**29.4 Roles And Responsibilities.**

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**(c) EIM Entity Scheduling Coordinator.**

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**(4) Obligations**. An EIM Entity Scheduling Coordinator shall–

(A) perform the obligations of an EIM Entity Scheduling Coordinator under the EIM Entity Scheduling Coordinator Agreement and Section 29;

(B) perform the obligations of a Scheduling Coordinator under provisions of the CAISO Tariff described in Section 29.1(b);

(C) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all non-participating resources in the Balancing Authority Area of each EIM Entity that it represents and update such information in a timely manner;

(D) verify in the manner set forth in the Business Practice Manual for the Energy Imbalance Market that all EIM Resources within the Balancing Authority Area of each EIM Entity represented by the EIM Entity Scheduling Coordinator have been registered with the CAISO;

(E) submit the Interchange schedules with other Balancing Authorities at the defined Interchange scheduling locations, including creating and processing E-Tags in accordance with NERC, North American Energy Standards Board, and WECC standards and business practices for bilateral schedules between Balancing Authority Areas that are arranged no less than 20 minutes in advance of the dispatch Interval of the Real-Time Market in which the Interchange will occur and that are included in an EIM Resource Plan;

(F) match E-Tags and manage schedule curtailments at the defined Interchange scheduling locations with other Balancing Authorities;

(G) provide EIM Transmission Service Information in accordance with Section 29.17;

(H) settle all financial obligations arising out of the Real-Time Market for the EIM Entity, including financial settlement with non-participating resources and non-participating load within the EIM Entity Balancing Authority Area; (I) submit EIM Base Schedules, EIM Resource Plans and other required information on behalf of the EIM Entity;

(J) register with the CAISO, consistent with the provisions in the Business Practice Manual for the Energy Imbalance Market, all non-participating resources that will be designated as EIM Available Balancing Capacity in the EIM Resource Plan; and

(K) create with the CAISO a Default Energy Bid consistent with the rules specified in Section 39.7.1 for all non-participating resources that will be Available Capacity in the EIM Resource Plan.

\* \* \*

**29.30 Bid and Self-Schedule Submission For CAISO Markets.**

**(a) In General.** In addition, to the rules specified below, the provisions of Section 30 that are applicable to the Real-Time Market shall apply to EIM Market Participants.

**(b) Transition Cost Multiplier.** The EIM Participating Resources that are also Multi-Stage Generating Resources may negotiate a Transition Cost multiplier with the CAISO, in consultation with Department of Market Monitoring, consistent with the procedures in Section 39.7.1.3 in the event that the monthly Thousand British Thermal Units (MMBtu) Gas Price Index used in Section 30.4.2 does not account for the fuel source of the Generating Unit.

**(c) EIM Available Balancing Capacity Energy Bid Curve for EIM Participating Resources.** For each applicable Trading Hour, if the CAISO determines that the submitted Energy Bid Curve is not sufficient to cover all of the uses identified in the EIM Resource Plan as provided in Section 29.34 (e), the CAISO will apply the submitted Energy Bid Curve for the EIM Participating Resource in the following priority:

**(1) Upward Capacity.** - Non-Spinning Reserves, Spinning Reserves, reserve capacity meeting the WECC requirements for regulating reserves, in incremental MW, Energy offered to the Real-Time Market above the EIM Base Schedule.

**(2) Downward Capacity.** - Reserve capacity meeting the WECC requirements for regulating reserves, in decremental MW, Energy offered to the Real-Time Market below the EIM Base Schedule.

**(3) Outages**. If the EIM Participating Resource Scheduling Coordinator submits an Outage that impacts an EIM Participating Resource identified as part of the EIM Available Balancing Capacity pursuant to Section 29.34 (e), the CAISO will reduce the resource’s overall available capacity before reducing the resource’s EIM Available Balancing Capacity.

