

July 21, 2014

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

**Re: California Independent System Operator Corporation
Compliance Filing
Docket No. ER14-1386-____**

Dear Secretary Bose:

The California Independent System Operator Corporation (“CAISO”)¹ submits this filing in compliance with the Commission’s “Order Conditionally Accepting Proposed Tariff Revisions to Implement Energy Imbalance Market,” issued in the captioned proceeding on June 19, 2014.²

I. Background

On February 28, 2014, the CAISO filed an amendment to its tariff to provide other balancing authority areas the opportunity to participate in the real-time market for imbalance energy that the CAISO currently operates in its own balancing authority area (“February 28 Tariff Filing”). The amendment sets forth the rules and procedures governing this expansion of the real-time market. Under the amendment, this set of rules and procedures is known as the Energy Imbalance Market or “EIM.” The CAISO requested a July 1, 2014, effective date for various proposed *pro forma* service agreements to be executed by EIM Market Participants, and requested a September 23, 2014, effective date for the balance of the proposed tariff revisions.

¹ Capitalized terms not otherwise defined herein have the meanings set forth in appendix A to the CAISO tariff. References to numbered sections are references to sections of the CAISO tariff unless otherwise indicated.

² *California Independent System Operator Corp.*, 147 FERC ¶ 61,231 (2014) (“June 19 Order”).

On April 15, 2014, the CAISO filed an answer to comments and protests submitted in response to the February 28 Tariff Filing (“April 15 Answer”). The April 15 Answer explained that the Commission should accept the February 28 Tariff Filing subject to certain minor clarifications that the CAISO agreed to make in a compliance filing if so directed by the Commission.

In the June 19 Order, the Commission accepted the February 28 Tariff Filing, effective as of the July 1 and September 23, 2014, dates requested by the CAISO, subject to a compliance filing containing the tariff changes discussed in Section II below.³

II. Compliance with the June 19 Order⁴

A. Centralized Counterparty

In the June 19 Order, the Commission directed the CAISO to revise proposed tariff section 29.22 so that the CAISO takes title to energy associated with EIM transfers consistent with its role as the centralized counterparty.⁵ In accordance with this directive, the CAISO proposes to revise section 29.22 to amend subsection (c) to provide that the CAISO takes title to energy associated with EIM transfers when the energy enters the CAISO controlled grid or the transmission system of an EIM Transmission Service Provider, whichever is first following dispatch, and from the CAISO to the entity that removes the energy from the CAISO controlled grid or the transmission system of a EIM Transmission Service Provider, whichever last precedes delivery to load. In order to ensure that the CAISO assumption of title to energy associated with EIM transfers is not interpreted as interfering with the provision in Section 29.22(b) that the CAISO is not a “Purchasing Selling Entity” for e-tag purposes, which the Commission recognized in the June 19 Order, the CAISO also proposes to modify that section to clarify that it applies despite the assumption of title.⁶

B. Administrative Fee

In the June 19 Order, the Commission directed the CAISO, as contemplated in the April 15 Answer, to revise proposed tariff section 29.11(j) to (1) clarify that the CAISO will calculate the MWh subject to the administrative fee once for all EIM Market Participants in an EIM entity’s balancing authority area;

³ See June 19 Order at Ordering Paragraphs (A)-(D).

⁴ For ease of reference, the section headings in Section II of this transmittal letter are the same as the section headings in the June 19 Order under which the Commission issued its compliance directives.

⁵ June 19 Order at PP 169, 171.

⁶ *Id.* at P 171.

(2) address any inconsistency between the language in sections 29.11(i)(3)(i) and 29.11(i)(3)(ii); and (3) make clear that the fee will be multiplied by the sum of imbalance energy identified in section 29.11(i)(3)(i) and, if the resulting amount is less than the amount calculated pursuant to sections 29.11(i)(2)(i) and -(ii), the remaining amounts will be allocated to the EIM entity scheduling coordinator pursuant to section 29.11(i)(2)(ii).⁷ The CAISO proposes to accomplish this by revising section 29.11(i) to (1) specify the calculation of the charge to each EIM Market Participant as the product of the rate and the relevant volumes, (2) provide for the calculation of the minimum total administrative charge, and (3) allocate to the EIM Entity Scheduling Coordinator any amount by which the minimum charge exceeds the amounts to be collected from the initial charges to EIM Market Participants.

C. Market Power Mitigation

In the June 19 Order, the Commission directed the CAISO to revise its proposed tariff sections regarding market power mitigation to make real-time local market power mitigation on EIM interties subject to filing with, and acceptance by, the Commission.⁸ The CAISO proposed to revise tariff section 29.39(d) to make FERC acceptance of a filing by the CAISO a prerequisite to implementation of real-time local market power mitigation on EIM interties.

The Commission also directed the CAISO to correct an erroneous cross-reference in proposed tariff section 29.39(c), which the CAISO had proposed to do in the April 15 Answer.⁹ Accordingly, the CAISO has revised section 29.39(c)(2) and 29.39(c)(3) to refer to section 29.39(d) rather than 29.39(c)(4).

D. Congestion Offset Costs

In the June 19 Order, the Commission found that proposed tariff section 11.5.4.1.1(d) was unclear. Although the CAISO disagreed, it offered to provide clarifying language if the Commission so directed. The Commission directed the CAISO to clarify that any real-time congestion offset charges that may arise from managing transmission constraints for transmission rights on an external balancing authority area that are held and scheduled by an EIM entity must be treated the same as if the constraints were transmission constraints in the balancing authority area of the EIM entity that holds and schedules the rights.¹⁰

⁷ *Id.* at PP 188, 190.

⁸ *Id.* at P 218.

⁹ *Id.* at PP 215, 227.

¹⁰ *Id.* at P 272.

The CAISO proposes to revise section 11.5.4.1.1(a) to specify that the contribution of a balancing authority area's constraints to real-time congestion costs includes the contribution of internal constraints, EIM External Interties and constraints enforced outside of the EIM Area needed to manage EIM Transfers of the balancing authority area. The CAISO believes this resolves any confusion about the scope of cost allocation under section 11.5.4.1.1(d).

E. Issues in Specific Tariff Provisions

In the June 19 Order, the Commission directed the CAISO to delete from proposed tariff section 29.26(b) the phrase "except that the EIM Entity shall ensure that no EIM Transmission Service Provider imposes a separate charge for EIM Transfers that use its facilities."¹¹ The CAISO proposes to revise section 29.26(b) to delete that phrase.

The Commission also directed the CAISO to clarify proposed tariff section 29.34(q) to identify which provisions in tariff section 34 will be applicable to variable energy resources participating in the Energy Imbalance Market.¹² The CAISO has clarified section 29.34(q) in accordance with this directive to identify those sections that specifically apply to variable energy resources. In addition, because eligible intermittent resources are a subset of variable energy resources, as that term is used in the CAISO tariff, the CAISO has also identified sections that refer to eligible intermittent resources. These sections do not, of course, set forth all obligations of variable energy resources or eligible intermittent resources because resources participating in the Energy Imbalance Market must also comply with provisions generally applicable to EIM Participating Resources.

Section 29.34(i)(2), as proposed, provides that an EIM Participating Resource Scheduling Coordinator may bid a transaction at an EIM External Intertie into the fifteen-minute market if both balancing authority areas support 15-minute scheduling at the EIM External Intertie. In response to comments, the CAISO indicated that the section should provide that the balancing authority areas permit "economic participation" at the interties. The Commission directed the CAISO to make that change. The Commission also agreed with comments that such economic participation is only possible if the transmission provider or path operator permits 15-minute scheduling at the interties, and directed the CAISO to include that requirement.¹³ The CAISO has revised section 29.34(i)(2) to make both these changes.

¹¹ *Id.* at P 278.

¹² *Id.* at P 284.

¹³ *Id.* at P 287.

The Commission also directed the CAISO either to (i) explain and provide support for the proposal in section 29.10(e) that an EIM entity scheduling coordinator with an EIM external intertie bid must provide hourly transmission profiles and 15-minute energy profiles from respective e-tags at least 20 minutes before the start of the operating hour; or (ii) revise section 29.10(e) to reflect that energy profile information must be submitted at least 20 minutes before any 15-minute interval in the 15-minute market.¹⁴ The CAISO explains that e-tags, whose timing is not specified in this section, must be submitted and reflect the point of delivery and point of receipt that were specified in the 15-minute market bid, which is due at least 20 minutes before the start of the hour. Under section 30.6.2 of the CAISO tariff, which is applicable to EIM Market Participants under section 29.30 of the CAISO tariff if a scheduling coordinator receives an intra-hour schedule change, then the scheduling coordinator must, by twenty minutes before the start of the fifteen-minute market interval to which the schedule change applies, ensure that an updated energy profile reflects the change. This should address the concerns about timing of the fifteen minute market that gave rise to the Commission's directive. If the Commission believes the section remains unclear, it should direct the CAISO in a further compliance filing to specifically refer to the requirements under section 30.6.2 of the CAISO tariff.

In addition, the Commission directed the CAISO to revise proposed tariff section 29.4 to allow governmental entities that are not subject to the Commission's standards of conduct to become both EIM Entity Scheduling Coordinators and EIM Participating Resource Schedule Coordinators through the use of non-disclosure agreements with the CAISO or other comparable means.¹⁵ The CAISO has revised section 29.4 in accordance with this directive. The revision allows governmental entities to assume both roles if they agree to abide by standards of conduct comparable to the Commission's Standards of Conduct, much the same as they are required to in the administration of their open access transmission tariff.

