

August 3, 2021

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

**Re: California Independent System Operator Corporation
Docket No. ER21-____-000**

**Tariff Amendment to Allow Submission of EIM Base Schedules
Below Minimum Load**

Dear Secretary Bose:

The California Independent System Operator Corporation (CAISO) submits this tariff amendment to allow participants in the Energy Imbalance Market (EIM) to submit EIM base schedules below the minimum load of their resources (Minimum Load Proposal).¹ The CAISO originally included the Minimum Load Proposal in a tariff filing submitted in January 2021.² However, the CAISO subsequently withdrew the Minimum Load Proposal before the Commission issued an order on it because the functionality had not passed the system testing necessary to allow it to go into effect on the proposed effective date.³

The CAISO has now completed the required system testing and proposes to implement the Minimum Load Proposal to allow EIM base schedules to reflect the energy produced when a resource is starting up. The Minimum Load Proposal will enable the resource sufficiency evaluation to consider this additional energy production and decrease the EIM participating resource's uninstructed imbalance energy, improving the efficiency and accuracy of the EIM.

¹ The CAISO submits this filing pursuant to section 205 of the Federal Power Act (FPA), 16 U.S.C. § 824d.

² See transmittal letter for Real-Time Settlement and Base Schedule Timeline Enhancements, Docket No. ER21-955-000, at 2, 8-10 (Jan. 27, 2021) (January 27 Tariff Filing).

³ See transmittal letter for Amendment to Tariff Changes to Implement Real-Time Settlement and Base Schedule Timeline Enhancements, and Requests for Shortened Comment Period and Waiver of Notice Requirements to Permit New Effective Date, Docket No. ER21-955-001, at 3 (Mar. 25, 2021) (March 25 Withdrawal Filing).

The CAISO requests that the Commission accept the changes proposed in this tariff amendment effective November 1, 2021, subject to confirmation by the CAISO within five business days of the actual effective date.

I. Procedural Background

The CAISO submitted the January 27 Tariff Filing to implement several real-time settlement and EIM base schedule timeline enhancements, including the Minimum Load Proposal.⁴ The CAISO originally proposed to implement the Minimum Load Proposal (and certain other revisions in the January 27 Tariff Filing) effective April 1, 2021.⁵ Subsequently, however, the CAISO determined it could not implement the Minimum Load Proposal by April 1 because the necessary software changes had not passed final end-to-end settlement system testing. Therefore, the CAISO submitted the March 25 Withdrawal Filing to withdraw the Minimum Load Proposal. The CAISO stated that it planned to resubmit the Minimum Load Proposal in a separate tariff amendment filing later in 2021, as soon as practical after the software cleared end-to-end testing.⁶

On April 30, 2021, the Commission issued an order accepting in part and rejecting in part the other tariff revisions contained in the January 27 Tariff Filing, effective as of the dates proposed in the January 27 Tariff Filing and revised in the March 25 Withdrawal Filing.⁷ The Commission noted the withdrawal of the Minimum Load Proposal.⁸

The CAISO has now completed the end-to-end testing of the software needed to implement the Minimum Load Proposal. Therefore, as discussed in the March 25 Withdrawal Filing, the CAISO is resubmitting the Minimum Load Proposal for Commission acceptance.⁹ The tariff revisions proposed in this filing are identical to the corresponding revisions included in the January 27 Tariff Filing and later withdrawn pursuant to the March 25 Withdrawal Filing.¹⁰

⁴ Transmittal letter for January 27 Tariff Filing at 2, 8-10.

⁵ *Id.* at 1-2, 15.

⁶ March 25 Withdrawal Filing at 3. Specifically, the CAISO withdrew new tariff section 29.11(b)(3)(D) and revisions to existing tariff sections 29.34(e)(4) and 29.34(f)(2) proposed in the January 27 Tariff Filing and the associated discussion on the Minimum Load Proposal contained in the transmittal letter for that filing. *Id.* In addition, the CAISO proposed an extension of the effective date for some of the tariff revisions contained in the January 27 Tariff Filing. *Id.* at 3-4.

