

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Table of Contents

<u>29.</u>	<u>Energy Imbalance Market.....</u>	<u>2</u>
<u>29.1</u>	<u>General Provisions.....</u>	<u>2</u>
<u>29.2</u>	<u>EIM Entity and EIM Sub-Entity Access to the Real-Time Market.....</u>	<u>4</u>
<u>29.3</u>	<u>[Not Used].....</u>	<u>16</u>
<u>29.4</u>	<u>Roles and Responsibilities</u>	<u>16</u>
<u>29.5</u>	<u>[Not Used].....</u>	<u>27</u>
<u>29.6</u>	<u>Communications.....</u>	<u>27</u>
<u>29.7</u>	<u>EIM Operations Under Normal and Emergency Conditions.....</u>	<u>29</u>
<u>29.8</u>	<u>[Not Used].....</u>	<u>35</u>
<u>29.9</u>	<u>Outages and Critical Contingencies.....</u>	<u>35</u>
<u>29.10</u>	<u>Metering and Settlement Data.....</u>	<u>38</u>
<u>29.11</u>	<u>Settlements and Billing for EIM Market Participants.....</u>	<u>39</u>
<u>29.12</u>	<u>Creditworthiness.....</u>	<u>57</u>
<u>29.13</u>	<u>Dispute Resolution.....</u>	<u>57</u>
<u>29.14</u>	<u>Uncontrollable Forces, Indemnity, Liabilities, and Penalties</u>	<u>57</u>
<u>29.15</u>	<u>[Not Used].....</u>	<u>57</u>
<u>29.16</u>	<u>[Not Used].....</u>	<u>57</u>
<u>29.17</u>	<u>EIM Transmission System.....</u>	<u>57</u>
<u>29.18</u>	<u>[Not Used].....</u>	<u>61</u>
<u>29.19</u>	<u>[Not Used].....</u>	<u>61</u>
<u>29.20</u>	<u>Confidentiality</u>	<u>61</u>
<u>29.21</u>	<u>[Not Used].....</u>	<u>61</u>
<u>29.22</u>	<u>Miscellaneous Provisions in Addition to Section 22.....</u>	<u>61</u>
<u>29.23</u>	<u>[Not Used].....</u>	<u>61</u>
<u>29.24</u>	<u>[Not Used].....</u>	<u>61</u>
<u>29.25</u>	<u>[Not Used].....</u>	<u>62</u>
<u>29.26</u>	<u>Transmission Rates and Charges.....</u>	<u>62</u>
<u>29.27</u>	<u>CAISO Markets and Processes.....</u>	<u>62</u>
<u>29.28</u>	<u>Inter-SC Trades</u>	<u>64</u>
<u>29.29</u>	<u>EIM Relationship to EDAM.....</u>	<u>64</u>
<u>29.30</u>	<u>Bid and Self-Schedule Submission for CAISO Markets.....</u>	<u>64</u>
<u>29.31</u>	<u>Day-Ahead.....</u>	<u>66</u>
<u>29.32</u>	<u>Greenhouse Gas Regulation and GHG Bid Adders.....</u>	<u>66</u>
<u>29.32.1</u>	<u>GHG Net Export Constraint.....</u>	<u>73</u>
<u>29.32.2</u>	<u>Data Availability.....</u>	<u>73</u>
<u>29.33</u>	<u>[Not Used].....</u>	<u>74</u>
<u>29.34</u>	<u>EIM Operations.....</u>	<u>74</u>
<u>29.35</u>	<u>Market Validation and Price Correction.....</u>	<u>96</u>
<u>29.36</u>	<u>[Not Used].....</u>	<u>96</u>
<u>29.37</u>	<u>Rules of Conduct</u>	<u>96</u>
<u>29.38</u>	<u>Market Monitoring</u>	<u>96</u>
<u>29.39</u>	<u>EIM Market Power Mitigation.....</u>	<u>97</u>
<u>29.40</u>	<u>[Not Used].....</u>	<u>98</u>
<u>29.41</u>	<u>[Not Used].....</u>	<u>98</u>
<u>29.42</u>	<u>[Not Used].....</u>	<u>98</u>
<u>29.43</u>	<u>[Not Used].....</u>	<u>98</u>
<u>29.44</u>	<u>Flexible Ramping Product.....</u>	<u>98</u>

29. Energy Imbalance Market

29.1 General Provisions.

- (a) **Operation of EIM.** Pursuant to Section 29, the CAISO shall expand operation and settlement of the Real-Time Market to provide for the purchase and sale of balancing Energy in any Balancing Authority Area for which the Balancing Authority executes an EIM Entity Agreement with the CAISO. Operation and Settlement of the Real-Time Market in an EIM Entity Balancing Authority Area for which the Balancing Authority executes an EDAM Entity Agreement with the CAISO is supplemented by Section 33.
- (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) are not limited in applicability to the CAISO Controlled Grid, the CAISO Balancing Authority Area, or CAISO Markets other than the Real-Time Market.
- (c) **Inconsistency Between Provisions.** If there is an inconsistency between a provision in Section 29 and another provision of the CAISO Tariff regarding the rights or obligations of EIM Market Participants, except in their capacity as EDAM Market Participants under Section 33, the provision in Section 29 shall prevail to the extent of the inconsistency. If there is an inconsistency between a provision in Section 29 and a provision in Section 33, the provisions of Section 33 will prevail with respect to participation in the Day-Ahead Market and the provisions of Section 29 will prevail with respect to participation in the Real-Time Market, provided that the provisions of both Sections 33 and 29 will be given equal consideration such that the provisions applicable as an EIM Market Participant and EDAM Market Participant may be reconciled where provisions apply to participation in both the Real-Time Market and the Day-Ahead Market.
- (d) **Suspension of EIM Entity Participation.**

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (1) **Temporary Suspension.** The CAISO may, within 60 days following an EIM Entity Implementation Date for an EIM Entity, and pursuant to the terms of a Market Notice, temporarily suspend the participation of that EIM Entity in the Real-Time Market for a period not to exceed 60 days if market or system operational issues adversely impact any portion of the EIM Area, provided that the ISO may continue operation of the Real-Time Market without the participation of the EIM Entity for a reasonable additional period of time in order to implement a resolution of the market or system operational issues.
- (2) **CAISO Termination.** If the CAISO is not able to identify a resolution of the EIM-related market or system operational issues within 60 days after issuance of the Market Notice of temporary suspension of EIM participation by an EIM Entity, the CAISO may, upon issuance of a subsequent Market Notice, terminate participation by the EIM Entity in the Real-Time Market and may extend the suspension of EIM participation by the EIM Entity for a time sufficient to process the termination of the EIM Entity Agreement.
- (3) **Reinstatement.**
 - (A) **After Temporary Suspension.** The CAISO may reinstate EIM operations after a temporary suspension of EIM participation by an EIM Entity by issuing a Market Notice announcing the intended reinstatement no less than 5 days in advance of the reinstatement date.
 - (B) **After CAISO Termination.** The CAISO may only reinstate EIM operations with respect to an EIM Entity after termination of EIM participation by an EIM Entity pursuant to a filing accepted by FERC.
- (4) **EIM Entity Action.** In the event the CAISO issues a Market Notice of the temporary suspension of EIM participation by an EIM Entity, the EIM Entity shall continue to submit EIM Base Schedules and the associated meter data to enable continued operation of the Real-Time Market until the CAISO issues a

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

subsequent Market Notice either that –

- (i) the cause of the temporary suspension has been resolved and the EIM Entity has been reinstated, in which case EIM participation by the EIM Entity shall return to normal; or
- (ii) EIM participation by the EIM Entity has been terminated.

(5) **CAISO Action.** In the event the CAISO issues a Market Notice of the temporary suspension of EIM participation by an EIM Entity, the CAISO shall –

- (i) prevent EIM Transfers and separate the EIM Entity Balancing Authority Area from operation of the Real-Time Market in the EIM Area in accordance with the provisions of the Business Practice Manual for the Energy Imbalance Market;
- (ii) suspend Settlement of Real-Time Market charges with respect to the EIM Entity in accordance with the provisions of the Business Practice Manual for the Energy Imbalance Market; and
- (iii) issue a subsequent Market Notice either that (i) the cause of the temporary suspension has been resolved and the EIM Entity has been reinstated, in which case EIM participation by the EIM Entity shall return to normal, or (ii) EIM participation by the EIM Entity has been terminated.

29.2 EIM Entity and EIM Sub-Entity Access to the Real-Time Market

(a) **In general.** The CAISO shall –

- (1) provide open and non-discriminatory access to the Real-Time Market, including the Energy Imbalance Market, in accordance with the provisions of the CAISO Tariff; and
- (2) make available for use in the Real-Time Market the transmission capacity that is available in Real-Time –
 - (A) on the CAISO Controlled Grid; and
 - (B) for which an EIM Entity or EIM Sub-Entity provides EIM Transmission Service Information pursuant to Section 29.17.

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

- (1) **EIM Implementation Agreement.** A Balancing Authority that wishes to become an EIM Entity must first execute an EIM Implementation Agreement with the CAISO that establishes –
 - (A) the activities the parties must undertake to enable the Balancing Authority to participate in the Real-Time Market;
 - (B) the EIM Entity Implementation Date;
 - (C) the implementation fee the Balancing Authority must pay to the CAISO for the start-up costs the CAISO incurs to accommodate the participation of the Balancing Authority in the Real-Time Market as provided in the agreement; and
 - (D) the obligation of the Balancing Authority to enter into an EIM Entity Agreement governing its participation in the Real-Time Market.
- (2) **FERC Approval.** The EIM Entity Implementation Date must be not less than six months and not more than twenty-four months after the date that the EIM Implementation Agreement between the CAISO and the Balancing Authority is accepted by FERC.
- (3) **Implementation Period.** The CAISO shall in its discretion determine the EIM Entity Implementation Date based on the complexity and compatibility of the Balancing Authority's transmission and technology systems with the CAISO systems and the planned timing of the CAISO's implementation of software enhancements.
- (4) **Market Simulation and Parallel Operations.** The CAISO and the prospective EIM Entity shall engage in –
 - (A) a market simulation that accounts for the prospective EIM Entity's implementation circumstances sufficient to meet the readiness criteria set forth in Section 29.2(b)(7); and
 - (B) at least 30 days of parallel operations representing the Energy

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Imbalance Market to support the CAISO and the prospective EIM Entity's readiness certification required by section 29.2(b)(6), an adequate period of which must occur prior to the readiness determination required by section 29.2(b)(5).

- (5) **Readiness Determination.** No later than 30 days prior to the prospective EIM Entity Implementation Date as established by the EIM Implementation Agreement, the CAISO will determine, in consultation with the prospective EIM Entity, whether the systems and processes of the prospective EIM Entity will be ready for the prospective EIM Entity's participation in the Energy Imbalance Market according to the criteria set forth in Section 29.2(b)(7) as measured by the thresholds specified in the Business Practice Manual for the Energy Imbalance Market, or consistent with any exceptions to thresholds, for certifying the prospective EIM Entity's readiness.

(6) **Readiness Certification.**

- (A) **Certification.** The CAISO and the prospective EIM Entity shall each file a market readiness certificate with FERC at least 30 days prior to the EIM Entity Implementation Date in which a senior office of each entity attests –
- (i) that the processes and systems of the prospective EIM entity have satisfied or will have satisfied the readiness criteria set forth in Section 29.2(b)(7) as of the EIM Entity Implementation Date;
 - (ii) to any known issues requiring resolution prior to the EIM Entity Implementation Date in accordance with section 29.2(b)(8);
 - (iii) to any exceptions from the established thresholds specified in the Business Practice Manuals, and that despite such exceptions the criteria were met or will be met as specified in 29.2(b)(7); and
 - (iv) that the EIM Entity Implementation Date is conditional on the resolution of the known issues identified in the certificates and

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

any unforeseen issues that undermine the satisfaction of the readiness criteria set forth in Section 29.2(b)(7).

- (B) **Delay or Re-Certification.** If, subsequent to readiness certification pursuant to Section 29.2(b)(6)(A), the CAISO or the prospective EIM Entity determines that it cannot proceed with implementation on the EIM Entity Implementation Date, the CAISO or the prospective EIM Entity will notify FERC of the delay, the reason for the delay, the new EIM Entity Implementation Date if it can be determined, and whether it will need to re-issue a portion or all of the readiness certification.

(7) **Readiness Criteria.**

- (A) **Prospective EIM Entity Full Network Model Integration.** The network model data of the prospective EIM Entity is integrated into the Full Network Model such that –
- (i) the Load, EIM Internal Intertie and EIM External Interties and Generating Unit definition in the Full Network Model is consistent with the Load, EIM Internal Intertie and EIM External Interties and Generating Unit definition in the prospective EIM Entity network model file that it delivered to the CAISO;
 - (ii) the SCADA measurements used in the prospective EIM Entity's EMS model match the measurements observed by the CAISO through the CAISO EMS;
 - (iii) the State Estimator solution is equivalent or superior to the prospective EIM Entity's state estimator solution for its Balancing Authority Area; and
 - (iv) the physical representation of the prospective EIM Entity network matches the Base Market Model that accounts for non-conforming load, behind-the-meter generation, Pseudo-Ties, and Dynamic Schedules, and third party transmission service

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

provider and path operator information that the CAISO agrees is used to support EIM Transfers and Real-Time Dispatch in the Energy Imbalance Market, as applicable.

(B) **Operations Training.** Prior to the start of parallel operations as set forth in Section 29.2(b)(4), all operations staff identified by the prospective EIM Entity who will have responsibility for EIM operations, transactions and settlements, have completed –

- (i) the introduction to Energy Imbalance Market training module;
- (ii) the specific hourly and daily tasks and duties for normal operation training module; and
- (iii) the assessment of market results and response to contingencies and abnormal situations training module.

(C) **Forecasting Capability.** The CAISO and, to the extent the prospective EIM Entity will use its own forecasts or is otherwise required to provide forecasting information to the CAISO, the prospective EIM Entity have demonstrated their respective forecasting capability through –

- (i) the definition of EIM Demand forecast boundaries based on the conforming and non-conforming Load characteristics, as applicable;
- (ii) the accuracy of the CAISO forecast of EIM Demand based on historical actual Load data for the defined EIM Demand forecast boundaries;
- (iii) the identification of weather stations locations used in forecasting, as applicable;
- (iv) the identification of the source of Variable Energy Resource forecasts pursuant to Section 29.11(j); and
- (v) the identification of the source of Hybrid Resource forecasts

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

pursuant to Section 29.11(j).

(D) **Balanced Schedules.** The prospective EIM Entity's Scheduling Coordinator has demonstrated it has the –

- (i) ability to balance EIM Demand and EIM Supply for the prospective EIM Entity's Balancing Authority Area;
- (ii) ability to pass the capacity test, as set forth in Section 29.34(l); and
- (iii) ability to pass the flexible ramping sufficiency test, as set forth in Section 29.34(m).

(E) **System Readiness and Integration.**

- (i) **Readiness.** The prospective EIM Entity and the CAISO have tested the functional and system elements in accordance with functional and system testing documentation posted on the CAISO Website.
- (ii) **System Integration.** The prospective EIM Entity and the CAISO have tested system integration testing in accordance with the system integration testing documentation posted on the CAISO Website.
- (iii) **Certificates.** The prospective EIM Entity has issued all necessary certificates to its employees that require system access to perform EIM-related job functions.

(F) **Settlements.** The CAISO and the prospective EIM Entity have demonstrated that –

- (i) the CAISO Settlement Statements and Invoices match the operational data published to stakeholders or fed into the settlement system and the resulting calculations correspond to the formulas defined in the CAISO Tariff and applicable Business

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- Practice Manuals during market simulation and parallel operations; and
- (ii) the Settlement Statements and Invoices of the prospective EIM Entity allocating charges and credits to its customers accurately reflect system and market data during parallel operations.
- (G) **Outage Management System.** The prospective EIM Entity has verified its ability to submit and retrieve accurate and correct outage information to and from the CAISO within the required timelines.
- (H) **Communications between the CAISO and the prospective EIM Entity.**
- (i) **Messaging.** The process and procedures used for voice and electronic messaging between the prospective EIM Entity and the CAISO are identified and incorporated into the prospective EIM Entity's operating procedures before the start of market simulation specified in Section 29.2(b)(4)(A).
 - (ii) **Training.** The operations staff identified by the prospective EIM Entity who will have responsibility for EIM operations, transactions and settlements are trained on the relevant Operating Procedures and tools used for EIM related communications before the start of parallel operations specified in Section 29.2(b)(4)(B).
 - (iii) **Third Party Transmission Service Providers.** Third party transmission service provider and path operator information that the CAISO agrees is used to support EIM Transfers and Real-Time Dispatch is made available by the CAISO to the prospective EIM Entity during parallel operations.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (I) **Market Simulation.**
 - (i) **Prospective EIM Entity Identification.** The CAISO has established and the prospective EIM Entity has tested all necessary SCIDs and Resource IDs established for the prospective EIM Entity's Balancing Authority Area.
 - (ii) **Day in the life simulation.** The prospective EIM Entity operations staff identified by the prospective EIM Entity who will have responsibility for EIM grid operations, have completed end-to-end daily market workflow with no critical defects.
 - (iii) **Structured scenarios simulation.** The prospective EIM Entity operations staff identified by the prospective EIM Entity who will have responsibility for EIM operations, transactions and settlements, have executed and passed all structured scenarios provided by CAISO with all significant issues resolved.
 - (iv) **Unstructured scenarios simulation.** The prospective EIM Entity operations staff identified by the prospective EIM Entity who will have responsibility for EIM operations, transactions and settlements, have executed and passed all unstructured scenarios provided by the prospective EIM Entity, with significant issues resolved.
 - (v) **Market results reports.** Market results are appropriate based on inputs, and the prospective EIM Entity and CAISO executive project sponsors approve the results.
 - (vi) **Market quality review.** The CAISO prices are validated based on input data for parallel operations specified in Section 29.2(b)(4)(B).
- (J) **Parallel Operations Plan.** The period of parallel operations specified in

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Section 29.2(b)(4)(B) runs consistently and in accordance with the prospective EIM Entity specific parallel operations plan.