Lastly, the Commission directed the CAISO to make three modifications that the CAISO had proposed in its April 15 Answer.¹⁶ First, the Commission directed the CAISO to clarify the proposed tariff provisions regarding the allocation of flexible ramping constraint cost. The CAISO has proposed as an exhibit a specific revision to section 11.25.2.1 in its answer. The CAISO is including that language in this filing.

Second, the Commission directed the CAISO to define base schedule of supply to include resources and interchange. The CAISO has proposed to add a

¹⁴ *Id.* at P 290.

¹⁵ *Id.* at P 293.

¹⁶ *Id.* at PP 300-01.

definition of "EIM Base Schedule of Supply" consistent with the Commission's direction.

The Commission directed the CAISO to revise the definition of scheduling coordinator metered entity consistent with the CAISO explanation that the definition is intended to include three types of entities: (1) a Generator, an Eligible Customer, an End-User, a Reliability Demand Response Resource, or a Proxy Demand Resource that is not a CAISO Metered Entity; (2) an EIM Entity, and (3) an EIM Participating Resource that elects to be a Scheduling Coordinator Metered Entity with regard to some or all of the EIM Resources it represents. The CAISO proposed that revision in this filing.

III. Materials Provided in this Compliance Filing

In addition to this transmittal letter, this compliance filing includes Attachments A and B. Attachment A contains clean CAISO tariff sheets reflecting the tariff revisions described above. Attachment B shows these revisions in black-line format.

Respectfully submitted,

/s/ John C. Anders
John C. Anders

Michael E. Ward
Alston & Bird LLP
The Atlantic Building
950 F Street, NW
Washington, DC 20004
Tel: (202) 756-3300
Fax: (202) 654-4875
michael.ward@alston.com

Roger E. Collanton,
General Counsel
Sidney Davies
Assistant General Counsel
John Anders, Senior Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 351-4400
Fax: (916) 608-7222
janders@caiso.com
sdavies@caiso.com
rcollanton@caiso.com

Counsel for the California Independent System Operator Corporation

CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service list for the captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 21st day of July, 2014.

/s/ Sarah M. Garcia

Attachment A – Clean Tariff Sheets

California Independent System Operator Corporation

July 21, 2014

11.5.4.1.1 Real-Time Congestion Offset.

- (a) **Real-Time Congestion Offset.** For each Settlement Period of the RTM, the CAISO shall calculate the Real-Time Congestion Offset as—
- (1) the sum for each Balancing Authority Area in the EIM Area of the product of the contribution of that Balancing Authority Area's Transmission Constraints, inclusive of internal constraints, EIM External Interties and constraints enforced outside of the EIM Area needed to manage EIM Transfers of the Balancing Authority Area, to the marginal Congestion component of the Locational Marginal Price at each resource location in the EIM Area and the imbalance energy, including Virtual Bids, at that resource location;
 - (2) minus any Virtual Bid adjustment.
- (b) **Treatment of EIM Internal Interties.** In performing the calculation in subsection (a)(1) of this section, the CAISO shall determine a Balancing Authority Area's contribution at EIM Internal Interties based on the number of Balancing Authority Areas that share the EIM Internal Intertie as provided in the Business Practice Manual for the Energy Imbalance Market.
- (c) **Virtual Bid Adjustment.**
- (1) **Individual Constraint Calculation.** For each Transmission Constraint in an EIM Entity Balancing Authority Area, the CAISO will calculate a Virtual Bid adjustment as the product of that Transmission Constraint's FMM Shadow Price and the lesser of—
 - (A) the Flow Impact of Virtual Bids and
 - (B) the Flow Impacts of all Day-Ahead Scheduled Energy and EIM Base Schedules less the Flow Impacts of FMM Schedules, but not less than zero.
 - (2) **EIM Entity Balancing Authority Area Calculation.** Each EIM Entity Balancing Authority Area's Virtual Bid adjustment shall be the sum of the individual Transmission Constraint calculation for all Transmission Constraints within that

EIM Entity Balancing Authority Area.

- (d) **Allocation.** The CAISO will allocate—
- (1) the Real-Time Congestion Offset for each EIM Entity Balancing Authority Area to the applicable EIM Entity Scheduling Coordinator;
 - (2) the Real-time Congestion Offset for the CAISO Balancing Authority Area in accordance with Section 11.5.4.2; and
 - (3) the Virtual Bid adjustment from each individual constraint calculation to each Scheduling Coordinator who submitted Virtual Bids based on that Scheduling Coordinator's Virtual Award's pro rata share of the gross positive Congestion revenues received by all Virtual Awards from that Transmission Constraint.

* * *

11.25.2.1 Flexible Ramping Constraint Derived Price

- (a) For each applicable fifteen-minute FMM interval, the Flexible Ramping Constraint Derived Price is equal to the lesser of—
- (1) \$800/MWh; or
 - (2) the greater of
 - (i) the Real-Time ASMP for Spinning Reserves for the applicable fifteen-minute FMM interval; or
 - (ii) the total Flexible Ramping Constraint Shadow Price, but not less than zero.
- (b) The CAISO will determine the total Flexible Ramping Constraint Shadow Price as the sum of the Flexible Ramping Constraint Shadow Prices for the groupings and individual Balancing Authority Areas in the EIM Area in which the resource is deemed to have contributed to the constraint, minus seventy-five (75) percent of the greater of
- (1) zero (0), or

- (2) the Real-Time System Marginal Energy Cost, calculated as the simple average of the System Marginal Energy Cost for each of the three five-minute RTD intervals in the applicable fifteen-minute FMM interval.

* * *

11.25.4

Apportionment of Flexible Ramping Constraint Costs

- (a) The CAISO will determine the Flexible Ramping Constraint costs for each constraint as the product of—
 - (1) the resource-specific total Flexible Ramping Constraint costs, calculated as the total compensation in Section 11.25.2(b), net of rescission of payments, and
 - (2) the ratio of each Flexible Ramping Constraint Shadow Price to the sum of the Flexible Ramping Constraint Shadow Prices for the groupings and individual Balancing Authority Areas in the EIM Area in which the resource is deemed to have contributed to the constraint.
- (b) For each constraint and each Balancing Authority Area in the EIM Area, the CAISO will determine the Flexible Ramping Constraint costs attributable to that Balancing Authority Area for which the applicable constraint(s) were binding in the applicable interval, based on the ratio of the Balancing Authority Area's requirement to its contribution to the individual constraint or group of constraints to which that Balancing Authority Area contributes.
- (c) The CAISO will determine each Balancing Authority Area's apportionment of Flexible Ramping Constraint costs as the sum for that Balancing Authority Area of the amounts determined in Section 11.25.4(b).

* * *

29.4 Roles And Responsibilities.

- (a) **CAISO Balancing Authority Obligations.**
 - (1) **Reliability Responsibilities.** Nothing in Section 29 shall alter the CAISO's responsibilities under the other sections of the CAISO Tariff, under any

agreement not required by Section 29, or under NERC Reliability Standards or any other Applicable Reliability Criteria as the Balancing Authority for the CAISO Balancing Authority Area and the transmission operator for the CAISO Controlled Grid.

- (2) **Operating Responsibilities.** During any interruption of the normal operation of the Real-Time Market, the CAISO as Balancing Authority shall remain responsible for managing the resources in its Balancing Authority Area and the flows on transmission lines internal to the CAISO Balancing Authority Area, including imports and exports, for the duration of the interruption.

(b) **EIM Entity.**

- (1) **Balancing Authority Obligations.**

- (A) **EIM Entity as Balancing Authority.** An EIM Entity must be a Balancing Authority registered and certified as such under the applicable authorities.
- (B) **Reliability Responsibilities.** Nothing in Section 29 shall alter an EIM Entity's responsibilities under NERC Reliability Standards as the Balancing Authority for the EIM Entity Balancing Authority Area and, to the extent applicable, as the transmission operator for transmission facilities within its Balancing Authority Area.
- (C) **Operating Responsibilities.** During any interruption of the normal operation of the Real-Time Market, the EIM Entity as Balancing Authority shall remain responsible in accordance with Section 29.7 for managing the resources in its Balancing Authority Area and the flows on internal transmission lines, including imports into and exports out of its Balancing Authority Area, for the duration of the interruption.
- (D) **Inadvertent Energy.** An EIM Entity remains responsible for tracking inadvertent Energy and administering the payback of inadvertent Energy for its Balancing Authority Area through processes established by WECC.

- (2) **EIM Entity Agreement.** An EIM Entity must execute an EIM Entity Agreement

no later than ninety (90) days before the EIM Entity Implementation Date.

