



Comments of Pacific Gas & Electric Company *Energy Imbalance Market Draft Tariff Language*

Submitted by	Company	Date Submitted
Will Dong (415) 973-9267 Paul Gribik (415) 973-6274	PG&E	December 5, 2013

Pacific Gas and Electric Company (PG&E) offers these comments regarding the California Independent System Operator’s (CAISO) Energy Imbalance Market (EIM) Draft Tariff Language.

PG&E provides detail tariff edits and comments in the appendix of this document. Besides our detail recommendations, PG&E offers additional discussion below on the following:

- 1) More tariff detail is needed on the Real-Time Congestion Balancing Account;
- 2) More tariff detail is needed on the Flexible Ramping Constraint;
- 3) New EIM terms need to be defined or current terms modified; and
- 4) Need consistent use of CAISO defined terms in the new tariff

1. More tariff detail is needed on the Real-Time Congestion Balancing Account

Under section 29.11 (4) (A), the proposed tariff states that *“The CAISO will calculate real-time congestion balancing accounts for neutrality charges for each Balancing Authority Area in the EIM Area as sum for each EIM Entity Balancing Authority Area of the product of the contribution of that EIM Entity Balancing Authority Area to the marginal congestion component of the Locational Marginal Price at each resource location and the imbalance energy, including convergence bids, at that resource location, minus any convergence bid adjustment.”*

PG&E requests additional details in the following areas:

- a) How are congestion offsets calculated for the 15 minute and 5 minute markets?

Underfunding can occur due to congestion in the 15 minute or 5 minute market (i.e., changes in transmission limits between base schedules and 15 minute market, or between 15 minute

market schedules and 5 minute dispatch). The CAISO should add details on how congestion costs not covered in the market will be treated under these two EIM market processes.

This issue may have been overlooked in the design phase. The EIM Draft Final Proposal stated that the BAA real-time balancing account can be determined based on the product of the 1) change of binding constraint flow between metered flow and the base flow and 2) the shadow price of the binding constraint in the BAA.¹ It seems to miss the fact that the shadow price can differ between the 15 minute and 5 minute markets, and so the RT Congestion Balancing Account should be calculated separately for each market.

b) What load should be used in the 15 minute market and the 5 minute market?

Under the proposed changes related to FERC 764, load is settled as the difference between metered load and base load times a weighted average of the 15 minute and 5 minute LMPs. The fact load is settled at a weighted average price presents a challenge if the EIM needs to calculate separate RT Congestion Balancing Accounts in the 15 minute and 5 minute markets.

Further discussion with stakeholders on these issues may be warranted, and the final proposed tariff should capture the result of that discussion.

2. More tariff detail is needed on the Flexible Ramping Constraint

The existing tariff establishes rules to calculate a Flexible Ramping Constraint requirement, and to set a price and to allocate costs to meet this constraint. These rules are relatively straight forward for a single CASIO Balancing Authority Area (BAA). However, they are much more complex for the EIM, which must establish such a constraint for each individual BAA and all the combinations thereof.

To facilitate this discussion and to demonstrate the complexity on this topic, let's consider the following example and scenarios provided by the CAISO in its EIM Draft Final Proposal.

Flexible Ramping Constraint Example:

- i. Flexible ramping requirement for individual BAAs and for the EIM Area (with and without diversity benefits)

BAA	Flexible Ramping Requirement (MW)	Flexible Ramping Requirement with diversity benefit (MW)
ISO	300	N/A
EIM1	200	$200 \times 600 / 650 = 184.62$

¹ <http://www.caiso.com/Documents/EnergyImbalanceMarket-DraftFinalProposal092313.pdf>

EIM2	150	$150 \times 600 / 650 = 138.46$
ALL	650	600

ii. EIM Transfer capability between BAAs

	ISO (MW)	EIM1 (MW)	EIM2 (MW)
ISO		80	80
EIM1	80		20
EIM2	80	20	

iii. Scenario #1: Both EIM1 and EIM2 pass the sufficiency test

BAA	Minimum Flexible Ramping Capacity Limit (MW)
ISO	$140 = 300 - 80 - 80$
EIM1	$100 = 200 - 80 - 20$
EIM2	$50 = 150 - 80 - 20$
ISO+ EIM1	$400 = 300 + 200 - 80 - 20$
ISO+ EIM2	$350 = 300 + 150 - 80 - 20$
EIM1+ EIM2	$190 = 200 + 150 - 80 - 80$
All	600

iv. Scenario #2: EIM2 fails sufficiency test

BAA	Minimum Flexible Ramping Capacity Limit (MW)
ISO	$200 = 300 - 80 - 20$
EIM1	$100 = 200 - 80 - 20$
EIM2	150
ISO+ EIM1	$500 = 300 + 200$

PG&E requests additional details in the following areas:

- a) How are the Flexible Ramping Constraint (FRC) requirements for each BAA and their combinations determined?
 - a. Are these FRC requirements the minimum flexible ramping capacity limits provided in the above example?
 - b. Should the FRC requirements include the diversity benefits? If so, how are diversity benefits allocated to these FRC requirements for an individual BAA, for a combination of BAAs? In Scenarios #1 and #2 above, the FRC requirements for individual BAAs and any combination of BAAs except the combination of all BAAs do not consider diversity benefits when calculating the requirements. In

Scenario #1, the FRC requirement for the combination of all BAAs does consider diversity benefits. The Tariff should explicitly state how the FRC requirements for individual BAAs and all possible combinations will be calculated for use in the FRC constraints.

- c. If a BAA fails the sufficiency test (scenario 2 above), should diversity benefits be considered in coming up with the Flexible Ramping Constraint requirements for the other BAAs that passed the test and their combinations?
- b) How are the costs of meeting the Flexible Ramping Constraints calculated?
- a. Will a Flexible Ramping Constraint Derived Price (defined in section 11.25.1 of the CAISO tariff) be calculated for each Flexible Ramping Constraint (i.e., single BAA and combination thereof)?² The draft tariff only seems to consider the price for constraints to meet FRC requirements in individual BAAs and not for constraints to meet FRC requirements for combinations of BAAs.

The existing CAISO tariff uses a combination of the FRC constraint shadow price in the CAISO and Ancillary Services Marginal Price (ASMP) for Spinning Reserve to compensate FRC in CAISO. The draft tariff states that in BAAs other than CAISO, the ASMP for Spinning Reserve will be zero when calculating the compensation. How does CAISO propose to compensate FRC when FRC is procured to meet a FRC requirement for a combination of BAAs that includes CAISO and EIM Entities?

- b. The proposed tariff is unclear on this point. Paragraph 1 under the “Flexible Ramping Constraint Allocation” section seems to suggest the CAISO will calculate Flexible Ramping Constraint Derived Prices, but paragraph 2 immediately below uses the term “marginal flexible ramp price.” This is an undefined term and it is not clear what it means, especially in the context of an FRC consists of a combination of BAAs.
- c. What is the total cost of meeting all the Flexible Ramping Constraints? How is this calculated?

Consider the following table which shows one potential outcome based on scenario 1, is the total cost of meeting all the FRCs calculated in a nested fashion based on the additional capacity procured by each constraint times the applicable FRC Derived Price? For instance, is the total cost of meeting the ISO+EIM1 FRC

² Existing tariff section 11 (http://www.caiso.com/Documents/Section11_CaliforniaISOSettlements-Billing_Nov1_2013.pdf)

the sum $140 \text{ MW} * \$A + 100 \text{ MW} * \$B + (400 - 140 - 100) * \D ? Additional details are needed on this point.

FRC	FRC Req.(MW)	Capacity to meet FRC from each BAA (MW)			FRC Derived Price (\$/MWh)
		ISO	EIM1	EIM2	
ISO	140	140	NA	NA	\$A
EIM1	100	NA	100	NA	\$B
EIM2	50	NA	NA	50	\$C
ISO+ EIM1	400	150	10	NA	\$D
ISO+ EIM2	350	10	NA	150	\$E
EIM1+ EIM2	190	NA	0	40	\$F
ALL	600	0	50	0	\$G

- c) Finally, how are the costs of meeting the Flexible Ramping Constraints allocated?
 - a. The proposed tariff is unclear on this. Paragraph 2 under “Flexible Ramping Constraint Allocation” in section 29.11 states “*The CAISO will allocate Flexible Ramping Constraint costs to each EIM Entity Balancing Authority Area according to the ratio of the product of the flexible ramping capacity in that Balancing Authority Area and the marginal flexible ramp price in that Balancing Authority Area to the sum of such products for all EIM Entity Balancing Authority Areas.*”
 - b. What is the flexible ramping capacity in a BAA? Is it the total Flexible Ramping Constraint capacity that is reserved from resources within a given BAA to meet all the FRCs that include the EIM Area? If so, why should the cost of meeting FRC be allocated based on where the supply came from, shouldn't it be based on which BAA the capacity is reserved for?
 - c. What is the marginal flexible ramp price, is it the shadow price of a given FER requirement constraint?

The calculation and cost allocation of Flexible Ramping Constraint is an important yet complicated element of the EIM design. The CAISO should provide additional details, preferably numerical examples such as the one presented in the table above so stakeholders clearly understand the proposed operations and settlements rules.

3. New EIM terms need to be defined or current terms modified

For clarity, the CAISO should create the following new definitions. These terms are unique to the operation of an EIM and should be referenced in the relevant tariff sections to avoid confusion with other non-EIM related terms.

- EIM Non-Participating Resource
- EIM Non-Participating Load
- EIM Unaccounted For Energy
- EIM Instructed Imbalance Energy
- EIM Uninstructed Imbalance Energy
- EIM Convergence Bid Adjustment
- EIM Administrative Charge

The CAISO may also need to modify existing defined terms so they remain accurate under an EIM. For example, the definition of Imbalance Energy needs to be expanded to consider deviations from EIM Base Schedules in the 15 minute market and deviations of the 5 minute dispatch from the 15-minute market schedules. Also, the existing definitions of Flexible Ramping Constraint and Flexible Ramping Constraint Derived Price may need to be modified to reference the appropriate EIM sections.

4. Need consistent use of CAISO defined terms in the new tariff

Where appropriate, the CAISO should use capitalized terms defined in the CAISO tariff. This will make the new sections of the tariff consistent with the older sections. PG&E provides some examples below and offers suggested edits in appendix section.

CAISO should use	Instead of
Reliability Coordinator	reliability coordinator
EIM Contingency	EIM contingency
Fifteen Minute Market (FMM)	15-minute market
Real Time Dispatch (RTD)	5-minute market
Hourly Real-Time LAP Price	hourly real-time Load Aggregation Point price
Imbalance Energy	imbalance energy
Shadow Price	shadow price
Virtual Bids	convergence bids
Energy Schedules	energy schedules
Curtable Demand	curtable demand
Demand Response Services	demand response services
Measured Demand	measured demand
Operational Adjustment	operational adjustment
Metered Demand	metered demand

Day-Ahead	day-ahead
Day-Ahead Market	Day-ahead market
Virtual Awards	virtual awards
Default Energy Bid	default energy bid
EIM Base Schedule	base schedule

Energy Imbalance Market

First Draft Tariff

November 12, 2013
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1. Introduction

The California ISO (ISO) Board of Governors approved the design for the Energy Imbalance Market (EIM) on November 7, 2013. The draft EIM tariff presented here incorporates that approved market design into the tariff framework presented on September 10, 2013.

The ISO would appreciate stakeholder comments concerning whether the draft EIM tariff accurately reflects the market design approved by the ISO Board of Governors. Specific comments supported by proposed changes to the draft tariff generally represent the best means to reflect and understand stakeholder requests, and the ISO has included a Word version of the draft EIM tariff to facilitate that review. Comments on the draft EIM tariff framework must be submitted by December 5, 2013.

This first draft of the EIM tariff remains under review and development by the ISO. In particular, the ISO intends to further consider the appropriate use of defined terms from Appendix A in context of the EIM and the relationship with other tariff development efforts currently underway. For example, the EIM is based on the 15-minute market being implemented in the Spring of 2014 and various descriptions of EIM charge codes and other language may need to be conformed to the final accepted version of the ISO's Order 764 compliance filing. In addition, the Full Network Model stakeholder process is underway and its final design will need to be considered in the EIM tariff.

The ISO appreciates that its ongoing review will change the draft EIM tariff presented here. However, these changes are expected to clarify the relationship between the EIM tariff and the existing tariff as amended by these related stakeholder initiatives - they will not change the EIM design. The ISO believes this first draft of the EIM tariff represents the approved EIM design, and welcomes stakeholder comments on that point.

The ISO will host a stakeholder meeting on December 16 to discuss all timely stakeholder comments. In this meeting the ISO will do its best to explain whether it intends to accept or reject each requested change and the reason for doing so. A revised draft EIM tariff will be posted on January 16, 2014, with a second round of comments due January 23, 2014, and a related tariff stakeholder meeting on January 30, 2014. The final EIM tariff will be filed with FERC no later than February 28, 2014.

2. Draft EIM Tariff

29 Energy Imbalance Market

29.1 General Provisions.

- (a) **Operation of EIM.** The CAISO shall operate and settle a market pursuant to Section 29 for the purchase and sale of imbalance energy in the CAISO Balancing Authority Area and any other Balancing Authority Area for which the Balancing Authority executes an EIM Entity Agreement.
- (b) **EIM Tariff Obligations.** EIM Market Participants shall comply with—
- (1) the provisions of Section 29; and
 - (2) other provisions of the CAISO Tariff that apply to the extent such provisions--
 - (A) expressly refer to Section 29 or EIM Market Participants;
 - (B) are cross referenced in Section 29; or
 - (C) otherwise by their terms apply to EIM Market Participants.
- (c) **Conflict Between Provisions.** If there is a conflict between a provision in Section 29 and another provision of the CAISO Tariff regarding the rights or obligations of EIM Market Participants, the provision in Section 29 shall prevail to the extent of the inconsistency.
- (d) **Reversion.**
- (1) **Temporary Reversion.** The CAISO may, within thirty (30) days following the implementation date of the EIM for an EIM Entity, and upon Market Notice, temporarily revert to pre-EIM operations for a period not to exceed 60 days with respect to that EIM Entity if market or system operational issues adversely impact the EIM Area or any EIM Entity Balancing Authority Area.
 - (2) **Permanent Reversion.** If the CAISO is not able to resolve the system or market issue during the temporary reversion, the CAISO may, upon Market Notice, permanently revert to pre-EIM operations with respect to an EIM Entity.
 - (3) **Reinstatement.**
 - (A) **Temporary Reversion.** The CAISO may reinstate EIM operations after a temporary reversion by providing public notice no less than 10 days in advance of the reinstatement date.
 - (B) **Permanent Reversion.** The CAISO may only reinstate EIM operations after a permanent reversion through a filing with FERC.