(K) **Additional Criteria**

- (i) **Execution of Necessary Agreements.** The prospective EIM Entity has complied with Section 29.4(c)(2) and executed any necessary agreements for operating as an EIM Entity, including any non-disclosure agreements required for the exchange of information.
- (ii) **Operating Procedures.** Prior to the start of parallel operations pursuant to Section 29.2(b)(4)(B), the CAISO and the prospective EIM Entity have defined, completed, and tested operating procedures for the prospective EIM Entity and its Scheduling Coordinator's participation in the Energy Imbalance Market.
- (iii) **Identification of EIM Available Balancing Capacity.** The prospective EIM Entity has identified EIM Resources and non-participating resources that it intends to designate in the EIM Resource Plan as EIM Available Balancing Capacity.
- (iv) **Flexible Capacity Requirements.** The CAISO has received and stored all historical data from the prospective EIM Entity necessary and sufficient for the CAISO to perform the flexible ramp requirement, and the CAISO has established flexible capacity requirements for the prospective EIM Entity's Balancing Authority Area and for the combined EIM Area including the prospective EIM Entity.
- (v) **Monitoring.** Sufficient and adequate data is available to the CAISO and the Department of Market Monitoring to enable market monitoring as of the Implementation Date.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (8) **Readiness Reporting.** The CAISO shall report on the CAISO Website periodically, but not less than monthly during market simulation pursuant to Section 29.2(b)(4)(A) and not less than twice a month during parallel operations pursuant to Section 29.2(b)(4)(B), on progress towards achieving the readiness criteria in Section 29.2(b)(7), including providing information explaining any exceptions to or deviations from the readiness thresholds granted according to the standards and procedures for granting exceptions or deviations set forth in the Business Practice Manual for the Energy Imbalance Market, and the reasons therefore, and publish such reports on its website in advance of and in support of the certificate to be filed pursuant to Section 29.2(b)(6).
- (c) **Access as an EIM Sub-Entity.**
- (1) **EIM Sub-Entity Qualification.** An electric utility that wishes to become an EIM Sub-Entity must—
- (A) be an electric utility embedded within an EIM Entity Balancing Authority Area and not receive long-term wholesale full requirements services from the EIM Entity;
 - (B) own a distribution system or transmission facilities directly connected to a transmission system embedded in the EIM Entity Balancing Authority Area for the purpose of providing—
 - (i) regulated electric service to eligible retail or wholesale customers, or
 - (ii) serve eligible customers in its capacity as a Local Publicly Owned Electric Utility;
 - (C) own or control one or more resources for the primary purpose of serving its eligible customers; and
 - (D) obtain authorization from the EIM Entity in whose Balancing Authority Area the prospective EIM Sub-Entity is located.
- (2) **EIM Entity Authorization.** An EIM Entity may elect at its sole discretion whether

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

or not to authorize participation by an EIM Sub-Entity within its Balancing Authority Area, which may encompass—

- (A) no electric utility regardless of whether one or more electric utilities in its Balancing Authority Area meets the qualifications in Section 29.2(c)(1);
- (B) all electric utilities that meet the qualifications in Section 29.2(c)(1) and seek to become EIM Sub-Entities; or
- (C) some electric utilities that meet the qualifications in Section 29.2(c)(1), and seek to become EIM Sub-Entities, provided the EIM Entity finds that there is a supportive existing and accepted contractual or tariff based practice for imbalance energy accounting within its Balancing Authority Area that distinguishes the EIM Sub-Entity from its other transmission service customers.

(3) **EIM Sub-Entity Implementation Agreement.** An electric utility that has been authorized by the EIM Entity to participate as an EIM Sub-Entity in accordance with 29.2(c)(2) and wishes to become an EIM Sub-Entity must also execute an EIM Sub-Entity Implementation Agreement with the CAISO that establishes—

- (A) the electric utility meets the CAISO qualifications for participation as an EIM Sub-Entity in Section 29.2(c)(1);
- (B) the EIM Sub-Entity Implementation Date, which—
 - (i) the CAISO shall in its discretion determine based on the complexity and compatibility of the transmission and technology systems and the planned timing of the CAISO's implementation of software enhancements, and
 - (ii) must be not less than twelve months and not more than twenty-four months after CAISO confirms that the electric utility meets the CAISO qualifications for participation as an EIM Sub-Entity;
- (C) the implementation fee deposit the electric utility must pay to the CAISO for the estimated start-up costs the CAISO will incur to partition the EIM

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Sub-Entity from the EIM Entity Balancing Authority Area, subject to true-up based on actual costs incurred in accordance with the EIM Sub-Entity Implementation Agreement;

- (D) the obligation of the electric utility to enter into an EIM Sub-Entity Agreement governing its participation in the Real-Time Market; and
- (E) the obligation of the EIM Sub-Entity to either execute the EIM Sub-Entity Scheduling Coordinator Agreement, or retain the services of an entity that has executed the EIM Sub-Entity Scheduling Coordinator Agreement.

(4) **EIM Sub-Entity Implementation Activities.** The CAISO and the prospective EIM Sub-Entity will engage in –

- (A) project management planning and tracking of all implementation tasks, issues and risks through regular meetings and status reports following a detailed project schedule outlining all the steps leading to the market simulation, parallel operations and participation;
- (B) authorization and certification processes associated with execution of the required agreements and any applicable tariff changes necessary for participation;
- (C) integration of the network model data with the CAISO's Full Network Model, including connectivity testing and Full Network Model verification prior to market simulation testing;
- (D) integration and access to non-production environments for integration and testing of market data exchange and modification of prospective EIM Sub-Entity operating and bid-to-bill systems associated with participation, including system integration, security and functional testing of all impacted systems and processes followed by market simulation according to a CAISO test plan outlining scenarios, a timeline and expected actions prior to testing;

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (E) review and approval of information and processes to confirm the Meter Data meets all requirements necessary for the implementation and Settlement of the prospective EIM Sub-Entity, including any associated testing;
 - (F) training events including computer based training modules for various roles and responsibilities, train-the-trainer courses which include hands-on scenario trainings with application tools, and optional participation in modeling workshops and other tracks as appropriate to prepare for transition to production.
- (5) **Readiness Reporting.** The CAISO shall report on the CAISO Website periodically, but not less than once during market simulation on progress towards completing the implementation activities in Section 29.2(c)(4) and once again during parallel operations confirming completion of the implementation activities in Section 29.2(c)(4).
- (6) **Readiness Determination.** No later than 10 days prior to the prospective EIM Sub-Entity Implementation Date as established in the EIM Sub-Entity Implementation Agreement, the CAISO will determine, in consultation with the EIM Entity and the prospective EIM Sub-Entity, whether the systems and processes of the EIM Entity and the prospective EIM Sub-Entity will be ready for the prospective EIM Sub-Entity's participation in the Energy Imbalance Market.

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 or any other Applicable Reliability Criteria as the Balancing Authority for the CAISO Balancing Authority Area and the transmission operator for the CAISO Controlled

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Grid.

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

(b) **EIM Entity.**

(1) **Balancing Authority Obligations.**

- (A) **EIM Entity as Balancing Authority.** An EIM Entity must be a Balancing Authority registered and certified as such under the applicable authorities.
- (B) **Reliability Responsibilities.** Nothing in Section 29 shall alter an EIM Entity's responsibilities under NERC Reliability Standards as the Balancing Authority for the EIM Entity Balancing Authority Area and, to the extent applicable, as the transmission operator for transmission facilities within its Balancing Authority Area.
- (C) **Operating Responsibilities.** During any interruption of the normal operation of the Real-Time Market, the EIM Entity as Balancing Authority shall remain responsible in accordance with Section 29.7 for managing the resources in its Balancing Authority Area and the flows on internal transmission lines, including imports into and exports out of its Balancing Authority Area, for the duration of the interruption.
- (D) **Inadvertent Energy.** An EIM Entity remains responsible for tracking inadvertent Energy and administering the payback of inadvertent Energy for its Balancing Authority Area through processes established by WECC.
- (2) **EIM Entity Agreement.** An EIM Entity must execute an EIM Entity Agreement no later than ninety (90) days before the EIM Entity Implementation Date.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

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

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

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

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

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

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

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

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

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

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

(2) **EIM Entity Scheduling Coordinator Agreement.** An EIM Entity Scheduling Coordinator must enter an EIM Entity Scheduling Coordinator Agreement with

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

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

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

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

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

- (A) perform the obligations of an EIM Entity Scheduling Coordinator under the EIM Entity Scheduling Coordinator Agreement and Section 29;
- (B) perform the obligations of a Scheduling Coordinator under provisions of the CAISO Tariff described in Section 29.1(b);
- (C) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all non-participating resources in the Balancing Authority Area of each EIM Entity that it represents and update such information in a timely manner;
- (D) verify in the manner set forth in the Business Practice Manual for the Energy Imbalance Market that all EIM Resources within the Balancing Authority Area of each EIM Entity represented by the EIM Entity

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Scheduling Coordinator have been registered with the CAISO;

- (E) submit the Interchange schedules for the EIM Entity and any EIM Sub-Entity within its Balancing Authority Area with other Balancing Authorities at the defined Interchange scheduling locations, including creating and processing E-Tags in accordance with NERC, North American Energy Standards Board, and WECC standards and business practices for bilateral schedules between Balancing Authority Areas that are arranged no less than 20 minutes in advance of the Dispatch Interval of the Real-Time Market in which the Interchange will occur and that are included in an EIM Resource Plan;
- (F) match E-Tags and manage schedule curtailments at the defined Interchange scheduling locations with other Balancing Authorities;
- (G) provide EIM Transmission Service Information in accordance with Section 29.17;
- (H) settle all financial obligations arising out of the Real-Time Market for the EIM Entity, including financial settlement with non-participating resources and non-participating load within the EIM Entity Balancing Authority Area;
- (I) submit EIM Base Schedules, EIM Resource Plans and other required information on behalf of the EIM Entity;
- (J) register with the CAISO, consistent with the provisions in the Business Practice Manual for the Energy Imbalance Market, all non-participating resources that the EIM Entity Scheduling Coordinator may designate as EIM Available Balancing Capacity in its EIM Resource Plan; and
- (K) create with the CAISO a Default Energy Bid consistent with the rules specified in Section 39.7.1 for all non-participating resources that the EIM Entity Scheduling Coordinator may designate as EIM Available

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Balancing Capacity in the EIM Resource Plan.

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

(d) **EIM Participating Resources.**

- (1) **Eligibility.** The owner or operator of an EIM Resource is eligible to become an EIM Participating Resource if the EIM Resource –
- (A) meets the eligibility requirements established by the EIM Entity in whose Balancing Authority Area the resource is located or scheduled or to which it may be dynamically transferred; and
 - (B) is capable of delivering Energy, Curtailable Demand, Demand Response Services, or similar services within the time specified by Section 29 for the Real-Time Market in which its EIM Participating Resource Scheduling Coordinator will submit Bids.
- (2) **EIM Participating Resource Agreement.** An EIM Participating Resource must execute an EIM Participating Resource Agreement.
- (3) **Obligations.** An EIM Participating Resource shall –
- (A) perform the obligations of an EIM Participating Resource under the EIM Participating Resource Agreement and Section 29;
 - (B) perform the obligations applicable to Market Participants and resources under the provisions of the CAISO Tariff described in Section 29.1(b);
 - (C) if it represents a Generating Unit, Load of a Participating Load, Proxy Demand Resource, or other qualified resource, perform the obligations required for the resource under the provisions of the CAISO Tariff described in section 29.1(b); and
 - (D) comply with all CAISO Tariff requirements associated with resource

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

registration and the measurement and verification of the associated services to be provided for EIM Resources other than Generating Units or CAISO qualified resources delivering Energy.

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

- (1) **Certification.** An EIM Participating Resource Scheduling Coordinator must be either an existing Scheduling Coordinator or must meet or have met the certification requirements in Section 4.5.1 for a Scheduling Coordinator.
- (2) **EIM Participating Resource Scheduling Coordinator Agreement.** An EIM Participating Resource Scheduling Coordinator must enter an EIM Participating Resource Scheduling Coordinator Agreement with the CAISO, which shall satisfy the obligation to enter a Scheduling Coordinator Agreement under Section 4.5.1 with regard to its representation of the EIM Participating Resource.
- (3) **Representation.** An EIM Participating Resource Scheduling Coordinator-
 - (A) may represent a Market Participant other than an EIM Participating Resource, but only if it enters a Scheduling Coordinator Agreement under Section 4.5.1 with regard to such Market Participant;
 - (B) may not also be an EIM Entity Scheduling Coordinator unless the EIM Participating Resource Scheduling Coordinator is a transmission provider subject to the standards of conduct set forth in 18 C.F.R. § 358; and
 - (C) may represent more than one EIM Participating Resource.
- (4) **Obligations.** An EIM Participating Resource Scheduling Coordinator must –
 - (A) perform the obligations of an EIM Participating Resource Scheduling Coordinator under the EIM Participating Resource Scheduling Coordinator Agreement and Section 29;
 - (B) perform the obligations of a Scheduling Coordinator under the provisions of the CAISO Tariff described in Section 29.1(b);
 - (C) ensure that the entity it represents has obtained any transmission service

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

necessary to participate in the Energy Imbalance Market under the terms of the CAISO Tariff or the tariff of another transmission service provider, as applicable;

(D) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all EIM Participating Resources that it represents, provide such information to the EIM Entity Scheduling Coordinator, and update such information with the CAISO in a timely manner.

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

(f) **EIM Sub-Entity.**

(1) **EIM Sub-Entity Agreement.** A prospective EIM Sub-Entity must execute an EIM Sub-Entity Agreement no later than ninety (90) days before its EIM Sub-Entity Implementation Date.

(2) **EIM Sub-Entity Obligations.** An EIM Sub-Entity shall –

(A) perform the obligations of an EIM Sub-Entity in accordance with the EIM Sub-Entity Agreement, Section 29, and other provisions of the CAISO Tariff that apply to EIM Sub-Entities, subject to the limitations specified in Section 29.1(b)(2)(C);

(B) verify that tariff or contractual arrangements with the EIM Entity for the Balancing Authority Area in which it is located, as necessary or applicable, are in place to enable operation of the Real-Time Market in its sub-area;

(C) qualify as or secure representation by no more than one EIM Sub-Entity Scheduling Coordinator;

(D) define the Load Aggregation Point for the EIM Sub-Entity; and

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (E) unless prohibited from using its own Demand Forecast by the EIM Entity for its Balancing Authority Area, inform the CAISO whether or not the EIM Sub-Entity intends to use the CAISO's Demand Forecast consistent with Section 29.34(d) and, as applicable, provide the EIM Entity with its Demand Forecast.

(3) **EIM Sub-Entity Termination of Participation.**

- (A) **EIM Sub-Entity Agreement.** An EIM Sub-Entity that wishes to terminate participation in the Real-Time Market as an EIM Sub-Entity must terminate the EIM Sub-Entity Agreement pursuant to its terms.
- (B) **Notice.** Delivery to the CAISO of a written notice of termination pursuant to the terms of the EIM Sub-Entity Agreement shall represent the commitment by the EIM Sub-Entity to undertake all necessary preparations to disable the EIM Sub-Entity 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 Sub-Entity within the EIM Entity Balancing Authority Area and transition responsibility to the EIM Entity, as outlined in the Business Practice Manual for the Energy Imbalance Market.