- (3) **EIM Entity Obligations.** An EIM Entity shall—
- (A) perform the obligations of an EIM Entity in accordance with the EIM Entity Agreement, Section 29, and other provisions of the CAISO Tariff that by their terms apply to EIM Entities, subject to the limitations specified in Section 29.1(b)(2)(C);
 - (B) ensure that each EIM Transmission Service Provider in its Balancing Authority Area has provisions in effect in the EIM Transmission Service Provider's transmission tariff, as necessary or applicable, to enable operation of the Real-Time Market in its Balancing Authority Area;
 - (C) qualify as or secure representation by no more than one EIM Entity Scheduling Coordinator;
 - (D) review and validate information about available transmission capacity submitted to it by an EIM Transmission Service Provider and transmit such validated information to its EIM Entity Scheduling Coordinator;
 - (E) provide the CAISO and its EIM Entity Scheduling Coordinator with information regarding the transmission capacity available to the Real-Time Market, including any information regarding Transmission Constraints of which it is aware;
 - (F) define Load Aggregation Points in its Balancing Authority Area;
 - (G) determine and inform the CAISO which resource types are eligible to participate in the Real-Time Market as resources and which transmission service providers or holders of transmission rights are EIM Transmission Service Providers; and
 - (H) inform the CAISO whether or not the EIM Entity intends to utilize the CAISO's Demand Forecast consistent with Section 29.34(d).
- (4) **EIM Entity Termination of EIM Participation.**
- (A) **EIM Entity Agreement.** An EIM Entity that wishes to terminate

participation in the Real-Time Market must terminate the EIM Entity Agreement pursuant to its terms.

(B) **Notice.** Delivery to the CAISO of a written notice of termination pursuant to the terms of the EIM Entity Agreement shall represent the commitment by the EIM Entity to undertake all necessary preparations to disable the Real-Time Market within the EIM Entity Balancing Authority Area.

(C) **Actions Following Notice.** Upon receipt of such notice, the CAISO shall undertake all necessary preparations to disable the Real-Time Market within the EIM Entity Balancing Authority Area, as outlined in the Business Practice Manual for the Energy Imbalance Market, including issuance of a Market Notice within five Business Days after receipt of such notice.

(5) **EIM Entity Corrective Actions.** If the EIM Entity takes corrective action, subject to the provisions of an open access transmission tariff, to address an issue with EIM implementation or EIM operation, or the EIM Entity issues a notice of termination—

(A) the EIM Entity shall take those actions provided in Section 29.1(d)(4) during the implementation of its corrective action; and

(B) the CAISO shall issue a Market Notice in accordance with Section 29.1(d)(1) and take those actions provided in Section 29.1(d)(5) during the implementation of the EIM Entity corrective action.

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

(1) **Certification.** An EIM Entity Scheduling Coordinator must meet or have met the certification requirements in Section 4.5.1 for a Scheduling Coordinator.

(2) **EIM Entity Scheduling Coordinator Agreement.** An EIM Entity Scheduling Coordinator must enter an EIM Entity Scheduling Coordinator Agreement with the CAISO, which shall satisfy the obligation to enter a Scheduling Coordinator Agreement under Section 4.5.1 with regard to its representation of the EIM Entity.

(3) **Representation.** An EIM Entity Scheduling Coordinator—

- (A) may represent a Market Participant other than an EIM Entity, but only if it enters a Scheduling Coordinator Agreement under Section 4.5.1 with regard to such Market Participant;
 - (B) may not also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for a Participating Generator, Participating Load, or Demand Resource Provider, unless the EIM Entity Scheduling Coordinator is a transmission provider subject to the standards of conduct set forth in 18 C.F.R. § 358; and
 - (C) may represent more than one EIM Entity if it has certified to the CAISO in the manner described in the Business Practice Manual for the Energy Imbalance Market that it has informed each EIM Entity of the multiple representation.
- (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; and
- (I) submit EIM Base Schedules, EIM Resource Plans and other required information on behalf of the EIM Entity.

(5) **Governmental Entities.** Notwithstanding Section 29.4(c)(3)(B), a governmental entity that is an EIM Entity Scheduling Coordinator may also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for resources participating in the CAISO Markets if it agrees to comply with standards of conduct equivalent to those set forth in 18 C.F.R. § 358.

(d) **EIM Participating Resources.**

- (1) **Eligibility.** The owner or operator of an EIM Resource is eligible to become an EIM Participating Resource if the EIM Resource—
 - (A) meets the eligibility requirements established by the EIM Entity in whose Balancing Authority Area the resource is located or scheduled or to which it may be dynamically transferred; and
 - (B) is capable of delivering Energy, Curtailable Demand, Demand Response Services, or similar services within the time specified by Section 29 for the

Real-Time Market in which its EIM Participating Resource Scheduling Coordinator will submit Bids.

- (2) **EIM Participating Resource Agreement.** An EIM Participating Resource must execute an EIM Participating Resource Agreement.
 - (3) **Obligations.** An EIM Participating Resource shall—
 - (A) perform the obligations of an EIM Participating Resource under the EIM Participating Resource Agreement and Section 29;
 - (B) perform the obligations applicable to Market Participants and resources under the provisions of the CAISO Tariff described in Section 29.1(b); and
 - (C) if it represents a Generating Unit, Load of a Participating Load, Proxy Demand Resource, or other qualified resource, perform the obligations required for the resource under the provisions of the CAISO Tariff described in section 29.1(b).
- (e) **EIM Participating Resource Scheduling Coordinator.**
- (1) **Certification.** An EIM Participating Resource Scheduling Coordinator must be either an existing Scheduling Coordinator or must meet or have met the certification requirements in Section 4.5.1 for a Scheduling Coordinator.
 - (2) **EIM Participating Resource Scheduling Coordinator Agreement.** An EIM Participating Resource Scheduling Coordinator must enter an EIM Participating Resource Scheduling Coordinator Agreement with the CAISO, which shall satisfy the obligation to enter a Scheduling Coordinator Agreement under Section 4.5.1 with regard to its representation of the EIM Participating Resource.
 - (3) **Representation.** An EIM Participating Resource Scheduling Coordinator—
 - (A) may represent a Market Participant other than an EIM Participating Resource, but only if it enters a Scheduling Coordinator Agreement under Section 4.5.1 with regard to such Market Participant;
 - (B) may not also be an EIM Entity Scheduling Coordinator unless the EIM Participating Resource Scheduling Coordinator is a transmission provider

- subject to the standards of conduct set forth in 18 C.F.R. § 358; and
- (C) may represent more than one EIM Participating Resource.
- (4) **Obligations.** An EIM Participating Resource Scheduling Coordinator must—
- (A) perform the obligations of an EIM Participating Resource Scheduling Coordinator under the EIM Participating Resource Scheduling Coordinator Agreement and Section 29;
 - (B) perform the obligations of a Scheduling Coordinator under the provisions of the CAISO Tariff described in Section 29.1(b);
 - (C) ensure that the entity it represents has obtained any transmission service necessary to participate in the Energy Imbalance Market under the terms of the CAISO Tariff or the tariff of another transmission service provider, as applicable;
 - (D) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all EIM Participating Resources that it represents, provide such information to the EIM Entity Scheduling Coordinator, and update such information in a timely manner.
- (5) **Governmental Entities.** Notwithstanding Section 29.4(e)(3)(B), a governmental entity that is an EIM Participating Resource Scheduling Coordinator may also be an EIM Entity Scheduling Coordinator if it agrees to comply with standards of conduct equivalent to those set forth in 18 C.F.R. § 358.

* * *

29.11. Settlements And Billing For EIM Market Participants.

- (a) **Applicability.** Section 29.11, rather than Section 11, shall apply to the CAISO Settlement with EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators, except as otherwise provided, but not to other Scheduling Coordinators.
- (b) **Imbalance Energy.**
 - (1) **FMM Instructed Imbalance Energy.**
 - (A) **Calculation.**

- (i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's FMM Instructed Imbalance Energy in the same manner as it calculates FMM Instructed Imbalance Energy under Section 11.5.1.1, except that references to the Day-Ahead Schedule in the relevant Appendix A definitions shall be deemed references to the EIM Base Schedule and that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the FMM that is identified by the EIM Entity Scheduling Coordinator prior to the start of the FMM.
 - (ii) **Non-Participating Resources.** The CAISO will calculate the FMM Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area as the sum of the Energy, if any, from EIM Manual Dispatch of the non-participating resource and any deviation from the EIM Base Schedule due to physical changes in any non-participating resource's output that the EIM Entity Scheduling Coordinator reports to the CAISO prior to the FMM.
 - (B) **Settlement.** The CAISO will settle—
 - (i) the FMM Instructed Imbalance Energy with the EIM Participating Resource Scheduling Coordinator for EIM Participating Resources; and
 - (ii) with the applicable EIM Entity Scheduling Coordinator for non-participating resources in an EIM Entity Balancing Authority Area.
- (2) **RTD Instructed Imbalance Energy.**
- (A) **Calculation.**
 - (i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's RTD Instructed Imbalance Energy in the

same manner in which it calculates FMM Instructed Imbalance Energy under Section 11.5.1.2, except that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the RTD that is identified by the EIM Entity Scheduling Coordinator.

- (ii) **Non-Participating Resources.** The CAISO will calculate the RTD Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area as the Energy, if any, from EIM Manual Dispatch of the non-participating resource in the RTD that is identified by the EIM Entity Scheduling Coordinator.

(B) **Settlement.** The CAISO will settle the RTD Instructed Imbalance Energy—

- (i) with the EIM Participating Resource Scheduling Coordinator for EIM Participating Resources; and
- (ii) with the applicable EIM Entity Scheduling Coordinator for non-participating resources in an EIM Entity Balancing Authority Area.