Comment [A1]: At other parts of the Tariff, imbalance energy is capitalized, indicating a defined term. The CAISO should be consistent here and either use existing defined terms or create new ones if needed to specify what imbalance energy means here.

29.2 Access To EIM.

(a) **In general.** The CAISO shall—

- (1) provide open and non-discriminatory access to the EIM in accordance with the provisions in the CAISO Tariff; and
- (2) make available for use in the EIM the transmission capacity on the CAISO Controlled Grid that is available in real-time and the transmission capacity an EIM Entity registers in the EIM Transmission Service Registry that is available in real-time, based on its transmission ownership and contractual rights.

(b) **Access as an EIM Entity.**

- (1) **Implementation Agreement.** A Balancing Authority that wishes to become an EIM Entity must first execute an implementation agreement with the CAISO that establishes—
 - (A) the activities the parties must undertake to enable the Balancing Authority to participate in the EIM;
 - (B) the date upon which the Balancing Authority will become an EIM Entity; and
 - (C) the implementation fee the Balancing Authority must pay to the CAISO for the start-up costs the CAISO incurs.
- (2) **FERC Approval.** The implementation agreement must be accepted by FERC not less than six months and not more than twenty-four months before the date on which the Balancing Authority is to become an EIM Entity.
- (3) **Implementation Period.** The CAISO shall in its discretion determine the required length of the implementation period based on the complexity and compatibility of the Balancing Authority's system and the planned timing of the CAISO's implementation of software enhancements.

Comment [A2]: The definition of EIM Transmission Service Provider, states that a third party transmission owner can make its transmission capacity available to use in EIM, not just the EIM Entity. This section should reflect that.

29.3 [Not Used]

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 and WECC Reliability Standards and Regional 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 EIM, 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 with NERC.
- (B) **Reliability Responsibilities.** Nothing in Section 29 shall alter an EIM Entity's responsibilities under NERC Reliability Standards and WECC Reliability Standards and Regional Criteria as the Balancing Authority for the EIM 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 EIM, the EIM Entity as Balancing Authority shall remain responsible 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 date upon which the Balancing Authority intends to become an EIM Entity;
- (3) **EIM Obligations.** An EIM Entity shall--
- (A) perform the obligations of an EIM Entity under the EIM Entity Agreement and Section 29;
- (B) have provisions in effect in its Open Access Tariff and ensure that each EIM Transmission Service Provider in its Balancing Authority Area has provisions in effect in its Open Access Tariff, as necessary, to enable the EIM in its Balancing Authority Area;
- (C) 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;

Comment [A3]: Please define what this date is, including where and how it is established

- (D) qualify as or secure representation by no more than one EIM Entity Scheduling Coordinator;
- (E) 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;
- (F) provide the CAISO and EIM Entity Scheduling Coordinator with information regarding the transmission capacity available to the EIM, including any transmission system information regarding constraints that it observes;
- (G) define Load Aggregation Points in its Balancing Authority Area; and
- (H) determine which resource types and transmission service providers are eligible to participate in the EIM within the EIM Entity Balancing Authority Area.

Comment [A4]: QUESTION: Does only the EIM Entity observe transmission constraints or do third party transmission providers located in the BAA also observe transmission constraints? Who is responsible for ensuring that constraints are enforced?

(4) **EIM Termination.**

- (A) **EIM Entity Agreement.** An EIM Entity that wishes to terminate participation in the EIM must terminate the EIM Entity Agreement pursuant to its terms.
- (B) **Notice.** Delivery to the CAISO of a written notice of termination shall represent the commitment by the EIM Entity to undertake all necessary preparations to disable the EIM 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 EIM within the EIM Entity Balancing Authority Area, which shall be outlined in the Business Practice Manuals, including public notice to Market Participants within ten (10) days.

(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; 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 that each EIM Entity of the multiple representation has authorized it to represent each other EIM Entity.

(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 such other provisions of the CAISO Tariff as apply by their own terms, except as provided otherwise in Section 29;
- (C) obtain any transmission service necessary for the EIM Entity it represents to participate in the EIM 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, all EIM Participating Resources of each EIM Entity it represents, and all non-participating resources in each EIM Entity Balancing Authority Area, and update such information in a timely manner;
- (E) submit the interchange schedules with other Balancing Authorities at the defined interchange scheduling points, including creating and processing e-tags in accordance with NERC, NAESB, 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 operating interval of the EIM and that are included in an EIM Resource Plan;
- (F) match e-Tags and manage schedule curtailments at the defined interchange scheduling points with other Balancing Authorities;
- (G) register information in the EIM Transmission System Registry; and
- (H) settle all financial obligations arising out of the EIM for the EIM Entity, including financial settlement with non-participating resources and non-participating load within the EIM Entity Balancing Authority Area.

(d) **EIM Participating Resource.**

- (1) **Eligibility.** Resources, including generating units, physical scheduling plants, participating loads, proxy demand resources, non-generator resources and dynamic transfers are eligible to become an EIM Participating Resource if the resource—
 - (A) meets the eligibility requirements established by the EIM Entity in whose Balancing Authority Area the resource is located;
 - (B) is capable of delivering energy, curtailable demand, demand response services, or similar services within the time specified by Section 29 for the EIM market in which it will submit bids; and
 - (C) meets California Air Resources Board registration and reporting requirements.
- (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 of Market Participants and resources under such other provisions of the CAISO Tariff as apply by their own terms, except as provided otherwise in Section 29;
 - (C) if it is a generating unit, participating load, proxy demand resource, or other qualified resource, perform the obligations required of the resource under such other provisions of the CAISO Tariff as apply by their own terms, except as specifically provided otherwise; and
 - (D) register in the Compliance Instrument Tracking System Service of the California Environmental Protection Agency Air Resources Board.

Comment [A5]: Are these defined terms? If so, they should be capitalized.

(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;
 - (C) may represent more than one EIM Participating Resource if it has certified to the CAISO in the manner described in the Business Practice Manual that each EIM Participating Resource of the multiple representation has authorized it to represent each other EIM Participating Resource; and
 - (D) may represent resources in other CAISO markets by entering into a Scheduling Coordinator Agreement under Section 4.5.1.1.11.
- (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 such other provisions of the CAISO Tariff as apply by their own terms, except as specifically provided otherwise;
 - (C) obtain any transmission service necessary for the entity it represents to participate in the EIM 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, all EIM Participating Resources that it represents, provide such information to the EIM Entity Scheduling Coordinator, and update such information in a timely manner; ~~and~~
 - (E) register in the Compliance Instrument Tracking System Service of the California Environmental Protection Agency Air Resources Board; and
 - (F) ensure that the EIM Participating Resources it represents are registered in the Compliance Instrument Tracking System Service of the California Environmental Protection Agency Air Resources Board.

Comment [A6]: One important obligation is missing from this section, which is that an EIM Participating Resource Scheduling Coordinator must also register in the Compliance Instrument Tracking System Service of the California Environmental Protection Agency Air Resources Board. This is specified on page 85 of the EIM Draft Final Proposal.

29.5. [Not Used]

29.6 Communications.

- (a) **EIM Entity.** The EIM Entity shall meet the technical and communication requirements provided in the Business Practice Manuals, which shall be based on the Inter-Control Center Communication Protocol and Reliability Standards.
- (b) **EIM Communications and OASIS.** Section 6 shall govern communications and information availability regarding the EIM to the extent it applies by its own terms except that –
 - (1) references to internal resources shall be deemed to include EIM Participating Resources; and
 - (2) references in Sections 6.2.2.1 and 6.5.2.1 to the CAISO Controlled Grid shall be deemed references to the EIM Area.
- (c) **Loss of Communications.**
 - (1) **Procedures.** The CAISO and each EIM Entity and EIM Entity Scheduling Coordinator shall establish procedures to address an interruption of EIM communications, which shall include steps to be taken to restore communications and address any impact on system or market operations as provided in Section 29.
 - (2) **Responsibilities.** An EIM Entity that loses communication with the CAISO remains responsible for managing its Balancing Authority Area imbalance needs without the EIM.
- (d) **Variable Energy Resource Forecast Communications.** If the EIM Participating Resource Scheduling Coordinator for a variable energy resource elects to use an independent forecasting service, it must make data transfer arrangements with the CAISO for the CAISO to receive the forecast in a format and on a schedule set forth in the Business Practice Manual.

29.7 EIM Operations Under Normal And Emergency Conditions.

- (a) **CAISO Controlled Grid Operations.** Section 7 shall not apply to EIM Market Participants in their capacities as such.
- (b) **Normal EIM Operations.** The CAISO shall administer the EIM to manage imbalance of the EIM Area under normal operations.
- (c) **Load Curtailment.** The CAISO will not issue Dispatch Instructions to an EIM Entity Scheduling Coordinator with respect to load that has not been bid into the EIM as an EIM Participating Resource.
- (d) **EIM Transfers.** The CAISO shall manage the EIM Transfers as aggregate dynamic schedules with each EIM Entity Balancing Authority Area, which—
 - (1) shall not require individual resource e-Tags;

- (2) shall not constitute inadvertent energy;
 - (3) shall reflect intra-hour incremental EIM Transfers between the CAISO and each EIM Entity Balancing Authority Area, with initial values that may be non-zero at the beginning of an operating hour if they represent ~~imbalance~~ ~~Imbalance energy~~ ~~Energy~~ dispatched in hourly, fifteen-minute, or five-minute intervals, or may be zero if they include only schedules for imbalance energy dispatched in fifteen-minute or five-minute intervals;
 - (4) shall be updated within 60 minutes after the end of each operating hour to include the integrated energy during the hour for the sum of all EIM Transfers within each Balancing Authority Area in accordance with WECC business practices for purposes of inadvertent energy accounting; and
 - (5) shall be subsequently updated as necessary consistent with the requirements of WECC, NERC, and NAESB standards and business practices.
- (e) **Dynamic Imbalance Schedule to Net Schedule Interchange.** The CAISO will—
- (1) model changes in the net five-minute schedule interchange values that result from EIM optimal dispatch as a dynamic schedule between the CAISO and EIM Entity for AGC control accuracy; and
 - (2) calculate the dynamic net schedule interchange for the CAISO and each EIM Entity Balancing Authority Area and derive from these dynamic net schedule interchanges the dynamic schedules on interties between the CAISO and EIM Entity Balancing Authority Areas for tagging purposes.
- (f) **EIM Entity Manual Dispatch.** The EIM Entity may issue a manual dispatch to an EIM Participating Resource or a non-participating resource in its Balancing Authority Area, outside of the EIM optimization, when necessary to address reliability or operational issues in the EIM Entity Balancing Authority Area that the EIM is not able to address through normal economic dispatch and congestion management, and upon communication to the CAISO the CAISO shall—
- (1) reflect manual dispatch instructions in fifteen-minute schedules and five-minute dispatch instructions; and
 - (2) treat an EIM Entity manual dispatch to an EIM Participating or non-participating resource as an imbalance instruction and settle it at the respective Locational Marginal Price, but the dispatch will not set that Locational Marginal Price.
- (g) **Actions in Response to an EIM Entity Manual Dispatch.** If the EIM Entity issues a manual dispatch to address circumstances on its system—
- (1) the EIM Entity shall immediately inform the CAISO that the EIM Entity Balancing Authority Area is under manual operation as specified in the Business Practice Manuals;

- (2) the EIM Entity shall immediately inform the CAISO of the manual dispatch to EIM Participating Resources and non-participating resources by submitting manual dispatch instructions for the affected resources; and
- (3) the EIM Entity remains responsible for informing the ~~reliability-Reliability coordinator-Coordinator~~ of ~~the any~~ EIM ~~contingency-Contingency~~ and may enforce constraints, as may be required.

(h) **EIM Disruption.**

- (1) **Declaration.** The CAISO may disrupt the EIM when in its judgment—
 - (A) operational circumstances (including failures of the EIM operation to produce feasible results or other market disruptions) in the EIM Area have caused or are in danger of causing an abnormal system condition in the CAISO Balancing Authority Area or an EIM Balancing Authority Area that requires immediate action to prevent loss of load, equipment damage, or tripping system elements that might result in cascading outages, or to restore system operation to meet Applicable Reliability Criteria; or
 - (B) EIM communications are interrupted and prevent an EIM Entity, EIM Entity Scheduling Coordinator, or EIM Participating Resource Scheduling Coordinator from accessing CAISO systems to submit or receive information.
- (2) **CAISO Response to EIM Disruption.** If the CAISO declares an EIM disruption, the CAISO may—
 - (A) maintain the EIM for other EIM Balancing Authority Areas by enforcing a net interchange constraint for the affected EIM Entity Balancing Authority Area to separate it from the remainder of the EIM Area;
 - (B) reduce or suspend EIM Transfers between one or more Balancing Authority Areas in the EIM Area; or
 - (C) instruct one or more Balancing Authorities in the EIM Area to assume manual dispatch of all resources within their Balancing Authority Area.
- (3) **EIM Entity Responsibility.** In response to an EIM disruption, all EIM Entities shall follow Reliability Standards applicable to their roles as Balancing Authorities in an effort to alleviate operational and system conditions and restore routine operations.
- (4) **EIM Scheduling Coordinator Responsibility.** All EIM Entity Scheduling Coordinators will promptly inform the CAISO of actions taken in response to an EIM disruption by the EIM Entities they represent through updates to the EIM Base Schedule, interchange e-Tags, transmission limit adjustments, or outage and derate information, as applicable.

