

Comments of Pacific Gas and Electric Company

EIM Readiness Criteria – Draft Tariff Language

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) offers the following comments and suggested edits on the California Independent System Operator’s (CAISO) Energy Imbalance Market (EIM) Readiness Criteria Draft Tariff Language.

29.2(b) EIM Access to the Real-Time Market

- (4) **Market Simulation and Parallel Operations.** The CAISO and the EIM Entity Initiate shall engage in–
- (A) a market simulation that accounts for the EIM Entity Initiate’s implementation circumstances sufficient to meet the readiness criteria set forth in Section 29.2(b)(7); and
 - (B) an adequate period of parallel operations representing the Energy Imbalance Market to support the CAISO and the EIM Entity Initiate’s readiness certification required by section 29.2(b)(5).
- (5) **Readiness Determination.** No later than 30 days prior to the EIM Entity Initiate’s Implementation Date and after adequate period of parallel operations as provided in Section 29.2(b)(4)(B), the CAISO will determine, in consultation with the EIM Entity Initiate, whether the systems and processes of the EIM Entity Initiate will be ready for the EIM Entity Initiate’s participation in the Energy Imbalance Market based on the criteria set forth in Section 29.2(b)(7).

Comment [A1]: CAISO should provide further details and/or description of what the CAISO means by an “adequate period”.

(6) **Readiness Certification.**

(A) **Certification.** The CAISO and the EIM Entity Initiate shall each file a market readiness certificate with the Federal Energy Regulatory Commission at least 30 days prior to the EIM Entity Initiate Implementation Date in which a senior officer of each entity attests—

- (i) that the processes and systems of the EIM Entity Initiate have satisfied or will have satisfied the readiness criteria set forth in Section 29.2(b)(7) on the EIM Implementation Date;
- (ii) to any known issues requiring resolution prior to the EIM Implementation Date in accordance with section 29.2(b)(8);
- (iii) to any deviations from the established thresholds specified in the Business Practice Manuals, and that despite such deviations the criteria was met or will be met as specified in 29.2(b)(7); and
- (iv) that the EIM Implementation Date is conditional on the resolution of the known issues identified in the certificates and any unforeseen issues that undermine the satisfaction of the readiness criteria set forth in Section 29.2(b)(7).

(B) **Delay or Withdrawal.** If, subsequent to readiness certification pursuant to Section 29.2(b)(6)(A), the CAISO determines that it cannot proceed with implementation on the Implementation Date, the CAISO will notify the Federal Energy Regulatory Commission of the delay, the reason for the delay, and whether it will withdraw its readiness certificate.

(7) **Readiness Criteria.** The EIM Entity Initiate and/or the CAISO will satisfy the following criteria within the measurable thresholds specified in the Business Practice Manual for the Energy Imbalance Market or consistent with any exceptions for the certifying

Prospective EIM Entity Initiate, as explained in the certificate and in accordance with section 29.2(b)(8).

- (A) **EIM Entity Initiate Full Network Model Integration.** The Full Network Model of the EIM Entity Initiate is integrated into the Full Network Model consistent 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 exported EIM Entity Initiate network model file;
 - (ii) the SCADA measurements used in EIM Entity Initiate’s EMS model matches the measurements observed by the CAISO through the CAISO EMS;
 - (iii) the State Estimator solution is equivalent or superior to the EIM Entity Initiate’s state estimator solution for its Balancing Authority Area; and
 - (iv) the physical representation of the EIM Entity Initiate network matches the Base Market Model that accounts for non-conforming load, behind-the-meter generation, Pseudo-Ties, and Dynamic Schedules, 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 EIM Entity Initiate have completed—
- (i) an 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/or the EIM Entity Initiate have demonstrated its 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 station(s) locations used in forecasting, as applicable; and
 - (iv) the identification of the source of Variable Energy Resource forecasts pursuant to section 29.11(j).
- (D) **Balanced Schedules.** The EIM Entity Initiate's Scheduling Coordinator has demonstrated it has the—
- (i) ability to balance EIM Demand and EIM Supply;
 - (ii) ability to pass 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 EIM Entity Initiate and the CAISO will test the functional and system elements in accordance with functional and system testing documentation posted on the CAISO Website.
 - (ii) **System Integration.** The EIM Entity Initiate and CAISO will test system integration testing in accordance with the system integration testing documentation posted on the CAISO Website.
 - (ii) **Certificates.** The EIM Entity Initiate has issued all necessary certificates to its employees that require system access to perform EIM-related job functions.