(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 as the difference between the 5-minute Meter Data and the EIM Base Schedule or, if the EIM Scheduling Coordinator reported physical changes in a non-participating resource's output to the CAISO prior to the FMM, the FMM Schedule, less any EIM Manual Dispatch Energy of non-participating resources.
- (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 with the applicable EIM Entity Scheduling Coordinator.

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

(d) **Charges for Over- and Under-Scheduling of EIM Entities.**

(1) **Under-Scheduling Charges.**

(A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area exceeds the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall charge the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 125% of the Hourly Real-Time LAP Price.

(B) **Level 2 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area exceeds the EIM Base Schedule of Supply submitted by the EIM Entity by more than 10% and by at least 2 MW, the CAISO shall charge the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 200% of the Hourly Real-Time LAP price.

(2) **Over-Scheduling Charges.**

(A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall pay the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 75% of the Hourly Real-Time LAP Price.

(B) **Level 2 Charge.** If, during any Trading Hour, the metered Demand

within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 10% and by at least 2 MW, the CAISO shall pay the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 50% of the Hourly Real-Time LAP Price.

(3) **Distribution of Revenues.**

(A) **Apportionment.** The CAISO will calculate the total daily excess revenues received from under-scheduling charges and over-scheduling charges under Section 29.11(d)(1) and (2) and apportion them to Balancing Authority Areas in the EIM Area that were not subject to either under-scheduling or over-scheduling charges during the Trading Day according to metered Demand.

(B) **Allocation.** The CAISO will allocate—

(i) the amounts apportioned to EIM Entity Balancing Authority Areas pursuant to Section 29.11(d)(3)(A) to the applicable EIM Entity Scheduling Coordinator; and

(ii) the amounts apportioned to the CAISO Balancing Authority Area pursuant to Section 29.11(d)(3)(A) to Scheduling Coordinators in the CAISO Balancing Authority Area according to metered Demand.

(4) **Exemption.** An EIM Entity will be exempt from under-scheduling and over-scheduling charges under Section 29.11(d)(1) and (2) if it uses the Demand Forecast prepared by the CAISO in its EIM Resource Plan and it approves EIM Base Schedules for its resources within +/- 1% of the CAISO Demand Forecast, as determined according to the Business Practice Manual for the Energy Imbalance Market.

(e) **Neutrality Accounts.**

- (1) **In General.** The CAISO will collect neutrality amounts from EIM Market Participants to recover differences in Real-Time Market payments made and Real-Time Market payments received.
 - (2) **Real-Time Congestion Offset.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Congestion Offset allocation calculated pursuant to Section 11.5.4.1.1.
 - (3) **Real-Time Imbalance Energy Offset Allocation.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Imbalance Energy Offset allocation calculated pursuant to Section 11.5.4.1.
 - (4) **Real-Time Marginal Cost of Losses Offset.** The CAISO will allocate the Real-Time Marginal Cost of Losses Offset to EIM Entity Scheduling Coordinators pursuant to Section 11.5.4.1.2.
 - (5) **Other Neutrality Adjustments.** The CAISO will levy additional charges on or make additional payments to EIM Market Participants as adjustments in accordance with Section 11.14.
- (f) **Real-Time Bid Cost Recovery.**
- (1) **In General.** The CAISO will provide EIM Participating Resources RTM Bid Cost Recovery.
 - (2) **Calculation of Real-Time Bid Cost Recovery.** The CAISO will calculate Real-Time Bid Cost Recovery in accordance with Section 11.8.4, except that the CAISO will treat a non-zero EIM Base Schedule of an EIM Participating Resource as a Self-Schedule and the EIM Participating Resource will not be eligible for recovery of Start-Up Costs and Minimum Load Costs, in accordance with the treatment of costs during self-commitment intervals as specified in Section 11.8.4.1.2.
- (3) **Allocation of EIM Entity RTM Bid Cost Uplift.**
- (A) **Calculation of Charge.** The Net RTM Bid Cost Uplift will be determined for each EIM Entity Balancing Authority Area in accordance with the

methodology set forth in Section 11.8.6.

- (B) **Settlement.** The CAISO will assess the Net RTM Bid Cost Uplift calculated for each EIM Entity Balancing Authority Area to the applicable EIM Entity Scheduling Coordinator in accordance with Section 11.8.6.6.(ii).

(g) **Flexible Ramping Constraint Allocation.**

- (1) **Calculation.** The CAISO will calculate awards for Flexible Ramping Constraint capacity according to Section 11.25.2 and rescission for non-performance in accordance with 11.25.3, except that the Real-Time Ancillary Service Market Price for Spinning Reserves will be deemed to be zero in determining awards to EIM Participating Resources.
- (2) **Apportionment of Costs.** The CAISO will apportion Flexible Ramping Constraint costs to each EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area in accordance with Section 11.25.4.
- (3) **Cost Allocation.** The CAISO will allocate each EIM Entity's Flexible Ramping Constraint costs to the applicable EIM Entity Scheduling Coordinator in accordance with Section 11.25.5(b).

- (h) **EIM Initial Fee.** The CAISO will charge Balancing Authority Areas that enter into an EIM Implementation Agreement pursuant to Section 29.2(b) an initial fee to cover a share of the capital and operations and maintenance costs associated with setting up the Real-Time Market to accommodate the participation of the Balancing Authority as an EIM Entity. The fee will be established by the EIM Implementation Agreement entered into pursuant to Section 29.2(b)(1) as accepted by FERC.

(i) **EIM Administrative Charge.**

- (1) **In General.** The CAISO will charge EIM Market Participants a fixed EIM Administrative Charge equal to the product of \$0.19/MWh and the sum of—
 - (A) the total gross absolute value of FMM Instructed Imbalance Energy, gross absolute value of RTD Imbalance Energy, and gross absolute

value of Uninstructed Imbalance Energy of the EIM Market Participant's Supply, and

(B) the gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Demand.

(2) **Minimum EIM Administrative Charge.** The CAISO will calculate the minimum EIM Administrative Charge as the product of \$0.19/MWh and—

(A) five percent of the total gross absolute value of Supply of all EIM Market Participants; plus

(B) five percent of the total gross absolute value of Demand of all EIM Market Participants.

(3) **Allocation of Minimum EIM Administrative Charge.** To the extent that the full amount charged pursuant to Section 29.11(i)(1) is less than the amount calculated under Section 29.11(i)(2), the ISO will allocate the difference to the EIM Entity Scheduling Coordinator.

(4) **Application of Revenues.** The CAISO will apply revenues received from the EIM Administrative Charge against the costs to be recovered through the Grid Management Charge as described in Appendix F, Schedule 1, Part A.

(j) **Variable Energy Resource Forecast Charge.**

(1) **In General.** The CAISO will charge EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators a fee for the Variable Energy Resource forecasting services in accordance with Appendix F, Schedule 4.

(2) **Waiver.** The CAISO will waive the Variable Energy Resource forecast charge if an EIM Entity has an independent forecast for its Variable Energy Resources and provides the independent forecast to the CAISO.

(k) **Transmission Service.** The CAISO will charge EIM Market Participants for transmission service according to Section 29.26.

(l) **Settlement Process.** With regard to the CAISO's assessment of charges to EIM Market

Participants pursuant to Sections 11 and 29.11, the CAISO shall assess such charges, address disputed invoices, assess Settlement-related fees and charges, including those under Sections 11.21, 11.28, and 11.29, and make any financial adjustments in accordance with the Settlements process and schedule set forth in Section 11.

- (m) **Charges Related to RTM Participation of Interties.** In the event that an EIM Entity enables participation in the Real-Time Market on EIM External Interties, the EIM Entity Scheduling Coordinator shall also be subject to any applicable charges under Sections 11.31 and 11.32.

* * *

29.22 Miscellaneous Provisions in Addition to Section 22. Section 22 and the additional miscellaneous provisions of Section 29.22 shall apply to the Energy Imbalance Market.

- (a) **Tax Liability.** To the extent that the CAISO would incur any tax liability as a result of the participation of EIM Market Participants in the Real-Time Market, as market operator or as central counterparty to Energy Imbalance Market transactions, for example, the CAISO will pass those taxes on to the EIM Entity Scheduling Coordinator for the EIM Entity area where the transactions triggered the tax liability.
- (b) **Purchasing Selling Agent.** Notwithstanding the CAISO's assumption to title pursuant to Section 29.22(c), neither the CAISO nor the EIM Entity is a "Purchasing Selling Entity" for purposes of E-Tagging or EIM Transfers, nor shall either be listed as a "Purchasing Selling Entity" for purposes of E-Tagging or EIM Transfers.
- (c) **Title to Energy.** Title to Energy in EIM Transfers passes directly to the CAISO from the entity that holds title when the Energy enters the CAISO Controlled Grid or the transmission system of an EIM Transmission Service Provider, whichever is first following Dispatch, and from the CAISO to the entity that removes the Energy from the CAISO Controlled Grid or the transmission system of a EIM Transmission Service Provider, whichever last precedes delivery to Load.

* * *

29.26 Transmission Rates And Charges.

- (a) **Transmission Charges for CAISO Facilities.**
 - (1) **Access Charge.** Transmission service charges for Real-Time Market transactions serving Load within the CAISO Balancing Authority Area that use the CAISO Controlled Grid are governed by Section 26.
 - (2) **Wheeling Access Charge.** EIM Transfers from the CAISO Controlled Grid to another EIM Entity Balancing Authority Area using the contractual or ownership rights of an EIM Entity shall not constitute Wheeling Out and shall not be subject to the Wheeling Access Charge under Section 26.
- (b) **Non-CAISO Facilities.** The determination and charges for transmission service for Real-Time Market transactions on facilities that are part of the contractual or ownership rights made available to the Real-Time Market by an EIM Transmission Service Provider through an EIM Entity will be the responsibility of the EIM Entity that made the facilities available, provided that charges for transmission service in excess of contractual limits shall not be considered a separate charge.