- (5) **System Restoration.** The CAISO shall reinstate normal operation of the EIM at such time as it determines that the EIM disruption has been resolved.

(i) **Congestion Management and Unscheduled Flow.**

- (1) **EIM Inability to Resolve Congestion.** The CAISO will provide information to EIM Entities about congestion that the EIM cannot resolve.
- (2) **Initiation of Unscheduled Flow Procedures.** The CAISO or an EIM Entity may initiate WECC's Unscheduled Flow Mitigation Procedure if applicable for conditions in its Balancing Authority Area.
- (3) **CAISO Action.** When WECC's Unscheduled Flow Mitigation Procedure is initiated, the CAISO shall adjust the affected schedules as determined by the WECC procedure, CAISO operating procedures, and Business Practice Manuals for the CAISO Balancing Authority Area.

29.8 [Not Used]

29.9 Outages and Critical Contingencies.

- (a) **Applicability of Section 9.** Section 9 shall apply to outages of transmission and generation facilities within an EIM Entity Balancing Authority Area, except that --
- (b) **Transmission Maintenance Outages.**
 - (1) **Responsibility.** The EIM Entity shall be responsible for performing engineering studies, modeling, and approving Maintenance Outages on transmission facilities within the EIM Entity Balancing Authority Area, including the transmission capacity made available by an EIM Transmission Service Provider.
 - (2) **Notice.** The EIM Entity Scheduling Coordinator shall submit notice of approved transmission outages to the CAISO by the means set forth in the Business Practice Manual and in accordance with the deadlines set forth in Section 9.
 - (3) **Notice of Modification.** The EIM Entity Scheduling Coordinator may submit a notice of modification of an approved transmission outage and any resulting updates to intertie limits to the CAISO by the means set forth in the Business Practice Manual in accordance with the deadlines set forth in Section 9.
 - (4) **Contents of Notice.** Notice of approved transmission outages shall include —
 - (A) the start and finish date for each Maintenance Outage; and
 - (B) such information other than start and finish date as is required in Section 9.3.6 for transmission operators seeking approval of

outages.

(c) **Generation Maintenance Outages.**

- (1) **Responsibility.** The EIM Entity shall be responsible for performing engineering studies with regard to, and modeling and approving, Maintenance Outages for EIM Participating Resources and non-participating resources within the EIM Entity Balancing Authority Area.
- (2) **Notice.** The EIM Entity Scheduling Coordinator shall submit notice of approved generation outages to the CAISO by the means set forth in the Business Practice Manual in accordance with the deadlines set forth in Section 9.
- (3) **Contents of Notice.** Notice of approved generation outages shall include—
 - (A) the start and finish date for each Maintenance Outage; and
 - (B) such information other than start and finish date as is required in Section 9.3.6 for generating units seeking approval of outages.

(d) **Actions Regarding Maintenance Outages.**

- (1) **CAISO Evaluation of Maintenance Outages.** The CAISO will evaluate the impact of approved transmission and generation maintenance outages through the ~~day-ahead~~Day-Ahead market~~Market~~ and will inform the EIM Entity Scheduling Coordinator of any anticipated overloads.
- (2) **EIM Entity Action.** Based on the information provided by the CAISO to the EIM Entity Scheduling Coordinator, the EIM Entity will take such action to adjust or cancel outages as it determines to be necessary and inform the ~~reliability~~Reliability coordinator~~Coordinator~~.

(e) **Forced Outages.** An EIM Entity Scheduling Coordinator shall comply with the provisions of Section 9 with regard to forced outages of transmission and generation facilities within the Balancing Authority Area of the EIM Entity it represents.

(f) **Transmission Limits.** An EIM Entity Scheduling Coordinator must notify the CAISO by the means specified in the Business Practice Manual with respect to transmission limits on the transmission facilities made available within the EIM Entity Balancing Authority Area that need to be enforced in the EIM, including—

- (1) physical MVA or MW limits under base case and contingencies;
- (2) scheduling limits for intertie transactions based on e-tags; and
- (3) contractual limits on transmission interfaces where the EIM Entity Balancing Authority Area has transmission rights.

29.10. Metering and Settlement Data.

- (a) **Telemetry Requirements.** The EIM Entity shall ensure that each EIM Participating Resource and non-participating resource in an EIM Entity Balancing Authority Area that is not a generating unit or is a generating unit with a nameplate capacity in excess of 10 MW (including each aggregated resource with a total nameplate capacity in excess of 10 MW) and each intertie with the EIM Balancing Authority Area has telemetry meeting the requirements of the Business Practice Manual.
- (b) **Settlement Metering.** The EIM Entity shall ensure that each EIM Participating Resource and non-participating resource in an EIM Entity Balancing Authority Area becomes either a CAISO Metered Entity or a Scheduling Coordinator Metered Entity and complies with the requirements of Section 10 except as provided in Section 29.10(c).
- (c) **Exception to Requirements of Section 10.3.9.** In the absence of metering standards set by a Local Regulatory Authority, EIM Participating Resources and non-participating resources in an EIM Entity Balancing Authority Area may qualify as Scheduling Coordinator Metered Entities without the need for third party certification if the CAISO determines that the applicable metering standards meet or exceed the standards for CAISO Metered Entities.
- (d) **Interchange Meter Data.** Settlement metering is required for all EIM Entity Balancing Authority Area interties.
- (e) **EIM Imbalance Energy With External Balancing Authority Area.** For each intertie bid that clears the EIM resulting in a 15-minute intertie schedule at an intertie between an EIM Entity Balancing Authority Area and an external Balancing Authority Area, the EIM Entity Scheduling Coordinator must submit to the CAISO the corresponding hourly transmission profile and 15-minute energy profiles from the respective e-Tags, which must reflect the point of receipt and point of delivery that was declared in market bid submittal, at least 20 minutes before the start of the hour.

Comment [A7]: QUESTION: Is the CAISO anticipating that an EIM Entity may allow intertie bids into its BAA from a non-EIM BAA in order to meet 764 requirements and that the EIM may clear these bids in the 15 minute EIM market? If so, how would an EIM Entity know the 15-minute schedules throughout the hour 20 minutes before the start of the hour?

29.11. Settlements And Billing.

- (a) **Applicability.** This Section 29.11, rather than Section 11, shall apply to the CAISO settlement with EIM Entity Scheduling Coordinators and EIM Participating Resources Scheduling Coordinators of all EIM charges described herein.
- (b) **Imbalance Energy.**
 - (1) **15-Minute Instructed Imbalance Energy.**
 - (A) **Calculation.** The CAISO will calculate a resource’s 15-minute Instructed Imbalance Energy as the algebraic difference between its 15-minute energy schedule, which is the outcome of the ~~15-minute market~~ **FMM**, and the hourly ~~base schedule~~ **EIM Base Schedule** (for EIM Participating Resources).

- (B) **Settlement.** The CAISO will settle the 15-minute Instructed Imbalance Energy with the resource's Scheduling Coordinator at the 15-minute Locational Marginal Price.
- (2) **5-Minute Instructed Imbalance Energy.**
- (A) **Calculation.** The CAISO will calculate a resource's 5-minute Instructed Imbalance Energy as the algebraic difference between its ~~dispatch~~ Dispatch, ~~operating~~ Operating point ~~Point~~, which is the outcome of Real-Time Dispatch, and its 15-minute energy schedule, which is the outcome of the ~~15-minute market~~ FMM.
- (B) **Settlement.** The CAISO will settle the 5-minute Instructed Imbalance Energy with the resource's Scheduling Coordinator at the 5-minute Locational Marginal Price.
- (3) **Import/Export Schedules.**
- (A) **Calculation.** For static or 15-minute import/export schedules at EIM Entity scheduling points with non-EIM Balancing Authority Areas, the CAISO will determine Instructed Imbalance Energy according to the ~~operational~~ Operational adjustments ~~Adjustments~~ to the respective hourly or 15-minute e-Tags, calculated in the ~~Real Time Dispatch~~ 5-minute market.
- (B) **Settlement.** The CAISO will settle the ~~operational~~ Operational adjustments ~~Adjustments~~ with the EIM Participating Resource Scheduling Coordinator or EIM Entity Scheduling Coordinator that submitted the schedule at the 5-minute Locational Marginal Price.
- (4) **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 as the algebraic difference between the 5-minute meter data and the dispatch trajectory, as established by calculating the area under the curve between consecutive ~~RTD instructions~~ 5-minute dispatches, taking into account the applicable resource ramp rate.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance Energy with the EIM Participating Resource's Scheduling Coordinator at the Resource's 5-minute Locational Marginal Price.
- (B) **Non-Participating Resources.**

Comment [A8]: Given the EIM will set static 15 minute export schedules, should the existing tariff (e.g., section 11.21) or this proposed new section 29 of the tariff be modified to describe the Price Correction process and how it applies to these 15 minute export schedules out of the EIM?

Comment [A9]: QUESTION: If the import/export schedule is a 15 minute schedule and is static, how is it being adjusted on a 5 minute basis? The non-EIM BAA is not participating in EIM so it does not seem that EIM can adjust the schedule. In addition, it is a static schedule and not a dynamic schedule so it does not seem that the BAAs can adjust it. Why are the 15 minute imports and exports not settled as the 15 minute imbalance energy similar to how participating resources are settled?

- (i) **Calculation.** For non-participating resources in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy as the algebraic difference between the 5-minute meter data and the ~~base schedule~~EIM Base Schedule, plus any identified manual dispatch energy.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance Energy at the five-minute Locational Marginal Price with the EIM Entity Scheduling Coordinator.

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

- (i) **Calculation.** For non-participating load, the CAISO will calculate Uninstructed Imbalance Energy on a 5-minute basis as the algebraic difference between the hourly meter data provided by the EIM Entity Scheduling Coordinators and the ~~base schedule~~EIM Base Schedule.
- (ii) **Settlement.** The CAISO will settle Uninstructed Imbalance Energy with the EIM Entity at the hourly real-time LAP price described in Section 11.5.2.2.

Comment [A10]: How is CAISO calculating the difference between **hourly** meter data and the **hourly** base schedule and getting values that vary from one 5 minute period to another?

Comment [A11]: Since the CAISO is settling on an hourly average price, why is the calculation of Uninstructed Imbalance Energy on a 5 minute basis if everything is hourly?

(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~~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 EIM Entity at the ~~Hourly Real-Time LAP Price~~hourly real-time Load Aggregation Point price.

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

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

- (A) **Tier 1.** If, during any Trading Hour, the metered ~~remand-demand~~ within an EIM Entity Balancing Authority Area exceeds the ~~base schedule~~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 Imbalance Energy at the EIM Entity Load Aggregation Point a price that is 125% of the ~~corresponding Hourly Real-Time LAP Price~~hourly real-time Load Aggregation Point price.
- (B) **Tier 2.** If, during any Trading Hour, the ~~metered demand~~Metered Demand within an EIM Entity Balancing Authority Area exceeds the ~~base schedule~~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 entire ~~imbalance~~ ~~Imbalance energy~~ ~~Energy~~ at the EIM Entity Load Aggregation Point a price that is 200% of the ~~corresponding Hourly Real-Time LAP Price~~ ~~hourly real-time Load Aggregation Point price~~.

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

- (A) **Tier 1.** If, during any Trading Hour, the ~~metered demand~~ ~~Metered Demand~~ within an EIM Entity Balancing Authority Area is less than the ~~base schedule~~ ~~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 Imbalance Energy at the EIM Entity Load Aggregation Point a price that is 75% of the ~~corresponding Hourly Real-Time LAP Price~~ ~~hourly real-time Load Aggregation Point price~~.
- (B) **Tier 2.** If, during any Trading Hour, the ~~metered demand~~ ~~Metered Demand~~ within an EIM Entity Balancing Authority Area is less than the ~~base schedule~~ ~~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 entire Imbalance Energy at the EIM Entity Load Aggregation Point a price that is 50% of the ~~corresponding Hourly Real-Time LAP Price~~ ~~hourly real-time Load Aggregation Point price~~.

(3) **Distribution of Revenues.** The CAISO will calculate the total daily excess revenues received from under-scheduling and over-scheduling charges and allocate them to load ~~within the EIM Area~~ at the Load Aggregation Points that was not subject to under-scheduling or over-scheduling charges according to ~~metered demand~~ ~~Metered Demand~~.

(4) **Exemption.** An EIM Entity will be exempt from under-scheduling and over-scheduling charges if it uses the CAISO load forecast in its EIM Resource Plan and it approves ~~base schedule~~ ~~EIM Base Schedules~~ for its resources within +/- 1% of the CAISO load forecast, as determined according to the Business Practice Manual.

(e) **Neutrality Charges.**

(1) **In General.** The CAISO will collect neutrality charges from EIM Market Participants to recover differences in payments received from load and payments to resources at Locational Marginal Prices.

(2) **EIM Balancing Authority Area Real Time Market Neutrality Allocation.**

(A) **Financial Amount of EIM Transfers.** The CAISO will calculate the real-time net scheduled interchange financial amount of EIM Transfers as the product of the real-time net schedule interchange direction flow in MWhs and the Locational Marginal Price of the pricing node at the corresponding intertie.

Comment [A12]: The CAISO should clarify that this allocation should go to all load within the EIM Area that is not subject to the under/over-scheduling charges.

Comment [A13]: This section could benefit from additional details regarding what is calculated based on 15 minute market outcomes and prices and 5 minute market outcomes and prices.

Comment [A14]: Should this be the change in net scheduled interchange between the base schedule and the 15 minute schedule for the 15 minute market and the net change in net scheduled interchange between the 15 minute market and the 5 minute market? Should the delta in 15 minute net scheduled interchange be priced at the 15 minute LMP for the pricing node while the delta for the 5 minute NSI be priced at the 5 minute LMP for the pricing node? There will be net scheduled interchange in both the 15 minute market and the 5 minute market as well as 15 minute market LMPs and 5 minute market LMPs, should settlements recognize the difference?