**(d) Available Balancing Capacity Energy Bid Curve for Non-Participating Resources.** The CAISO will create a bid curve based on the calculated Default Energy Bid established by the EIM Entity Scheduling Coordinator and the CAISO pursuant to Section 39.7.1 for all non-participating resources for identified as EIM Available Balancing Capacity.

**\* \* \***

**29.34 EIM Operations**

(a) **In General.** Section 34, as supplemented by provisions in Section 29.34, will govern the operation of the Real-Time Market within the EIM Area.

(b) **Applicability.** EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators will submit EIM Base Schedules and other necessary information to the CAISO for use in the Real-Time Market pursuant to Section 29.34 and not pursuant to Section 34.

(c) **Submission Deadlines.** If an EIM Entity Scheduling Coordinator or EIM Participating Resource Scheduling Coordinator fails to submit an EIM Base Schedule according to the timelines established in this Section 29.34, the CAISO will not accept the EIM Base Schedule or use it in the Real-Time Market.

(d) **Demand Forecast.**

(1) **In General.** In accordance with procedures set forth in the Business Practice Manual for the Energy Imbalance Market, the CAISO shall develop short-term and mid-term Demand Forecasts by Demand Forecast zone within each EIM Entity Balancing Authority Area, separately from the CAISO Balancing Authority Area.

(2) **Short Term Forecast.** The CAISO’s short-term Demand Forecast for an EIM Entity Balancing Authority Area shall produce a value every five minutes for the duration of the CAISO’s Dispatch horizon, which has five-minute granularity and extends several Dispatch Intervals.

(3) **Mid-Term Forecast.** The CAISO’s mid-term Demand Forecast for an EIM Entity Balancing Authority Area shall produce hourly values for the next hour through the next 7 days.

(4) **EIM Entity Scheduling Coordinator Demand Forecast.**

(A) **In General.** An EIM Entity Scheduling Coordinator may opt to provide a non-binding EIM Entity Demand Forecast, net of behind-the-meter Generation that is not registered as an EIM Resource, as part of the hourly EIM Base Schedules.

(B) **Timing and Scope.** The EIM Entity Scheduling Coordinator must provide any such Demand Forecasts by 10:00 a.m. for the next 7 days.

(C) **Updates.** The EIM Entity Scheduling Coordinator must update any such Demand Forecast for each Operating Hour and the following 6 to 10 hours and submit the update to the CAISO no later than 75 minutes prior to the start of that Operating Hour, as part of its hourly EIM Base Schedule submission.

(D) **Effect on Bid Requirement.** If the EIM Entity Demand Forecast is less than the CAISO Demand Forecast, then the EIM Entity’s EIM Resource Plan must include sufficient Bids to cover the difference in Demand Forecasts.

(5) **Posting.** Between 6:00 p.m. of the seventh day prior to the start of the Operating Day and 6:00 p.m. of the day prior to the Operating Day, the CAISO shall post and update hourly Demand Forecasts by Demand Forecast zone.

(e) **EIM Resource Plan.**

(1) **In General.** By 10:00 a.m. of the day preceding the Operating Day, the EIM Entity Scheduling Coordinators on behalf of non-participating resources and EIM Participating Resource Scheduling Coordinators on behalf of EIM Participating Resources, must submit all applicable components of the EIM Resource Plan as set forth in Section 29.34(e)(3).

(2) **Scope.** The EIM Resource Plan components must cover a seven day horizon (with hourly detail for each resource) beginning with the Operating Day.

(3) **Contents.** The EIM Resource Plan shall comprise—

(A) EIM Base Schedules of EIM Entities and EIM Participating Resources;

(B) Energy Bids (applicable to EIM Participating Resources only);

(C) Reserve capacity meeting the WECC requirements for regulating reserves, in incremental MW (applicable to resources only), which is to include any EIM Available Balancing Capacity to address an upward power balance violation;

(D) Reserve capacity meeting the WECC requirements for regulating reserves, in decremental MW (applicable to resources only), which is to include EIM Available Balancing Capacity to address a downward power balance constraint;

(E) Spinning Reserves in MW;

(F) Non-Spinning Reserves in MW; and

(G) if the EIM Entity Scheduling Coordinator is not relying on the CAISO’s Demand Forecast, a Demand Forecast.