(g) **EIM Sub-Entity Scheduling Coordinator.**

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

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (A) may represent a Market Participant other than an EIM Sub-Entity, but only if it enters a Scheduling Coordinator Agreement under Section 4.5.1 with regard to such Market Participant;
 - (B) may not also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for a Participating Generator, Participating Load, or Demand Resource Provider, unless the EIM Sub-Entity Scheduling Coordinator is a transmission provider subject to the standards of conduct set forth in 18 C.F.R. § 358; and
 - (C) may represent more than one EIM Sub-Entity if it has certified to the CAISO in the manner described in the Business Practice Manual for the Energy Imbalance Market that it has informed each EIM Sub-Entity of the multiple representation.
- (4) **Obligations.** An EIM Sub-Entity Scheduling Coordinator shall-
- (A) perform the obligations of an EIM Sub-Entity Scheduling Coordinator under the EIM Sub-Entity Scheduling Coordinator Agreement and Section 29;
 - (B) perform the obligations of a Scheduling Coordinator under provisions of the CAISO Tariff described in Section 29.1(b);
 - (C) register in the manner set forth in the Business Practice Manual for the Energy Imbalance Market all EIM Sub-Entity non-participating resources that it represents in the EIM Entity Balancing Authority Area and update such information with the CAISO in a timely manner;
 - (D) verify in the manner set forth in the Business Practice Manual for the Energy Imbalance Market that all Sub-Entity EIM Resources within the EIM Entity Balancing Authority Area represented by the EIM Sub-Entity Scheduling Coordinator have been registered with the CAISO;
 - (E) update the Full Network Model according to Section 29.17(a) if authorized by the EIM Entity and notice to the EIM Entity is provided;

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (F) submit transmission Outages in accordance with Section 29.9(b) if authorized by the EIM Entity;
 - (G) submit EIM Manual Dispatch instructions for EIM Resources and non-participating resources they represent if authorized by the EIM Entity;
 - (H) settle all financial obligations arising out of the Real-Time Market for the EIM Sub-Entity, including financial settlement with non-participating resources and non-participating load it represents within the EIM Entity Balancing Authority Area;
 - (I) submit EIM Base Schedules, EIM Resource Plans and other required information on behalf of the EIM Sub-Entity;
 - (J) ensure all EIM Resources and Demand within the EIM Sub-Entity area are metered in accordance with Section 29.10;
 - (K) register with the CAISO, consistent with the provisions in the Business Practice Manual for the Energy Imbalance Market, all non-participating resources that the EIM Entity Scheduling Coordinator may designate as EIM Available Balancing Capacity in its EIM Resource Plan; and
 - (L) create with the CAISO a Default Energy Bid consistent with the rules specified in Section 39.7.1 for all non-participating resources that the EIM Entity Scheduling Coordinator may designate as EIM Available Balancing Capacity in the EIM Resource Plan.
- (5) **Governmental Entities.** Notwithstanding Section 29.4(g)(3)(B), a governmental entity that is an EIM Sub-Entity Scheduling Coordinator may also be an EIM Participating Resource Scheduling Coordinator or a Scheduling Coordinator for resources participating in the CAISO Markets if it agrees to comply with standards of conduct equivalent to those set forth in 18 C.F.R. § 358.

29.5 [Not Used]

29.6 Communications

- (a) **EIM Entity and EIM Sub-Entity.** The EIM Entity or EIM Sub-Entity, as applicable, shall

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

meet the technical and communication requirements specified in the Business Practice Manual for the Energy Imbalance Market, 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 participation of EIM Market Participants in the Real-Time Market except that –
- (1) references to internal resources shall be deemed to include EIM Resources;
 - (2) references in Sections 6.2.2.1 and 6.5.2.1 to the CAISO Controlled Grid and references in Sections 6.5.4.2.2(a) and 6.5.5.1.1 to CAISO Balancing Authority Area shall be deemed references to the EIM Area; and
 - (3) the provisions of Section 6.3.1 that authorize the CAISO to communicate directly with Generators and Demand Response Providers to ensure System Reliability shall not apply to Generators and Demand Response Providers in the EIM Entity's Balancing Authority Area or pseudo-tied from an external Balancing Authority Area to the EIM Entity Balancing Authority Area.
- (c) **Loss of Communications.**
- (1) **Procedures.** The CAISO and each EIM Entity, EIM Sub-Entity, EIM Entity Scheduling Coordinator, and EIM Sub-Entity Scheduling Coordinator shall establish procedures to address an interruption of Real-Time Market 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 or EIM Sub-Entity that loses communication with the CAISO remains responsible for managing its Balancing Authority Area or EIM Sub-Entity area imbalance needs without balancing Energy from the Real-Time Market, and EIM Entities and EIM Sub-Entities shall have communication procedures to address such circumstances.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (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 for the Energy Imbalance Market.
- (e) **Hybrid Resource Forecast Communications.** If the EIM Participating Resource Scheduling Coordinator for a Hybrid 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 for the Energy Imbalance Market.

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 transmission capacity made available to the Real-Time Market to manage Energy imbalances in the EIM Area under normal operations.
- (c) **Load Curtailment.** The CAISO will not issue Dispatch Instructions to an EIM Entity Scheduling Coordinator or an EIM Sub-Entity Scheduling Coordinator with respect to Load or Demand that has not been bid into the Real-Time Market.
- (d) **Dispatch Instructions for EIM Resources.** The CAISO will not issue Dispatch Instructions to an EIM Participating Resource Scheduling Coordinator with respect to Supply that has not been bid into the Real-Time Market.
- (e) **EIM Transfers.** The CAISO will use Transfer System Resources to manage 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 Balancing

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Authority Area and each EIM Entity Balancing Authority Area;

- (4) shall be updated by the CAISO 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 between each Balancing Authority Area in the EIM 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 North American Energy Standards Board standards and business practices.

(f) **Dynamic Imbalance Schedule to Net EIM Transfers.** The CAISO will use Transfer System Resources to –

- (1) model changes in the net five-minute scheduled EIM Transfers that result from Real-Time Dispatch as a Dynamic Schedule between the CAISO and EIM Entity for AGC control accuracy; and
- (2) calculate the dynamic net scheduled EIM Transfers for the CAISO and each EIM Entity Balancing Authority Area and derive from these dynamic net scheduled EIM Transfers the Dynamic Schedules on EIM Internal Interties for E-Tag purposes.

(g) **EIM Manual Dispatch.**

- (1) The EIM Entity may issue an EIM Manual Dispatch to an EIM Resource or a non-participating resource in its Balancing Authority Area, outside of the Market Clearing of the Real-Time Market, when necessary to address reliability or operational issues in the EIM Entity Balancing Authority Area that the CAISO is not able to address through normal economic Dispatch and Congestion Management. The EIM Entity may issue an EIM Manual Dispatch to any EIM Resource or a non-participating resource in its Balancing Authority Area regardless of whether an EIM Sub-Entity Scheduling Coordinator has rights to issue an EIM Manual Dispatch to such EIM Resource or non-participating

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

resource.

- (2) If authorized by the EIM Entity, the EIM Sub-Entity may issue an EIM Manual Dispatch to an EIM Resource or a non-participating resource for which it is registered as the EIM Sub-Entity Scheduling Coordinator when necessary to address reliability or operational issues in its service territory that the CAISO is not able to address through normal economic Dispatch and Congestion Management, provided that such ability by the EIM Sub-Entity shall not prevent the EIM Entity from issuing an EIM Manual Dispatch to any EIM Resource or a non-participating resource in its Balancing Authority Area, and the most recent EIM Manual Dispatch shall take precedence over any prior EIM Manual Dispatch issued to the EIM Resource. Any financial or operational impact on an EIM Sub-Entity resulting from an EIM Manual Dispatch issued by the EIM Entity shall be resolved in accordance with the applicable tariff or contractual arrangements between the EIM Entity and the EIM Sub-Entity.

- (h) **EIM Entity and EIM Sub-Entity Actions in Response to an EIM Manual Dispatch.** If the EIM Entity or EIM Sub-Entity issues an EIM Manual Dispatch to address circumstances on its system –

- (1) the EIM Entity shall immediately inform the CAISO, as specified in the Business Practice Manual for the Energy Imbalance Market, if the EIM Entity Balancing Authority Area is under manual operation;
- (2) the EIM Entity or EIM Sub-Entity shall immediately inform the CAISO of the EIM Manual Dispatch issued to any EIM Resource or non-participating resource by submitting the EIM Manual Dispatch instruction for the affected resource to the CAISO as specified in the Business Practice Manual for the Energy Imbalance Market; and
- (3) the EIM Entity or EIM Sub-Entity remains responsible for informing the Reliability Coordinator of the circumstances creating the need for the EIM Manual Dispatch and may enforce Transmission Constraints, as may be required.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (i) **CAISO Actions in Response to Notification of EIM Manual Dispatch.** Upon receipt of notice of an EIM Manual Dispatch, the CAISO shall –
 - (1) reflect the EIM Manual Dispatch in the Real-Time Market;
 - (2) disregard an EIM Manual Dispatch in the determination of the Locational Marginal Price; and
 - (3) treat an EIM Manual Dispatch to an EIM Participating Resource or non-participating resource as FMM or RTD Instructed Imbalance Energy for Settlement.
- (j) **EIM Disruption.**
 - (1) **Declaration.** The CAISO may declare an interruption of EIM Entity participation in the Real-Time Market when in its judgment –
 - (A) operational circumstances (including a failure of the Real-Time Market operation to produce feasible results in the EIM Area or other CAISO Market Disruption) 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) communications between the CAISO and EIM Market Participants are disrupted and prevent an EIM Entity, EIM Entity Scheduling Coordinator, EIM Sub-Entity, EIM Sub-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 interruption of EIM Entity participation in the Real-Time Market, the CAISO may in its judgment, among other things-
 - (A) separate the affected EIM Entity Balancing Authority Area from the EIM

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Area and maintain the Real-Time Market for other Balancing Authority Areas in the EIM Area by enforcing a net transfer constraint for the affected 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 including the CAISO Balancing Authority Area and in accordance with Section 33.7.5 as applicable to EDAM Transfers, and communication and coordination with all impacted EIM Entities to assess and mitigate potential issues within the EIM Area;
- (C) instruct one or more EIM Entities to maintain system balance within their Balancing Authority Area without RTM Dispatch; or
- (D) in addition or as an alternative, use market results in the Real-Time Market in accordance with Section 7.7.9 or take any of the actions specified in Section 7.7.6 with respect to the Real-Time Market, except that if Section 7.7.6 calls for the use of Day-Ahead Market results, the CAISO will use:
 - (i) the price specified in the EIM Entity's open access transmission tariff as the LMP;
 - (ii) the EIM Entity's or EIM Sub-Entity's EIM Base Schedule as the schedule;
 - (iii) the EIM Bid Adder from the most recent corresponding interval that is available as the EIM Bid Adder; and
 - (iv) the emissions rate set by the California Air Resources Board for an unspecified source multiplied by the daily Greenhouse Gas Allowance Price.

- (3) **EIM Entity Responsibility.** In response to an interruption of EIM Entity participation in the Real-Time Market by the CAISO, all EIM Entities shall follow NERC Reliability Standards applicable to their roles as Balancing Authorities in

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

an effort to alleviate operational and system conditions and restore routine operations.

- (4) **EIM Entity and EIM Sub-Entity Scheduling Coordinator Responsibility.** All EIM Entity Scheduling Coordinators and EIM Sub-Entity Scheduling Coordinators shall promptly inform the CAISO of actions taken by the EIM Entities and EIM Sub-Entities they represent in response to an interruption of EIM Entity or EIM Sub-Entity participation in the Real-Time Market by the CAISO through updates to their EIM Base Schedules, Interchange E-Tags, transmission limit adjustments, or Outage and derate information, as applicable.
- (5) **System Restoration.** The CAISO shall reinstate normal operation of the Real-Time Market in the EIM Area at such time as it determines that the conditions that caused the interruption of EIM Entity or EIM Sub-Entity participation in the Real-Time Market have been resolved.

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

- (1) **Inability to Resolve Congestion.** The CAISO will provide information to EIM Entities about Congestion that the Real-Time Market 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) **EIM Entity Action.** When the WECC unscheduled flow mitigation procedure is initiated, each EIM Entity shall adjust its schedules as determined by the WECC procedure and immediately inform the CAISO of the changes, as well as any affected EIM Sub-Entities.
- (4) **CAISO Action.** When WECC's unscheduled flow mitigation procedure is initiated, the CAISO shall reflect the affected EIM Market Participant schedules in the Real-Time Market as determined by the WECC procedure, EIM Entity, EIM Sub-Entity, CAISO Operating Procedures, and Business Practice Manuals for the

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

CAISO Balancing Authority Area and EIM Entity Balancing Authority Areas.

29.8 [Not Used]

29.9 Outages and Critical Contingencies.

(a) **Applicability of Section 9.** Section 9 shall not apply to EIM Market Participants except as referenced in Section 29.9.

(b) **Transmission Scheduled Outages.**

- (1) **Responsibility.** The EIM Entity shall be responsible for performing engineering studies with regard to, and modeling and approving, Outages on transmission facilities for maintenance purposes within the EIM Entity Balancing Authority Area, including making any necessary arrangements for this purpose regarding the transmission capacity made available by an EIM Transmission Service Provider to the Real-Time Market. The EIM Entity may delegate its responsibilities under this Section 29.9(b) to an EIM Sub-Entity within its Balancing Authority Area with regard to transmission facilities for which the EIM Sub-Entity acts as the transmission operator, provided that the EIM Entity shall notify the CAISO of the delegation in accordance with the timelines and procedures in the Business Practice Manual for the Energy Imbalance Market.
- (2) **Notice.** The EIM Entity Scheduling Coordinator or, if delegated under Section 29.9(b)(1), the EIM Sub-Entity Scheduling Coordinator shall submit notice of transmission Outages approved by the EIM Entity or EIM Sub-Entity to the CAISO by the means set forth in the Business Practice Manual for the Energy Imbalance Market and at least seven Business Days prior to the planned Outage.
- (3) **Notice of Modification.** The EIM Entity Scheduling Coordinator or, if delegated under Section 29.9(b)(1), the EIM Sub-Entity Scheduling Coordinator may submit a notice of modification of an approved transmission Outage and any resulting updates to EIM Intertie limits to the CAISO by the means set forth in the Business Practice Manual for the Energy Imbalance Market and in accordance with the deadlines set forth in Section 9 and Section 29.9.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (4) **Contents of Notice.** The EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator notices of approved transmission Outages shall include –
- (A) the start and finish date for each Outage for maintenance purposes; 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, Outages of EIM Resources and non-participating resources for maintenance purposes within the EIM Entity Balancing Authority Area. The EIM Entity may delegate its responsibilities under this Section 29.9(c) to an EIM Sub-Entity within its Balancing Authority Area with regard to EIM Resources and non-participating resources for which the EIM Sub-Entity acts as the EIM Sub-Entity Scheduling Coordinator, provided that the EIM Entity shall notify the CAISO of the delegation in accordance with the timelines and procedures in the Business Practice Manual for the Energy Imbalance Market.
 - (2) **Notice.** The EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator shall submit notice of Outages of EIM Resources and non-participating resources approved by the EIM Entity or EIM Sub-Entity to the CAISO by the means set forth in the Business Practice Manual for the Energy Imbalance Market and at least seven Business Days prior to the planned Outage.
 - (3) **Contents of Notice.** The EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator notices of approved Outages of EIM Resources and non-participating resources shall include-
 - (A) the start and finish date for each Outage for maintenance purposes; and
 - (B) such information other than start and finish date as is required in Section 9.3.6 for Operators seeking approval of Generating Unit Outages.

- (d) **Actions Regarding Scheduled Outages.**
- (1) **CAISO Evaluation of Scheduled Outages.** The CAISO will implement the transmission and Generation Outages approved by the EIM Entity or EIM Sub-Entity through the Day-Ahead Market process and will inform the EIM Entity and EIM Sub-Entity Scheduling Coordinator where applicable of any anticipated overloads.
 - (2) **EIM Entity and EIM Sub-Entity Action.** Based on the information provided by the CAISO to the EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator, the EIM Entity and EIM Sub-Entity shall have the opportunity to take action to adjust or cancel Outages as it determines to be necessary.
 - (3) **Notice to Reliability Coordinator.**
 - (A) **EIM Entity and EIM Sub-Entity Responsibility.** The EIM Entity and EIM Sub-Entity are responsible for informing the Reliability Coordinator of scheduled Outages.
 - (B) **CAISO Facilitation.** Upon request of an EIM Entity or EIM Sub-Entity, and without assuming any liability, the CAISO may provide a third party Reliability Coordinator with Outage information submitted to the CAISO by the EIM Entity or EIM Sub-Entity on behalf of the EIM Entity or EIM Sub-Entity.
- (e) **Forced Outages.** An EIM Entity Scheduling Coordinator and an EIM Sub-Entity Scheduling Coordinator shall comply with the reporting provisions of Section 9 with regard to Forced Outages of transmission facilities within the EIM Entity Balancing Authority Area or within the EIM Sub-Entity area they represent and an EIM Participating Resource Scheduling Coordinator shall comply with the reporting provisions of Section 9 with regard to Forced Outages of Generating Units it represents as EIM Resources. The applicable provisions of Section 9 as to Forced Outages on transmission facilities and Generating Units include, but are not limited to, Sections 9.3.6.4.1(b), 9.3.6.4.1(c),

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

9.3.6.4.1(d), 9.3.6.4.2(2), 9.3.6.4.2(3), and 9.3.10.

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

- (1) physical MVA or MW limits under base case and contingencies;
- (2) scheduling limits for EIM Intertie transactions based on E-Tags; and
- (3) contractual limits on Transmission Interfaces where the EIM Transmission Service Provider has transmission rights.

29.10 Metering and Settlement Data.

- (a) **Telemetry Requirements.** The EIM Entity shall ensure that each EIM 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 rated capacity of 10 MW or greater (including each aggregated resource with a total rated capacity of 10 MW or greater) and each EIM Intertie has telemetry meeting the requirements of the Business Practice Manual for the Energy Imbalance Market.
- (b) **Metering for Settlement Purposes.** 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). The EIM Sub-Entity will include the EIM Entity on Schedule 3 or 5 of the applicable meter service agreement to give the EIM Entity access to the EIM Sub-Entity Meter Data.
- (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

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

determines that the applicable metering standards meet or exceed the standards for CAISO Metered Entities.