- (F) **Settlements.** The CAISO and the EIM Entity Initiate have demonstrated that—
- (i) the CAISO Settlement Statements and Invoices match the operational data published to stakeholders during the market simulation or, if not published, match the operational data fed into or generated by the settlement system and the resulting calculations correspond to the formulas defined in the CAISO Tariff and applicable Business Practice Manuals during market simulation; and
 - (ii) the Settlement Statements and Invoices of the EIM Entity Initiate allocating charges and credits to its customers accurately reflect system and market data during parallel operations.
- (G) **Outage Management System.** The EIM Entity Initiate will verify its ability to submit and retrieve outages information accurately and correctly to the CAISO within the required timelines.
- (H) **Communications between the CAISO and the EIM Entity Initiate.**
- (i) The process and procedures used for voice and/or electronic messaging are identified and incorporated into the EIM Entities Initiate's business processes before the start of market simulation specified in section 29.2(b)(4)(A).
 - (ii) The operations staff identified by the EIM Entity Initiate 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).
- (I) **Market Simulation.**
- (i) **Day in the life simulation.** The EIM Entity Initiate operations staff identified by the EIM Entity Initiate complete end-to-end daily market workflow with no critical defects or workarounds.

Comment [A2]: CAISO should specify what the expectations are for demonstrating success in regards to publishing settlement statements/invoices (e.g. the number of statements/invoices, the number of weeks of quality results).

- (ii) **Structured scenarios simulation.** The EIM Entity Initiate operations staff execute and pass all structured scenarios provided by CAISO with all significant issues resolved or identified a feasible workaround.
- (iii) **Unstructured scenarios simulation.** The EIM Entity Initiate operations staff identified by the EIM Entity Initiate execute and pass all unstructured scenarios provided by the EIM Entity Initiate, with significant issues resolved or have identified a feasible workaround.
- (iv) **Market results reports.** Market results are appropriate based on inputs, and the EIM Entity Initiate and CAISO executive project sponsors approve the results.
- (v) **Market quality review.** The CAISO prices are validated based on input data for parallel operation specified in section 29.2(b)(4)(B).
- (J) **Parallel Production Plan.** The ~~Parallel production period of parallel operations~~ specified in section 29.2(b)(4)(B) runs consistently and in accordance with the timeframe set forth in the EIM Entity Initiate-specific parallel operation plan.
- (K) **Additional Criteria**
 - (i) **Execution of Necessary Agreements.** The EIM Entity Initiate has complied with Section 29.4(c)(2) and executed any necessary non-disclosure agreements 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 EIM Entity Initiate have defined, completed, and tested operating procedures for the EIM Entity Initiate and its Scheduling Coordinator's participation in the Energy Imbalance Market.

Comment [A3]: The term "Parallel production" is not used in section 29.2(b)(4)(B).

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- (iii) **EIM Entity Initiate Identification.** The CAISO has established and the EIM Entity Initiate has tested all necessary SCIDs and Resource IDs for the EIM Entity Initiate's Balancing Authority Area.
 - (iv) **Identification of Additional Available Capacity.** The EIM Entity Initiate has identified EIM Participating Resources and non-participating resources that have additional capability that it intends to include in the EIM Resource Plan to resolve under-supply or over-supply conditions in the EIM Entity Initiate Balancing Authority Area, which at a minimum must include the units that are used for ACE correction.
 - (v) **Flexible Capacity Requirements.** The CAISO has received and stored all historical data from the EIM Entity Initiate necessary and sufficient for the CAISO to perform the flexible ramp requirement, and the CAISO has established flexible capacity requirements for the EIM Entity Initiate's Balancing Authority Area and the combined EIM Area including the EIM Entity Initiate.
 - (vi) **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.
- (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 process 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).

- State Estimator

A computer software program that provides the CAISO with a near Real-Time assessment of system conditions within the CAISO Balancing Authority Area, including portions of the CAISO Balancing Authority Area where Real-Time information is unavailable, and for purposes of the Energy Imbalance Market, including the EIM Entity Initiate Balancing Authority Area(s).

- EIM Entity Initiate

A Balancing Authority Area with an EIM Implementation Agreement that has been made effective in accordance with its terms.

Comment [A4]: Clarification requested: Does this definition include only those EIM Entities that have not yet activated their EIM market processes, or does it include all EIM entities as well?

- Base Market Model

A computer based model of the CAISO Controlled Grid, and for purposes of the Energy Imbalance Market, including the EIM Entity Initiate Balancing Authority Area(s), that is derived from the Full Network Model as described in Section 27.5.1 and that, as described further in Section 27.5.6, is used as the basis for formulating the market models used in the operation of each of the CAISO Markets.