(4) **Contents of EIM Base Schedules.** EIM Base Schedules of EIM Entities must include hourly-level Demand Forecasts for EIM Demand, hourly-level schedules for resources, and hourly-level scheduled Interchanges.

(5) **Adjustment Prior to Submission of Real-Time EIM Base Schedules.** The EIM Entity Scheduling Coordinator may adjust the components of the EIM Resource Plan prior to the submission of Real-Time EIM Base Schedules up to 75 minutes before the Operating Hour.

(f) **Real-Time EIM Base Schedules.**

(1) **In General.**

(A) **Initial Submission.** EIM Entity Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and non-participating resources in the EIM Entity Balancing Authority Area that wish to submit real-time hourly EIM Base Schedules, or, with regard to non-participating resources, wish to submit EIM Base Schedule information pursuant to Section 29.34(f)(4), must submit such schedules or other information consistent with the requirements of the Business Practice Manual for the Energy Imbalance Market and at least 75 minutes before the start of the Operating Hour.

(B) **Interim Revisions.** EIM Entity Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and non-participating resources in the EIM Entity Balancing Authority Area may revise hourly Real-Time EIM Base Schedules, or, with regard to non-participating resources, revise EIM Base Schedule information submitted pursuant to Section 29.34(f)(4), meeting the requirements of the Business Practice Manual for the Energy Imbalance Market at or before 55 minutes before the start of the Operating Hour.

(C) **Final Revision.** EIM Entity Scheduling Coordinators may further revise hourly Real-Time EIM Base Schedules, including EIM Base Schedules for EIM Participating Resources, at or before 40 minutes before the start of the Operating Hour.

(2) **EIM Base Schedule for EIM Participating Resources.** The EIM Base Schedule for each EIM Participating Resource must be within the Economic Bid range of the submitted Energy Bids for each Operating Hour for EIM Resources, which the CAISO will make available to the EIM Entity without price information.

(3) **EIM Base Schedule for Imports and Exports.** EIM Base Schedules must disaggregate Day-Ahead import/export schedules between the EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area, disaggregate the forward export schedules to other Balancing Authority Areas, and identify the relevant EIM Interties for imports and exports to an EIM Entity Balancing Authority Area from Balancing Authority Areas other than the CAISO Balancing Authority Area.

(4) **EIM Base Schedule Aggregation.** In response to a request by an EIM Entity Scheduling Coordinator, the CAISO will establish an electronic interface by which non-participating resources, Loads, and other customers of the EIM Entity may submit EIM Base Schedule information to the EIM Scheduling Coordinator and the CAISO.

(g) **Initial EIM Base Load Schedule.** The CAISO will derive an initial EIM Base Load Schedule for each EIM Entity from the Demand Forecast used for the EIM Entity Balancing Authority Area, estimated Transmission Losses, and an assumed Load distribution, pursuant to the methodology set forth in the Business Practice Manual for the Energy Imbalance Market.

(h) **Energy Bids.** EIM Participating Resource Scheduling Coordinators may submit Energy Bidsin accordance with the timelines, processes, and requirements applicable to other resources submitting Energy Bids under Section 34.

(i) **Interchange Schedules with Other Balancing Authorities.**

(1) **In General.** EIM Entity Scheduling Coordinators must submit Interchange Schedules with other Balancing Authority Areas at the relevant EIM Interties and must update these Interchange Schedules with any adjustments, when applicable, as part of the hourly EIM Resource Plan revision.

(2) **Economic Bidding of EIM Intertie Transactions.** An EIM Participating Resource Scheduling Coordinator may bid a transaction at an EIM External Intertie into the FMM if the EIM Entity supports economic bidding of EIM External Intertie transactions and the relevant transmission service providers or path operators support 15-minute scheduling at the EIM External Intertie under FERC Order No. 764.