- (B) **Initial Calculation.** The CAISO will calculate the EIM Balancing Authority Area real time market neutrality amount to be recovered on a 5-minute basis for each EIM Entity Balancing Authority Area as the sum of the financial amount of EIM Transfers and the settlement amounts for Instructed Imbalance Energy, Uninstructed Imbalance Energy, and Unaccounted For Energy, less the Balancing Authority Area real-time congestion balancing account.
 - (C) **Adjustment.** The CAISO will adjust the initial calculation of the EIM Balancing Authority Area real-time market neutrality amount by—
 - (i) dividing the sum of net EIM Transfers out of an EIM Entity Balancing Authority Area by the sum of the absolute value of Uninstructed Imbalance Energy due to load, the absolute value of Uninstructed Imbalance Energy due to supply, the absolute value of Unaccounted For Energy, and the net EIM Transfer out of the Balancing Authority Area;
 - (ii) summing the amounts for all EIM Entity Balancing Authority Areas that had EIM Transfers out in the 5-minute interval; and
 - (iii) distributing that sum to the initially determined amounts for each EIM Entity Balancing Authority Area that had EIM Transfers in during the 5-minute interval based on its pro-rata share of the EIM Transfers during the 5-minute interval.
 - (D) **Allocation.** The CAISO will allocate the adjusted real-time market neutrality amount to EIM Entity Scheduling Coordinators.
- (3) **EIM Area Neutrality Allocation.**
- (A) **Calculation.** The CAISO will calculate the EIM Area neutrality amount to be recovered on a 5-minute basis as the sum of the settlement amounts for Instructed Imbalance Energy, Uninstructed Imbalance Energy, Unaccounted For Energy, EIM Balancing Authority Area real time market neutrality, real-time ancillary service congestion revenues, and ~~virtual~~ Virtual awards ~~Awards~~, if applicable, less the real-time congestion balancing account.
 - (B) **Allocation.** The CAISO will allocate the EIM Area Neutrality amount to Scheduling Coordinators based on EIM Area ~~metered demand~~ Metered Demand.
- (4) **EIM Entity Balancing Authority Area Real-Time Congestion Balancing Account.**
- (A) **Real-Time Congestion Balancing Accounts.** The CAISO will calculate real-time congestion balancing accounts for neutrality charges

for each Balancing Authority Area in the EIM Area as sum for each ~~EIM Entity~~ Balancing Authority Area of the product of the contribution of that ~~EIM Entity~~ Balancing Authority Area to the marginal congestion component of the Locational Marginal Price at each resource location and the imbalance energy, including convergence bids, at that resource location, minus any ~~convergence-Convergence bid Bid adjustment~~ Adjustment.

Comment [A15]: This rule should apply to all BAAs within the EIM Area, not just EIM Entity BAAs.

(B) **Convergence Bid Adjustment.**

- (i) **Individual Constraint ~~Convergence Bid Impact Calculation.~~** For each ~~Transmission constraint~~ Constraint in an EIM Entity Area, the CAISO will calculate a ~~convergence-Convergence bid Bid adjustment~~ Adjustment as the product of the ~~15-minute market~~ FMM shadow ~~Shadow price~~ Price and the lesser of (1) the flow contribution of ~~all Virtual Bids~~ ~~convergence bids in the EIM Area~~ and (2) the flow contributions of all ~~day-ahead~~ Day-Ahead energy and EIM ~~base~~ Base schedules ~~Schedules~~ less the flow contributions of 15-minute ~~energy~~ Energy ~~schedules~~ Schedules in the EIM Area, but not less than zero.
- (ii) **EIM Balancing Authority Area Calculation.** Each EIM Balancing Authority Area's convergence bid adjustment shall be the sum of the ~~individual~~ Individual ~~constraint~~ Constraint ~~Convergence Bid Impact~~ calculation for all constraints within that EIM Balancing Authority Area.

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

- (i) the real-time congestion balancing account for neutrality for each EIM Entity Balancing Authority Area to EIM Entity Scheduling Coordinators;
 - (ii) the real-time congestion balancing account for neutrality for the CAISO Balancing Authority Area to ~~measured~~ Measured ~~demand~~ Demand, excluding demand associated with existing contracts and transmission ownership right self-schedules; and
 - (iii) the sum of the adjustment to Scheduling Coordinators who submitted convergence bids based on the pro rata contribution of each convergence bid to the total calculated convergence bidding adjustment.
- (5) **EIM Neutrality Settlement.** The CAISO will charge each EIM Entity's allocated neutrality amounts to the EIM Entity Scheduling Coordinator.
- (6) **Virtual Schedule Congestion Balancing Account.** The CAISO will charge the virtual schedule congestion balancing account to each virtual

schedule's pro rata share of the positive out-of-market revenues of all virtual schedules.

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

- (1) **In General.** The CAISO will provide Eligible Bid Cost Recovery Resources in the EIM with Real-Time Bid Cost Recovery to ensure that the resources receive sufficient Real-Time Market revenues to cover bid costs and commitment costs.
- (2) **Calculation of Real-Time Bid Cost Recovery.** The CAISO will calculate Real-Time Bid Cost Recovery payments in accordance with Section 11.8, except that:

(A) the EIM Participating Resources shall be eligible only for recovery of RTM Energy Bid Cost, RTM Start Up Costs and RTM Minimum Load Costs; and

(B) 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.

(3) **Allocation.**

(A) **EIM Entity Hourly RTM Bid Cost Uplift.** The Net RTM Bid Cost Uplift for the Trading Hour shall be the product of the uplift ratio in Section 11.8.6.3 and the sum over all of the 5-minute Settlement Intervals of the Trading Hour of any positive Net RTM Bid Cost Uplift plus the sum of Settlement Interval on the Trading Hour of any EIM Transfer adjustment.

(B) **EIM Transfer Adjustment.** The CAISO shall calculate the EIM Transfer adjustment by—

- (i) dividing the sum of net EIM Transfers out of an EIM Entity Balancing Authority Area by the sum of the absolute value of uninstructed imbalance energy due to load, the absolute value of uninstructed imbalance energy due to supply, the absolute value of unaccounted for energy, and the net EIM Transfer out of the Balancing Authority Area;
- (ii) summing the amounts for all EIM Entity Balancing Authority Area that had EIM Transfers out in the 5-minute interval; and
- (iii) distributing that sum to the initially determined amounts for each **EIM Entity** Balancing Authority Area **in the EIM Area** that had EIM Transfers in during the 5-minute interval based on its pro-rata share of the EIM Transfers during the 5-minute interval.

Comment [A16]: This section should provide additional details to show how BCR is calculated based on results from the two market processes. Specifically, it should show that BCR is the difference between 1) total revenues that resources will receive in the 15 minute market and the five minute market and 2) sum of the 15 minute market and the 5 minute market costs.

Furthermore, this section should also specify that if a resource has its start time adjusted by EIM but there is no shut down time between the start called by EIM and the start that would be self-scheduled, the resource should not recover startup costs.

Comment [A17]: This rule should apply to all BAAs within the EIM Area, not just EIM Entity BAAs.

- (4) **EIM Entity Real-Time Bid Cost Uplift Charges.** The CAISO will charge each EIM Entity's allocated Net RTM Bid Cost Uplift amounts to the EIM Entity Scheduling Coordinator.
- (g) **Flexible Ramping Constraint Allocation.**
- (1) **Compensation.** The CAISO will calculate awards for Flexible Ramping Constraint capacity according to Section 11.25.1, except that the Real-Time ASMP for Spinning Reserves will be deemed to be zero in determining awards to EIM Participating Resources.
- (2) **Allocation.** The CAISO will allocate Flexible Ramping Constraint costs to each EIM Entity Balancing Authority Area according to the ratio of the product of the flexible ramping capacity in that Balancing Authority Area and the marginal flexible ramp price in that Balancing Authority Area to the sum of such products for all EIM Entity Balancing Authority Areas.
- (3) **EIM Flexible Ramping Constraint Charges.** The CAISO will charge each EIM Entity's allocated flexible ramping constraint costs to the EIM Entity Scheduling Coordinator.
- (h) **EIM Initial Fee.** The CAISO will charge Balancing Authority Areas that enter an implementation agreement pursuant to Section 29.2(b) an EIM initial fee to cover a share of the capital and O&M costs associated with setting up the EIM. The fee will be established by the implementation agreement as accepted by FERC.
- (i) **EIM Administrative Charge.**
- (1) **In General.** ~~For 2014, The~~ the CAISO will charge EIM Market Participants a fixed EIM Administrative Charge of \$0.19/MWh, applied as specified in subsection (i)(2). For subsequent years, the CAISO will establish a new EIM Administrative Charge as part of its Grid Management Charge stakeholder process.
- (2) **Allocation.** The CAISO will allocate the EIM Administrative Charge to each EIM Market Participant according to the sum of (A) the greater of the gross imbalance energy of the EIM Market Participant's supply and five-percent of the EIM Market Participant's gross supply, and (B) the greater of the gross imbalance energy of the EIM Market Participant's demand and five percent of the EIM Market Participant's gross demand.
- (3) **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 Coordinator and Participating Resource Scheduling Coordinators a fee for the variable energy resource forecasting services in accordance with Appendix F,

Comment [A18]: The CAISO should specify the \$0.19/MWh value is only applicable in 2014; and thereafter, the CAISO will establish a new EIM Administrative Charge as part of its Grid Management Charge stakeholder process.

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- (2) **Waiver.** The CAISO will waive the variable energy forecast charge if an EIM Entity has an independent forecast for its variable energy resources and provides its forecast to the CAISO.
- (k) **Transmission Service.** The CAISO will charge EIM Market Participants for EIM transmission service according to Section 29.26.
- (l) **Settlement Schedule.** The CAISO shall assess EIM charges and fees in accordance with the settlements and billing process and schedule set forth in Section 11.

(m) **Financial Adjustments.**

Comment [A19]: Rules regarding financial adjustments should be specified, consistent with section 3.7.9 of the Draft Final Proposal (p. 72)

29.12 Creditworthiness.

- (a) **Requirements.** EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators shall comply with the creditworthiness and other requirements of Section 12.
- (b) **Credit Default.** In the event of a credit default in the EIM, the credit default settlement provisions in Section 12 shall apply.

29.13 Dispute Resolution.

- (a) **Invoices.** Confirmation and validation of any dispute associated with the EIM is subject to Section 11.29.8, and shall be managed through the customer inquiry, dispute, and information system and as provided in the Settlement and Billing Business Practice Manual.
- (b) **Other Disputes.** EIM Market Participants shall agree to dispute resolution pursuant to Section 13.

29.14 Force Majeure, Indemnity, Liabilities, and Penalties. The force majeure, indemnity, liability and penalty provisions of Section 14 shall apply to the operation of and transactions in the EIM.

29.15 [Not Used]

29.16 [Not Used]

29.17 EIM Transmission System.

- (a) **Registration.** Each EIM Entity Scheduling Coordinator shall–
 - (1) register in the EIM Transmission Service Registry the static network topology information associated with transmission capacity that it owns, controls or has a contractual entitlement that may be used in the EIM;
 - (2) register in the EIM Transmission Service Registry the static network topology information associated with transmission capacity that each EIM

Comment [A20]: QUESTION: Do EIM Entity SCs own transmission capacity or have rights to it? If not, should they be held accountable for registering this information?

Transmission Service Provider owns, controls or has a contractual entitlement within the EIM Entity Balancing Authority Area that may be used in the EIM;

- (3) update the registered information no less frequently than the timelines for updates to the Full Network Model as provided in the CAISO Tariff and Business Practice Manuals; and
 - (4) ensure that the information provided to the Transmission Service Registry is accurate and complete.
- (b) **Availability.** Each EIM Entity shall ensure that all EIM Transmission Service Providers in its Balancing Authority make available in real-time for use in the EIM transmission capacity that is registered in the EIM Transmission Service Registry and that is not otherwise encumbered, reserved, scheduled, or being used by its transmission customers or by others.
- (c) **Information on Availability.** Each EIM Entity Scheduling Coordinator shall inform the CAISO in the manner and by the deadlines specified in the Business Practice Manual regarding the availability of the registered transmission capacity for use in real-time.
- (d) **EIM Transfer Limit.** A Balancing Authority that has entered an agreement to become an EIM Entity shall establish the maximum EIM Transfer limit at least ninety days prior to the date upon which it will become an EIM Entity.
- (e) **EIM Transfer Availability.** The EIM Transfer limit shall be determined by the EIM Entity Scheduling Coordinator and communicated to the CAISO prior to the start of the next EIM operating interval in accordance with the procedures and timelines for submission and acceptance in the applicable Business Practice Manual.

29.18 [Not Used]

29.19 [Not Used]

29.20 Confidentiality Provision in Addition to Section 20. Each EIM Entity Scheduling Coordinator and EIM Participating Resource Scheduling Coordinator must execute a Non-Disclosure Agreement with the CAISO in order to access market data that the CAISO provides on the California Market Results Interface that are not publicly available.

29.21 [Not Used]

29.22 Miscellaneous Provisions in Addition to Section 22.

- (a) **Tax Liability.** To the extent that the CAISO would incur any tax liability as a result of the Energy Imbalance Market, as market operator or as central counterparty to EIM 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.** Neither the CAISO nor the EIM Entity is a purchasing selling entity for EIM Transfers.
- (c) **Title for Energy.** Title for energy in the Energy Imbalance Market passes directly from the entity that holds title when the energy enters the CAISO Controlled Grid to the entity that removes the energy from the CAISO Controlled Grid.

29.23 [Not Used]

29.24 [Not Used]

29.25 [Not Used]

29.26 Transmission Rates And Charges.

- (a) **Transmission Charges for CAISO Facilities.**
 - (1) **Access Charge.** Transmission service charges for EIM transactions with sinks on the CAISO Controlled Grid are governed by Section 26.
 - (2) **Wheeling Access Charge.** EIM transfers from the CAISO Controlled Grid to an EIM Area using the contractual or ownership rights of an EIM Entity or an EIM Transmission Provider shall not be exports and shall not be subject to the Wheeling Access Charge under Section 26.
- (b) **Non-CAISO Facilities.** The determination and charges for transmission service charges for EIM transactions on facilities that are part of the contractual or ownership rights made available to the EIM by an EIM Entity will be the responsibility of the EIM entity that made the facilities available, except that no EIM Transmission Service Provider may impose a separate charge for EIM Transfers that use its facilities.