⁷ *Cal. Indep. Sys. Operator Corp.*, 175 FERC ¶ 61,096 (2021).

⁸ *Id.* at n.17.

⁹ As was the case for the January 27 Tariff Filing, the Minimum Load Proposal will be implemented pursuant to the addition of new tariff section 29.11(b)(3)(D) and the revisions to existing tariff sections 29.34(e)(4) and 29.34(f)(2) contained in the instant filing.

¹⁰ No further stakeholder process beyond the process that resulted in the January 27 Tariff Filing was necessary, given that the Minimum Load Proposal here is identical to the one submitted in the

II. Proposed Tariff Revisions

The EIM has expanded to include more EIM entities with large resource that have long start up times. These stakeholders identified the limitation on the submission of EIM base schedules with energy below a resource's minimum load as an issue because this startup energy is not accounted for purposes of the resource sufficiency evaluation even though they rely on the energy produced when a resource is starting and ramping to its minimum load. The CAISO undertook a stakeholder initiative in 2020 to consider this issue, and this amendment represents the proposed solution following that effort.¹¹ Stakeholder questions were answered along the way and stakeholders support the Minimum Load Proposal.

EIM base schedules reflect EIM entities' planned system operation and are the baseline for imbalance energy settlement in the EIM. However, EIM base schedule submissions do not allow resources to include start-up energy below minimum load (*i.e.*, energy below PMin). For CAISO resources, balanced schedules are established via the integrated forward market and real time unit commitment process, whereas EIM entities are responsible for creating their own balanced EIM base schedules. All energy shown in the CAISO day-ahead schedules is settled, but for EIM entities only deviations from EIM base schedules are settled—EIM base schedules themselves are not settled. Because EIM base schedules are not settled, the imbalance energy settlement under this proposal will be limited to the deviations between the submitted base schedule, including the expected energy produced during startup, and the metered output from the resource. This provides for an accurate representation of the base schedule energy for uninstructed imbalance energy settlement.

The inability of EIM entities to account for energy below a resource's minimum load is most problematic for those entities with large resources that have long start-up times. Resources can have multi-hour start times and minimum loads in the hundreds of MW, and EIM entities generally rely on resources' start up energy to balance their systems. Not accounting properly for energy below minimum load in the market limits an EIM entity's ability to account accurately for startup energy in its EIM base schedule submission for inclusion in the resource sufficiency evaluation. It is more efficient and accurate for EIM entities' to capture in their resource plans potentially significant amounts of energy produced on the specific resource when that resource is starting up.

The Minimum Load Proposal will align the accounting of start-up energy for EIM resources and CAISO resources in the resource sufficiency evaluation. The resource sufficiency evaluation comprises four different tests: (1) feasibility, (2) balancing, (3)

January 27 Tariff Filing.

¹¹ See [Western EIM Base Schedule Submission Deadline, Draft Final Proposal, October 30, 2020](#).

capacity, and (4) flexibility.¹² The design of the balancing test ensures accurate base schedule submissions, while the feasibility test runs a powerflow on submitted base schedules to inform EIM entities of expected congestion. The bid-range capacity test determines if an EIM entity participating in the EIM has sufficient supply to meet its obligations, independent of access to incremental EIM transfers. The flexible ramping sufficiency test ensures each EIM entity can ramp to meet expected forecast variations in the upcoming operating hour. Failing either the capacity or flexibility test will result in the EIM entity's transfers being limited to the quantity that passed the most recent evaluation interval.¹³

EIM entities' ability to show energy below minimum load on their submitted base schedules will more accurately reflect the resources on their system they expect to have available for balancing, thus, this will enhance their ability to pass the bid-range capacity test. Because this energy should be present in the operating hour, EIM entities can show it as additional capacity on a base schedule. However, the flexible ramping sufficiency test will also account for this additional non-dispatchable capacity, which may require EIM entities to ensure additional downward flexibility on other resources within their supply plan. The CAISO's real-time pre-dispatch optimization currently considers energy below minimum load in creating balanced schedules that serve as the CAISO's input to the resource sufficiency evaluation, and this energy below minimum load will accordingly be considered in the balancing and feasibility tests in the same manner as all other base scheduled energy.