(j) **CAISO Validation.** The CAISO Markets systems will validate the initial EIM Resource Plan by 1:00 p.m. on the day before the Operating Day, and within 15 minutes of the submission of EIM Base Schedules or adjustments to EIM Base Schedules, the CAISO will validate the EIM Resource Plan and notify the EIM Entity Scheduling Coordinator—

(1) if the EIM Resource Plan is not balanced;

(2) if the EIM Resource Plan provides insufficient Flexible Ramping Constraint capacity to meet requirements determined pursuant to Section 29.34(m); and

(3) if the CAISO anticipates Congestion based on the submitted EIM Resource Plans.

(k) **EIM Resource Plan Balance.** If, after the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules according to Section 29.34(f)(1)(c), Supply in the EIM Base Schedules does not balance the Demand Forecast, the CAISO will adjust the Demand in the EIM Base Schedule to equal Supply.

(l) **EIM Resource Plan Evaluation.**

(1) **Requirement.** The EIM Base Schedules for resources included in the EIM Resource Plan must balance the Demand Forecast for each EIM Entity Balancing Authority Area.

(2) **Insufficient Supply.** An EIM Resource Plan shall be deemed to have insufficient Supply if the sum of EIM Base Schedules from non-participating resources and the sum of the highest quantity offers in the Energy Bid range from EIM Participating Resources, including Interchange with other Balancing Authority Areas, is less than the total Demand Forecast that the EIM Entity Scheduling Coordinator has decided to use for the associated EIM Entity Balancing Authority Area.

(3) **Excess Supply.** An EIM Resource Plan shall be deemed to have excessive Supply if the sum of EIM Base Schedules from non-participating resources and the sum of the lowest quantity Bids in the Energy Bid range from EIM Participating Resources is greater than the total Demand Forecast that the EIM Entity Scheduling Coordinator has decided to use for the associated EIM Entity Balancing Authority Area.

(m) **Flexible Ramping Constraint Requirement.**

(1) **Responsibility.** Each EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area will be responsible for meeting its own portion of the combined Flexible Ramping Constraint capacity requirements for the next hour as determined by Section 29.34(m).

(2) **Nature.** The Flexible Ramping Constraint capacity requirement is a minimum requirement for each Balancing Authority Area in the EIM Area and each combination thereof based upon the EIM Transfer limit between Balancing Authority Areas.

(3) **Determination.** Under the provisions of Section 29.34(m) and the procedures set forth in the Business Practice Manual for the Energy Imbalance Market, the CAISO will determine the Flexible Ramping Constraint capacity requirement using the CAISO Demand Forecast and CAISO Variable Energy Resource forecast for each Balancing Authority Area in the EIM Area and each combination thereof.

(4) **Sufficiency Determination.**

(A) **Review.** The CAISO will review the EIM Resource Plan pursuant to the process set forth in the Business Practice Manual for the Energy Imbalance Market and verify that it has sufficient Bids for Ramping capability to meet the EIM Entity Balancing Authority Area Flexible Ramping Constraint capacity requirement, as adjusted pursuant to Sections 29.34(m)(4)(B) and (C).

(B) **Pro Rata Reduction and Diversity Limit.** Each EIM Entity Balancing Authority Area Flexible Ramping Constraint capacity requirement shall be reduced by its pro rata share of the diversity benefit in the EIM Area as may be limited by the available net import EIM Transfer capability into that EIM Entity Balancing Authority Area.

(C) **Sufficiency of an EIM Entity Balancing Authority Area with a Net Outgoing EIM Transfer.**  If an EIM Entity Balancing Authority Area has a net outgoing EIM Transfer (net export with reference to the EIM Base Schedule) before the Operating Hour, then the CAISO will apply a Flexible Ramping Constraint capacity requirement credit in determining the sufficiency of the Flexible Ramping Constraint capacity for that EIM Entity Balancing Authority Area equal to the net outgoing EIM Transfer before the Operating Hour.