* * *

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);
 - (D) Reserve capacity meeting the WECC requirements for regulating reserves, in decremental MW (applicable to resources only);
 - (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 Bids in 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.

(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 Inertia 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).

(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.

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29.39 EIM Market Power Mitigation.

(a) **EIM Market Power Mitigation Procedure.** The CAISO shall apply the Real-Time Local

Market Power Mitigation procedure in Section 39.7 to the Energy Imbalance Market, except as provided in Section 29.39.

- (b) **Competitive Path Assessment.** The CAISO shall conduct the competitive path assessment to determine for each EIM Entity Balancing Authority Area whether a path is competitive or non-competitive, consistent with Section 39.7.2, except that—
- (1) EIM Participating Resource Scheduling Coordinators shall submit information required by the CAISO to perform the competitive path assessment;
 - (2) the competitive path assessment shall not exclude EIM Participating Resources from the test used to determine the competitiveness of Transmission Constraints on the basis that they may be net buyers of Energy in the Real-Time Market; and
 - (3) the CAISO may establish different Reference Buses for each Balancing Authority Area, which need not be within the Balancing Authority Area, for calculating the LMP decomposition which is used to trigger Bid mitigation, based on the topology of each Balancing Authority Area and consideration of the bus at which the Marginal Cost of Congestion component of Locational Marginal Prices is least influenced by market power.
- (c) **Locational Marginal Price Decomposition.** The CAISO shall perform the Locational Marginal Price decomposition for each EIM Entity Balancing Authority Area using the results of the competitive path assessment and the Congestion pricing results of the pre-market run to determine which resources may have local market power due to Congestion on a non-competitive Transmission Constraint, consistent with Section 34.2.3 and 39.7, except that—
- (1) the CAISO will not mitigate resource Bids for scheduling limit constraints with Balancing Authority Areas that do not participate in the Real-Time Market;
 - (2) the Locational Marginal Price decomposition shall only be triggered if the resource is effective at relieving an uncompetitive constraint within the same Balancing Authority Area in which the resource is located except as described in Section 29.39(d);

- (3) EIM Resources shall be mitigated to relieve congestion on uncompetitive constraints within the same Balancing Authority Area in which the EIM Resources are located except as described in Section 29.39(d); and

(d) **Market Power Mitigation of EIM Transfer Constraints.**

- (1) **Structural Competitiveness Assessment.** The Department of Market Monitoring may conduct a structural competitiveness assessment of an individual or group of entities within an EIM Entity Balancing Authority Area prior to or subsequent to the EIM Implementation Date for the EIM Entity to evaluate market power based on factors which may include—
 - (A) the Demand for Real-Time Imbalance Energy within the EIM Entity Balancing Authority Area;
 - (B) the Supply owned or controlled by different entities with the EIM Entity Balancing Authority Area; and
 - (C) the potential Supply available to the EIM Entity Balancing Authority Area from EIM Transfers.
- (2) **Application of Market Power Mitigation.** The Department of Market Monitoring may include EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie in the Local Market Power Mitigation procedures under Section 39.7 if the CAISO determines that market power may exist based on a structural competitiveness assessment pursuant to Section 29.39(d)(1) and the FERC accepts a filing by the CAISO to implement such inclusion, and the Department of Market Monitoring may exclude the EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie from Local Market Power Mitigation if it determines that market power no longer exists based on a structural competitiveness assessment pursuant to Section 29.39(d)(1) and the FERC accepts a filing by the CAISO to implement the exclusion.

- (e) **Default Energy Bids.** The CAISO shall use the methods and standards set forth in Section 39.7 to determine Default Energy Bids for EIM Participating Resources.

* * *

Appendix A
Master Definition Supplement

* * *

- EIM Base Schedule of Supply

That portion of an EIM Base Schedule that represents Energy from resources and interchange.

* * *

- Scheduling Coordinator Metered Entity

An entity that is (1) a Generator, Eligible Customer, End-User, Reliability Demand Response Resource, or Proxy Demand Response Resource that is not a CAISO Metered Entity; (2) an EIM Entity; and (3) an EIM Participating Resource that elects to be a Scheduling Coordinator Metered Entity with regard to some or all of the EIM Resources it represents.

Attachment B – Marked Tariff Sheets

California Independent System Operator Corporation

July 21, 2014

11.5.4.1.1 Real-Time Congestion Offset.

- (a) **Real-Time Congestion Offset.** For each Settlement Period of the RTM, the CAISO shall calculate the Real-Time Congestion Offset as—
- (1) the sum for each Balancing Authority Area in the EIM Area of the product of the contribution of that Balancing Authority Area's Transmission Constraints, inclusive of internal constraints, EIM External Interties and constraints enforced outside of the EIM Area needed to manage EIM Transfers of the Balancing Authority Area. to the marginal Congestion component of the Locational Marginal Price at each resource location in the EIM Area and the imbalance energy, including Virtual Bids, at that resource location;
 - (2) minus any Virtual Bid adjustment.
- (b) **Treatment of EIM Internal Interties.** In performing the calculation in subsection (a)(1) of this section, the CAISO shall determine a Balancing Authority Area's contribution at EIM Internal Interties based on the number of Balancing Authority Areas that share the EIM Internal Intertie as provided in the Business Practice Manual for the Energy Imbalance Market.
- (c) **Virtual Bid Adjustment.**
- (1) **Individual Constraint Calculation.** For each Transmission Constraint in an EIM Entity Balancing Authority Area, the CAISO will calculate a Virtual Bid adjustment as the product of that Transmission Constraint's FMM Shadow Price and the lesser of—
 - (A) the Flow Impact of Virtual Bids and
 - (B) the Flow Impacts of all Day-Ahead Scheduled Energy and EIM Base Schedules less the Flow Impacts of FMM Schedules, but not less than zero.
 - (2) **EIM Entity Balancing Authority Area Calculation.** Each EIM Entity Balancing Authority Area's Virtual Bid adjustment shall be the sum of the individual Transmission Constraint calculation for all Transmission Constraints within that

EIM Entity Balancing Authority Area.

- (d) **Allocation.** The CAISO will allocate—
- (1) the Real-Time Congestion Offset for each EIM Entity Balancing Authority Area to the applicable EIM Entity Scheduling Coordinator;
 - (2) the Real-time Congestion Offset for the CAISO Balancing Authority Area in accordance with Section 11.5.4.2; and
 - (3) the Virtual Bid adjustment from each individual constraint calculation to each Scheduling Coordinator who submitted Virtual Bids based on that Scheduling Coordinator's Virtual Award's pro rata share of the gross positive Congestion revenues received by all Virtual Awards from that Transmission Constraint.

* * *

11.25.2.1 Flexible Ramping Constraint Derived Price

- (a) For each applicable fifteen-minute FMM interval, the Flexible Ramping Constraint Derived Price is equal to the lesser of—
- (1) \$800/MWh; or
 - (2) the greater of
 - (i) the Real-Time ASMP for Spinning Reserves for the applicable fifteen-minute FMM interval; or
 - (ii) the total Flexible Ramping Constraint Shadow Price, ~~but not less than zero.~~
but not less than zero.
- (b) The CAISO will determine the total Flexible Ramping Constraint Shadow Price as the sum of the Flexible Ramping Constraint Shadow Prices for the groupings and individual Balancing Authority Areas in the EIM Area in which the resource is deemed to have contributed to the constraint, minus seventy-five (75) percent of the greater of
- (1) zero (0), or

- (2) the Real-Time System Marginal Energy Cost, calculated as the simple average of the System Marginal Energy Cost for each of the three five-minute RTD intervals in the applicable fifteen-minute FMM interval.

* * *

11.25.4

Apportionment of Flexible Ramping Constraint Costs

- (a) The CAISO will determine the Flexible Ramping Constraint costs for each constraint as the product of—
 - (1) the resource-specific total Flexible Ramping Constraint costs, calculated as the total compensation in Section 11.25.2(b), net of rescission of payments, and
 - (2) ~~the ratio of the Flexible Ramping Constraint Shadow Price to the total Flexible Ramping Constraint Shadow Price, determined as described in Section 11.25.2-1(b)~~ the ratio of each Flexible Ramping Constraint Shadow Price to the sum of the Flexible Ramping Constraint Shadow Prices for the groupings and individual Balancing Authority Areas in the EIM Area in which the resource is deemed to have contributed to the constraint.
- (b) For each constraint and each Balancing Authority Area in the EIM Area, the CAISO will determine the Flexible Ramping Constraint costs attributable to that Balancing Authority Area for which the applicable constraint(s) were binding in the applicable interval, based on the ratio of the Balancing Authority Area's requirement to its contribution to the individual constraint or group of constraints to which that Balancing Authority Area contributes.
- (c) The CAISO will determine each Balancing Authority Area's apportionment of Flexible Ramping Constraint costs as the sum for that Balancing Authority Area of the amounts determined in Section 11.25.4(b).