The advisory resource sufficiency evaluation conducted seventy-five minutes prior to the hour uses the CAISO's day-ahead market results. The subsequent resource sufficiency evaluations, including the financially binding run conducted forty minutes prior to the hour, utilize the CAISO's real-time market schedules, which consider energy produced below minimum load. The proposed change to allow EIM entities to show this energy on their base schedules for the purposes of passing the resource sufficiency evaluation would provide them equal treatment to CAISO resources using advisory real-time market results as an input to the resource sufficiency evaluation.

To accommodate this, the CAISO would modify the logic of the EIM base schedule aggregation portal and the resource sufficiency evaluation to allow entities to submit start-up energy as part of a resource's EIM base schedule; current validation rules reject schedules below a resource's minimum load.¹⁴ More accurate EIM base schedules will produce a more accurate real time market solution for EIM entity operations and minimize uninstructed imbalance energy settlement because the startup energy would be reflected in an EIM base schedule. EIM base schedule energy below minimum load would also count

¹² CAISO Tariff sections 29.34(j), (k), (l), and (m). See also the [EIM resource sufficiency enhancements stakeholder process](#) for more detailed discussion of the RSE.

¹³ CAISO Tariff section 29.34(n).

¹⁴ See proposed changes to CAISO Tariff sections 29.34(e)(4) and 29.34(f)(2).

as part of an EIM entity's resource sufficiency balancing test only, improving the accuracy and efficiency of that test. No changes to the capacity and flexible ramp sufficiency tests themselves are necessary because the start-up energy does not represent an energy bid.

The CAISO recognizes this proposal will treat the settlement of start-up energy for EIM resources and CAISO resources differently because of the fundamental differences between the base scheduling process and the CAISOs day-ahead market clearing process. This different treatment is not unduly discriminatory because the CAISO and EIM entities are not similarly situated in this respect. To provide similar settlement treatment for start-up energy for internal CAISO resources, the CAISO would need to develop a new energy class with its own rules, and settlement and the integrated forward market would need to include this start-up energy within its market optimization. Because CAISO day-ahead schedules are already balanced, the CAISO does not believe this additional flexibility would provide sufficient benefits to justify its implementation at this time. This initiative only addresses a narrow issue that EIM entities seek to resolve in their role as the balancing authorities operating in the EIM. Significant design changes to the CAISO day-ahead market are unnecessary and unwarranted. Allowing this different treatment will enable EIM entities to include the information described above in the submission of their EIM base schedules now without waiting for the CAISO to address comprehensive structure changes until a more appropriate time.

Under the CAISO's proposal, the CAISO will assume that when a resource is producing energy below its minimum load, it will generally ramp in a linear manner up to its minimum load. To ensure there is no misuse of this functionality in an attempt to circumvent the intent of the resource sufficiency evaluation, the CAISO proposes to perform after-the-fact monitoring on the submitted EIM base schedules that contain resources with start-up energy. Examples of conditions the CAISO proposes to monitor include: (i) an EIM base schedule below minimum load in an hour when there is an EIM base schedule at or above minimum load in the previous hour; (ii) a non-monotonically increasing pattern of EIM base schedules below minimum load over consecutive hours; (iii) lack of an EIM base schedule in an hour when there is an EIM base schedule below minimum load in the previous hour; and (iv) EIM base schedules below minimum load for an unreasonably long multi-hour period based on the resource's registered technology and start-up profile. The CAISO understands resources may have unique characteristics, and actions such as resource tripping during start-up are not uncommon occurrences. Therefore, the CAISO will examine operator logs, outage cards, and other available records to resolve any potential questions concerning potential observed patterns of misuse that could inappropriately impact the resource sufficiency evaluation or settlement. The CAISO will undertake these monitoring activities consistent with the rules of conduct applied by the CAISO and pursue identified concerns accordingly.