29.27 CAISO Markets And Processes. Section 27 shall apply to EIM Market Participants and to the CAISO's operation of the EIM according to its terms.

29.28 Inter-SC Trades. EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators may not submit inter-SC trades.

29.29 [Not Used]

29.30 Bid and Self-Schedule Submission For CAISO Markets. Section 30 shall apply to EIM Market Participants and to the CAISO's operation of the EIM according to its terms.

29.31 Day-Ahead. EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators may not submit bids in the CAISO's Day-Ahead Market on behalf of EIM Market Participants that they represent.

29.32 Greenhouse Gas Regulation.

- (a) **Greenhouse Gas Bid Adders.**
 - (1) **Bid Submission.** EIM Participating Resources may submit a bid adder

that is based on the estimated cost of compliance with California Air Resources Board greenhouse gas regulations, which may include the cost of allowances, uncertainty on the final resource specific emission factor, and other costs of greenhouse gas compliance.

- (2) **Cap on Bid Adder.** The sum of the greenhouse gas bid adder and the energy cost portion of the bid cannot exceed \$1000/MWh.
 - (3) **Minimum Bid Adder.** The greenhouse bid adder shall not be less than \$0/MWh.
 - (4) **Market Power Mitigation.** The greenhouse gas bid adder shall not be subject to local market power mitigation.
- (b) **Consideration of Greenhouse Gas Compliance in Market Optimization.** The CAISO shall modify its Security Constrained Economic Dispatch optimization in the Real-Time Unit Commitment and Real-Time Dispatch to take into account greenhouse gas bid adders in selecting energy produced by EIM Participating Resources outside California for import into California but not when selecting EIM Participating Resources to serve load outside of California.
- (c) **Effect on Locational Marginal Price.** Greenhouse gas compliance costs shall be included in the shadow prices for the net imbalance energy export allocation as a fourth component in the Locational Marginal Prices for EIM Entity Balancing Authority Areas.
- (d) **Notice to EIM Participating Resource.** The CAISO will notify the EIM Participating Resource Scheduling Coordinator through the dispatch instruction whether the resource is deemed to have been imported in to California as a result of the EIM optimization.
- (e) **Reporting Requirements.** The CAISO will report the portion of the 15-minute energy schedule and the portion of 5-minute energy dispatch that is associated with energy imports to CAISO for all EIM Participating Resources as part of the Real-Time Market results publication. Each EIM Participating Resource Scheduling Coordinator will aggregate and report energy imports to the to the California Air Resources Board pursuant to the Regulation for Mandatory Reporting of Greenhouse Gas Emissions.

29.33 Hour-Ahead Process. Hour-Ahead Processes for the EIM shall be governed by Section 33.

29.34 EIM Operations

- (a) **In General.** The CAISO shall operate the EIM according to Section 34, as supplemented by this Section 29.34.
- (b) **Applicability.** EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators will submit schedules and other necessary data to the CAISO for use in the EIM pursuant to this Section 29.34 and not pursuant to Section 34.

Comment [A21]: The CAISO should specify the entity responsible for reporting these energy imports (i.e., EIM Participating Resource Scheduling Coordinator).

Comment [A22]: This section may no longer exist once the FERC 764 changes are approved

- (c) **Submission Deadlines.** If an EIM Entity Scheduling Coordinator or EIM Participating Resource Scheduling Coordinator fails to submit a schedule according to the timelines established in this Section 29.34, the CAISO will not accept the schedule or use it in the EIM.
- (d) **Demand Forecast.**
- (1) **In General.** In accordance with procedures set forth in the Business Practice Manual, the CAISO shall develop short-term and mid-term forecasts by Demand Forecast Zone within each EIM Entity Balancing Authority Area, separately from the CAISO Balancing Authority Area.
 - (2) **Short Term Forecast.** The short-term forecast 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 out through a 4.5-hour horizon.
 - (3) **Mid-Term Forecast.** The mid-term forecast shall produce hourly values for the next hour through the next 7 days.
 - (4) **EIM Entity SC Demand Forecast.**
 - (A) **In General.** An EIM Entity Scheduling Coordinator may opt to provide a non-binding demand forecast, net of behind-the-meter generation that is not registered as a resource, as part of the hourly ~~base schedule~~EIM Base Schedules.
 - (B) **Timing and Scope.** The EIM Entity Scheduling Coordinator must provide any such forecasts by 10:00 a.m. for the next 7 days.
 - (C) **Updates.** The EIM Entity Scheduling Coordinator must update any such 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 ~~base schedule~~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 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. 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(d)(4).

(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) **Balance.**

(A) **Requirement.** The ~~base schedule~~EIM Base Schedules included in the EIM Resource Plan must balance the demand forecast for each EIM Entity Balancing Authority Area.

(B) **Insufficient Supply.** An EIM Resource Plan shall be deemed to have insufficient energy supply if the sum of ~~base schedule~~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 for the associated EIM Entity Balancing Authority Area.

Comment [A23]: Should specify whether this is the CAISO's demand forecast or the EIM Entity's demand forecast.

(C) **Excess Supply.** An EIM Resource Plan shall be deemed to have excessive energy supply if the sum of ~~base schedule~~EIM Base Schedules from non-participating resources and the sum of the lowest quantity offers in the energy bid range from EIM Participating Resources is greater than the total demand forecast for the associated EIM Entity Balancing Authority Area.

Comment [A24]: Should specify whether this is the CAISO's demand forecast or the EIM Entity's demand forecast.

(4) **Contents.** The Resource Plan shall comprise—

- (A) EIM Base Schedules;
- (B) energy Bids (applicable to EIM Participating Resources only);
- (C) regulation Reserve MW-Up (applicable to resources only);
- (D) regulation Reserve MW-Down (applicable to resources only);
- (E) operating Reserve MW-Spinning;
- (F) operating Reserve MW-Non-Spinning; and
- (G) if the EIM Entity Scheduling Coordinator is not relying on the CAISO's demand forecast, a demand forecast.

(5) **Adjustment.** The EIM Entity Scheduling Coordinator may adjust the components of the EIM Resource Plan as necessary following CAISO bid validation reviews 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 must submit real-time hourly EIM Base Schedules meeting the requirements of the Business Practice Manual at least 75 minutes before the start of the operating hour.
 - (B) **Revisions.** EIM Entity Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators and non-participating resources in the EIM Entity Balancing Authority Area may revise real-time hourly EIM Base Schedules meeting the requirements of the Business Practice Manual at or before 55 minutes and EIM Entity Scheduling Coordinators may do so again at or before 45 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 bid for each operating hour of resources in the EIM Entity Balancing Authority Area participating in the EIM, 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~~**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 intertie scheduling points 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.** An EIM Entity Scheduling Coordinator may allow non-participating resources, loads, and other customers to submit EIM Base Schedule information through an interface hosted by the CAISO.
- (g) **Initial EIM Base Load Schedule.** The CAISO will derive an initial EIM Base Load Schedule for each EIM Entity from the CAISO demand forecast 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.
 - (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) **Intertie Schedules with Other Balancing Authorities.**
 - (1) **In General.** EIM Entity Scheduling Coordinators must submit intertie schedules with other Balancing Authority Areas at the relevant intertie scheduling points and must update these intertie schedules with any

adjustments, when applicable, as part of the hourly resource plan revision.

- (2) **Bidding Intertie Schedules.** An EIM Entity Scheduling Coordinator may bid an intertie schedule between the EIM Entity and a neighboring Balancing Authority Area into the ~~15-minute market~~FMM if both Balancing Authority Areas support economic bidding of 15-minute intertie scheduling under FERC Order No. 764.

- (j) **CAISO Validation.** The CAISO market systems will validate the initial Resource Plan by 1:00 p.m. on the day before the Operating Day, and within 15 minutes of the submission of Base Schedules or adjustments to 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 Resource Plan provides insufficient flexible ramping capacity to meet requirements determined under Section 29.34(o); and
 - (3) if the CAISO anticipates congestion based on the submitted EIM Resource Plans.

- (k) **Supply Insufficiency.** If supply in the Base Schedules is insufficient to meet the load forecast, in which case the CAISO will reduce the load in the ~~base schedule~~EIM Base Schedule, which will result in the shortfall being settled through EIM.

- (l) **EIM Optimization.** The CAISO will perform the EIM optimization using Real-Time Unit Commitment and Real-Time Dispatch consistent with the procedures and timelines in Section 34.

- (m) **Transmission Constraint Relaxation.** If an EIM Entity Scheduling Coordinator's approved resource plan does not have sufficient bids to resolve congestion, the CAISO will relax the relevant transmission constraints in the market clearing solution and the EIM Entity will become responsible for managing its congested constraints through other means, and the CAISO will determine prices for congestion consistent with transmission constraint relaxation parameters established in the Business Practice Manuals until the constraint is no longer binding in the EIM.

- (n) **EIM Output Results.** The CAISO will provide 15-minute energy schedules and 5-minute dispatch instructions to the EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators in the same manner as it provides them to other Scheduling Coordinators under Section 34.

- (o) **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-EIM Area Flexible Ramping Constraint~~flexible

Comment [A25]: What is a BAA's own portion of the combined requirement? Isn't each BAA only responsible for meeting its individual, standalone requirement?

ramping requirements for the next hour.

- (2) **Nature.** The CAISO shall determine a Flexible Ramping Constraint flexible ramp capacity requirement is a minimum requirement for each Balancing Authority Area in the EIM Area and each combination thereof based upon the transfer capability between Balancing Authority Areas, and for the EIM Area.
- (3) **Determination.** Under the procedures set forth in the Business Practice Manual, the CAISO will determine the Flexible Ramping Constraint flexible ramping requirement using the CAISO demand forecast and CAISO variable energy resource for each Balancing Authority Area in the EIM Area and, for each combination thereof, and for the EIM Area as upward ramping needs based on the demand forecast change across consecutive intervals, demand forecast error, and energy production variability.
- (4) **15-Minute Requirement.** For the purpose of procurement on a 15-minute basis, the 5-minute requirements may be aggregated into a 15-minute requirement by summing the three 5-minute interval requirements into a 15-minute requirement for each 15-minute RTUC interval.
- (5) **Sufficiency Determination.**
 - (A) **Review.** The CAISO will review the EIM Resource Plan as set forth in the Business Practice Manual and verify that it has sufficient bids for ramping capability to meet the EIM Entity Balancing Authority Area flexible ramping capacity requirement.
 - (B) **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 imbalance energy export with reference to the base net schedule interchange) before the operating hour, then it will have partially fulfilled its Flexible Ramping Constraint flexible ramp requirement for that hour because it can retract that EIM transfer during the hour as needed and the CAISO will apply a Flexible Ramping Constraint flexible ramping requirement credit in the flexible ramp sufficiency test for that EIM Entity Balancing Authority Area equal to the net outgoing EIM transfer before the operating hour.
 - (C) **Sufficiency of an EIM Entity Balancing Authority Area with a Net Ingoing EIM Transfer.** If an EIM Entity Balancing Authority Area that has a net incoming EIM transfer (net imbalance energy import with reference to the base net schedule interchange) before the operating hour; then the Flexible Ramping Constraint flexible ramping requirement for that EIM Entity Balancing Authority Area in the flexible ramping sufficiency test will be considered sufficient if it meets its own Flexible Ramping Constraint flexible ramping requirement, irrespective of the incoming EIM Transfer, which will be the result of optimal dispatch

Comment [A26]: The CAISO should use the defined term Flexible Ramping Constraint requirement consistently throughout this section.

in the EIM Area.

- (6) **Effect of Insufficiency. If an EIM Entity Balancing Authority Area fails the flexible ramping sufficiency test—**
- (1) it will not be included in any Balancing Authority Area combination constraints;
 - (2) the CAISO will formulate only individual constraints for the EIM Entity Balancing Authority Area individual flexible ramping requirements; and
 - (3) the CAISO will limit transfer into the EIM Entity Balancing Authority Area.

(p) **Reserve Sharing.**

(1) **Schedules.**

- (A) **EIM Entity Responsibility.** Each EIM Entity is responsible for its DCS compliance, or share of such compliance under the terms of a reserve sharing group agreement, and it and the reserve sharing group are responsible for deploying operating reserves and regulation in conformance with NERC and WECC requirements.
- (B) **EIM Entity Scheduling Coordinator Responsibility.** The EIM Entity Scheduling Coordinator shall—
 - (i) include any energy schedules for deployment of reserves in the hourly ~~base-schedule~~EIM Base Schedules, if time permits, or in manual dispatch instructions, in which case they will be settled in EIM as bilateral (self-scheduled) transactions, with changes in resource output balanced with other changes in resource output or in tagged interchange;
 - (ii) immediately inform the CAISO of operating reserve contingencies and resource ~~base-schedule~~EIM Base Schedule adjustments in response to contingencies; and
 - (iii) if a resource's actual response differs from the resource ~~base-schedule~~EIM Base Schedule adjustment, supply a resource ~~base-schedule~~EIM Base Schedule update showing the actual resources that have deployed during the event by no later than 1:00 a.m. seven days after the operating day in which the event occurred.
- (C) **CAISO Actions.**
 - (i) **Prior to Update.** Until resource operating limit updates are received, the CAISO will continue to send dispatch

instructions based upon pre-event operating limits.

- (ii) **After Update.** After ~~base-schedule~~EIM Base Schedule updates are received and EIM dispatches 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 in the EIM Entity Balancing Authority Area—
 - (i) the EIM Entity must submit assisting Balancing Authority Area load to contingent 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 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, 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 Resource Production Forecast.** The CAISO shall treat variable energy resources in accordance with Section 34.

29.35 Market Validation And Price Correction. Market validation and price correction for the EIM shall be governed by Section 35, except that references to the Real-Time Market shall be deemed references to the EIM.

29.36 [Not Used]

29.37 Rules Of Conduct. EIM Entity Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators shall be subject to the provisions of Section 37 except for Section 37.2.