(D) **Sufficiency of an EIM Entity Balancing Authority Area with a Net Ingoing EIM Transfer.**  If an EIM Entity Balancing Authority Area has a net incoming EIM Transfer (net import with reference to the EIM Base Schedule) before the Operating Hour; then the Flexible Ramping Constraint capacity for that EIM Entity Balancing Authority Area will be considered sufficient if it meets its own Flexible Ramping Constraint capacity requirement, irrespective of the incoming EIM Transfer that results from Real-Time Dispatch in the EIM Area.

**(E) Effect of EIM Available Balancing Capacity.** The CAISO will not consider any EIM Available Balancing Capacity identified by an EIM Entity Scheduling Coordinator in the EIM Resource Plan for purposes of this sufficiency determination.

(5) **Combinations of Constraints.** The CAISO shall determine the Flexible Ramping Constraint capacity requirement for all possible combinations of sufficient Balancing Authority Areas in the EIM Area, including requirements for individual Balancing Authority Areas in each combination, by reducing the total Flexible Ramping Constraint capacity requirement for each group of Balancing Authority Areas by the total amount of EIM Internal Intertie import capability to that group from each Balancing Authority Area outside the group.

(n) **Effect of Resource Plan Insufficiency.**

(1) **Resource Plan Balance.** If, after the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules as provided in Section 29.34(f)(1)(c), the EIM Resource Plan has insufficient supply as determined according to Section 29.34(l)—

(A) the CAISO will not include the EIM Entity Balancing Authority Area in any Flexible Ramping Constraints for any combination of Balancing Authority Areas;

(B) the CAISO will formulate only individual constraints for the EIM Entity Balancing Authority Area’s individual Flexible Ramping Constraint capacity requirements; and

(C) the CAISO will hold the EIM Transfer limit into the EIM Entity Balancing Authority Area at the value for the last 15-minute interval.

(2) **Flexible Ramping Insufficiency.** If, after the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules as provided in Section 29.34(f)(1)(c), the CAISO determines that an EIM Entity Balancing Authority Area has insufficient Flexible Ramping Constraint capacity according to Section 29.34(m), the CAISO will take the actions described in Section 29.34(n)(1).

**(3) Available Balance Capacity**. The EIM Available Balancing Capacity identified in the EIM Resource Plan will not be considered in the evaluation of the tests identified in Section 29….. (l) and 29…..(m).

(o) **Transmission Constraint Relaxation.** If an EIM Entity Scheduling Coordinator’s approved EIM Resource Plan does not have sufficient Bids to resolve Congestion, the CAISO will relax the relevant Transmission Constraints in the Market Clearing and the EIM Entity will become responsible for managing its congested Transmission Constraints through other means, and the CAISO will determine prices for Congestion consistent with Transmission Constraint relaxation parameters established in the Business Practice Manual for the Energy Imbalance Market until the Transmission Constraint is no longer binding in the Real-Time Market.

(p) **Operating Reserves.**

(1) **Schedules.**

(A) **EIM Entity Responsibility.** Each EIM Entity is responsible for its contingency reserves, or share of such contingency reserves under the terms of a reserve sharing group agreement, and it and the reserve sharing group are responsible for deploying operating reserves, including regulating reserves, in conformance with NERC and WECC requirements.

(B) **EIM Entity Scheduling Coordinator Responsibility.** The EIM Entity Scheduling Coordinator shall—

(i) include any Energy deployed from reserves in the hourly EIM Base Schedules, if time permits, in which case they will be settled in the Real-Time Market;

(ii) otherwise include the Energy deployed from reserves as EIM Manual Dispatches, if time does not permit;

(iii) immediately inform the CAISO of events requiring Dispatch of operating reserves and resource EIM Base Schedule adjustments in response to contingencies;

(iv) if a resource’s actual response differs from the resource EIM Base Schedule adjustment, provide a resource EIM Base Schedule update showing the actual resources dispatched during the event by no later than 1:00 a.m. seven days after the Operating Day in which the event occurred; and

(v) inform the CAISO of the amount of resource capacity that is reserved for contingency reserve responsibility by either ensuring that an Energy Bid for the resource is below the maximum operating limit of the resource or reducing the maximum operating limit of the resource.