The CAISO will settle energy below minimum load included in an EIM base schedule as if the EIM resource had received a dispatch instruction to minimum load

based upon the submission of an energy self-schedule.¹⁵ The CAISO will determine the quantity of uninstructed imbalance energy based on the resource's deviation from its start-up base schedule and its meter, and will settle the difference between the base schedule and the metered output at the applicable real-time dispatch locational marginal price—the CAISO will not settle energy associated with the base schedule. In addition, since the resource's base schedule indicates that the resource is transitioning from start-up to minimum load, the CAISO will calculate and settle standard ramping energy and ramping energy deviation according to the CAISO tariff.¹⁶ The Department of Market Monitoring concurred that limiting the settlement to the difference between the EIM base schedule and the metered output should prevent a generator from getting paid imbalance energy for output up to its base schedule.¹⁷ DMM did note a potential bid cost recovery issue in its comments on the January 27 Tariff Filing because start-up energy would be considered, but not included, in the real-time market dispatch.¹⁸ This concern is addressed because the CAISO will only calculate standard ramping energy and ramping energy deviation during the transition period from start-up to minimum load, and will consider the start-up period to be a self-commitment that excludes the start-up costs from bid cost recovery consideration.¹⁹ This settlement results in appropriate treatment of EIM base schedule submissions below minimum load, while also mitigating concern that the base scheduled energy below minimum load could increase bid cost recovery.

The CAISO respectfully requests that the Commission accept the Minimum Load Proposal as a just and reasonable means to address the start-up energy related concerns raised by EIM entities.

III. Effective Date

The CAISO requests that the Commission accept the changes proposed in this tariff amendment effective November 1, 2021, subject to confirmation by the CAISO within five business days of the actual effective date. The CAISO plans to implement the Minimum Load Proposal along with the second tranche of changes proposed in the January 27 Filing, which the Commission accepted subject to notice within five business days of the actual effective date.²⁰ Having the same notice requirement here would help the CAISO ensure that all changes are implemented according to the planned release dates, while allowing the CAISO to notify the Commission of the actual effective date of all changes

¹⁵ See proposed CAISO Tariff section 29.11(b)(3)(D).

¹⁶ CAISO Tariff section 29.11(b)(2).

¹⁷ DMM Comments, ER21-955-000.

¹⁸ *Id.*

¹⁹ CAISO Tariff section 29.11(f)(2).

²⁰ *Cal. Indep. Sys. Operator Corp.*, 175 FERC ¶ 61,096 (2021).

accordingly. In any event, the CAISO will keep stakeholders updated on the actual implementation dates for all proposed changes throughout its release planning process.²¹

IV. Communications

Pursuant to Rule 203(b)(3) of the Commission's Rules of Practice and Procedure,²² the individuals listed below are to receive correspondence and other communications regarding this filing:

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V. Service

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has issued a market notice advising stakeholders of this filing and posted a copy of the filing on the CAISO website.

VI. Contents of Filing

In addition to this transmittal letter, this filing includes the following attachments:

Attachment A	Clean CAISO tariff sheets incorporating the tariff revisions described in this filing
Attachment B	Red-lined document showing the tariff revisions described in this filing

²¹ The CAISO [posts release planning information on its website](#) and hosts regular meetings to keep stakeholders informed.

²² 18 C.F.R. § 385.203(b)(3).

VII. Conclusion

For the reasons set forth in this filing, the CAISO requests that the Commission accept the tariff revision contained in this filing effective November 1, 2021, subject to confirmation by the CAISO within five business days of the actual effective date.

Respectfully submitted,

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Counsel for the California Independent System Operator Corporation

Attachment A – Clean Tariff

EIM Base Schedules Below Minimum Load

California Independent System Operator Corporation

August 3, 2021

29.11 Settlements and Billing for EIM Market Participants

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(b) Imbalance Energy.

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(3) Uninstructed Imbalance Energy.

(A) EIM Participating Resources.

- (i) **Calculation.** For EIM Participating Resources and an EIM Entity Balancing Authority Area's dynamic import/export schedules with external resources, the CAISO will calculate Uninstructed Imbalance Energy in the same manner in which it calculates Uninstructed Imbalance Energy under Section 11.5.2.1.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance Energy with the EIM Participating Resource Scheduling Coordinator or the EIM Entity Scheduling Coordinator, as applicable.

(B) Non-Participating Resources.