29.38 Market Monitoring. The CAISO Department of Market Monitoring shall provide market monitoring services for the EIM, including—

- (a) monitoring markets administered by the CAISO for actual or potential ineffective market rules, market abuses, market power or violations of FERC or CAISO market rules prohibiting provision of false information or market manipulation;

- (b) coordinating with CAISO business units that review and monitor the performance and quality of the CAISO markets;
- (c) providing recommendations about actual or potential market design flaws or ineffective market rules to the CAISO and FERC; and
- (d) referring a matter to FERC if the Department of Market Monitoring determines there is sufficient credible information-evidence that a violation of FERC or CAISO market rules has occurred.

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 EIM, except that—
 - (1) the CAISO shall apply the procedure separately for each EIM Entity Balancing Authority Area by performing tests for constraint competitiveness and bid mitigation only on resources situated within the same Balancing Authority Area in which a constraint is located;
 - (2) the CAISO shall only subject a resource to bid mitigation for market power within the same Balancing Authority Area in which ~~it~~ the resource is located situated;
 - (3) the three-pivotal-supplier test used to determine the competitiveness of constraints shall not exclude any suppliers participating in the EIM; and
 - (4) the CAISO may establish different reference buses for each Balancing Authority Area, which need not be within the Balancing Authority Area, for the purpose of computing determining shift factors for use used in the market power mitigation procedures, based on the typography-network topology of each Balancing Authority Area and consideration of the bus at which the congestion component of Locational Marginal Prices is least influenced by market power.
- (b) **Dynamic Competitive Path Assessment.** The CAISO shall conduct the dynamic competitive path assessment to determine for each EIM Entity Balancing Authority Area whether a path is which of its Transmission Constraints are competitive versus non-competitive, consistent with Section 39.7.2, except that—
 - (1) EIM Participating Resource Scheduling Coordinators shall submit to the CAISO information required ~~by the CAISO~~ to perform the dynamic competitive path assessment;
 - (2) the Dynamic dynamic Competitive competitive Path-path Assessment assessment shall not exclude suppliers participating in the EIM from the test used to determine the competitiveness of constraints on the basis that they may be net buyers of energy in the EIM; and

(3) the ~~mitigation-reference-Reference bus-Bus used in the Market Power Mitigation procedure~~ for EIM Participating Resources is not required to be the same as the ~~Reference Bus used in the Market Power Mitigation procedure for resources within the CAISO's mitigation-reference bus-Balancing Authority Area.~~

(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 dynamic competitive path assessment and the congestion pricing results of the pre-market run so as to determine which resources may have local market power due to congestion on ~~an-one or more uncompetitive-non-competitive~~ constraints, consistent with Section 31.2.1, except that—

(1) the CAISO will not mitigate resource bids for scheduling limit constraints with Balancing Authority Areas that do not participate in the EIM;

(2) the Locational Marginal Price decomposition shall only be triggered if the resource is effective at relieving congestion on one or more an uncompetitive-non-competitive constraints within the same Balancing Authority Area in which the resource is located-situated, except as described in paragraph (4);

(3) EIM Participating Resources shall be mitigated to relieve congestion on uncompetitive-non-competitive constraints within the same Balancing Authority Area in which they are located-situated except as described in paragraph (4); and

(4) the EIM Transfer constraints may be included in the market power mitigation procedures if CAISO determines that EIM Entity Balancing Authority Area market power exists, and if such action is authorized by FERC.

(d) **Default Energy Bids.** The CAISO ~~will-shall~~ use the methods and standards set forth in Section 39.7.1 for setting to calculate default energy bids Default Energy Bids for EIM Participating Resources Locational Marginal Price in the EIM, consistent with Section 39.7.

29.40 [Not Used]

29.41 [Not Used]

29.42 [Not Used]

29.43 [Not Used]

29.44 [Not Used]

Appendix A New Definitions

- Energy Imbalance Market (EIM)

The CAISO's voluntary real-time market to manage transmission congestion and optimize procurement of imbalance energy (positive or negative) to balance supply and demand deviations for the EIM Area through economic bids submitted by EIM Participating Resource Scheduling Coordinators in the ~~fifteen-minute market~~ FMM and five-minute markets.

Comment [A27]: This new definition identifies the EIM as a "voluntary" market, and the modified definition of RTM further below seems to indicate that the EIM will become the RTM once this tariff is approved by FERC. Where does the CAISO BAA fit in the EIM and RTM definitions? The EIM is not voluntary for the CAISO BAA nor are some of the RTM functions relevant to the EIM.

- EIM Area

The combined CAISO and EIM Entity Balancing Authority Areas.

- EIM Base Schedule

A forward Energy Schedule submitted by an EIM Entity Scheduling Coordinator that provides hourly-level forecasts for load, hourly-level schedules for resources, and hourly-level schedules interchanges and other information that is used by the CAISO as the baseline to measure deviations for purposes of EIM ~~Settlement~~ settlement.

- EIM Entity

A Balancing Authority that represents one or more EIM Transmission Service Providers and that enters into the EIM Entity Agreement with the CAISO to enable the EIM to occur in its Balancing Authority Area.

- EIM Entity Agreement

An agreement between an EIM Entity and the CAISO, a pro forma version of which is set forth in Appendix B.

- EIM Entity Scheduling Coordinator

The EIM Entity, or a third party designated by the EIM Entity, that is certified by the CAISO and that enters into the pro forma EIM Entity Scheduling Coordinator Agreement under which it is a Scheduling Coordinator and a Market Participant and is responsible for meeting the requirements specified in Section 29 on behalf of the EIM Entity.

- EIM Entity Scheduling Coordinator Agreement

An agreement between an EIM Entity Scheduling Coordinator and the CAISO, a pro forma version of which is set forth in Appendix B.

- EIM Market Participant

An EIM Entity, EIM Entity Scheduling Coordinator, EIM Participating Resource, or EIM Participating Resource Scheduling Coordinator.

- EIM Participating Resource

A resource that (1) can deliver energy, curtailable demand, demand response services, or similar services; (2) is located within an EIM Entity Balancing Authority Area; (3) is eligible to be, and elects to participate in the EIM as, a Market Participant, and that enters into the pro forma EIM Participating Resource Agreement under which it is responsible for meeting the requirements specified in Section 29.

- EIM Participating Resource Agreement

An agreement between an EIM Participating Resource and the CAISO, a pro forma version of which is set forth in Appendix B.

- EIM Participating Resource Scheduling Coordinator

The participating resource or a third party designated by the resource, that is certified by the CAISO and enters into the pro forma EIM Participating Resource Scheduling Coordinator Agreement under which it is a Scheduling Coordinator and Market Participant and is responsible for meeting the requirements specified in Tariff Section 29 on behalf of the resource.

- EIM Participating Resource Scheduling Coordinator Agreement

An agreement between the EIM Participating Resource Scheduling Coordinator and the CAISO, a pro forma version of which is set forth in Appendix B.

- EIM Resource Plan

The combination of load ~~base-schedule~~EIM Base Schedules, generation ~~base-schedule~~EIM Base Schedules, interchange ~~base-schedule~~EIM Base Schedules, ancillary services plans of the EIM Entity, and the bid ranges of EIM Participating Resources. .

- EIM Transfer

The transfer of real-time energy between an EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area, or between EIM Entity Balancing Authority Areas, using transmission capacity available in the EIM. The EIM Transfer is not a Real-Time Interchange Export or a Real-Time Interchange Import.

- EIM Transmission Service Provider

An EIM Entity or third party that owns transmission or has transmission service rights in the EIM Entity Balancing Authority Area and that chooses to make transmission service available for EIM use through an EIM Entity.

- EIM Transmission Service Registry

A data base maintained by the CAISO and containing information about transmission capacity available for use in the EIM.

Amended Definitions

-CAISO Metered Entity

- (a) any one of the following entities that is directly connected to the CAISO Controlled Grid:
 - i. a Generator other than a Generator that sells all of its Energy (excluding any Station Power that is netted pursuant to Section 10.1.3) and Ancillary Services to the Utility Distribution Company or Small Utility Distribution Company in whose Service Area it is located;
 - ii. an MSS Operator; or
 - iii. a Utility Distribution Company or Small Utility Distribution Company; and
- (b) any one of the following entities:
 - i. a Participating Generator;
 - ii. a Participating TO in relation to its Tie Point Meters with other TOs or Balancing Authority Areas;
 - iii. a Participating Load;
 - iv. a Participating Intermittent Resource; ~~or~~
 - v. an EIM Participating Resource; or
 - vi. a utility that requests that Unaccounted for Energy for its Service Area be calculated separately, in relation to its meters at points of connection of its Service Area with the systems of other utilities.

-CAISO Markets

Any of the markets administered by the CAISO under the CAISO Tariff, including, without limitation, the DAM, HASP, RTM, EIM, transmission, and Congestion Revenue Rights.

Comment [A28]: May need to remove the reference to HASP once the FERC 764 changes are approved

- Market Participant

An entity, including a Scheduling Coordinator, who either: (1) participates in the CAISO Markets through the buying, selling, transmission, or distribution of Energy, capacity, or Ancillary Services into, out of, or through the CAISO Controlled Grid; (2) is a CRR Holder or Candidate CRR Holder, ~~or~~ (3) is a Convergence Bidding Entity; or (4) is an EIM Entity, EIM Entity Scheduling Coordinator, EIM Participating Resource, or EIM Participating Resource Scheduling Coordinator.

- Real-Time Market (RTM)

The spot market conducted by the CAISO using SCUC and SCED in the Real-Time, after the HASP is completed, which includes the RTUC, STUC and the RTD for the purpose of Unit Commitment, Ancillary Service procurement, Congestion Management and Energy procurement based on Supply Bids and CAISO Forecast of CAISO Demand, which will be the EIM prospectively from the effective date of Section 29.

Comment [A29]: May need to remove the reference to HASP once the FERC 764 changes are approved; more importantly, needs to specify that the new 15 minute market (FMM), in the context of the EIM, will be a part of the RTM

-Scheduling Coordinator

An entity certified by the CAISO for the purposes of undertaking the functions specified in Section 4.5.3, including any entity designated as a Scheduling Coordinator for an EIM Entity or EIM Participating Resource for the purposes of undertaking the functions specified in Section 29.4.

**Appendix B
New Pro Forma Agreements**

EIM Entity Agreement [separate attachment]

EIM Entity Scheduling Coordinator Agreement [separate attachment]

EIM Participating Resource Agreement [separate attachment]

EIM Participating Resource Scheduling Coordinator Agreement [separate attachment]

Appendix B. __

EIM Entity Agreement (EIMEA)

THIS ENERGY IMBALANCE MARKET ENTITY AGREEMENT (“AGREEMENT”) is established this ____ day of _____, ____ and is accepted by and between:

[Full legal name] (“EIM Entity”), having its registered and principal executive office at [address],

and

California Independent System Operator Corporation (“CAISO”), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate.

The EIM Entity and the CAISO are hereinafter referred to as the “Parties”.

Whereas:

- A.** The Parties named above operate Balancing Authority Areas.
- B.** The EIM Entity provides transmission service in accordance with an Open Access Transmission Tariff (“OATT”), including imbalance energy services.
- C.** The CAISO operates an Energy Imbalance Market pursuant to the CAISO Tariff (“EIM”).
- D.** There [] are [] are not third party transmission service providers within the EIM Entity Balancing Authority Area that intend to enable EIM services on their transmission systems.
- E.** The Parties are entering into this Agreement to enable EIM services within the EIM Entity Balancing Authority Area, including real-time transfers of Energy among the CAISO Balancing Authority Area and other Balancing Authority Areas that have enabled the EIM pursuant to an EIM Entity Agreement with the CAISO.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
 - (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
 - (b) the singular shall include the plural and vice versa;

- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a "person" includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) any reference to a day, week, month or year is to a calendar day, week, month or year;
- (k) unless the context requires otherwise, "or" is used in the conjunctive sense: and
- (l) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II

RESPONSIBILITIES OF EIM ENTITY AND CAISO

- 2.1 Scope of Responsibilities.** The Parties are individually responsible for the efficient use and reliable operation of their Balancing Authority Areas consistent with the reliability standards established by the Western Electricity Coordinating Council ("WECC") and the North American Electric Reliability Corporation ("NERC"), and in accordance with their respective tariffs on file with the Federal Energy Regulatory Commission ("FERC"). Nothing in this Agreement is intended to change, supersede, or alter either Party's obligations to abide by NERC and WECC reliability standards or to provide open and non-discriminatory transmission access in accordance with the terms of their respective FERC tariffs.
- 2.2 Tariff Provisions.** The CAISO shall provide open access to the EIM in accordance with the terms of the CAISO Tariff. The EIM Entity shall have in effect provisions in its OATT to enable operation of the EIM in its Balancing Authority Area in accordance with the CAISO Tariff.
- 2.3 EIM Entity Scheduling Coordinator.** The EIM Entity shall be represented by an EIM Entity Scheduling Coordinator, which may be the EIM Entity or another entity certified by the CAISO to perform the functions of an EIM Entity Scheduling Coordinator.

- 2.4 EIM Transmission Service and Resource Registry Information.** The EIM Entity shall populate and update a registry established by the CAISO for EIM purposes with the static network topology information of its Balancing Authority Area, non-participating resources, and loads in accordance with the CAISO Tariff and Business Practice Manuals. The EIM Entity is responsible for the accuracy and completeness of this information.
- 2.5 EIM Transmission Availability.** The EIM Entity shall make available for use in the EIM transmission capacity on its system that is not otherwise encumbered, reserved, scheduled, or being used by its transmission customers or by others and shall make arrangements with third party transmission service providers within its Balancing Authority Area that intend to enable EIM services on their transmission systems to provide such transmission capacity on their systems. The EIM Entity shall provide the CAISO with real time information regarding the availability of transmission capacity for use in the EIM as provided in the CAISO Tariff and Business Practice Manuals.