- (d) **Interchange Meter Data.** Metering for Settlement purposes is required for all EIM Interties.
- (e) **EIM Energy Imbalance with an External Balancing Authority Area.** For each EIM External Intertie Bid that clears the FMM resulting in a 15-minute EIM External Intertie schedule –
 - (1) 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 the FMM Bid submittal, at least 20 minutes before the start of the Operating Hour; and
 - (2) the EIM Entity Scheduling Coordinator must provide an updated Energy profile to the extent required by Section 30.5.7.

29.11 Settlements and Billing for EIM Market Participants.

- (a) **Applicability.** Section 29.11, rather than Section 11, shall apply to the CAISO Settlement with EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, and EIM Participating Resource Scheduling Coordinators, except as otherwise provided, but not to other Scheduling Coordinators. Settlement of the Real-Time Market with EDAM Entity Scheduling Coordinators, EDAM Resource Scheduling Coordinators, and EDAM Load Serving Entity Scheduling Coordinators is also governed by Section 33.11. Settlement under Section 33.11 results in outcomes not produced for EIM Market Participants that are not EDAM Market Participants, including Settlement of Demand within an EDAM Entity Balancing Authority Area, Settlement of Supply from EDAM Resources that would otherwise be settled as non-participating resources in an EIM Entity Balancing Authority Area, sequential netting of Bid Cost Recovery from the RUC to the RTM, and Settlement of transfer revenue associated with an EDAM Transfer limit established in accordance with Section 33.7 and Section 33.18.

(b) **Imbalance Energy.**

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

(A) **Calculation.**

- (i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's FMM Instructed Imbalance Energy in the same manner as it calculates FMM Instructed Imbalance Energy under Section 11.5.1.1, except that references to the Day-Ahead Schedule in the relevant Appendix A definitions shall be deemed references to the EIM Base Schedule, unless the EIM Participating Resource is also an EDAM Resource (in which case the Day-Ahead Schedule will be referenced), and that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the FMM that is identified by the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator prior to the start of the FMM.
- (ii) **Non-Participating Resources.** The CAISO will calculate the FMM Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area in the same manner as it calculates FMM Instructed Imbalance Energy under Section 11.5.1.1, except that references to the Day-Ahead Schedule in the relevant Appendix A definitions shall be deemed references to the EIM Base Schedule, and that the CAISO will include any Energy from an EIM Manual Dispatch or EIM Auto-Match of the EIM non-participating resource in the FMM that is identified by the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator prior to the start of the FMM.

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

- (i) the FMM Instructed Imbalance Energy with the EIM Participating

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Resource Scheduling Coordinator for EIM Participating
Resources; and

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

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

(A) **Calculation.**

- (i) **EIM Participating Resources.** The CAISO will calculate an
EIM Participating Resource's RTD Instructed Imbalance Energy
in the same manner in which it calculates RTD Instructed
Imbalance Energy under Sections 11.5.1.2 and 11.5.5, except
that the CAISO will include any Energy from an EIM Manual
Dispatch of the EIM Participating Resource in the RTD that is
identified by the EIM Entity Scheduling Coordinator or EIM Sub-
Entity Scheduling Coordinator.
- (ii) **Non-Participating Resources.** The CAISO will calculate the
RTD Instructed Imbalance Energy of non-participating resources
in an EIM Entity Balancing Authority Area in the same manner in
which it calculates RTD Instructed Imbalance Energy under
Section 11.5.1.2 and 11.5.5, except that the CAISO will include
any Energy from an EIM Manual Dispatch or EIM Auto-Match of
the EIM non-participating resource in the RTD that is identified
by the EIM Entity Scheduling Coordinator or EIM Sub-Entity
Scheduling Coordinator.

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

- (i) with the EIM Participating Resource Scheduling Coordinator for
EIM Participating Resources; and

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

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

(3) **Uninstructed Imbalance Energy.**

(A) **EIM Participating Resources.**

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

(B) **Non-Participating Resources.**

- (i) **Calculation.** For non-participating resources in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy in accordance with Section 11.5.2, except that the CAISO will treat an EIM Base Schedule as a Day-Ahead Schedule and the CAISO will treat an EIM Manual Dispatch and an EIM Auto-Match as a Dispatch Instruction.
- (ii) **Settlement.** The CAISO will settle the Uninstructed Imbalance Energy for non-participating resources in an EIM Entity Balancing Authority Area at the applicable RTD Locational Marginal Price in accordance with Section 11.5.2.1 with the applicable EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator and will treat EIM Entity Balancing Authority Demand in the same manner as the CAISO treats

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

CAISO Demand under that Section.

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

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

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

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

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Locational Marginal Price in accordance with Section 11.5.2.1
with the applicable EIM Entity Scheduling Coordinator or EIM
Participating Resource Scheduling Coordinator.

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

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

(2) **Settlement.**

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

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

- (i) the CAISO will apply a zero-percent Transmission Losses factor when calculating the Initial EIM base load schedule per section 29.34(g); and
- (ii) the EIM Entity Scheduling Coordinator will apply a zero-percent Transmission Losses factor when calculating their metered Demand.

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

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

(A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area exceeds the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall settle

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

with the applicable EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the relevant Load Aggregation Point at a price that is 125% of the Hourly Real-Time LAP Price.

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

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

- (A) **Level 1 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 5% but less than or equal to 10% and by at least 2 MW, the CAISO shall settle with the applicable EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the relevant Load Aggregation Point at a price that is 75% of the Hourly Real-Time LAP Price.
- (B) **Level 2 Charge.** If, during any Trading Hour, the metered Demand within an EIM Entity Balancing Authority Area is less than the EIM Base Schedule of Supply submitted by the EIM Entity by more than 10% and by at least 2 MW, the CAISO shall settle with the applicable EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator for all Uninstructed Imbalance Energy at the relevant Load Aggregation Point at a price that is 50% of the Hourly Real-Time LAP Price.

(3) **Distribution of Revenues.**

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (A) **Apportionment.** The CAISO will calculate the total daily excess revenues received from under-scheduling charges and over-scheduling charges under Section 29.11(d)(1) and (2) and apportion them to Balancing Authority Areas in the EIM Area that were not subject to either under-scheduling or over-scheduling charges during the Trading Day according to metered Demand.
- (B) **Allocation.** The CAISO will allocate –
- (i) the amounts apportioned to EIM Entity Balancing Authority Areas pursuant to Section 29.11(d)(3)(A) to the applicable EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator; and
 - (ii) the amounts apportioned to the CAISO Balancing Authority Area pursuant to Section 29.11(d)(3)(A) to Scheduling Coordinators in the CAISO Balancing Authority Area according to metered Demand.
- (4) **Exemption.** An EIM Entity will be exempt from under-scheduling and over-scheduling charges under Section 29.11(d)(1) and (2) if it uses the Demand Forecast prepared by the CAISO in its EIM Resource Plan and it approves EIM Base Schedules for its resources within +/- 1% of the CAISO Demand Forecast, as determined according to the Business Practice Manual for the Energy Imbalance Market. This exemption will not apply to an EIM Entity that permits any EIM Sub-Entity located within its Balancing Authority Area to submit its own Demand Forecast.
- (e) **Neutrality Accounts.**
- (1) **In General.** The CAISO will collect neutrality amounts from EIM Market Participants to recover differences in Real-Time Market payments made and Real-Time Market payments received.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (2) **Real-Time Congestion Offset.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Congestion Offset allocation calculated pursuant to Section 11.5.4.1.2.
 - (3) **Real-Time Imbalance Energy Offset Allocation.** The CAISO will assess EIM Entity Scheduling Coordinators a Real-Time Imbalance Energy Offset allocation calculated pursuant to Section 11.5.4.1.1.
 - (4) **Real-Time Marginal Cost of Losses Offset.** The CAISO will allocate the Real-Time Marginal Cost of Losses Offset to EIM Entity Scheduling Coordinators pursuant to Section 11.5.4.1.3.
 - (5) **Marginal Greenhouse Gas Cost Offset.** The CAISO will allocate the Marginal Greenhouse Gas Cost Offset to a GHG Regulation Area's metered Demand pursuant to Section 11.5.4.1.4.
 - (6) **EIM Transfer Revenue.** The CAISO will allocate EIM Transfer revenue to EIM Entity Scheduling Coordinators pursuant to Section 11.5.4.1.5.
 - (7) **Other Neutrality Adjustments.** The CAISO will levy additional charges on or make additional payments to EIM Market Participants as adjustments in accordance with Section 11.14.
- (f) **Real-Time Bid Cost Recovery.**
- (1) **In General.** The CAISO will provide EIM Participating Resources RTM Bid Cost Recovery. The CAISO will net RUC Bid Cost Shortfalls and RUC Bid Cost Surpluses in accordance with Section 11.8.5 for EIM Participating Resources that are also EDAM Resources.
 - (2) **Calculation of Real-Time Bid Cost Recovery.** The CAISO will calculate Real-Time Bid Cost Recovery in accordance with Section 11.8.4, except that the CAISO will treat a non-zero EIM Base Schedule of an EIM Participating Resource as an IFM Self-Schedule and the corresponding intervals as IFM self-commitment intervals.
 - (3) **RTM Energy Bid Cost for Storage Resources**

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

The CAISO will calculate Real-Time Market Energy Bid Cost for EIM Participating Resources that are storage resources and participate as Non-Generator Resources in accordance with 11.8.4.1.5.1, except that the CAISO will treat references to Day-Ahead Energy Schedules as EIM Base Schedules. The CAISO will not consider Day-Ahead Market Locational Marginal Prices in the calculation of Real-Time Market Energy Bid Costs for EIM Participating Resources that are storage resources and participate as Non-Generator Resources.

(4) **Application of Real-Time Performance Metric.**

The CAISO will adjust the RTM Energy Bid Cost, the RTM Market Revenues, and RTM Minimum Load Costs determined pursuant to Section 29.11(f)(2) by multiplying the Real-Time Performance Metric with those amounts for the applicable Settlement Interval pursuant to the rules specified in Section 11.8.4.4 and its subsections, except that the CAISO will treat an EIM Base Schedule as a Day-Ahead Schedule.

(5) **Allocation of EIM Entity RTM Bid Cost Uplift.**

(A) **Calculation of Charge.** The Net RTM Bid Cost Uplift will be determined for each EIM Entity Balancing Authority Area in accordance with the methodology set forth in Section 11.8.6.

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

(g) **EIM Sub-Entity Implementation Cost.**

The CAISO will charge electric utilities that enter into an EIM Sub-Entity Implementation Agreement pursuant to Section 29.2(c) a fee to cover the actual costs the CAISO incurs to separate the EIM Sub-Entity from the EIM Entity Balancing Authority Area. The EIM Sub-Entity is responsible for actual costs incurred by the CAISO in conducting

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

implementation activities.

- (1) The EIM Sub-Entity will provide the CAISO a \$260,000 deposit for the implementation of the EIM Sub-Entity at the time of the request. The CAISO shall draw from the EIM Sub-Entity's deposit to cover actual costs incurred during implementation. Whenever the implementation costs exceed the deposit(s) received, the CAISO will invoice the EIM Sub-Entity for an additional deposit in \$25,000 increments.
 - (2) Invoices shall be due no later than thirty (30) days after the date of receipt. Any invoice payment past due will accrue interest, per annum, calculated in accordance with 5 C.F.R. 1315.10.
 - (3) All eligible refunds will be processed following the CAISO's generally accepted accounting practices, including batch deposit refund disbursements. Any deadline for CAISO action will be tolled to the extent the EIM Sub-Entity has not provided the CAISO with the appropriate documents to facilitate the EIM Sub-Entity's refund.
- (h) **EIM Initial Fee.** The CAISO will charge Balancing Authority Areas that enter into an EIM Implementation Agreement pursuant to Section 29.2(b) an initial fee to cover a share of the capital and operations and maintenance costs associated with setting up the Real-Time Market to accommodate the participation of the Balancing Authority as an EIM Entity. The fee will be established by the EIM Implementation Agreement entered into pursuant to Section 29.2(b)(1) as accepted by FERC.
- (i) **EIM Administrative Charge.**
- (1) **In General.** The CAISO will charge EIM Market Participants an EIM Administrative Charge consisting of the real-time portion of the Market Services Charge and the system operations charges described in Section 11.22.2.
 - (2) **Market Services Charge.** The Market Services Charge shall be the product of the Market Services Charge for each Scheduling Coordinator as calculated according to the formula in Appendix F, Schedule 1, Part A, the real-time market

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

percentage as calculated in the cost-of-service study according to Appendix F, Schedule 1, Part A, and the sum of Gross FMM Instructed Imbalance Energy (excluding FMM Manual Dispatch Energy) and Gross RTD Instructed Imbalance Energy (excluding RTD Manual Dispatch Energy Standard Ramping Deviation, Ramping Energy Deviation, Residual Imbalance Energy, and Operational Adjustments).

- (3) **System Operations Charge.** In 2024 and 2025, the System Operations Charge will be the product of the System Operations Charge for each Scheduling Coordinator, as calculated according to the formula in Appendix F, Schedule 1, Part A, the real-time dispatch percentage as calculated in the cost-of-service study conducted according to Appendix F, Schedule 1, Part A, and the absolute difference between metered energy and the EIM Base Schedules.
- (4) **System Operations Real-Time Dispatch Charge.** Beginning in 2026, the System Operations Real-Time Dispatch Charge will be the product of the System Operations Real-Time Dispatch Charge for each Scheduling Coordinator, as calculated according to the formula in Appendix F, Schedule 1, Part A, and the absolute difference between metered energy and the EIM Base Schedules.
- (5) **Minimum EIM Administrative Charge.** The CAISO will calculate the minimum EIM Administrative Charge as the product of the sum of the real-time activities associated with Market Services Charge and the real-time activities associated with system operations, as well as –
 - (A) five percent of the total gross absolute value of Supply of all EIM Market Participants; plus
 - (B) five percent of the total gross absolute value of Demand of all EIM Market Participants.
- (6) **Withdrawing EIM Entity.** If the EIM Entity notifies the CAISO of its intent to terminate participation in the Energy Imbalance Market and requests suspension of the Energy Imbalance Market in its Balancing Authority Area under Section

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

29.4(b)(4), the CAISO will charge the EIM Entity the minimum EIM Administrative Charge calculated under Section 29.11(i)(4) during the notice period.

(7) **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.

(8) **EDAM Administrative Charge.** An EIM Market Participant that is also an EDAM Market Participant will pay the EDAM Administrative Charge and will not pay the EIM Administrative Charge.

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

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

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

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

(l) **Settlement.** With regard to the CAISO's assessment and payment of charges to, and collection of charges from, EIM Market Participants pursuant to Sections 11 and 29.11, the CAISO shall assess, pay and collect such charges, address disputed invoices, assess, pay and collect Settlement-related fees and charges, including those under Sections 11.21, 11.28, and 11.29, and make any financial adjustments in accordance with the terms and schedule set forth in Section 11.

(m) **Charges Related to RTM Participation of Interties.** In the event that an EIM Entity enables participation in the Real-Time Market on EIM External Interties, the EIM Entity

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Scheduling Coordinator shall also be subject to any applicable charges under Sections 11.31 and 11.32.

- (n) **EIM Transfers and Settlement for Contingency Reserve Obligations.** The CAISO shall allocate Operating Reserve Obligations to EIM Entity Scheduling Coordinators for EIM Transfers as follows –
 - (1) EIM Entity Scheduling Coordinators will receive a credit equal to three (3) percent of the hourly MW EIM Transfer into the CAISO Balancing Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.3 and 11.10.4.3, respectively; and
 - (2) EIM Entity Scheduling Coordinators will receive a charge equal to three (3) percent of the hourly MW EIM Transfer out of the CAISO Balancing Authority Area multiplied by the hourly user rate for Spinning Reserves and Non-Spinning Reserves, as calculated per Section 11.10.3.3 and 11.10.4.3, respectively.
- (o) **Application of Persistent Deviation Metric.**

The CAISO will modify the Bid Cost Recovery calculations described in Section 29.11(f) and Residual Imbalance Energy payments in Section 11.5.5 as described in Section 11.17, except that the CAISO will treat an EIM Base Schedule as a Day-Ahead Schedule.
- (p) **Flexible Ramping Product.** The CAISO will allocate and settle payments and charges for the Flexible Ramping Product according to Section 11.25, where the CAISO will consider EIM Base Schedules of non-participating resources as Self-Schedules.
- (q) **EIM Transfer System Resource Settlement Information.** The CAISO will provide EIM Entities with non-binding Settlement information associated with Energy transfer schedule changes from their respective base schedules between EIM Entity Balancing Authority Areas.
- (r) **EIM Transfer System Resource Settlement.**
 - (1) **EIM Transfer System Resource Registration.** The CAISO will provide each EIM Entity with financially binding Settlement of Energy transfer schedule changes from its respective base schedules between EIM Entity Balancing

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Authority Areas, unless the EIM Entity Balancing Authority Areas are also EDAM Entity Balancing Authority Areas in which case transfer schedule changes will be referenced from the Day-Ahead Schedule for the EDAM Transfer, and will –

- (A) establish for each EIM Entity that shares an EIM Internal Intertie a to/from EIM Transfer System Resource pricing location in their respective EIM Entity Balancing Authority Area;
- (B) associate with each to/from EIM Transfer System Resource pricing location, a unique base EIM Transfer System Resource that accounts for Energy transfer schedule changes between EIM Entity Balancing Authority Areas;
- (C) require each EIM Entity Scheduling Coordinator to submit EIM Base Schedules and E-Tags that identifies Energy transfer schedule changes at the registered base EIM Transfer System Resource; and
- (D) reject EIM Base Schedule changes at the to/from EIM Transfer System Resource pricing location not associated with the registered base EIM Transfer System Resource.