- (i) **Calculation.** For non-participating resources in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2, except that the CAISO will treat an EIM Base Schedule as a Day-Ahead Schedule and the CAISO will treat an EIM Manual Dispatch and an EIM Auto-Match as a Dispatch Instruction.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance

Energy for non-participating resources in an EIM Entity Balancing Authority Area at the applicable RTD Locational Marginal Price in accordance with Section 11.5.2.1 with the applicable EIM Entity Scheduling Coordinator and will treat EIM Balancing Authority Demand in the same manner as the CAISO treats CAISO Demand under that Section.

(C) **Non-Participating Load.**

- (i) **Calculation.** For non-participating Load in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2.2, except that the CAISO will determine deviations based on the EIM Base Load Schedule.
- (ii) **Settlement.** The CAISO will settle Uninstructed Imbalance Energy for non-participating Load in an EIM Entity Balancing Authority Area at the applicable Default LAP Hourly Real-Time Price in accordance with Section 11.5.2.2 with the applicable EIM Entity Scheduling Coordinator and will treat EIM Balancing Authority Demand in the same manner as the CAISO treats CAISO Demand under that Section.

(D) **EIM Base Schedules Below PMin.**

- (i) **Calculation.** For deviations from an EIM Base Schedule below PMin submitted by an EIM Entity Scheduling Coordinator or an EIM Participating Resource Scheduling Coordinator, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2 as if the EIM Resource had received a Dispatch Instruction to PMin based upon the submission of an Energy Self-Schedule.
- (ii) **Settlement.** The CAISO will settle Uninstructed Imbalance

Energy for deviations from an EIM Base Schedule below PMin in an EIM Entity Balancing Authority Area at the applicable RTD Locational Marginal Price in accordance with Section 11.5.2.1 with the applicable EIM Entity Scheduling Coordinator or EIM Participating Resource Scheduling Coordinator.

(c) **Unaccounted For Energy of EIM Entities.**

(1) **Calculation.** The CAISO will calculate Unaccounted For Energy for each EIM Entity Balancing Authority Area as the difference between metered Demand, and the sum of the metered Supply and the metered values at the interties, adjusted for losses.

(2) **Settlement.**

(A) **Unaccounted for Energy Settlement.** The CAISO will settle Unaccounted For Energy with the applicable EIM Entity Scheduling Coordinator at the applicable Hourly Real-Time LAP price.

(B) **Election Not to Settle Unaccounted for Energy.** Annually, an EIM Entity Scheduling Coordinator that submits metered Demand through Meter Data calculated without End-Use Meters may elect to not settle Unaccounted For Energy through the CAISO Markets, in which case –

(i) the CAISO will apply a zero-percent Transmission Losses factor when calculating the Initial EIM base load schedule per section 29.34(g); and

(ii) the EIM Entity Scheduling Coordinator will apply a zero-percent Transmission Losses factor when calculating their metered Demand.

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29.34 EIM Operations

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(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) EIM Upward Available Balancing Capacity;
 - (D) EIM Downward Available Balancing Capacity;
 - (E) EIM Reserves to Meet NERC/WECC Contingency Reserves Requirements; and
 - (F) 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, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, 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) **Additional Revisions.** EIM Entity Scheduling Coordinators may continue to 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), at or before 40 minutes before the start of the Operating Hour.
 - (D) **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 30 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, provided that an EIM Participating Resource Scheduling Coordinator may also include Energy below PMin in an EIM Base Schedule.
- (3) **EIM Base Schedule for Imports and Exports.** EIM Base Schedules must-
- (A) disaggregate Day-Ahead import/export schedules between the EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area;
 - (B) 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; and
 - (C) include approved, pending, and adjusted E-Tags for imports and exports.
- (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.

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Attachment B – Marked Tariff
EIM Base Schedules Below Minimum Load
California Independent System Operator Corporation
August 3, 2021

29.11 Settlements and Billing for EIM Market Participants

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(b) Imbalance Energy.

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(3) Uninstructed Imbalance Energy.

(A) EIM Participating Resources.