ARTICLE III

TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by the Parties or the date it is accepted for filing and made effective by FERC and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.
- 3.2 Termination**
- 3.2.1 Termination by CAISO.** The CAISO may terminate this Agreement by giving written notice of termination in the event that the EIM Entity commits any material default under this Agreement or Section 29 of the CAISO Tariff that, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given the EIM Entity written notice of the default, unless the default is excused by reason of Uncontrollable Forces in accordance with Article IX of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.
- 3.2.2 Termination by EIM Entity.** In the event that the EIM Entity no longer wishes to enable EIM services within its Balancing Authority Area pursuant to the CAISO Tariff, it may terminate this Agreement on giving the CAISO not less than one-hundred and eighty (180) days written notice. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (120) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination or upon the next production date of

the Full-Network Model release following the one-hundred and eighty (180) days after the CAISO's receipt of the EIM Entity's notice of termination, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

- 3.3 No Termination Charge.** The CAISO shall not levy an exit fee or other charge associated with CAISO systems, procedures, or other changes required by the termination of the EIM Entity's participation in the EIM as of the effective date of such notice, provided that EIM Entity obligations incurred under this Agreement prior to the effective date of such notice shall survive termination until satisfied.

ARTICLE IV

CAISO TARIFF

- 4.1 Agreement Subject to CAISO Tariff.** This Agreement shall be subject to Section 29 of the CAISO Tariff which shall be deemed to be incorporated herein. The EIM Entity shall abide by, and will perform, all of the obligations of EIM Entities under the CAISO Tariff.

ARTICLE V

COSTS

- 5.1 Operating and Maintenance Costs.** The EIM Entity shall be responsible for all its costs incurred in connection with meeting its obligations under this Agreement.

ARTICLE VI

DISPUTE RESOLUTION

- 6.1 Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VII

REPRESENTATIONS AND WARRANTIES

- 7.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 7.2 Necessary Approvals.** The EIM Entity represents that all necessary rights, leases, approvals, permits, licenses, easements, access to operate in compliance with this Agreement have been or will be obtained by the EIM Entity prior to the effective date of this Agreement, including any arrangement with third party Balancing Authorities.

ARTICLE VIII

LIABILITY

- 8.1 **Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the EIM Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE IX

UNCONTROLLABLE FORCES

- 9.1 **Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE X

MISCELLANEOUS

- 10.1 **Assignments.** Either Party may assign or transfer any or all of its rights or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and no Party may assign or transfer any or all of its rights or obligations under this Agreement without such consent. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights or obligations under this Agreement as if said successor in interest were an original Party to this Agreement.
- 10.2 **Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 10.3 **Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 10.4 **Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.

- 10.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 10.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 10.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 10.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the EIM Entity shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 10.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[NAME OF EIM ENTITY]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES
[Section 10.2]

EIM Entity

Name of Primary

Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative

Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary

Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative

Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Appendix B. __

EIM Entity Scheduling Coordinator Agreement (EIMESCA)

THIS AGREEMENT is made this ___ day of _____, _____ and is entered into, by and between:

- (1) **[Full legal name]** having a registered or principal executive office at **[address]** (the "EIM Entity Scheduling Coordinator")

and

- (2) **CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate (the "CAISO").

The EIM Entity Scheduling Coordinator and the CAISO are hereinafter referred to as the "Parties".

Whereas:

- A. The EIM Entity Scheduling Coordinator has applied for certification or has been certified by the CAISO under the certification procedure referred to in Section 29 of the CAISO Tariff.
- B. The EIM Entity Scheduling Coordinator wishes to submit base schedules in the Energy Imbalance Market ("EIM") under the terms and conditions set forth in Section 29 of the CAISO Tariff.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretation.

1.1 Master Definitions Supplement. Terms and expressions used in this Agreement shall have the same meanings as those contained in the Master Definitions Supplement to the CAISO Tariff.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) unless the context otherwise requires, “or” is used in the conjunctive sense;
- (k) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (l) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

2. Covenant of the EIM Entity Scheduling Coordinator.

2.1 The EIM Entity Scheduling Coordinator agrees that:

- 2.1.1** CAISO Tariff Section 29 governs all aspects of EIM information submission, including the financial and technical criteria for EIM Entity Scheduling Coordinator base schedule submissions Settlement, information reporting requirements, and confidentiality restrictions;
- 2.1.2** It will abide by, and will perform all of the obligations under Section 29 of the CAISO Tariff placed on EIM Entity Scheduling Coordinators in respect of all matters set forth therein, including ongoing obligations in respect of scheduling, Settlement, system security policy and procedures to be developed by the CAISO from time to time, billing and payments, confidentiality and dispute resolution;
- 2.1.3** It shall ensure that each EIM Entity for which it submits base schedules enters into an EIM Entity Agreement in accordance with Section 29 of the CAISO Tariff;
- 2.1.4** It shall have the primary responsibility to the CAISO, as principal, for all EIM Entity Scheduling Coordinator payment obligations under the Section 29 of the CAISO Tariff;

2.1.5 Its status as an EIM Entity Scheduling Coordinator is at all times subject to the Section 29 of the CAISO Tariff.

3. Term and Termination.

3.1 This Agreement shall commence on the later of (a) _____ or (b) the date the EIM Entity Scheduling Coordinator is certified by the CAISO as an EIM Entity Scheduling Coordinator.

3.2 This Agreement may be terminated in accordance with the provisions of Section 4.5.4.4 and 4.5.4.5 of the CAISO Tariff; provided, however, that any outstanding financial right or obligation or any other right or obligation under the CAISO Tariff of the EIM Entity Scheduling Coordinator that may have arisen under this Agreement, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive such termination until satisfied. The CAISO shall timely file any notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC rules regarding termination.

4. Settlement Account.

4.1 The EIM Entity Scheduling Coordinator shall maintain at all times an account with a bank capable of Fedwire transfer and, at its option, may also maintain an account capable of ACH transfers, to which credits or debits that arise under Section 29 of the CAISO Tariff shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account as notified by the EIM Entity Scheduling Coordinator to the CAISO from time to time by giving at least 20 days written notice before the new account becomes operational, together with all information necessary for the CAISO's processing of a change in that account.

5. Agreement to be bound by CAISO Tariff.

5.1 Section 29 of the CAISO Tariff is incorporated herein and made a part hereof. In the event of a conflict between the terms and conditions of this Agreement and any other terms and conditions set forth in the CAISO Tariff that may apply to EIM Entity Scheduling Coordinators, the terms and conditions of the CAISO Tariff shall prevail.

6. Electronic Contracting.

6.1 All submitted information, applications, schedules, Bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (e.g. direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of Section 29 of the CAISO Tariff as if executed in written format.

7. Penalties and Sanctions.

7.1 The EIM Entity Scheduling Coordinator shall be subject to all penalties made applicable to EIM Entity Scheduling Coordinators set forth in Section 29 of the CAISO Tariff.

8. Costs.

8.1 The EIM Entity Scheduling Coordinator shall be responsible for all its costs incurred for the purpose of meeting its obligations under this Agreement.

9. Dispute Resolution.

9.1 The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

10. Representation and Warranties.

10.1 Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

11. Liability.

11.1 The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the EIM Entity Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

12. Uncontrollable Forces.

12.1 Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

13. Miscellaneous.

13.1 **Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and no Party may assign or transfer any or all of its rights or obligations under this Agreement without such consent. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.

13.2 **Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Entity Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

- 13.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 13.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 13.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 13.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 13.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 13.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the EIM Entity Scheduling Coordinator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective authorized officials.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[Name of EIM Entity Scheduling Coordinator]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES
[Section 13.2]

EIM Entity Scheduling Coordinator

Name of Primary Representative: _____
Title: _____
Company: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

Name of Alternative Representative: _____
Title: _____
Company: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

CAISO

Name of Primary Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email address: _____
Phone: _____
Fax: _____

Name of Alternative

Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email address: _____

Phone: _____

Fax: _____

Appendix B. __

EIM Participating Resource Agreement (EIMPRA)

THIS ENERGY IMBALANCE MARKET PARTICIPATING RESOURCE AGREEMENT (“AGREEMENT”) is established this ____ day of _____, ____ and is accepted by and between:

[Full legal name] (“EIM Participating Resource”), having its registered and principal executive office at [address],

and

California Independent System Operator Corporation (“CAISO”), a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate.

The EIM Participating Resource and the CAISO are hereinafter referred to as the “Parties”.

Whereas:

- A.** The CAISO operates an Energy Imbalance Market pursuant to the CAISO Tariff.
- B.** The EIM Participating Resource receives imbalance energy service from an EIM Entity in accordance with the EIM Entity’s Open Access Transmission Tariff or from another transmission service provider within the EIM Entity Balancing Authority Area.
- C.** The Parties wish to enter into this Agreement to establish the terms and conditions for participation in the Energy Imbalance Market by the EIM Participating Resource in accordance with Section 29 of the CAISO Tariff.

NOW THEREFORE, in consideration of the mutual covenants set forth herein, **THE PARTIES AGREE** as follows:

ARTICLE I

DEFINITIONS AND INTERPRETATION

- 1.1 Master Definitions Supplement.** All terms and expressions used in this Agreement shall have the same meaning as those contained in the Master Definitions Supplement to the CAISO Tariff.
- 1.2 Rules of Interpretation.** The following rules of interpretation and conventions shall apply to this Agreement:
 - (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
 - (b) the singular shall include the plural and vice versa;
 - (c) the masculine shall include the feminine and neutral and vice versa;
 - (d) “includes” or “including” shall mean “including without limitation”;

- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;
- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) unless the context otherwise requires, “or” is used in the conjunctive sense;
- (k) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (l) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

ARTICLE II

RESPONSIBILITIES OF EIM PARTICIPATING RESOURCE

- 2.1 EIM Participating Resource Scheduling Coordinator.** The EIM Participating Resource shall be represented by an EIM Participating Resource Scheduling Coordinator, which may be the EIM Participating Resource or another entity certified by the ISO to perform the functions of an EIM Participating Resource Scheduling Coordinator.
- 2.2 EIM Participating Resources.** The EIM Participating Resource has identified on Schedule 1 all EIM Participating Resources that it owns, operates, has a contractual entitlement to, or that otherwise will be included in the Master File.
- 2.2.1 Technical Characteristics.** The EIM Participating Resource has provided to the CAISO in Schedule 1 the required information regarding the operating characteristics of each EIM Participating Resource listed in Schedule 1, in addition to any further level of detail that may be required by Section 29 of the CAISO Tariff.
- 2.2.2 Notification of Changes.** Sixty (60) days prior to changing any technical information in Schedule 1, the EIM Participating Resource shall notify the CAISO of the proposed changes. The CAISO shall post on the CAISO Website a schedule showing, for at least one year in advance, (i) the proposed dates on which the CAISO’s Master File will be updated, which dates shall occur at least every three months; (ii) the dates on which the information contained in the revised Master File will become effective; and (iii) the deadlines by which changed technical information must be submitted to the CAISO in order to be tested and included in the next scheduled update of the CAISO’s Master File.

Unless the EIM Participating Resource fails to test at the values in the proposed change(s), the change will become effective upon the effective date for the next scheduled update of the Master File, provided the EIM Participating Resource submits the changed information by the applicable deadline and is tested by the deadline. Subject to such notification this Agreement shall not apply to any EIM Participating Resource identified in Schedule 1 which the EIM Participating Resource no longer owns or no longer has contractual entitlement to.

ARTICLE III

TERM AND TERMINATION

- 3.1 Effective Date.** This Agreement shall be effective as of the later of the date it is executed by the Parties or the date it is accepted for filing and made effective by FERC, if such FERC filing is required, and shall remain in full force and effect until terminated pursuant to Section 3.2 of this Agreement.
- 3.2 Termination**
- 3.2.1 Termination by CAISO.** Subject to Section 5.2, the CAISO may terminate this Agreement by giving written notice of termination in the event that the EIM Participating Resource commits any material default under this Agreement and/or the CAISO Tariff which, if capable of being remedied, is not remedied within thirty (30) days after the CAISO has given, to the EIM Entity, written notice of the default, unless excused by reason of Uncontrollable Forces in accordance with Article X of this Agreement. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement was filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the filing of the notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within sixty (60) days after issuance of the notice of default; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if filed with FERC, or thirty (30) days after the date of the CAISO's notice of default, if terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.
- 3.2.2 Termination by EIM Participating Resource.** In the event that the EIM Participating Resource no longer wishes to submit Bids and transmit Energy over the CAISO Controlled Grid, it may terminate this Agreement, on giving the CAISO not less than ninety (90) days written notice, provided, however, that in accordance with Section 3.3, the EIM Participating Resource may modify Schedule 1 to EIM Participating Resources which it no longer owns or no longer has contractual entitlement to and such modification shall be effective upon receipt by the CAISO. With respect to any notice of termination given pursuant to this Section, the CAISO must file a timely notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC Order No. 2001 and related FERC orders. The filing of the notice of termination by the CAISO with FERC will be considered timely if: (1) the request to file a notice of termination is made after the preconditions for termination have been met, and the CAISO files the notice of termination within thirty (30) days of receipt of such request; or (2) the CAISO files the notice of termination in accordance with the requirements of FERC Order No. 2001. This Agreement shall terminate upon acceptance by FERC of such a notice of termination, if such notice is required to be filed with FERC, or upon ninety (90) days after the CAISO's receipt of the EIM Entity's notice of termination, if

terminated in accordance with the requirements of FERC Order No. 2001 and related FERC orders.

ARTICLE IV

CAISO TARIFF

- 4.1 **Agreement Subject to CAISO Tariff.** This Agreement shall be subject to Section 29 of the CAISO Tariff which shall be deemed to be incorporated herein. The EIM Participating Resource shall abide by, and will perform all of the obligations under the CAISO Tariff placed on EIM Entities in respect of all matters set forth therein.

ARTICLE V

PENALTIES AND SANCTIONS

- 5.1 **Penalties.** If the EIM Participating Resource fails to comply with any provisions of this Agreement, the CAISO shall be entitled to impose penalties and sanctions on the EIM Entity. No penalties or sanctions may be imposed under this Agreement unless a CAISO Tariff provision providing for such penalties or sanctions has first been filed with and made effective by FERC. Nothing in the Agreement, with the exception of the provisions relating to the CAISO ADR Procedures, shall be construed as waiving the rights of the EIM Participating Resource to oppose or protest any penalty proposed by the CAISO to the FERC or the specific imposition by the CAISO of any FERC-approved penalty on the EIM Entity.
- 5.2 **Corrective Measures.** If the EIM Participating Resource fails to meet or maintain the requirements set forth in this Agreement or Section 29 the CAISO Tariff, the CAISO shall be permitted to take any of the measures, contained or referenced in Section 29 of the CAISO Tariff, which the CAISO deems to be necessary to correct the situation.