* * *

29.4 Roles And Responsibilities.

(a) **CAISO Balancing Authority Obligations.**

- (1) **Reliability Responsibilities.** Nothing in Section 29 shall alter the CAISO's responsibilities under the other sections of the CAISO Tariff, under any agreement not required by Section 29, or under NERC Reliability Standards or any other Applicable Reliability Criteria as the Balancing Authority for the CAISO Balancing Authority Area and the transmission operator for the CAISO Controlled Grid.
- (2) **Operating Responsibilities.** During any interruption of the normal operation of the Real-Time Market, the CAISO as Balancing Authority shall remain responsible for managing the resources in its Balancing Authority Area and the flows on transmission lines internal to the CAISO Balancing Authority Area, including imports and exports, for the duration of the interruption.

(b) **EIM Entity.**

- (1) **Balancing Authority Obligations.**
 - (A) **EIM Entity as Balancing Authority.** An EIM Entity must be a Balancing Authority registered and certified as such under the applicable authorities.
 - (B) **Reliability Responsibilities.** Nothing in Section 29 shall alter an EIM Entity's responsibilities under NERC Reliability Standards as the Balancing Authority for the EIM Entity Balancing Authority Area and, to the extent applicable, as the transmission operator for transmission facilities within its Balancing Authority Area.
 - (C) **Operating Responsibilities.** During any interruption of the normal operation of the Real-Time Market, the EIM Entity as Balancing Authority shall remain responsible in accordance with Section 29.7 for managing the resources in its Balancing Authority Area and the flows on internal transmission lines, including imports into and exports out of its Balancing Authority Area, for the duration of the interruption.
 - (D) **Inadvertent Energy.** An EIM Entity remains responsible for tracking

inadvertent Energy and administering the payback of inadvertent Energy for its Balancing Authority Area through processes established by WECC.

- (2) **EIM Entity Agreement.** An EIM Entity must execute an EIM Entity Agreement no later than ninety (90) days before the EIM Entity Implementation Date.
- (3) **EIM Entity Obligations.** An EIM Entity shall—
 - (A) perform the obligations of an EIM Entity in accordance with the EIM Entity Agreement, Section 29, and other provisions of the CAISO Tariff that by their terms apply to EIM Entities, subject to the limitations specified in Section 29.1(b)(2)(C);
 - (B) ensure that each EIM Transmission Service Provider in its Balancing Authority Area has provisions in effect in the EIM Transmission Service Provider's transmission tariff, as necessary or applicable, to enable operation of the Real-Time Market in its Balancing Authority Area;
 - (C) qualify as or secure representation by no more than one EIM Entity Scheduling Coordinator;
 - (D) review and validate information about available transmission capacity submitted to it by an EIM Transmission Service Provider and transmit such validated information to its EIM Entity Scheduling Coordinator;
 - (E) provide the CAISO and its EIM Entity Scheduling Coordinator with information regarding the transmission capacity available to the Real-Time Market, including any information regarding Transmission Constraints of which it is aware;
 - (F) define Load Aggregation Points in its Balancing Authority Area;
 - (G) determine and inform the CAISO which resource types are eligible to participate in the Real-Time Market as resources and which transmission service providers or holders of transmission rights are EIM Transmission Service Providers; and
 - (H) inform the CAISO whether or not the EIM Entity intends to utilize the

CAISO's Demand Forecast consistent with Section 29.34(d).

(4) **EIM Entity Termination of EIM Participation.**

- (A) **EIM Entity Agreement.** An EIM Entity that wishes to terminate participation in the Real-Time Market must terminate the EIM Entity Agreement pursuant to its terms.
- (B) **Notice.** Delivery to the CAISO of a written notice of termination pursuant to the terms of the EIM Entity Agreement shall represent the commitment by the EIM Entity to undertake all necessary preparations to disable the Real-Time Market within the EIM Entity Balancing Authority Area.
- (C) **Actions Following Notice.** Upon receipt of such notice, the CAISO shall undertake all necessary preparations to disable the Real-Time Market within the EIM Entity Balancing Authority Area, as outlined in the Business Practice Manual for the Energy Imbalance Market, including issuance of a Market Notice within five Business Days after receipt of such notice.

(5) **EIM Entity Corrective Actions.** If the EIM Entity takes corrective action, subject to the provisions of an open access transmission tariff, to address an issue with EIM implementation or EIM operation, or the EIM Entity issues a notice of termination—

- (A) the EIM Entity shall take those actions provided in Section 29.1(d)(4) during the implementation of its corrective action; and
- (B) the CAISO shall issue a Market Notice in accordance with Section 29.1(d)(1) and take those actions provided in Section 29.1(d)(5) during the implementation of the EIM Entity corrective action.

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

- (1) **Certification.** An EIM Entity Scheduling Coordinator must meet or have met the certification requirements in Section 4.5.1 for a Scheduling Coordinator.
- (2) **EIM Entity Scheduling Coordinator Agreement.** An EIM Entity Scheduling Coordinator must enter an EIM Entity Scheduling Coordinator Agreement with

the CAISO, which shall satisfy the obligation to enter a Scheduling Coordinator Agreement under Section 4.5.1 with regard to its representation of the EIM Entity.

- (3) **Representation.** An EIM Entity Scheduling Coordinator–
- (A) may represent a Market Participant other than an EIM Entity, but only if it enters a Scheduling Coordinator Agreement under Section 4.5.1 with regard to such Market Participant;
 - (B) may not also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for a Participating Generator, Participating Load, or Demand Resource Provider, unless the EIM Entity Scheduling Coordinator is a transmission provider subject to the standards of conduct set forth in 18 C.F.R. § 358; and
 - (C) may represent more than one EIM Entity if it has certified to the CAISO in the manner described in the Business Practice Manual for the Energy Imbalance Market that it has informed each EIM Entity of the multiple representation.
- (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; and
- (I) submit EIM Base Schedules, EIM Resource Plans and other required information on behalf of the EIM Entity.

(5) **Governmental Entities.** Notwithstanding Section 29.4(c)(3)(B), a governmental entity that is an EIM Entity Scheduling Coordinator may also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for resources participating in the CAISO Markets if it agrees to comply with standards of conduct equivalent to those set forth in 18 C.F.R. § 358.

(d) **EIM Participating Resources.**

- (1) **Eligibility.** The owner or operator of an EIM Resource is eligible to become an EIM Participating Resource if the EIM Resource—
 - (A) meets the eligibility requirements established by the EIM Entity in whose Balancing Authority Area the resource is located or scheduled or to which

it may be dynamically transferred; and

(B) is capable of delivering Energy, Curtailable Demand, Demand Response Services, or similar services within the time specified by Section 29 for the Real-Time Market in which its EIM Participating Resource Scheduling Coordinator will submit Bids.

(2) **EIM Participating Resource Agreement.** An EIM Participating Resource must execute an EIM Participating Resource Agreement.

(3) **Obligations.** An EIM Participating Resource shall—

(A) perform the obligations of an EIM Participating Resource under the EIM Participating Resource Agreement and Section 29;

(B) perform the obligations applicable to Market Participants and resources under the provisions of the CAISO Tariff described in Section 29.1(b); and

(C) if it represents a Generating Unit, Load of a Participating Load, Proxy Demand Resource, or other qualified resource, perform the obligations required for the resource under the provisions of the CAISO Tariff described in section 29.1(b).

(e) **EIM Participating Resource Scheduling Coordinator.**

(1) **Certification.** An EIM Participating Resource Scheduling Coordinator must be either an existing Scheduling Coordinator or must meet or have met the certification requirements in Section 4.5.1 for a Scheduling Coordinator.

(2) **EIM Participating Resource Scheduling Coordinator Agreement.** An EIM Participating Resource Scheduling Coordinator must enter an EIM Participating Resource Scheduling Coordinator Agreement with the CAISO, which shall satisfy the obligation to enter a Scheduling Coordinator Agreement under Section 4.5.1 with regard to its representation of the EIM Participating Resource.

(3) **Representation.** An EIM Participating Resource Scheduling Coordinator—

(A) may represent a Market Participant other than an EIM Participating Resource, but only if it enters a Scheduling Coordinator Agreement

- under Section 4.5.1 with regard to such Market Participant;
- (B) may not also be an EIM Entity Scheduling Coordinator unless the EIM Participating Resource Scheduling Coordinator is a transmission provider subject to the standards of conduct set forth in 18 C.F.R. § 358; and
 - (C) may represent more than one EIM Participating Resource.
- (4) **Obligations.** An EIM Participating Resource Scheduling Coordinator must—
- (A) perform the obligations of an EIM Participating Resource Scheduling Coordinator under the EIM Participating Resource Scheduling Coordinator Agreement and Section 29;
 - (B) perform the obligations of a Scheduling Coordinator under the provisions of the CAISO Tariff described in Section 29.1(b);
 - (C) ensure that the entity it represents has obtained any transmission service necessary to participate in the Energy Imbalance Market under the terms of the CAISO Tariff or the tariff of another transmission service provider, as applicable;
 - (D) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all EIM Participating Resources that it represents, provide such information to the EIM Entity Scheduling Coordinator, and update such information in a timely manner.

(5) **Governmental Entities.** Notwithstanding Section 29.4(e)(3)(B), a governmental entity that is an EIM Participating Resource Scheduling Coordinator may also be an EIM Entity Scheduling Coordinator if it agrees to comply with standards of conduct equivalent to those set forth in 18 C.F.R. § 358.