(2) **Settlement for EIM Transfer System Resource Changes.** The CAISO will settle EIM Transfer System Resource changes established pursuant to Section 29.11(r)(1) as –

- (A) FMM Instructed Imbalance Energy or RTD Instructed Energy based on the Settlement Interval in which the E-Tag is received, without regard for other Energy types identified in Sections 11.5.1.1 or 11.5.2.2, or as an Operational Adjustment if the E-Tag is received after the end of the Operating Hour for purposes of Energy accounting in accordance with the applicable WECC business practices;
- (B) based on the difference between the E-Tag and the EIM Transfer System Resource base schedule;
- (C) at the relevant FMM or RTD Locational Marginal Price at each unique

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

EIM Transfer System Resource pricing location associated with the base
EIM Transfer System Resource; and

(D) including any contribution that the base EIM Transfer System Resource
might have on the RTM Bid Cost Recovery pursuant to Section 29.11(f).

(s) **EIM Entity Access to EIM Sub-Entity Settlement Information.**

An EIM Entity shall have access to CAISO Settlement Statements and Invoices
for all EIM Sub-Entities within the Balancing Authority Area for that EIM Entity.

(t) **Revenue and Surcharges for the Assistance Energy Transfer Product.**

The revenue from assistance Energy transfers paid by a participating Balancing
Authority Area in the EIM Area that has elected to receive assistance Energy in
accordance with Section 29.34(n)(3), *i.e.*, the EIM Assistance Energy Transfer
Surcharge, will be calculated, allocated and distributed as follows—

(1) Assistance Energy Transfer Surcharge.

(A) Calculation. Other than amounts directly attributable to actions
taken in coordination with the Reliability Coordinator, if a
Balancing Authority Area in the EIM Area receives an assistance
Energy transfer, then the EIM Assistance Energy Transfer
Surcharge will apply to the lower of the quantities specified in
Section 29.11(t)(1)(A)(i) or (ii):

- (i) the higher of the quantity of the failure of the upward
capacity test in Section 29.34(l) or the upward flexibility
test in Section 29.34(m), or
- (ii) the quantity of net EIM Transfers excluding base
scheduled transfers as identified on all after-the-fact E-
Tags associated with EIM Transfers into the participating
Balancing Authority Area.

- (a) If the EIM Assistance Energy Transfer
Surcharge is applied to the assistance Energy

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

transfers received by an EIM Entity pursuant to Section 29.11(t)(1)(A)(ii), then the quantity of EIM Transfers subject to the EIM Assistance Energy Transfer Surcharge will be adjusted to reflect the EIM Upward Available Balancing Capacity as a credit.

- (b) If the EIM Assistance Energy Transfer Surcharge is applied to the assistance Energy transfers received by the CAISO pursuant to Section 29.11(t)(1)(A)(ii), then the quantity of EIM Transfers subject to the EIM Assistance Energy Transfer Surcharge will be adjusted to reflect the sum of all Regulation Up (adjusted for Regulation non-compliance quantities) within the CAISO Balancing Authority Area as a credit.

(B) Allocation. The revenue collected through the EIM Assistance Energy Transfer Surcharge from participating Balancing Authority Areas in the EIM Area that fail the upward capacity test in Section 29.34(l) or the upward flexibility test in Section 29.34(m) will be allocated, pro rata, to all other Balancing Authority Areas in the EIM Area with net EIM Transfers, excluding base scheduled transfers, in the export direction if such Balancing Authority Areas passed the upward capacity test in Section 29.34(l) and the upward flexibility test in Section 29.34(m). A Balancing Authority Area is eligible for a revenue allocation even if it has not elected to receive assistance Energy transfers.

(C) Distribution. The revenue collected through the EIM Assistance

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Energy Transfer Surcharge will be allocated to the net exporting Balancing Authority Areas in the EIM Area that pass the upward capacity test in Section 29.34(l) and the upward flexibility test in Section 29.34(m) in accordance with Section 29.11(t)(2) will be distributed as follows:

- (1) to the EIM Entity Scheduling Coordinators for sub-allocation according to its OATT, or
- (2) to the CAISO for sub-allocation to Scheduling Coordinators that provide incremental Energy net of FMM Instructed Imbalance Energy, RTD Instructed Imbalance Energy, and Uninstructed Imbalance Energy excluding non-Participating Load.

(2) Assistance Energy Transfer Surcharges.

- (A)** Any assistance Energy transfer surcharges allocated to the net importing Balancing Authority Areas in the EIM Area that fail the upward capacity test in Section 29.34(l) or the upward flexibility test in Section 29.34(m) will be allocated to the EIM Entity Scheduling Coordinator for sub-allocation according to its OATT. Any assistance Energy transfer charges allocated to the CAISO Balancing Authority Area will be sub-allocated based on Measured Demand, excluding Demand associated with ETC or TOR Self-Schedules for which a RTM Congestion Credit was provided as specified in Section 11.5.7, and excluding Demand associated with ETC, Converted Right, or TOR Self-Schedules for which an IFM Congestion Credit was provided as specified in Section 11.2.1.5; regardless of whether an MSS Operator has elected gross or net Settlement, Scheduling Coordinators for MSS Operators will receive their allocation based on the MSS

Aggregation Net Non-ETC/TOR Measured Demand.

29.12 Creditworthiness

- (a) **Requirements.** EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, and EIM Participating Resource Scheduling Coordinators shall comply with the credit and other requirements of Section 12.
- (b) **Credit Default.** In the event of a failure to satisfy the credit or other requirements in Section 12, the consequences specified in Section 12 shall apply to EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, and EIM Participating Resource Scheduling Coordinators.

29.13 Dispute Resolution

- (a) **Invoices.** Confirmation and validation of any dispute associated with the participation of EIM Market Participants in the Real Time Market is subject to Section 11.29.8 and shall be managed through the CAISO's customer inquiry, dispute, and information system and as provided in the Business Practice Manual for the Energy Imbalance Market.
- (b) **Other Disputes.** EIM Market Participants shall be subject to dispute resolution pursuant to Section 13.

29.14 Uncontrollable Forces, Indemnity, Liabilities, and Penalties

The provisions of Section 14 regarding Uncontrollable Forces, indemnity, liability, and penalties shall apply to the participation of EIM Market Participants in the Real-Time Market.

29.15 [Not Used]

29.16 [Not Used]

29.17 EIM Transmission System

- (a) **Information.** Each EIM Entity, and any EIM Sub-Entity authorized by the EIM Entity to perform one or more of the following tasks, shall –
 - (1) deliver EIM Transmission Service Information to the CAISO regarding the network topology information associated with transmission capacity that it owns, controls, or has a contractual entitlement to that may be used in the Real-Time Market;

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (2) deliver EIM Transmission Service Information to the CAISO regarding the network topology information associated with transmission capacity that each other EIM Transmission Service Provider owns, controls, or has a contractual entitlement to within the EIM Entity Balancing Authority Area that may be used in the Real-Time Market;
 - (3) update the EIM Transmission Service Information no less frequently than the timelines for updates to the Full Network Model as provided in the CAISO Tariff and Business Practice Manual for the Energy Imbalance Market; and
 - (4) ensure that the EIM Transmission Service Information is accurate and complete.
- (b) **Effectiveness.** The EIM Transmission Service Information shall only be used for operation of the CAISO Markets in accordance with the procedures set forth in the Business Practice Manual for the Energy Imbalance Market.
- (c) **Availability.** Each EIM Entity and EIM Sub-Entity shall ensure that all EIM Transmission Service Providers in its Balancing Authority Area or EIM Sub-Entity area make available for use in the Real-Time Market transmission capacity that is included in the EIM Transmission Service Information and that is not otherwise encumbered, reserved, scheduled, or being used by its transmission customers or by others.
- (d) **Information on Availability.** Each EIM Entity Scheduling Coordinator and EIM Sub-Entity Scheduling Coordinator shall inform the CAISO in the manner and by the deadlines specified in the Business Practice Manual for the Energy Imbalance Market regarding the availability of the transmission capacity identified in the EIM Transmission Service Information for use in the Real-Time Market.
- (e) **EIM Transfer Limit.** A Balancing Authority that has entered into an EIM Implementation Agreement to become an EIM Entity shall establish and inform the CAISO of the maximum EIM Transfer limit at least ninety days prior to the EIM Entity Implementation Date in accordance with the Business Practice Manual for the Energy Imbalance Market.
- (f) **EIM Transfer Availability.**
 - (1) **In General.** The ISO will model individual constraints for each EIM Transfer limit

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

submitted by each EIM Entity that makes transmission available on an EIM Internal Intertie.

- (2) **Use of Interchange Transmission Rights.** The EIM Entity Scheduling Coordinator shall determine the EIM Transfer limit made available for use in the Real-Time Market through interchange transmission rights and communicate that limit to the CAISO prior to the start of the next Dispatch Interval in accordance with the procedures and timelines for submission and acceptance in the Business Practice Manual for the Energy Imbalance Market.
- (3) **Use of Available Transfer Capability.** The EIM Entity Scheduling Coordinator shall determine the EIM Transfer limit made available to the Real-Time Market through available transfer capability in accordance with its tariff and communicate that limit to the CAISO prior to the start of the next Dispatch Interval in accordance with the procedures and timelines for submission and acceptance in the Business Practice Manual for the Energy Imbalance Market.
- (4) **Multiple EIM Transfer Limits.** If there are two or more EIM Entity Balancing Authority Areas that share the same EIM Internal Intertie, the CAISO's Security Constrained Economic Dispatch in the Real-Time Unit Commitment and Real-Time Dispatch will enforce the individual EIM Transfer limit for each EIM Entity Balancing Authority Area while allowing Energy to wheel through the EIM Entity Balancing Authority Areas based on the transmission made available for use in the Real-Time Market.
- (5) **EIM Transfers and CAISO Scheduling Points.** EIM Transfers shall compete for Available Transfer Capability at interties that are an EIM Internal Intertie and a CAISO Scheduling Point.
- (6) **EIM Transfer Limit Constraints.** The CAISO's Security Constrained Economic Dispatch in the Real-Time Unit Commitment and Real-Time Dispatch shall enforce the EIM Transfer limit and the associated physical limit at each EIM

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Internal Intertie.

- (7) **EIM Transfer Limits at EDAM Interties.** The CAISO will not re-optimize EDAM Transfer limits established in accordance with Section 33.16, Section 33.17, and Section 33.18 in the Real-Time Market, and will establish separate EIM Transfer limits to represent other transmission capacity from the Day-Ahead Market at each EDAM Internal Intertie.

(g) **EIM Transfer Schedule Cost.**

- (1) **In General.** The CAISO's Security Constrained Economic Dispatch in the Fifteen Minute Market and Real-Time Dispatch shall use an EIM Transfer schedule cost associated with EIM Transfers at each EIM Internal Intertie to determine the optimal scheduling path for EIM Transfers, which in all intervals shall be less than \$0.01.
- (2) **Objectives.** The CAISO shall use the lowest EIM Transfer schedule cost determined based upon the objectives of –
- (A) maximizing the use of the transmission capacity made available for EIM Transfers in both the Fifteen-Minute Market and Real-Time Dispatch;
 - (B) minimizing the number of E-Tags required to comply with the WECC scheduling practices; and
 - (C) minimizing the impact of outages or curtailments on the E-Tags used to account for EIM Transfers based on historical outage and curtailment data for each EIM Internal Intertie.
- (3) **EIM Transfer Schedule Cost Publication.** The CAISO will publish the EIM Transfer schedule cost associated with each EIM Internal Intertie.
- (4) **EIM Transfer Schedule Cost Adjustment.** The CAISO may adjust the EIM Transfer schedule costs to maintain the path priorities established by the criteria in Section 29.17(g)(2) when an EIM Entity Balancing Authority Area is added or subtracted from the EIM Area, as seasonal transmission system ratings change, or the transmission system topology changes.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (5) **Locational Marginal Price.** The CAISO will reflect the EIM Transfer schedule cost in the Marginal Cost of Congestion.

29.18 [Not Used]

29.19 [Not Used]

29.20 Confidentiality

The confidentiality provisions of Section 20 shall apply to participation of EIM Market Participants in the Real-Time Market.

29.21 [Not Used]

29.22 Miscellaneous Provisions in Addition to Section 22.

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

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

29.23 [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 Real-Time Market transactions serving Load within the CAISO Balancing Authority Area that use the CAISO Controlled Grid are governed by Section 26.
- (2) **Wheeling Access Charge.** EIM Transfers from the CAISO Controlled Grid to another EIM Entity Balancing Authority Area using the contractual or ownership rights of an EIM Entity shall not constitute Wheeling Out and shall not be subject to the Wheeling Access Charge under Section 26.

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

29.27 CAISO Markets and Processes.

- (a) **In General.** Except as provided in subsection (b) of this section, the provisions of Section 27 that are applicable to the Real-Time Market shall apply to EIM Market Participants.
- (b) **Transition Period for New EIM Entities.**
- (1) **Transmission Constraint Relaxation.** For a period of six months following the Implementation Date of a new EIM Entity, the provisions of Section 27.4.3.2 and the second sentence of Section 27.4.3.4 shall not apply to constraints that are within Balancing Authority Areas of the new EIM Entity or affect EIM Transfers between the Balancing Authority Areas of the new EIM Entity and any other EIM

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Entity that is subject to this subsection (b). For those intervals that experience infeasibilities described in those provisions, the CAISO shall instead determine prices consistent with the provisions of Sections 27, 34, and Appendix C, that would apply in the absence of Section 27.4.3.2 and the second sentence of Section 27.4.3.4.

(2) **Flexible Ramping Product.** For a period of six months following the EIM Entity Implementation Date of a new EIM Entity, when the transmission and/or power balance constraints as specified in Sections 27.4.3.2 and 27.4.3.4, respectively, are relaxed, the CAISO shall set the Flexible Ramping Product parameter for pricing purposes, for the new EIM Entity Balancing Authority Area, at an amount between and including \$0 and \$0.01.

(3) **Extension of Transition Period Pricing.** Any extensions of the initial six-month transition period, as approved by the Federal Energy Regulatory Commission, are specified below. Sixty days prior to the expiration of the transition period, the CAISO will post on the CAISO website an assessment of whether an extension of the transition period, for up to an additional six months, is needed for the applicable EIM Entity. The CAISO will post an update to such assessment prior to the expiration of the transition period should there be any changes to its posted conclusions.

(A) [reserved]

(4) **Reports.** During the term of the transition period, the CAISO will submit monthly reports with the Commission on the infeasibilities observed in the applicable EIM Entity Balancing Authority Area, the nature of the issues causing the infeasibility

(c) **Automated EIM Mirror.** If the CAISO updates an Interchange E-Tag for a schedule change outside of the Market Clearing of the Real-Time Market for System Resources and Scheduling Points and the associated energy is generated at, wheeled through, or consumed at an EIM Entity Balancing Authority Area, the CAISO will automatically EIM Mirror the schedule change using the relevant EIM Mirror System Resource in

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

accordance with the procedures specified in the Business Practice Manual for the Energy Imbalance Market.

- (d) **Base GDFs for Aggregated EIM Non-Participating Resources.** The CAISO will allow base Generation Distribution Factor submission for aggregate EIM non-participating resources through the submission of EIM Base Schedules and will distribute the base schedule and any imbalances of aggregate EIM non-participating resources using the submitted base GDFs, if available, or otherwise the registered default base GDFs for the resource in the Master File, normalized for Outages and remedies adopted to address the issues identified.

29.28 Inter-SC Trades

EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, and EIM Participating Resource Scheduling Coordinators may submit only Inter-SC Trades of Energy for Real-Time Market transactions within an EIM Entity Balancing Authority Area in accordance with Section 28.

29.29 EIM Relationship to EDAM

The provisions of this Section 29 apply to EIM Market Participants and EDAM Market Participants, in addition to Section 33, which includes requirements applicable to EDAM Market Participants that are not applicable to EIM Market Participants.

29.30 Bid and Self-Schedule Submission for CAISO Markets.

- (a) **In General.** The provisions of Section 30 that are applicable to the Real-Time Market, as supplemented by Section 29.30, shall apply to EIM Market Participants.
- (b) **Start-Up and Minimum Load.** For the determination of Proxy Start-Up Costs and Proxy Minimum Load Costs, the CAISO will utilize the Market Services Charge and system operations charges described in Section 11.22.2 reflected in the EIM Administrative Charge.
- (c) **EIM Available Balancing Capacity Energy Bid Curve for EIM Participating Resources.** For each Trading Hour, the CAISO will apply Energy Bids submitted for EIM Participating Resources, which may be subject to mitigation pursuant to Section 29.39, towards the EIM Available Balancing Capacity as provided in Section 29.30(e).