ARTICLE VI

COSTS

- 6.1 **Operating and Maintenance Costs.** The EIM Participating Resource shall be responsible for all its costs incurred in connection with meeting its obligations under this Agreement.

ARTICLE VII

DISPUTE RESOLUTION

- 7.1 **Dispute Resolution.** The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE VIII

REPRESENTATIONS AND WARRANTIES

- 8.1 Representation and Warranties.** Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.
- 8.2 Necessary Approvals.** The EIM Participating Resource represents that all necessary rights, leases, approvals, permits, licenses, easements, access to operate in compliance with this Agreement have been or will be obtained by the EIM Participating Resource prior to the effective date of this Agreement, including any arrangement with third party Balancing Authorities.

ARTICLE IX

LIABILITY

- 9.1 Liability.** The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the EIM Participating Resource and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE X

UNCONTROLLABLE FORCES

- 10.1 Uncontrollable Forces Tariff Provisions.** Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource and references to the CAISO Tariff shall be read as references to this Agreement.

ARTICLE XI

MISCELLANEOUS

- 11.1 Assignments.** Either Party may assign or transfer any or all of its rights or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and no Party may assign or transfer any or all of its rights or obligations under this Agreement without such consent. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest were an original Party to this Agreement.
- 11.2 Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 2. A Party must update the information in Schedule 2 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.
- 11.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the

statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.

- 11.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 11.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 11.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 11.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 11.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the EIM Participating Resource shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 11.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed on behalf of each by and through their authorized representatives as of the date hereinabove written.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[NAME OF EIM PARTICIPATING RESOURCE]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

**EIM Participating Resources
[Section 2.4]**

SCHEDULE 2

NOTICES
[Section 11.2]

EIM Participating Resource

Name of Primary

Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative

Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

CAISO

Name of Primary

Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative

Representative: _____

Title: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Appendix B. __

EIM Participating Resource Scheduling Coordinator Agreement (EIMPRSCA)

THIS AGREEMENT is made this ___ day of _____, _____ and is entered into, by and between:

- (1) **[Full legal name]** having a registered or principal executive office at **[address]** (the "EIM Participating Resource Scheduling Coordinator")

and

- (2) **CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION**, a California nonprofit public benefit corporation having a principal executive office located at such place in the State of California as the CAISO Governing Board may from time to time designate (the "CAISO").

The EIM Participating Resource Scheduling Coordinator and the CAISO are hereinafter referred to as the "Parties".

Whereas:

- A. The EIM Participating Resource Scheduling Coordinator has applied for or has been certified by the CAISO under the certification procedure referred to in Section 29 of the CAISO Tariff.
- B. The EIM Participating Resource Scheduling Coordinator wishes to submit Bids from EIM Participating Resources under the terms and conditions set forth in Section 29 of the CAISO Tariff.

NOW IT IS HEREBY AGREED as follows:

1. Definitions and Interpretation.

1.1 Master Definitions Supplement. Terms and expressions used in this Agreement shall have the same meanings as those contained in the Master Definitions Supplement to the CAISO Tariff.

1.2 Rules of Interpretation. The following rules of interpretation and conventions shall apply to this Agreement:

- (a) if there is any inconsistency between this Agreement and the CAISO Tariff, the CAISO Tariff will prevail to the extent of the inconsistency;
- (b) the singular shall include the plural and vice versa;
- (c) the masculine shall include the feminine and neutral and vice versa;
- (d) "includes" or "including" shall mean "including without limitation";
- (e) references to a Section, Article or Schedule shall mean a Section, Article or a Schedule of this Agreement, as the case may be, unless the context otherwise requires;

- (f) a reference to a given agreement or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made;
- (g) unless the context otherwise requires, references to any law shall be deemed references to such law as it may be amended, replaced or restated from time to time;
- (h) unless the context otherwise requires, any reference to a “person” includes any individual, partnership, firm, company, corporation, joint venture, trust, association, organization or other entity, in each case whether or not having separate legal personality;
- (i) unless the context otherwise requires, any reference to a Party includes a reference to its permitted successors and assigns;
- (j) unless the context otherwise requires, “or” is used in the conjunctive sense;
- (k) any reference to a day, week, month or year is to a calendar day, week, month or year; and
- (l) the captions and headings in this Agreement are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Agreement.

2. Covenant of the EIM Participating Resource Scheduling Coordinator.

2.1 The EIM Participating Resource Scheduling Coordinator agrees that:

- 2.1.1** CAISO Tariff Section 29 governs all aspects of EIM bidding and scheduling of Energy, including (without limitation), the financial and technical criteria for EIM Participating Resource Scheduling Coordinators, bidding, Settlement, information reporting requirements and confidentiality restrictions;
- 2.1.2** It will abide by, and will perform all of the obligations under Section 29 of the CAISO Tariff placed on EIM Participating Resource Scheduling Coordinators in respect of all matters set forth therein including, without limitation, ongoing obligations in respect of scheduling, Settlement, system security policy and procedures to be developed by the CAISO from time to time, billing and payments, confidentiality and dispute resolution;
- 2.1.3** It shall ensure that each EIM Participating Resource for which it submits Bids enters into an EIM Participating Resource Agreement in accordance with Section 29 of the CAISO Tariff;
- 2.1.4** It shall have the primary responsibility to the CAISO, as principal, for all EIM Participating Resource Scheduling Coordinator payment obligations under Section 29 of the CAISO Tariff;

2.1.5 Its status as an EIM Participating Resource Scheduling Coordinator is at all times subject to Section 29 of the CAISO Tariff.

3. Term and Termination.

3.1 This Agreement shall commence on the later of (a) _____ or (b) the date the EIM Participating Resource Scheduling Coordinator is certified by the CAISO as an EIM Participating Resource Scheduling Coordinator.

3.2 This Agreement may be terminated in accordance with the provisions of Section 4.5.4.4 and 4.5.4.5 of the CAISO Tariff; provided, however, that any outstanding financial right or obligation or any other right or obligation under the CAISO Tariff of the EIM Participating Resource Scheduling Coordinator that may have arisen under this Agreement, and any provision of this Agreement necessary to give effect to such right or obligation, shall survive such termination until satisfied. The CAISO shall timely file any notice of termination with FERC, if this Agreement has been filed with FERC, or must otherwise comply with the requirements of FERC rules regarding termination.

4. Settlement Account.

4.1 The EIM Participating Resource Scheduling Coordinator shall maintain at all times an account with a bank capable of Fedwire transfer and, at its option, may also maintain an account capable of ACH transfers, to which credits or debits that arise under Section 29 of the CAISO Tariff shall be made in accordance with the billing and Settlement provisions of Section 11 of the CAISO Tariff. Such account shall be the account as notified by the EIM Participating Resource Scheduling Coordinator to the CAISO from time to time by giving at least 20 days written notice before the new account becomes operational, together with all information necessary for the CAISO's processing of a change in that account.

5. Agreement to be bound by CAISO Tariff.

5.1 CAISO Tariff Section 29 is incorporated herein and made a part hereof. In the event of a conflict between the terms and conditions of this Agreement and any other terms and conditions set forth in the CAISO Tariff, the terms and conditions of the CAISO Tariff shall prevail.

6. Electronic Contracting.

6.1 All submitted information, applications, schedules, Bids, confirmations, changes to information on file with the CAISO and other communications conducted via electronic transfer (e.g. direct computer link, FTP file transfer, bulletin board, e-mail, facsimile or any other means established by the CAISO) shall have the same legal rights, responsibilities, obligations and other implications as set forth in the terms and conditions of Section 29 of the CAISO Tariff as if executed in written format.

7. Penalties and Sanctions.

7.1 The EIM Participating Resource Scheduling Coordinator shall be subject to all penalties made applicable to EIM Participating Resource Scheduling Coordinators set forth in Section 29 of the CAISO Tariff.

8. Costs.

- 8.1 The EIM Participating Resource Scheduling Coordinator shall be responsible for all its costs incurred for the purpose of meeting its obligations under this Agreement.

9. Dispute Resolution.

- 9.1 The Parties shall make reasonable efforts to settle all disputes arising out of or in connection with this Agreement. In the event any dispute is not settled, the Parties shall adhere to the CAISO ADR Procedures set forth in Section 13 of the CAISO Tariff, which is incorporated by reference, except that any reference in Section 13 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

10. Representation and Warranties.

- 10.1 Each Party represents and warrants that the execution, delivery and performance of this Agreement by it has been duly authorized by all necessary corporate and/or governmental actions, to the extent authorized by law.

11. Liability.

- 11.1 The provisions of Section 14 of the CAISO Tariff will apply to liability arising under this Agreement, except that all references in Section 14 of the CAISO Tariff to Market Participants shall be read as references to the EIM Participating Resource Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

12. Uncontrollable Forces.

- 12.1 Section 14.1 of the CAISO Tariff shall be incorporated by reference into this Agreement except that all references in Section 14.1 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement.

13. Miscellaneous.

- 13.1 **Assignments.** Either Party may assign or transfer any or all of its rights and/or obligations under this Agreement with the other Party's prior written consent in accordance with Section 22.2 of the CAISO Tariff and no Party may assign or transfer any or all of its rights or obligations under this Agreement without such consent. Such consent shall not be unreasonably withheld. Any such transfer or assignment shall be conditioned upon the successor in interest accepting the rights and/or obligations under this Agreement as if said successor in interest was an original Party to this Agreement.
- 13.2 **Notices.** Any notice, demand or request which may be given to or made upon either Party regarding this Agreement shall be made in accordance with Section 22.4 of the CAISO Tariff, provided that all references in Section 22.4 of the CAISO Tariff to Market Participants shall be read as a reference to the EIM Participating Resource Scheduling Coordinator and references to the CAISO Tariff shall be read as references to this Agreement, and unless otherwise stated or agreed shall be made to the representative of the other Party indicated in Schedule 1. A Party must update the information in Schedule 1 of this Agreement as information changes. Such changes shall not constitute an amendment to this Agreement.

- 13.3 Waivers.** Any waiver at any time by either Party of its rights with respect to any default under this Agreement, or with respect to any other matter arising in connection with this Agreement, shall not constitute or be deemed a waiver with respect to any subsequent default or other matter arising in connection with this Agreement. Any delay, short of the statutory period of limitations, in asserting or enforcing any right under this Agreement shall not constitute or be deemed a waiver of such right.
- 13.4 Governing Law and Forum.** This Agreement shall be deemed to be a contract made under, and for all purposes shall be governed by and construed in accordance with, the laws of the State of California, except its conflict of law provisions. The Parties irrevocably consent that any legal action or proceeding arising under or relating to this Agreement to which the CAISO ADR Procedures do not apply, shall be brought in any of the following forums, as appropriate: any court of the State of California, any federal court of the United States of America located in the State of California, or, where subject to its jurisdiction, before the Federal Energy Regulatory Commission.
- 13.5 Consistency with Federal Laws and Regulations.** This Agreement shall incorporate by reference Section 22.9 of the CAISO Tariff as if the references to the CAISO Tariff were referring to this Agreement.
- 13.6 Merger.** This Agreement constitutes the complete and final agreement of the Parties with respect to the subject matter hereof and supersedes all prior agreements, whether written or oral, with respect to such subject matter.
- 13.7 Severability.** If any term, covenant, or condition of this Agreement or the application or effect of any such term, covenant, or condition is held invalid as to any person, entity, or circumstance, or is determined to be unjust, unreasonable, unlawful, imprudent, or otherwise not in the public interest by any court or government agency of competent jurisdiction, then such term, covenant, or condition shall remain in force and effect to the maximum extent permitted by law, and all other terms, covenants, and conditions of this Agreement and their application shall not be affected thereby, but shall remain in force and effect and the Parties shall be relieved of their obligations only to the extent necessary to eliminate such regulatory or other determination unless a court or governmental agency of competent jurisdiction holds that such provisions are not separable from all other provisions of this Agreement.
- 13.8 Amendments.** This Agreement and the Schedules attached hereto may be amended from time to time by the mutual agreement of the Parties in writing. Amendments that require FERC approval shall not take effect until FERC has accepted such amendments for filing and made them effective. Nothing contained herein shall be construed as affecting in any way the right of the CAISO to unilaterally make application to FERC for a change in the rates, terms and conditions of this Agreement under Section 205 of the FPA and pursuant to FERC's rules and regulations promulgated thereunder, and the EIM Participating Resource Scheduling Coordinator shall have the right to make a unilateral filing with FERC to modify this Agreement pursuant to Section 206 or any other applicable provision of the FPA and FERC's rules and regulations thereunder; provided that each Party shall have the right to protest any such filing by the other Party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the Parties or of FERC under Sections 205 or 206 of the FPA and FERC's rules and regulations thereunder, except to the extent that the Parties otherwise mutually agree as provided herein.
- 13.9 Counterparts.** This Agreement may be executed in one or more counterparts at different times, each of which shall be regarded as an original and all of which, taken together, shall constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their respective authorized officials.

California Independent System Operator Corporation

By: _____

Name: _____

Title: _____

Date: _____

[Name of EIM Participating Resource Scheduling Coordinator]

By: _____

Name: _____

Title: _____

Date: _____

SCHEDULE 1

NOTICES
[Section 13.2]

EIM Participating Resource Scheduling Coordinator

Name of Primary Representative: _____

Title: _____

Company: _____

Address: _____

City/State/Zip Code: _____

Email Address: _____

Phone: _____

Fax No: _____

Name of Alternative

Representative: _____
Title: _____
Company: _____
Address: _____
City/State/Zip Code: _____
Email Address: _____
Phone: _____
Fax No: _____

CAISO

Name of Primary Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email address: _____
Phone: _____
Fax: _____

Name of Alternative Representative: _____
Title: _____
Address: _____
City/State/Zip Code: _____
Email address: _____
Phone: _____
Fax: _____