(C) **CAISO Actions.**

(i) **Prior to Update.** Until the CAISO receives resource operating limit updates from an EIM Entity Scheduling Coordinator, the CAISO will continue to send Dispatch Instructions based upon pre-event operating limits.

(ii) **After Update.** After EIM Base Schedule updates are received and Dispatches in the Real-Time Market reflect the updated Self-Schedules and operating limits, the CAISO shall account for the Dispatches in the net scheduled Interchange values that it provides to EIM Entity Scheduling Coordinators.

(2) **Updates to Data for Reserve Sharing Event.**

(A) **Responsibilities.** Immediately following a reserve sharing event impacting the EIM Entity Balancing Authority Area—

(i) the EIM Entity must submit information regarding the assistance provided, including impacts to Balancing Authority Area Load schedules for each participant involved in the reserve sharing event; and

(ii) the EIM Entity Scheduling Coordinator must submit to the CAISO EIM Manual Dispatch instructions for resources in the EIM Entity Balancing Authority Area deployed in response to the reserve sharing event, pursuant to the reserve sharing group’s criteria.

(B) **Offsets.** Until 1:00 a.m. seven days following the reserve sharing event impacting the EIM Entity Balancing Authority Area, the EIM Entity may offset the Load schedules created by the reserve sharing event by entering resource to Load schedules, reflecting generation resources actually utilized to assist in the event.

(q) **Variable Energy Resources.** Provisions of Section 34 specifically applicable to Variable Energy Resources and Eligible Intermittent Resources appear in Sections 34.1.3, 34.1.6, 34.2.2, 34.5.1. 34.13.2.

(r) **Use of EIM Available Balancing Capacity.**

(1) **In General.** If sufficient, the CAISO will use any identified EIM Available Balancing Capacity in the Real-Time Market to resolve in the applicable EIM Balancing Authority Area only identified infeasible market solutions that would otherwise be resolved using the parameters described in sections 27.4.3.1 and 27.4.3.4, subject to the provisions of this subsection 29.34(r).

(2) **Determining Feasible Market Solutions.** The CAISO will identify and resolve potential infeasible market solutions that would otherwise be resolved using the parameters described in Sections 27.4.3.1 and 27.4.3.4, as applicable to the EIM Balancing Authority Areas in the two runs it conducts for scheduling and pricing in the CAISO markets by

(A) clearing the Real-Time Market in the scheduling run, using Energy Bid Curves submitted by the EIM Participating Resource Scheduling Coordinator and the Energy Bid Curves it creates using the specified Default Energy Bids for the non-participating resources identified by the EIM Entity Scheduling Coordinator pursuant to Section 29.\_\_\_, during which the CAISO uses:

(1) the bids associated with the Available Balancing Capacity only after Energy Bids submitted by EIM Participating Resources are exhausted; and

(2) prevents the use of EIM Available Balancing Capacity to support EIM Transfers.

(B) clearing the Real-Time Market pricing run by limiting the dispatch of the EIM Available Balancing Capacity to the amount dispatched in the scheduling run solution, while:

(1) using the bids associated with the EIM Available Balancing Capacity; and

(2) reducing the load forecast for the EIM Balancing Authority Area by a small tolerance to allow for price determination.

(C) clearing the Real-Time Market in the EIM Balancing Authority Areas pursuant to the parameters specified in Sections 27.5.3.1 and 27.5.3.4, as applicable, if the amount of EIM Available Balancing Capacity is not sufficient to clear the infeasibility identified in the two runs.

\* \* \*

**EIM Available Balancing Capacity.**

Any capacity that an EIM Entity Scheduling Coordinator has identified in the EIM Resource Plan as available to resolve a power balance violations in the EIM Balancing Authority Area as described in Section [ ].