- (d) **EIM Available Balancing Capacity Bids Used for EIM Available Balancing Capacity Served by Non-Participating Resources.** The CAISO will create an Energy Bid Curve based on the Default Energy Bid established by the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator and the CAISO pursuant to Section 29.4(c)(4)(K) for all non-participating resources that the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator may identify as EIM Available Balancing Capacity, and will apply such bids to the EIM Available Balancing Capacity as provided in Section 29.30(e).
- (e) **Treatment of Energy Bid Curves for EIM Available Balancing Capacity.** For each Trading Hour the CAISO will allocate the categories of the EIM Resource Plan specified in Section 29.34(e)(3)(C) and (D) as follows.
- (1) **Upward Capacity.** For upward capacity above the EIM Base Schedule, the CAISO will –
- (A) allocate the Spinning and Non-Spinning Reserves down from the upper regulating limit as registered in the Master File, taking into account any PMax rerates; and then
- (B) allocate EIM Upward Available Balancing Capacity to the Energy Bid Curve starting at the highest value of the Energy Bid Curve that does not overlap with Spinning or Non-Spinning Reserves.
- (2) **Downward Capacity.** For downward capacity below the EIM Base Schedule, the CAISO will allocate EIM Downward Available Balancing Capacity to the Energy Bid Curve starting at its lowest value, taking into account any PMin rerates.
- (3) **Remaining Capacity.** The CAISO will use any remaining portion of the Energy Bid Curve after the allocations in Section 29.30(e)(1) and 29.30(e)(2) for Dispatch under any condition, except that for non-participating resources the CAISO will adjust the EIM Upward Available Balancing Capacity and EIM Downward Available Balancing Capacity towards the EIM Base Schedule so that there will not be any remaining capacity for Dispatch.

29.31 Day-Ahead.

EIM Entity Scheduling Coordinators, EIM Sub-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 in their capacity as an EIM Entity Scheduling Coordinator, EIM Sub-Entity Scheduling Coordinator, or EIM Participating Resource Scheduling Coordinator, unless participation in the Day-Ahead Market is enabled within an EIM Entity Balancing Authority Area in accordance with Section 33, in which case participation in the Day-Ahead Market by EDAM Market Participants is governed by Section 33 and execution of the associated agreement in Appendix B is required to support participation in the Day-Ahead Market .

29.32 Greenhouse Gas Regulation and GHG Bid Adders.

(a) GHG Bid Adders.

- (1) In General.** EDAM Resource Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and Scheduling Coordinators for resources within the CAISO Balancing Authority Area will have an opportunity to recover costs of compliance with GHG regulations adopted by a state jurisdiction that has priced GHG emissions as part of a state GHG reporting and reduction program. The provisions of Section 29.32 pertaining to the GHG Regulation Area of the State of Washington will not take effect until January 1, 2027.
- (2) Bid Adders.** The Fifteen-Minute Market and Real-Time Dispatch will use GHG Bid Adders submitted by EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators for resources located outside of a specific GHG Regulation Area to optimize the attribution of GHG Transfers into that GHG Regulation Area.

The Fifteen-Minute Market and Real-Time Dispatch will use GHG Bid Adders submitted by EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators for resources located within the GHG

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Regulation Area of the State of Washington to optimize the attribution of GHG Transfers into GHG Regulation Areas outside of the State of Washington.

The Fifteen-Minute Market and Real-Time Dispatch will use GHG Bid Adders submitted by EDAM Resource Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and Scheduling Coordinators for resources located within the GHG Regulation Area of the State of California to optimize the attribution of GHG Transfers into GHG Regulation Areas outside of the State of California.

For purposes of this Section 29.32, GHG Regulation Areas will reflect the Pricing Nodes of the CAISO Balancing Authority Area, an EDAM Entity Balancing Authority Area or an EIM Entity Balancing Authority Area within the GHG boundary as defined by a state jurisdiction that has priced GHG emissions as part of a state GHG reporting and reduction program. GHG Regulation Areas modeled in the Fifteen-Minute Market and Real-Time Dispatch may include Pricing Nodes in addition to Pricing Nodes for GHG Regulation Areas modeled in the Day Ahead Market, because the EIM Area may include EIM Entity Balancing Authority Areas located within the GHG boundary area as defined by a state jurisdiction that has priced GHG emissions as part of a state GHG reporting and reduction program that are not participating in the Day-Ahead Market.

Scheduling Coordinators, EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators for resources located inside a specific GHG Regulation Area will not submit GHG Bid Adders to serve Demand within that GHG Regulation Area.

Scheduling Coordinators for resources with Pseudo-Tie arrangements or Dynamic Schedules into the CAISO Balancing Authority Area that register in the Master File that their resources' capacity is associated with serving Demand in

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

the GHG Regulation Area within the State of California will not submit GHG Bid Adders.

EDAM Resource Scheduling Coordinators for resources with Pseudo-Tie arrangements or Dynamic Schedules into an EDAM Entity Balancing Authority Area with Demand in the State of California that register in the Master File that their resources' capacity is associated with serving Demand in the GHG Regulation Area within the State of California will not submit GHG Bid Adders.

EDAM Resource Scheduling Coordinators for resources with Pseudo-Tie arrangements or Dynamic Schedules into an EDAM Balancing Authority Area with Demand in the State of Washington that register in the Master File that their resources' capacity is associated with serving Demand in the GHG Regulation Area within the State of Washington will not submit GHG Bid Adders.

EIM Participating Resource Scheduling Coordinators for resources with Pseudo-Tie arrangements or Dynamic Schedules into an EIM Balancing Authority Area with Demand in the State of California that register in the Master File that their resources' capacity is associated with serving Demand in the GHG Regulation Area within the State of California will not submit GHG Bid Adders.

EIM Participating Resource Scheduling Coordinators for resources with Pseudo-Tie arrangements or Dynamic Schedules into an EIM Balancing Authority Area with Demand in the State of Washington that register in the Master File that their resources' capacity is associated with serving Demand in the GHG Regulation Area within the State of Washington will not submit GHG Bid Adders.

(A) Bid Submission.

EDAM Resource Scheduling Coordinators for resources located outside of a GHG Regulation Area may submit a separate GHG Bid Adder as an hourly Bid component specific to each GHG Regulation Area.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

EIM Participating Resource Scheduling Coordinators for resources located outside of a GHG Regulation Area may submit a separate GHG Bid Adder as an hourly Bid component specific to each GHG Regulation Area.

Scheduling Coordinators for resources located within the GHG Regulation Area of the State of California may submit a GHG Bid Adder as an hourly Bid component for the GHG Regulation Area outside of the State of California.

Scheduling Coordinators for resources located within the GHG Regulation Area of the State of Washington may submit a GHG Bid Adder as an hourly Bid component for the GHG Regulation Area outside of the State of Washington.

GHG Bid Adders will consist of a price and MW quantity. The price included in the EIM Bid Adder will not be less than \$0/MWh and not greater than 110% of the resource's GHG maximum compliance cost as determined in accordance with Section 29.32(a)(3).

(B) Default Treatment. If a resource located outside of a specific GHG Regulation Area does not have a GHG Bid Adder, the Fifteen-Minute Market and Real-Time Dispatch will not select the resource for attribution into that GHG Regulation Area.

(3) Determination of EIM Maximum GHG Bid Adder.

The CAISO will calculate maximum daily GHG Bid Adders for each EDAM Resource, each EIM Resource, and each resource located within the CAISO Balancing Authority Area in relation to GHG Regulation Areas, as applicable, based on the resource's highest average heat rate on its heat rate curve, the applicable Greenhouse Gas Allowance Price, and the resource's applicable emission rate. The CAISO will perform this calculation in accordance with the provisions of the applicable Business Practice Manual. The CAISO will also

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

provide for an option to negotiate a maximum daily GHG Bid Adder for each GHG Regulation Area in accordance with the provisions of the applicable Business Practice Manual.

- (4) **GHG Bid Adder Price.** The price included in the GHG Bid Adder will not be less than \$0/MWh. The sum of the GHG Bid Adder price and the Energy Bid price may not exceed the Soft Energy Bid Cap unless the sum of a resource's relevant maximum daily GHG Bid Adder and Default Energy Bid as adjusted pursuant to Section 30.11 exceeds the Soft Energy Bid Cap. In this case, the sum of a resource's GHG Bid Adder and Energy Bid price may not exceed the sum of the relevant maximum daily GHG Bid Adder and the resource's Default Energy Bid or the Hard Energy Bid Cap, whichever is lower.

(b) **Consideration of GHG Bid Adders in Market Clearing.**

(1) **Dispatch of Resources with Nonzero GHG Bid Adders.**

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will take into account GHG Bid Adders in selecting Energy produced by EDAM Resources located outside of a specific GHG Regulation Area up to the associated MW quantity included in the GHG Bid Adder to serve Demand within that GHG Regulation Area.

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will take into account GHG Bid Adders in selecting Energy produced by resources located within the GHG Regulation Area of the State of California up to the associated MW quantity included in the GHG Bid Adder to serve Demand in the GHG Regulation Area outside the State of California.

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will take into account GHG Bid Adders in selecting Energy produced by resources located within the GHG Regulation Area

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

of the State of Washington up to the associated MW quantity included in the GHG Bid Adder to serve Demand in the GHG Regulation Area outside the State of Washington.

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will not consider GHG Bid Adders when selecting EDAM Resource Facilities, EIM Resources, or resources located within the CAISO Balancing Authority Area to serve Demand outside of GHG Regulation Areas.

(2) Maximum GHG MW Attribution Quantity. The Fifteen-Minute Market and Real-Time Dispatch will limit the total GHG attribution to an EDAM Resource Facility located outside GHG Regulation Areas to serve Demand in GHG Regulation Areas to a value equal to the lower of (i) the MW value in the EDAM Resource's GHG Bid Adder, (ii) the EDAM Resource's upper Economic Bid minus the EDAM Resource Facility's Day-Ahead Energy Schedule plus the EDAM Resource Facility's total Day-Ahead Market GHG attribution, considering any applicable derates and Ancillary Services capacity reservations, for the relevant Operating Hour, or (iii) the EDAM Resource Facility's Real-Time Market Energy Schedule.

The Fifteen-Minute Market and Real-Time Dispatch will limit the maximum GHG Bid Adder MW quantity of an EIM Participating Resource located outside GHG Regulation Areas to a value equal to the lower of (i) the MW value in the EIM Participating Resource's GHG Bid Adder; (ii) the EIM Participating Resource's dispatchable Bid range between the EIM Participating Resource's EIM Base Schedule and the EIM Participating Resource's effective upper Economic Bid, considering any applicable derates and Ancillary Services capacity reservations, for the relevant Operating Hour, or (iii) the EIM Participating Resource's Real-Time Market Energy Schedule.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

The Fifteen-Minute Market and Real-Time Dispatch will limit the maximum GHG Bid Adder MW quantity of a resource located within the CAISO Balancing Authority Area to serve Demand in a GHG Regulation Area outside of the State of California to a value equal to the lower of (i) the MW value in the resource's GHG Bid Adder; (ii) the resource's upper Economic Bid minus the resource's Day-Ahead Energy Schedule plus the EDAM Resource's total Day-Ahead Market GHG attribution, considering any applicable derates and Ancillary Services capacity reservations, for the relevant Operating Hour, or (iii) the resource's Real-Time Market Energy Schedule.

- (3) **Dispatch of EIM Participating Resources Bid Adders of Zero.** The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will not dispatch resources located outside a GHG Regulation Area for delivery into that GHG Regulation Area if the MW quantity included in the GHG Bid Adder is zero.

(c) **GHG Marginal Cost.**

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will take into account Energy Bids and GHG Bids, optimally select resources located outside of a GHG Regulation Area to support GHG Transfers into a GHG Regulation Area until the total MW of GHG Transfers into the respective GHG Regulation Area is fully allocated. The Shadow Price of this allocation constraint is the Marginal GHG Cost for the respective GHG Regulation Area.

(d) **Compensation.**

EIM Resource Scheduling Coordinators and EDAM Resource Scheduling Coordinators will receive GHG settlements pursuant to Section 11. When the Real-Time Market attributes a resource located outside of a GHG Regulation Area to support a GHG Transfer to serve Demand in a GHG Regulation Area, the applicable Scheduling Coordinator for the resource will receive a payment equaling the product of the GHG

Transfer to the GHG Regulation Area attributed to the resource in the Real-Time Market at the applicable Real-Time Market Marginal GHG Cost for that GHG Regulation Area.

29.32.1 GHG Net Export Constraint

The CAISO's Security Constrained Economic Dispatch in the Fifteen-Minute Market and Real-Time Dispatch will apply a net export constraint for EDAM Entity and EIM Entity Balancing Authority Areas that do not overlap with a GHG Regulation Area. This constraint will limit the aggregate attribution of EDAM Resource Facilities within a specific EDAM Entity Balancing Authority Area or EIM Participating Resources within an EIM Entity Balancing Authority Area such that the aggregate attribution does not exceed the net exports from that Balancing Authority Area. This constraint will also limit the aggregate attribution of resources within a specific GHG Regulation Area to serve Demand in another GHG Regulation Area such that the attribution may not exceed the net exports from these resources' native Balancing Authority Areas. This constraint will not restrict the Real-Time Market from attributing capacity located outside of a specific GHG Regulation Area obligated to serve Demand within that GHG Regulation Area that is registered with the CAISO in accordance with the applicable Business Practice Manual. The CAISO will not enforce this constraint for any Balancing Authority Area in the EIM Area and during any Real-Time Market interval in which the CAISO Balancing Authority Area, an EDAM Entity Balancing Authority Area, or an EIM Entity Balancing Authority Area with Demand in a GHG Regulation Area is deficient in the upward direction for purposes of the capacity or flexibility tests described Section 29.34.

29.32.2 Data Availability

- (a) **Notification.** The CAISO will notify an EDAM Resource Scheduling Coordinator of the portion of the FMM Energy Schedule and the portion of the RTD Energy Dispatch that support a GHG Transfer to serve Demand in a GHG Regulation Area as part of the Real-Time Market results publication.

The CAISO will notify an EIM Participating Resource Scheduling Coordinator of the portion of the FMM Energy Schedule and the portion of the RTD Energy Dispatch that

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

support a GHG Transfer to serve Demand in a GHG Regulation Area as part of the Real-Time Market results publication.

The CAISO will notify the Scheduling Coordinator for a resource located in the CAISO Balancing Authority Area of the portion of the resource's FMM Energy Schedule and the portion of the RTD Energy Dispatch that support a GHG Transfer to serve Demand in a GHG Regulation Area as part of the Real-Time Market results publication.

- (b) **Disclosure.** The CAISO may disclose information related to GHG Transfers to a Government Authority, so long as such information does not disclose confidential information of any individual Market Participant.

29.33 [Not Used]

29.34 EIM Operations

- (a) **In General.** Section 34, as supplemented by provisions in Section 29.34, will govern the operation of the Real-Time Market within the EIM Area. Operation of the Real-Time Market within the EDAM Area is further supplemented by Section 33, which produces outcomes that satisfy or modify certain requirements otherwise applicable to EIM Market Participants, including a Day-Ahead Schedule instead of a submitted EIM Base Schedule and an initial EIM Base Load Schedule, pools of Balancing Authority Areas for purposes of the EIM Resource Sufficiency Evaluation, and Energy transfers between Balancing Authority Areas with equal scheduling priority to Demand.
- (b) **Applicability.** EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, and EIM Participating Resource Scheduling Coordinators will submit EIM Base Schedules and other necessary information to the CAISO for use in the Real-Time Market pursuant to Section 29.34 and not pursuant to Section 34.
- (c) **Submission Deadlines.** If an EIM Entity Scheduling Coordinator, EIM Sub-Entity Scheduling Coordinator, or EIM Participating Resource Scheduling Coordinator fails to submit an EIM Base Schedule according to the timelines established in this Section 29.34, the CAISO will not accept the EIM Base Schedule or use it in the Real-Time Market.

(d) **Demand Forecast.**

- (1) **In General.** In accordance with procedures set forth in the Business Practice Manual for the Energy Imbalance Market, the CAISO shall develop short-term and mid-term Demand Forecasts by Demand Forecast zone within each EIM Entity Balancing Authority Area, separately from the CAISO Balancing Authority Area, and, as needed for the EDAM Upward Pool or EDAM Downward Pool.
- (2) **Short Term Forecast.** The CAISO's short-term Demand Forecast for an EIM Entity Balancing Authority Area shall produce a value every five minutes for the duration of the CAISO's Dispatch horizon, which has five-minute granularity and extends several Dispatch Intervals.
- (3) **Mid-Term Forecast.** The CAISO's mid-term Demand Forecast for an EIM Entity Balancing Authority Area shall produce hourly values for the next hour through the next 7 days.
- (4) **EIM Entity Scheduling Coordinator Demand Forecast.**
 - (A) **In General.** An EIM Entity Scheduling Coordinator, and if permitted by the EIM Entity for its Balancing Authority Area, an EIM Sub-Entity Scheduling Coordinator, may opt to provide a non-binding EIM Entity Demand Forecast, net of behind-the-meter Generation that is not registered as an EIM Resource, as part of the hourly EIM Base Schedules.
 - (B) **Timing and Scope.** The EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator must provide any such Demand Forecasts by 10:00 a.m. for the next 7 days.
 - (C) **Updates.** The EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator must update any such Demand Forecast for each Operating Hour and the following 6 to 10 hours and submit the update to the CAISO no later than 75 minutes prior to the start of that Operating Hour, as part of its hourly EIM Base Schedule submission.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (D) **Effect on Bid Requirement.** If the EIM Entity Demand Forecast or EIM Sub-Entity Demand Forecast is less than the CAISO Demand Forecast, then the EIM Entity's or EIM Sub-Entity's EIM Resource Plan must include sufficient Bids to cover the difference in Demand Forecasts.
- (5) **Posting.** Between 6:00 p.m. of the seventh day prior to the start of the Operating Day and 6:00 p.m. of the day prior to the Operating Day, the CAISO shall post and update hourly Demand Forecasts by Demand Forecast zone.
- (e) **EIM Resource Plan.**
 - (1) **In General.** By 10:00 a.m. of the day preceding the Operating Day, the EIM Entity Scheduling Coordinators and, if permitted by the EIM Entity, EIM Sub-Entity Scheduling Coordinators on behalf of non-participating resources and EIM Participating Resource Scheduling Coordinators on behalf of EIM Participating Resources, must submit all applicable components of the EIM Resource Plan as set forth in Section 29.34(e)(3).
 - (2) **Scope.** The EIM Resource Plan components must cover a seven day horizon (with hourly detail for each resource) beginning with the Operating Day.
 - (3) **Contents.** The EIM Resource Plan shall comprise –
 - (A) EIM Base Schedules of EIM Entities, EIM Sub-Entities as applicable, and EIM Participating Resources;
 - (B) Energy Bids (applicable to EIM Participating Resources only);
 - (C) EIM Upward Available Balancing Capacity;
 - (D) EIM Downward Available Balancing Capacity;
 - (E) EIM Reserves to Meet NERC/WECC Contingency Reserves Requirements; and
 - (F) if the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator is not relying on the CAISO's Demand Forecast, a Demand Forecast.
 - (4) **Contents of EIM Base Schedules.** EIM Base Schedules of EIM Entities and

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

EIM Sub-Entities must include hourly-level Demand Forecasts for EIM Demand, hourly-level schedules for resources, including any hourly-level schedules below PMin that the EIM Entity seeks an accounting for, and, for EIM Entities only, hourly-level scheduled Interchanges.