* * *

29.11. Settlements And Billing For EIM Market Participants.

- (a) **Applicability.** Section 29.11, rather than Section 11, shall apply to the CAISO Settlement with EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators, except as otherwise provided, but not to other Scheduling Coordinators.

(b) **Imbalance Energy.**

(1) **FMM Instructed Imbalance Energy.**

(A) **Calculation.**

(i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's FMM Instructed Imbalance Energy in the same manner as it calculates FMM Instructed Imbalance Energy under Section 11.5.1.1, except that references to the Day-Ahead Schedule in the relevant Appendix A definitions shall be deemed references to the EIM Base Schedule and that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the FMM that is identified by the EIM Entity Scheduling Coordinator prior to the start of the FMM.

(ii) **Non-Participating Resources.** The CAISO will calculate the FMM Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area as the sum of the Energy, if any, from EIM Manual Dispatch of the non-participating resource and any deviation from the EIM Base Schedule due to physical changes in any non-participating resource's output that the EIM Entity Scheduling Coordinator reports to the CAISO prior to the FMM.

(B) **Settlement.** The CAISO will settle—

(i) the FMM Instructed Imbalance Energy with the EIM Participating Resource Scheduling Coordinator for EIM Participating Resources; and

(ii) with the applicable EIM Entity Scheduling Coordinator for non-participating resources in an EIM Entity Balancing Authority Area.

(2) **RTD Instructed Imbalance Energy.**

(A) **Calculation.**

- (i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's RTD Instructed Imbalance Energy in the same manner in which it calculates FMM Instructed Imbalance Energy under Section 11.5.1.2, except that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the RTD that is identified by the EIM Entity Scheduling Coordinator.
- (ii) **Non-Participating Resources.** The CAISO will calculate the RTD Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area as the Energy, if any, from EIM Manual Dispatch of the non-participating resource in the RTD that is identified by the EIM Entity Scheduling Coordinator.

(B) **Settlement.** The CAISO will settle the RTD Instructed Imbalance Energy—

- (i) with the EIM Participating Resource Scheduling Coordinator for EIM Participating Resources; and
- (ii) with the applicable EIM Entity Scheduling Coordinator for non-participating resources in an EIM Entity Balancing Authority Area.

(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 as the difference between the 5-minute Meter Data and the EIM Base Schedule or, if the EIM Scheduling Coordinator reported physical changes in a non-participating resource's output to the CAISO prior to the FMM, the FMM Schedule, less any EIM Manual Dispatch Energy of non-participating resources.

(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 with the applicable EIM Entity Scheduling Coordinator.

(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 Hourly Real-Time LAP price with the applicable EIM Entity 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.** The CAISO will settle Unaccounted For Energy with the applicable EIM Entity Scheduling Coordinator at the applicable Hourly Real-Time LAP price.
- (d) **Charges for Over- and Under-Scheduling of EIM Entities.**
- (1) **Under-Scheduling Charges.**
 - (A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area exceeds the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall charge the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 125% of the Hourly Real-Time LAP Price.
 - (B) **Level 2 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area exceeds the EIM Base Schedule of Supply submitted by the EIM Entity by more than 10% and by at least 2 MW, the CAISO shall charge the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 200% of the Hourly Real-Time LAP price.
 - (2) **Over-Scheduling Charges.**
 - (A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall pay the applicable EIM Entity Scheduling Coordinator for all Uninstructed

Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 75% of the Hourly Real-Time LAP Price.

(B) **Level 2 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 10% and by at least 2 MW, the CAISO shall pay the applicable EIM Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the EIM Entity Load Aggregation Point at a price that is 50% of the Hourly Real-Time LAP Price.

(3) **Distribution of Revenues.**

(A) **Apportionment.** The CAISO will calculate the total daily excess revenues received from under-scheduling charges and over-scheduling charges under Section 29.11(d)(1) and (2) and apportion them to Balancing Authority Areas in the EIM Area that were not subject to either under-scheduling or over-scheduling charges during the Trading Day according to metered Demand.

(B) **Allocation.** The CAISO will allocate—

(i) the amounts apportioned to EIM Entity Balancing Authority Areas pursuant to Section 29.11(d)(3)(A) to the applicable EIM Entity Scheduling Coordinator; and

(ii) the amounts apportioned to the CAISO Balancing Authority Area pursuant to Section 29.11(d)(3)(A) to Scheduling Coordinators in the CAISO Balancing Authority Area according to metered Demand.

(4) **Exemption.** An EIM Entity will be exempt from under-scheduling and over-scheduling charges under Section 29.11(d)(1) and (2) if it uses the Demand Forecast prepared by the CAISO in its EIM Resource Plan and it approves EIM Base Schedules for its resources within +/- 1% of the CAISO Demand Forecast,

as determined according to the Business Practice Manual for the Energy Imbalance Market.

(e) **Neutrality Accounts.**

- (1) **In General.** The CAISO will collect neutrality amounts from EIM Market Participants to recover differences in Real-Time Market payments made and Real-Time Market payments received.
- (2) **Real-Time Congestion Offset.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Congestion Offset allocation calculated pursuant to Section 11.5.4.1.1.
- (3) **Real-Time Imbalance Energy Offset Allocation.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Imbalance Energy Offset allocation calculated pursuant to Section 11.5.4.1.
- (4) **Real-Time Marginal Cost of Losses Offset.** The CAISO will allocate the Real-Time Marginal Cost of Losses Offset to EIM Entity Scheduling Coordinators pursuant to Section 11.5.4.1.2.
- (5) **Other Neutrality Adjustments.** The CAISO will levy additional charges on or make additional payments to EIM Market Participants as adjustments in accordance with Section 11.14.

(f) **Real-Time Bid Cost Recovery.**

- (1) **In General.** The CAISO will provide EIM Participating Resources RTM Bid Cost Recovery.
- (2) **Calculation of Real-Time Bid Cost Recovery.** The CAISO will calculate Real-Time Bid Cost Recovery in accordance with Section 11.8.4, except that the CAISO will treat a non-zero EIM Base Schedule of an EIM Participating Resource as a Self-Schedule and the EIM Participating Resource will not be eligible for recovery of Start-Up Costs and Minimum Load Costs, in accordance with the treatment of costs during self-commitment intervals as specified in Section 11.8.4.1.2.

- (3) **Allocation of EIM Entity RTM Bid Cost Uplift.**
- (A) **Calculation of Charge.** The Net RTM Bid Cost Uplift will be determined for each EIM Entity Balancing Authority Area in accordance with the methodology set forth in Section 11.8.6.
 - (B) **Settlement.** The CAISO will assess the Net RTM Bid Cost Uplift calculated for each EIM Entity Balancing Authority Area to the applicable EIM Entity Scheduling Coordinator in accordance with Section 11.8.6.6.(ii).
- (g) **Flexible Ramping Constraint Allocation.**
- (1) **Calculation.** The CAISO will calculate awards for Flexible Ramping Constraint capacity according to Section 11.25.2 and rescission for non-performance in accordance with 11.25.3, except that the Real-Time Ancillary Service Market Price for Spinning Reserves will be deemed to be zero in determining awards to EIM Participating Resources.
 - (2) **Apportionment of Costs.** The CAISO will apportion Flexible Ramping Constraint costs to each EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area in accordance with Section 11.25.4.
 - (3) **Cost Allocation.** The CAISO will allocate each EIM Entity's Flexible Ramping Constraint costs to the applicable EIM Entity Scheduling Coordinator in accordance with Section 11.25.5(b).
- (h) **EIM Initial Fee.** The CAISO will charge Balancing Authority Areas that enter into an EIM Implementation Agreement pursuant to Section 29.2(b) an initial fee to cover a share of the capital and operations and maintenance costs associated with setting up the Real-Time Market to accommodate the participation of the Balancing Authority as an EIM Entity. The fee will be established by the EIM Implementation Agreement entered into pursuant to Section 29.2(b)(1) as accepted by FERC.
- (i) **EIM Administrative Charge.**
- (1) **In General.** The CAISO will charge EIM Market Participants a fixed EIM

Administrative Charge equal to the product of \$0.19/MWh and the sum of—

(A) the total gross absolute value of FMM Instructed Imbalance Energy, gross absolute value of RTD Imbalance Energy, and gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Supply, and

(B) the gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Demand.

~~rate of \$0.19/MWh, applied as specified in Section 29.11(i)(2) and (3).~~

(2) **Minimum EIM Administrative Charge.** The CAISO will calculate the minimum EIM Administrative Charge as the product of \$0.19/MWh and—

(A) five percent of the total gross absolute value of Supply of all EIM Market Participants; plus

(B) five percent of the total gross absolute value of Demand of all EIM Market Participants.

(3) **Allocation of Minimum EIM Administrative Charge.** To the extent that the full amount charged pursuant to Section 29.11(i)(1) is less than the amount calculated under Section 29.11(i)(2), the ISO will allocate the difference to the EIM Entity Scheduling Coordinator.