- (i) **Calculation.** For EIM Participating Resources and an EIM Entity Balancing Authority Area's dynamic import/export schedules with external resources, the CAISO will calculate Uninstructed Imbalance Energy in the same manner in which it calculates Uninstructed Imbalance Energy under Section 11.5.2.1.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance Energy with the EIM Participating Resource Scheduling Coordinator or the EIM Entity Scheduling Coordinator, as applicable.

(B) Non-Participating Resources.

- (i) **Calculation.** For non-participating resources in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2, except that the CAISO will treat an EIM Base Schedule as a Day-Ahead Schedule and the CAISO will treat an EIM Manual Dispatch and an EIM Auto-Match as a Dispatch Instruction.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance

Energy for non-participating resources in an EIM Entity Balancing Authority Area at the applicable RTD Locational Marginal Price in accordance with Section 11.5.2.1 with the applicable EIM Entity Scheduling Coordinator and will treat EIM Balancing Authority Demand in the same manner as the CAISO treats CAISO Demand under that Section.

(C) **Non-Participating Load.**

- (i) **Calculation.** For non-participating Load in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2.2, except that the CAISO will determine deviations based on the EIM Base Load Schedule.
- (ii) **Settlement.** The CAISO will settle Uninstructed Imbalance Energy for non-participating Load in an EIM Entity Balancing Authority Area at the applicable Default LAP Hourly Real-Time Price in accordance with Section 11.5.2.2 with the applicable EIM Entity Scheduling Coordinator and will treat EIM Balancing Authority Demand in the same manner as the CAISO treats CAISO Demand under that Section.

(D) **EIM Base Schedules Below PMin.**

- (i) **Calculation.** For deviations from an EIM Base Schedule below PMin submitted by an EIM Entity Scheduling Coordinator or an EIM Participating Resource Scheduling Coordinator, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2 as if the EIM Resource had received a Dispatch Instruction to PMin based upon the submission of an Energy Self-Schedule.
- (ii) **Settlement.** The CAISO will settle Uninstructed Imbalance

Energy for deviations from an EIM Base Schedule below PMin in an EIM Entity Balancing Authority Area at the applicable RTD Locational Marginal Price in accordance with Section 11.5.2.1 with the applicable EIM Entity Scheduling Coordinator or EIM Participating Resource Scheduling Coordinator.

(c) **Unaccounted For Energy of EIM Entities.**

(1) **Calculation.** The CAISO will calculate Unaccounted For Energy for each EIM Entity Balancing Authority Area as the difference between metered Demand, and the sum of the metered Supply and the metered values at the interties, adjusted for losses.

(2) **Settlement.**

(A) **Unaccounted for Energy Settlement.** The CAISO will settle Unaccounted For Energy with the applicable EIM Entity Scheduling Coordinator at the applicable Hourly Real-Time LAP price.

(B) **Election Not to Settle Unaccounted for Energy.** Annually, an EIM Entity Scheduling Coordinator that submits metered Demand through Meter Data calculated without End-Use Meters may elect to not settle Unaccounted For Energy through the CAISO Markets, in which case –

(i) the CAISO will apply a zero-percent Transmission Losses factor when calculating the Initial EIM base load schedule per section 29.34(g); and

(ii) the EIM Entity Scheduling Coordinator will apply a zero-percent Transmission Losses factor when calculating their metered Demand.

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29.34 EIM Operations

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(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) EIM Upward Available Balancing Capacity;
 - (D) EIM Downward Available Balancing Capacity;
 - (E) EIM Reserves to Meet NERC/WECC Contingency Reserves Requirements; and
 - (F) 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, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, 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) **Additional Revisions.** EIM Entity Scheduling Coordinators may continue to 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), at or before 40 minutes before the start of the Operating Hour.

(D) **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 30 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, provided that an EIM Participating Resource Scheduling Coordinator may also include Energy below PMin in an EIM Base Schedule.

(3) **EIM Base Schedule for Imports and Exports.** EIM Base Schedules must-

(A) disaggregate Day-Ahead import/export schedules between the EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area;

(B) 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; and

(C) include approved, pending, and adjusted E-Tags for imports and exports.

(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.

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