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

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

(1) **In General.**

- (A) **Initial Submission.** EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and non-participating resources in the EIM Entity Balancing Authority Area that wish to submit real-time hourly EIM Base Schedules, or, with regard to non-participating resources, wish to submit EIM Base Schedule information pursuant to Section 29.34(f)(4), must submit such schedules or other information consistent with the requirements of the Business Practice Manual for the Energy Imbalance Market and at least 75 minutes before the start of the Operating Hour.
- (B) **Interim Revisions.** EIM Entity Scheduling Coordinators, EIM Sub-Entity Scheduling Coordinators, EIM Participating Resource Scheduling Coordinators, and non-participating resources in the EIM Entity Balancing Authority Area may revise hourly Real-Time EIM Base Schedules, or, with regard to non-participating resources, revise EIM Base Schedule information submitted pursuant to Section 29.34(f)(4), meeting the requirements of the Business Practice Manual for the Energy Imbalance Market at or before 55 minutes before the start of the Operating Hour.

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (C) **Final Revision.** EIM Entity Scheduling Coordinators may further revise hourly Real-Time EIM Base Schedules, including EIM Base Schedules for EIM Sub-Entities and EIM Participating Resources, at or before 40 minutes before the start of the Operating Hour, provided that any financial or operational impact resulting from such EIM Base Schedule changes for an EIM Sub-Entity shall be resolved in accordance with the applicable tariff or contractual arrangements between the EIM Entity and the EIM Sub-Entity.
- (2) **EIM Base Schedule for EIM Participating Resources.** The EIM Base Schedule for each EIM Participating Resource must be within the Economic Bid range of the submitted Energy Bids for each Operating Hour for EIM Resources, which the CAISO will make available to the EIM Entity without price information, provided that an EIM Participating Resource Scheduling Coordinator may also include Energy below PMin in an EIM Base Schedule.
- (3) **EIM Base Schedule for Imports and Exports.** EIM Base Schedules must –
 - (A) disaggregate Day-Ahead import/export schedules between the EIM Entity Balancing Authority Area and the CAISO Balancing Authority Area;
 - (B) identify the relevant EIM Interties for imports and exports to an EIM Entity Balancing Authority Area from Balancing Authority Areas other than the CAISO Balancing Authority Area; and
 - (C) include approved, pending, and adjusted E-Tags for imports and exports.
- (4) **EIM Base Schedule Aggregation.** In response to a request by an EIM Entity Scheduling Coordinator or an EIM Sub-Entity Scheduling Coordinator, the CAISO will establish an electronic interface by which non-participating resources, Loads, and other customers of the EIM Entity or EIM Sub-Entity may submit EIM Base Schedule information to the EIM Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator and to the CAISO.
- (g) **Initial EIM Base Load Schedule.** The CAISO will derive an initial EIM Base Load

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Schedule for each EIM Entity and EIM Sub-Entity from the Demand Forecasts used for the EIM Entity Balancing Authority Area and EIM Sub-Entity area, estimated Transmission Losses, and an assumed Load distribution, pursuant to the methodology set forth in the Business Practice Manual for the Energy Imbalance Market.

- (h) **Energy Bids.** EIM Participating Resource Scheduling Coordinators may submit Energy Bids in accordance with the timelines, processes, and requirements applicable to other resources submitting Energy Bids under Section 34.
- (i) **Interchange Schedules with Other Balancing Authorities.**
 - (1) **In General.** EIM Entity Scheduling Coordinators must submit Interchange Schedules with other Balancing Authority Areas at the relevant EIM Interties and must update these Interchange Schedules with any adjustments, when applicable, as part of the hourly EIM Resource Plan revision.
 - (2) **Economic Bidding of EIM Intertie Transactions.** An EIM Participating Resource Scheduling Coordinator may bid a transaction at an EIM External Intertie into the FMM if the EIM Entity supports economic bidding of EIM External Intertie transactions and the relevant transmission service providers or path operators support 15-minute scheduling at the EIM External Intertie under FERC Order No. 764.
- (j) **CAISO Validation and Feasibility Test.** The CAISO Markets systems will validate the initial EIM Resource Plan by 1:00 p.m. on the day before the Operating Day, and within 15 minutes of the submission of EIM Base Schedules or adjustments to EIM Base Schedules, the CAISO will validate the EIM Resource Plan and notify the EIM Entity Scheduling Coordinator-
 - (1) if the EIM Resource Plan is not balanced;
 - (2) if the EIM Resource Plan provides insufficient Flexible Ramping Product capacity to meet requirements determined pursuant to Section 29.34(m); and
 - (3) if the CAISO anticipates Congestion based on the submitted EIM Resource

Plans.

(k) **EIM Resource Sufficiency Evaluation – Balancing Test.**

- (1) **EIM Base Schedule Adjustment.** If, after the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules according to Section 29.34(f)(1)(c), Supply in the EIM Base Schedules does not balance the Demand Forecast, the CAISO will adjust the Demand in the EIM Base Schedule to equal Supply.
- (2) **EIM Base Schedule Balancing Test.** The EIM Base Schedules of Supply included in the EIM Resource Plan must balance the Demand Forecast for each EIM Entity Balancing Authority Area.
 - (A) An EIM Entity Balancing Authority Area will be balanced if the sum of Supply from the EIM Base Schedules, including Interchange with other Balancing Authority Areas, is within one percent above or below the total Demand Forecast that the EIM Entity Scheduling Coordinator has decided to use for the associated EIM Entity Balancing Authority Area.
 - (B) An EIM Entity Balancing Authority Area will be out of balance if the sum of Supply from the EIM Base Schedules, including Interchange with other Balancing Authority Areas, is more or less than one percent above or below the total Demand Forecast the EIM Entity Scheduling Coordinator has decided to use for the associated EIM Entity Balancing Authority Area.
 - (C) If an EIM Entity Scheduling Coordinator elects to use the CAISO Demand Forecast and is not balanced as determined in Section 29.34(k)(2)(B) or the EIM Entity Scheduling Coordinator elects to use their own demand forecast, then the EIM Entity Balancing Authority Area will be assessed for over-scheduling or under-scheduling charges pursuant to Section 29.11(d)(3).
 - (D) A Balancing Authority Area in the EIM Area that is not subject to the

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

balancing test in this Section 29.34(k) will not be eligible for revenue apportionment and allocation pursuant to Section 29.11(d)(3).

(l) **EIM Resource Sufficiency Evaluation – Capacity Test.**

(1) **Requirement.**

The Supply, as applicable and as detailed in Business Practice Manuals, included in—

- (A) the EIM Resource Plan must meet the Demand Forecast for each EIM Entity Balancing Authority Area, and
- (B) the RUC Schedules, the HASP Advisory Schedules and HASP Intertie Block Schedules or the FMM Schedules must meet the Demand Forecast for the CAISO Balancing Authority Area.

(2) **Supply and Demand Forecast.** Conditions and actions in the Real-Time Market will affect what Supply will be counted and what Demand Forecast will be referenced in the capacity test performed in accordance with this Section 29.34(l) and, in some cases as noted below, both this capacity test and the flexibility test performed in accordance with Section 29.34(m).

- (A) For purposes of this Section 29.34(l) and also for purposes of Section 29.34(m) with respect to Sections 29.34(l)(2)(A)(iii) and 29.34(l)(2)(A)(iv), Supply counted in the capacity test will also include—
 - (i) a Short Start Unit with a Bid in the RTM through the upcoming hour that is offline in the last fifteen minute interval before the hour under evaluation provided the Short Start Unit has remaining Start-Ups in the day including the hour under evaluation;
 - (ii) a Multi-Stage Generating Resource configuration that can reach another configuration within the timeframe for it to be counted as available in accordance with Section 29.34(l)(1)(A)(i), provided the resource has remaining in-state transitions to that MSG

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- Configuration in the day including the hour under evaluation;
- (iii) a Multi-Stage Generating Resource transitioning between MSG Configurations or a Short Start Unit moving through a Forbidden Operating Region in the hour under evaluation, in both the capacity test and the flexibility test performed in accordance with Section 29.34(m) ; or
 - (iv) a Non-Generator Resource or storage device maximum and minimum output in the hour under evaluation based upon its State of Charge as monitored by the CAISO in the last fifteen minute interval before the hour under evaluation, and its Bids to charge or discharge Energy in the hour under evaluation, in both the capacity test and the flexibility test performed in accordance with Section 29.34(m).
- (B) For purposes of this Section 29.34(l) and also for purposes of Section 29.34(m) with respect to Section 29.34(l)(2)(B)(iii), Supply counted in the capacity test will not include—
- (i) a Short Start Unit with a Bid in the RTM which received a Start-Up Instruction before the hour under evaluation and has failed to initiate Start-Up;
 - (ii) a Short Start Unit that is on Outage during the hour under evaluation or has returned from an Outage but is unable to Start-Up within the hour under evaluation; or
 - (iii) an Import Bid or Export Bid for delivery to or export from the CAISO Balancing Authority Area lacking a transmission profile in a submitted E-Tag supporting its Interchange Schedule at the time the final binding capacity test and flexibility test for the CAISO Balancing Authority Area are performed in accordance with Section 29.34(m).

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (C) Supply from a resource counted in accordance with Section 29.34(l)(2)(A)(i) may be adjusted by the CAISO in accordance with the timelines and procedures provided in the Business Practice Manual for the Energy Imbalance Market to address significant overcounting of Supply available to the Real-Time Market, provided that the overcounting has been identified, supported with analysis and documented by the CAISO.
 - (D) Demand response under a demand response program administered in an EIM Entity Balancing Authority Area that does not otherwise qualify as an EIM Resource, *i.e.*, count as Supply, may be accounted for through a corresponding EIM Entity adjustment to their Demand Forecast, which will then be referenced in the capacity test performed in accordance with this Section 29.34(l), the flexibility test performed in accordance with Section 29.34(m), and the balancing test performed in accordance with Section 29.34(k), provided the EIM Entity submits an attestation to the CAISO in accordance with the procedures and timelines in the Business Practice Manual for the Energy Imbalance Market that certifies adjustments made to its Demand Forecast will correspond to expected increases or reductions in demand provided by the demand response.
- (3) **Insufficient Supply.** An EIM Resource Plan or the CAISO equivalent, as applicable and as detailed in Business Practice Manuals, shall be deemed to have insufficient Supply to pass the capacity test if—
- (A) the sum of EIM Base Schedules of Supply and the sum of the incremental or decremental offers in the Energy Bid range from EIM Participating Resources above or below their EIM Base Schedule, including Interchange with other Balancing Authority Areas, is not sufficient to meet the total Demand Forecast that the EIM Entity Scheduling Coordinator has decided to use for the associated EIM Entity

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Balancing Authority Area, and

- (B) the sum of Supply and the sum of the incremental or decremental offers in the Energy Bid range above or below the RUC Schedules, the HASP Advisory Schedules and HASP Intertie Block Schedules or the FMM Schedules is not sufficient to meet the total Demand Forecast for the CAISO Balancing Authority Area, provided that the benefit of the exclusion of the export schedules which may be curtailed in accordance with Section 34.12.4(a) or 34.12.4(b) will be reflected in the upward capacity test results for the CAISO Balancing Authority Area.

(m) **Individual EIM Resource Sufficiency Evaluation – Flexibility Test.**

(1) **Review.**

- (A) **Individual EIM Entity Balancing Authority Areas.** The CAISO will review the EIM Resource Plan for an EIM Entity Balancing Authority Area pursuant to the process set forth in the Business Practice Manual for the Energy Imbalance Market and verify that it has sufficient Bids for Ramping capability, accounting for Sections 29.34(l)(2)(A)(iii), 29.34(l)(2)(A)(iv), 29.34(l)(2)(B)(iv) and 29.34(l)(2)(D), to meet the EIM Entity Balancing Authority Area upward and downward Ramping requirements within a one percent or one MW tolerance, as adjusted pursuant to Sections 29.34(m)(2), (3), and (7).
- (B) **CAISO Balancing Authority Area.** The CAISO will review the RUC Schedules, the HASP Advisory Schedules and HASP Intertie Block Schedules or the FMM Schedules in the CAISO Balancing Authority Area pursuant to the process set forth in the Business Practice Manual for the Energy Imbalance Market and verify that it has sufficient Bids for Ramping capability, accounting for Sections 29.34(l)(2)(A)(iii), 29.34(l)(2)(A)(iv) and 29.34(l)(2)(B)(iv), to meet the CAISO Balancing Authority Area upward and downward Ramping requirements within a

one percent or one MW tolerance, as adjusted pursuant to Sections 29.34(m)(2), (3), and (7), provided that the benefit of the exclusion of export schedules which may be curtailed in accordance with Section 34.12.4(a) or 34.12.4(b) will be reflected in the results of the upward flexibility test for the CAISO Balancing Authority Area.

- (C) **EIM Resource Sufficiency Evaluation for the Balancing Authority Areas in the EDAM Area.** Consistent with Section 33.31.1.4, the CAISO will evaluate resource sufficiency of the Balancing Authority Areas in the EDAM Area solely pursuant to this Section 29.34(m). The CAISO will consider all Day-Ahead Market awards for Energy, Imbalance Reserves, and Reliability Capacity as supply prior to testing an individual Balancing Authority Area in the EDAM Area for EIM resource sufficiency. The CAISO will evaluate the EDAM Upward Pool to verify that it has sufficient Bids and Ramping capability to meet the Upward Uncertainty Requirement for the EDAM Upward Pool within a one percent or one MW tolerance, as adjusted pursuant to Sections 29.34(m)(2)-(5). The CAISO will evaluate the EDAM Downward Pool to verify that it has sufficient Bids and Ramping capability to meet the Downward Uncertainty Requirement for the EDAM Downward Pool within a one percent or one MW tolerance, as adjusted pursuant to Sections 29.34(m)(2)-(5). A Balancing Authority in the EDAM Area not included in the EDAM Upward Pool or EDAM Downward Pool will be evaluated in the same manner as an individual EIM Balancing Authority Area.

- (D) **Power Balance Constraint and Load Conformance Considerations.** The CAISO, pursuant to the process set forth in the Business Practice Manual for the Energy Imbalance Market, will consider the quantity of any power balance constraint relaxation in the Real-Time Market solution, while excluding from consideration any constraint relaxation due

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

to Load conformance in the Real-Time Market solution, in the determination of whether sufficient Bids for Ramping capability are available to meet the upward and downward Ramping requirements in accordance with this Section 29.34(m)(1).

- (2) **Determination of Diversity Benefits.** The CAISO will calculate separately the upward and downward EIM Diversity Benefits as the difference between the sum of the upward and downward Uncertainty Requirements for all Balancing Authority Areas in the EIM Area, and the Uncertainty Requirement for the EIM Area. The Diversity Benefits for a Balancing Authority Area in the EDAM Area is its proportional amount of the difference between the sum of each Balancing Authority Area's individual Imbalance Reserve requirement and the EDAM Area Imbalance Reserve requirements, with the CAISO calculating the Imbalance Reserve requirements for each Balancing Authority Area independently and for the EDAM Area as a whole.
- (3) **Effects of Diversity Benefits for EIM Entities that Are Not Balancing Authorities in the EDAM Area.** For each Balancing Authority Area in the EIM Area that is not a Balancing Authority Area in the EDAM Area, the CAISO will reduce the upward and downward Uncertainty Requirements by the Balancing Authority Area's pro rata share of the upward and downward EIM Diversity Benefit in the EIM Area as may be limited by –
 - (A) the available net import EIM Transfer capability into that Balancing Authority Area in the case of an upward Uncertainty Requirement; and
 - (B) the available net export EIM Transfer capability from that Balancing Authority Area in the case of a downward Uncertainty Requirement.
- (4) **Effect of Diversity Benefit for Balancing Authority Areas that Are Within the Pool of EDAM Balancing Authority Areas.** For each Balancing Authority Area that is included in the pool of Balancing Authority Areas in the EDAM Area as provided in Section 33.31.1.4, the EIM RSE will hold a portion of the Diversity

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Benefit from allocation and reflect this quantity as additional global procurement of Imbalance Reserves for the EDAM Area as provided in the Business Practice Manuals for purposes of the EIM RSE. If the pool of Balancing Authority Areas in the EDAM Area is subdivided for purposes of accepting the assistance Energy transfer product as provided in Section 29.34(n)(3)(C), each sub-pool will carry with it and leverage the Diversity Benefit of the entities within the sub-pool.