~~(2) **Calculation.** The CAISO will calculate MWh subject to the EIM Administrative Charge rate for each EIM Market Participant as—~~

~~(i) the greater of (a) the sum of the gross absolute value of FMM Instructed Imbalance Energy, gross absolute value of RTD Instructed Imbalance Energy, and gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Supply, or (b) five percent of the total gross absolute value of Supply of all EIM Market Participants; plus~~

~~(ii) the greater of (a) the absolute value of the gross Uninstructed Imbalance Energy of the EIM Market Participant's Demand, or (b) five percent of the total gross absolute value of Demand of all EIM Market Participants.~~

~~(3) **Allocation.** The CAISO will calculate the total of the amount of the EIM Administrative Charge for each EIM Market Participant by multiplying the rate specified in Section 29.11(i)(1) by the MWh calculated pursuant to Section 29.11(i)(2) and will allocate that charge—~~

~~(i) to the sum of (a) the total gross absolute value of FMM Instructed Imbalance Energy, gross absolute value of RTD Instructed Imbalance Energy, and gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Supply, and (b) the gross absolute value of Uninstructed Imbalance Energy of the EIM Market Participant's Demand, and~~

~~(ii) to the extent not all EIM Administrative Charges are allocated pursuant to Section 29.11(i)(3)(i), the remaining amounts to the applicable EIM Entity Scheduling Coordinator.~~

(4) **Application of Revenues.** The CAISO will apply revenues received from the EIM Administrative Charge against the costs to be recovered through the Grid Management Charge as described in Appendix F, Schedule 1, Part A.

(j) **Variable Energy Resource Forecast Charge.**

(1) **In General.** The CAISO will charge EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators a fee for the Variable Energy Resource forecasting services in accordance with Appendix F, Schedule 4.

(2) **Waiver.** The CAISO will waive the Variable Energy Resource forecast charge if an EIM Entity has an independent forecast for its Variable Energy Resources and provides the independent forecast to the CAISO.

(k) **Transmission Service.** The CAISO will charge EIM Market Participants for transmission service according to Section 29.26.

(l) **Settlement Process.** With regard to the CAISO's assessment of charges to EIM Market Participants pursuant to Sections 11 and 29.11, the CAISO shall assess such charges, address disputed invoices, assess Settlement-related fees and charges, including those

under Sections 11.21, 11.28, and 11.29, and make any financial adjustments in accordance with the Settlements process and schedule set forth in Section 11.

- (m) **Charges Related to RTM Participation of Interties.** In the event that an EIM Entity enables participation in the Real-Time Market on EIM External Interties, the EIM Entity Scheduling Coordinator shall also be subject to any applicable charges under Sections 11.31 and 11.32.

* * *

29.22 Miscellaneous Provisions in Addition to Section 22. Section 22 and the additional miscellaneous provisions of Section 29.22 shall apply to the Energy Imbalance Market.

- (a) **Tax Liability.** To the extent that the CAISO would incur any tax liability as a result of the participation of EIM Market Participants in the Real-Time Market, as market operator or as central counterparty to Energy Imbalance Market transactions, for example, the CAISO will pass those taxes on to the EIM Entity Scheduling Coordinator for the EIM Entity area where the transactions triggered the tax liability.
- (b) **Purchasing Selling Agent.** Notwithstanding the CAISO's assumption to title pursuant to Section 29.22(c), neither the CAISO nor the EIM Entity is a "Purchasing Selling Entity" for purposes of E-Tagging or EIM Transfers, nor shall either be listed as a "Purchasing Selling Entity" for purposes of E-Tagging or EIM Transfers.
- (c) **Title to Energy.** Title to Energy in ~~the Real-Time Market~~ EIM Transfers passes directly to the CAISO from the entity that holds title when the Energy enters the CAISO Controlled Grid or the transmission system of an EIM Transmission Service Provider, whichever is first following Dispatch, and from the CAISO to the entity that removes the Energy from the CAISO Controlled Grid or the transmission system of a EIM Transmission Service Provider, whichever last precedes delivery to Load.

* * *

29.26 Transmission Rates And Charges.

- (a) **Transmission Charges for CAISO Facilities.**
 - (1) **Access Charge.** Transmission service charges for Real-Time Market

transactions serving Load within the CAISO Balancing Authority Area that use the CAISO Controlled Grid are governed by Section 26.

(2) **Wheeling Access Charge.** EIM Transfers from the CAISO Controlled Grid to another EIM Entity Balancing Authority Area using the contractual or ownership rights of an EIM Entity shall not constitute Wheeling Out and shall not be subject to the Wheeling Access Charge under Section 26.

(b) **Non-CAISO Facilities.** The determination and charges for transmission service for Real-Time Market transactions on facilities that are part of the contractual or ownership rights made available to the Real-Time Market by an EIM Transmission Service Provider through an EIM Entity will be the responsibility of the EIM Entity that made the facilities available, ~~except that the EIM Entity shall ensure that no EIM Transmission Service Provider imposes a separate charge for EIM Transfers that use its facilities~~, provided that charges for transmission service in excess of contractual limits shall not be considered a separate charge.

* * *

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);
 - (D) Reserve capacity meeting the WECC requirements for regulating reserves, in decremental MW (applicable to resources only);
 - (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 Bids in 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 ~~both Balancing Authority Areas 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.

(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 Inertia 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).

(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 ~~Production Forecast.~~ Provisions of Section 34 specifically applicable to The CAISO shall treat Variable Energy Resources and Eligible Intermittent Resources appear in in accordance with Sections 34.1.3, 34.1.6, 34.2.2, 34.5.1, 34.13.2.**

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- (a) **EIM Market Power Mitigation Procedure.** The CAISO shall apply the Real-Time Local Market Power Mitigation procedure in Section 39.7 to the Energy Imbalance Market, except as provided in Section 29.39.
- (b) **Competitive Path Assessment.** The CAISO shall conduct the competitive path assessment to determine for each EIM Entity Balancing Authority Area whether a path is competitive or non-competitive, consistent with Section 39.7.2, except that—
- (1) EIM Participating Resource Scheduling Coordinators shall submit information required by the CAISO to perform the competitive path assessment;
 - (2) the competitive path assessment shall not exclude EIM Participating Resources from the test used to determine the competitiveness of Transmission Constraints on the basis that they may be net buyers of Energy in the Real-Time Market; and
 - (3) the CAISO may establish different Reference Buses for each Balancing Authority Area, which need not be within the Balancing Authority Area, for calculating the LMP decomposition which is used to trigger Bid mitigation, based on the topology of each Balancing Authority Area and consideration of the bus at which the Marginal Cost of Congestion component of Locational Marginal Prices is least influenced by market power.
- (c) **Locational Marginal Price Decomposition.** The CAISO shall perform the Locational Marginal Price decomposition for each EIM Entity Balancing Authority Area using the results of the competitive path assessment and the Congestion pricing results of the pre-market run to determine which resources may have local market power due to Congestion on a non-competitive Transmission Constraint, consistent with Section 34.2.3 and 39.7, except that—
- (1) the CAISO will not mitigate resource Bids for scheduling limit constraints with Balancing Authority Areas that do not participate in the Real-Time Market;
 - (2) the Locational Marginal Price decomposition shall only be triggered if the resource is effective at relieving an uncompetitive constraint within the same Balancing Authority Area in which the resource is located except as described in

Section 29.39~~(d)(4)~~;

- (3) EIM Resources shall be mitigated to relieve congestion on uncompetitive constraints within the same Balancing Authority Area in which the EIM Resources are located except as described in Section 29.39~~(d)(e)(4)~~; and

(d) **Market Power Mitigation of EIM Transfer Constraints.**

- (1) **Structural Competitiveness Assessment.** The Department of Market Monitoring may conduct a structural competitiveness assessment of an individual or group of entities within an EIM Entity Balancing Authority Area prior to or subsequent to the EIM Implementation Date for the EIM Entity to evaluate market power based on factors which may include—

- (A) the Demand for Real-Time Imbalance Energy within the EIM Entity Balancing Authority Area;
- (B) the Supply owned or controlled by different entities with the EIM Entity Balancing Authority Area; and
- (C) the potential Supply available to the EIM Entity Balancing Authority Area from EIM Transfers.

- (2) **Application of Market Power Mitigation.** The Department of Market Monitoring may include EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie in the Local Market Power Mitigation procedures under Section 39.7 if the CAISO determines that market power may exist based on a structural competitiveness assessment pursuant to Section 29.39(d)(1) and the ~~CAISO Governing Board~~FERC accepts a filing by the CAISO to implement ~~authorizes~~ such inclusion, and the Department of Market Monitoring may exclude the EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie from Local Market Power Mitigation if it determines that market power no longer exists based on a structural competitiveness assessment pursuant to Section 29.39(d)(1) and the ~~CAISO Governing Board~~FERC accepts a filing by the CAISO to implement ~~authorizes~~ the exclusion.

- (e) **Default Energy Bids.** The CAISO shall use the methods and standards set forth in Section 39.7 to determine Default Energy Bids for EIM Participating Resources.

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**Appendix A
Master Definition Supplement**

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- EIM Base Schedule of Supply

That portion of an EIM Base Schedule that represents Energy from resources and interchange.

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- Scheduling Coordinator Metered Entity

An entity that is (1) a Generator, Eligible Customer, End-User, Reliability Demand Response Resource, or Proxy Demand Response Resource that is not a CAISO Metered Entity; (2) an EIM Entity; and (3) ~~or~~ an EIM Participating Resource that elects to be a Scheduling Coordinator Metered Entity with regard to some or all of the EIM Resources it represents.