(5) **Effect of Diversity Benefit for Balancing Authority Areas in the EDAM Area that Are not Within the Pool of EDAM Balancing Authority Areas.** The EIM RSE will consider the effects of dynamic transfers from the members of the EDAM Upward Pool and EDAM Downward Pool to the Balancing Authority Area not included in the pool as provided in Section 33.31.1.4, pursuant to the procedures the Business Practice Manuals.

(6) **Determination of Flexible Ramping Sufficiency Credit.** The CAISO will calculate for each Balancing Authority Area in the EIM Area, the upward flexible Ramping sufficiency credit as the outgoing EIM Transfer from that area and the downward flexible Ramping sufficiency credit as the incoming EIM transfer into that area.

(7) **Effect of Flexible Ramping Sufficiency Credit.** The CAISO will reduce the upward Uncertainty Requirement of a Balancing Authority Area in the EIM Area by its upward flexible Ramping sufficiency credit, and will reduce the downward Uncertainty Requirement of a Balancing Authority Area in the EIM Area by its downward flexible Ramping sufficiency credit.

(n) **Effect of EIM Resource Capacity or Flexibility Insufficiency.**

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

(A) the CAISO will not include the EIM Entity Balancing Authority Area or the

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

CAISO Balancing Authority Area in the Uncertainty Requirement for the group of Balancing Authority Areas that passes both the capacity test and flexibility tests in the upward and downward directions, as applicable; and

- (B) the CAISO will hold the EIM Transfer limit into or from the EIM Entity Balancing Authority Area or the CAISO Balancing Authority Area, as specified in Section 29.34(n)(2), at the less restrictive of the value for the last 15-minute interval with sufficient Supply balance or the hourly Real-Time EIM Base Schedule corresponding to the 15-minute interval with insufficient Supply as described in the business practice manual.
- (C) To facilitate procurement of the Flexible Ramping Product and determination of the Uncertainty Requirement in the manner provided by Section 44.2.4 within the existing RTUC processes and along the time intervals for RTUC runs set forth in Section 34.3.1 and further explained in the Business Practice Manual for Market Operations, and solely for the purpose of this subsection 29.34(n)(1), the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules for the first fifteen-minute interval of each hour will be that provided in Section 29.34(f)(1)(B) and the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules to allow for procurement of the Flexible Ramping Product for the remaining intervals of each hour will be that provided in Section 29.34(f)(1)(C).

- (2) **Insufficient Flexible Ramping Capacity.** If, after the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules or the CAISO equivalent as provided in Section 29.34(f)(1)(c), the CAISO determines-

- (A) that an EIM Entity Balancing Authority Area or the CAISO Balancing Authority Area has insufficient upward Ramping capacity according to Section 29.34(m), the CAISO will take the actions described in Section

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- 29.34(n)(1)(A) and (B) in the upward and into the EIM Entity BAA or CAISO BAA direction; and
- (B) that an EIM Entity Balancing Authority Area or the CAISO Balancing Authority Area has insufficient downward Ramping capacity according to Section 29.34(m), the CAISO will take the actions described in Section 29.34(n)(1)(A) and (B) in the downward and from the EIM Entity BAA or CAISO BAA direction.
- (C) To facilitate procurement of the Flexible Ramping Product and determination of the Uncertainty Requirement in the manner provided by Section 44.2.4 within the existing RTUC processes and along the time intervals for RTUC runs set forth in Section 34.3.1 and further explained in the Business Practice Manual for Market Operations, and solely for the purpose of this subsection 29.34(n)(2), the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules for the first fifteen-minute interval of each hour will be that provided in Section 29.34(f)(1)(B) and the final opportunity for the EIM Entity to revise hourly Real-Time EIM Base Schedules to allow for procurement of the Flexible Ramping Product for the remaining intervals of each hour will be that provided in Section 29.34(f)(1)(C).

(3) Assistance Energy Transfers.

- (A) In General.** A Balancing Authority Area in the EIM Area may obtain assistance Energy transfers into its Balancing Authority Area if its Scheduling Coordinator has elected to accept automatically incremental EIM Transfer imports and pay the associated EIM Assistance Energy Transfer Surcharge following the failure of the upward capacity test in Section 29.34(l) or the upward flexibility test in Section 29.34(m) in accordance with the timelines and procedures included in the Business Practice Manual for the Energy Imbalance Market. Consistent with the

requirements in the Business Practice Manual, the CAISO will send a market notification prior to the CAISO Balancing Authority Area accepting assistance Energy transfers as provided in this section.

(B) Assistance Energy Transfer Product. If a participating Balancing Authority Area in the EIM Area has opted-in to receive assistance Energy transfers consistent with the process requirements set forth in the Business Practice Manuals and the participating Balancing Authority Area fails the upward capacity test in Section 29.34(l) or the upward flexibility test in Section 29.34(m) then—

- (i) the Balancing Authority Area will not be subject to the capacity test or flexibility test failure consequences for EIM Transfers in Section 29.34(n);
- (ii) the Balancing Authority Area will pay the EIM Assistance Energy Transfer Surcharge according to Section 29.11(t).

(C) Access to the Assistance Energy Transfer Product for pooled Balancing Authority Areas within the EDAM Area. A Balancing Authority Area in the EDAM Area that is pooled together with other Balancing Authority Areas within the EDAM Area as part of the EDAM Upward Pool or EDAM Downward Pool pursuant to Section 33.31.1.4 may elect to receive assistance Energy transfers. If the Balancing Authority Areas in the EDAM Area that are pooled together for purposes of the EIM RSE do not uniformly elect to receive assistance Energy transfers, then the EDAM Upward Pool will be subdivided into two sub-pools: those Balancing Authority Areas in the EDAM Area that elect to receive assistance Energy transfers and those Balancing Authority Areas in the EDAM Area that do not elect to receive assistance Energy transfers. If the EDAM Upward Pool, or its sub-pool as applicable, elects to receive assistance Energy transfers and fails the upward flexibility test

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

in Section 29.34(m) then:

- (i) The EDAM Upward Pool, or its sub-pool as applicable, will not be subject to the failure consequences of Section 29.34(n)(1)(B) or Section 29.34(n)(2)(B); and
 - (ii) the EDAM Upward Pool, or sub-pool as applicable, will receive an assistance Energy transfer and will be assessed the EIM Assistance Energy Transfer Surcharge according to Section 29.11(t), with any revenue or Surcharges distributed to the EDAM Upward Pool to be allocated *pro-rata* to the members of the EDAM Upward Pool, or sub-pool as applicable, that received the assistance Energy transfers.
- (o) **Transmission Constraint Relaxation.** If an EIM Entity Scheduling Coordinator's approved EIM Resource Plan does not have sufficient Bids to resolve Congestion, the CAISO will relax the relevant Transmission Constraints in the Market Clearing and the EIM Entity will become responsible for managing its congested Transmission Constraints through other means, and the CAISO will determine prices for Congestion consistent with Transmission Constraint relaxation parameters established in the Business Practice Manual for the Energy Imbalance Market until the Transmission Constraint is no longer binding in the Real-Time Market.
- (p) **Operating Reserves.**
 - (1) **Schedules.**
 - (A) **EIM Entity Responsibility.** Each EIM Entity is responsible for its contingency reserves, or share of such contingency reserves under the terms of a reserve sharing group agreement, and it and the reserve sharing group are responsible for deploying operating reserves, including regulating reserves, in conformance with NERC and WECC requirements.
 - (B) **EIM Entity Scheduling Coordinator Responsibility.** The EIM Entity Scheduling Coordinator shall –

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (i) include any Energy deployed from reserves in the hourly EIM Base Schedules, if time permits, in which case they will be settled in the Real-Time Market;
- (ii) otherwise include the Energy deployed from reserves as EIM Manual Dispatches, if time does not permit;
- (iii) immediately inform the CAISO of events requiring Dispatch of operating reserves and resource EIM Base Schedule adjustments in response to contingencies;
- (iv) if a resource's actual response differs from the resource EIM Base Schedule adjustment, provide a resource EIM Base Schedule update showing the actual resources dispatched during the event by no later than 1:00 a.m. seven days after the Operating Day in which the event occurred; and
- (v) inform the CAISO of the amount of resource capacity that is reserved for contingency reserve responsibility by either ensuring that an Energy Bid for the resource is below the maximum operating limit of the resource or reducing the maximum operating limit of the resource.

(C) **CAISO Actions.**

- (i) **Prior to Update.** Until the CAISO receives resource operating limit updates from an EIM Entity Scheduling Coordinator, the CAISO will continue to send Dispatch Instructions based upon pre-event operating limits.
- (ii) **After Update.** After EIM Base Schedule updates are received and Dispatches in the Real-Time Market reflect the updated Self-Schedules and operating limits, the CAISO shall account for the Dispatches in the net scheduled Interchange values that it provides to EIM Entity Scheduling Coordinators.

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

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

- (i) the EIM Entity must submit information regarding the assistance provided, including impacts to Balancing Authority Area Load schedules for each participant involved in the reserve sharing event; and
- (ii) the EIM Entity Scheduling Coordinator or EIM Sub-Entity Scheduling Coordinator must submit to the CAISO EIM Manual Dispatch instructions for resources in the EIM Entity Balancing Authority Area deployed in response to the reserve sharing event, pursuant to the reserve sharing group's criteria.

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

(q) **Variable Energy Resources and Hybrid Resources.** Provisions of Section 34 specifically applicable to Variable Energy Resources and Eligible Intermittent Resources appear in Sections 34.1.3, 34.1.6, 34.2.2, 34.5.1. 34.13.2. Provisions of Section 34 specifically applicable to Hybrid Resources appear in Section 34.1.6.3. The CAISO shall provide EIM Entities with access to review the forecast of all Variable Energy Resources in its Balancing Authority Area as outlined in the Business Practice Manual for the Energy Imbalance Market.

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

(1) **In General.** The CAISO will use EIM Available Balancing Capacity identified in the EIM Resource Plan to address power balance constraint infeasibilities in the EIM Balancing Authority Area for which the EIM Available Balancing Capacity is

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

designated by the responsible EIM Entity Scheduling Coordinator, while simultaneously participating in Congestion Management.

- (2) **EIM Resource Sufficiency Evaluations.** The CAISO will not apply the EIM Available Balancing Capacity towards its evaluation of the resource sufficiency tests specified in Section 29.34(k), (l), and (m).
- (3) **Real-Time Market Scheduling Run.** In each interval of the Real-Time Market, the CAISO will use the EIM Available Balancing Capacity in the run of the market optimization used to establish scheduling priorities by-
 - (A) adding a penalty price factor to EIM Available Balancing Capacity Energy Bid prices so that the EIM Available Balancing Capacity is dispatched to address power balance violations, after Effective Economic Bids submitted for EIM Participating Resources in the respective EIM Balancing Authority Area not associated with the EIM Available Balancing Capacity have cleared, while respecting the economic merit order of the EIM Available Balancing Capacity Energy Bid prices;
 - (B) enforce a constraint that prevents the release of EIM Upward Available Balancing Capacity in excess of the difference between the EIM Entity's demand and the supply of Effective Economic Bids cleared within the applicable EIM Balancing Authority Area, minus the import transfer into that EIM Balancing Authority Area; and
 - (C) enforce a constraint that prevents the release of EIM Downward Available Balancing Capacity in excess of the difference between the supply of Effective Economic Bids cleared within the applicable EIM Balancing Authority Area and the EIM Entity's demand, minus the export transfer out of that EIM Balancing Authority Area.
- (4) **Real-Time Market Pricing Run.** For each interval of the Real-Time Market, in the run of the market optimization used to set binding schedules and prices, the

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

CAISO will –

- (A) use the EIM Available Balancing Capacity released in the run of the market optimization to establish scheduling priorities based on the Energy Bid Curves for EIM Participating Resources and non-participating resources created pursuant to Sections 29.30(c) and (d), respectively;
- (B) change the Demand Forecast for the EIM Balancing Authority Area by a small tolerance to allow for price determination;
- (C) clear the Real-Time Market and establish prices based on the pricing parameters in Sections 27.4.3.2 and 27.4.3.4, if the amount of EIM Available Balancing Capacity released in the scheduling run is not sufficient to clear the potential infeasibility identified in the scheduling run.

(s) **EIM Auto-Match.**

- (1) **Designation.** An EIM Entity may submit a designation to the Master File of EIM non-participating resources, up to the number specified in the Business Practice Manual, in its Balancing Authority Area to automatically match import/export schedule changes outside of the Market Clearing of the Real-Time Market because of changes to E-Tags at one or more designated EIM Interties or Scheduling Points, up to the number designated in the Business Practice Manual for the Energy Imbalance Market.
- (2) **Duration of Designation.** Any designation under paragraph (1) of this subsection shall remain in effect until the EIM Entity notifies the CAISO that it is terminating the designation by a submission to the Master File.
- (3) **CAISO Actions in Response to Intertie Schedule Change.** If an EIM Entity designates a non-participating resource under paragraph (1) of this subsection, the CAISO, upon identification of an associated EIM Intertie or Scheduling Point schedule change outside of the Market Clearing of the Real-Time Market, shall –

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

- (A) reflect a matching schedule change to the EIM non-participating resource in the Real-Time Market using the EIM Auto-Match feature; and
- (B) omit the EIM Intertie or Scheduling Point schedule change from the historical intertie schedule over/under-scheduling histogram for the determination of additional capacity test requirements for relevant EIM Balancing Authority Area(s) under Sections 29.34(l)(4)(B) and 29.34(m)(6)(ii) that are registered for EIM Auto-Match in accordance with the procedures specified in the Business Practice Manual for the Energy Imbalance Market.

29.35 Market Validation and Price Correction

Market validation and price correction for the Energy Imbalance Market shall be governed by Section 35, except that, for a period not to exceed 90 days after an EIM Entity Implementation Date, the time allowed for the CAISO's correction of Real-Time Market prices shall be 10 Business Days.

29.36 [Not Used]

29.37 Rules of Conduct

All EIM Market Participants 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 participation of EIM Market Participants in the Real-Time Market, including –

- (a) monitoring markets administered by the CAISO for actual or potential ineffective market rules, market abuses, market power, 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 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 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 Energy Imbalance Market, including EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie, except as provided in Section 29.39. In relation to power balance constraints within the EDAM Area and EIM Area, the Marginal Energy Cost in the CAISO Balancing Authority Area will reflect a competitive marginal energy price. For this purpose, when an EDAM Balancing Authority Area's or EIM Balancing Authority Area's Marginal Energy Cost is greater than CAISO Balancing Authority Area's Marginal Energy Cost, then Real-Time Local Market Power Mitigation process will apply the competitive path assessment. If non-competitive conditions exist, the Real-Time Local Market Power Mitigation process will treat the differential between the Marginal Energy Cost in the CAISO Balancing Authority Area and the Marginal Energy Cost in the EDAM Balancing Authority Area or EIM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to mitigation procedures.
- (b) **Competitive Path Assessment.** The CAISO shall conduct the competitive path assessment to determine for each EDAM Balancing Authority Area and EIM Entity Balancing Authority Area whether a path is competitive or non-competitive, consistent with Section 39.7.2, except that –
- (1) EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators shall submit information required by the CAISO to perform the competitive path assessment;
 - (2) the competitive path assessment shall not exclude EDAM Resources or EIM Participating Resources from the test used to determine the competitiveness of Transmission Constraints on the basis that they may be net buyers of Energy in the Real-Time Market; and
 - (3) the CAISO may establish different Reference Buses for each Balancing Authority

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

Area, which need not be within the Balancing Authority Area, for calculating the LMP decomposition which is used to trigger Bid mitigation, based on the topology of each Balancing Authority Area and consideration of the bus at which the Marginal Cost of Congestion component of Locational Marginal Prices is least influenced by market power.

- (c) **Locational Marginal Price Decomposition.** The CAISO shall perform the Locational Marginal Price decomposition within each EDAM Entity Balancing Authority Area and EIM Entity Balancing Authority Area using the results of the competitive path assessment and the Congestion pricing results of the pre-market run to determine which resources may have local market power due to Congestion on a non-competitive Transmission Constraint, consistent with Section 34.2.3 and 39.7.
- (d) **Default Energy Bids.** The CAISO shall use the methods and standards set forth in Section 39.7 to determine Default Energy Bids for EDAM Resources and EIM Participating Resources, except that the CAISO will use the Market Services Charge and system operations charges described in Section 33.11.6 reflected in the EDAM Administrative Charge or Section 11.22.2 reflected in the EIM Administrative Charge, as applicable.

29.40 [Not Used]

29.41 [Not Used]

29.42 [Not Used]

29.43 [Not Used]

29.44 Flexible Ramping Product

The CAISO will procure flexible ramping product for the Energy Imbalance Market as set forth in Section 44, except that the CAISO will consider the EIM Base Schedules of non-participating resources as Self-Schedules for the calculation of Flexible Ramping Product requirements.