



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

Submitted by	Company	Date Submitted
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Pacific Gas and Electric Company (PG&E) appreciates the efforts made by the California Independent System Operator (CAISO) to further refine its proposed Energy Imbalance Market (EIM) tariff based on stakeholder input. PG&E offers these comments regarding the Draft Final Tariff Language.

A. Rules Specific to the EIM Shall be Addressed in Section 29

PG&E understands the need to cross reference between section 29 and other sections of the existing CAISO Tariff in order to minimize redundancy. PG&E also understands CAISO’s view that the EIM is an extension of, not separate from, the ISO’s real time market. However, PG&E believes rules specifically pertaining to the EIM belongs in section 29, which is dedicated for that purpose.

Specifically, PG&E recommends that the proposed section 11.5.4.1 titled “Real-Time Balancing Authority Area Neutrality Amount” be moved into section 29.

The proposed section 11.5.4.1 is entirely dedicated to EIM rules. For instance, this section details how the CAISO will calculate neutrality account for each EIM Entity BAA and how that calculation will be adjusted for each EIM Entity BAA. It further details how real-time congestion offset will be calculated for each EIM Entity BAA and are adjusted by virtual schedules. Clearly, these rules are specific to serve the EIM and should thus be included in section 29.

B. Comments on Specific Sections within Section 29 of the Draft Final Tariff

1. Section 29.7(j)(2) CAISO Response to EIM Disruption

This section states that the CAISO may “establish an Administrative Price in the Real-Time Market” to address EIM disruptions. Will this Administrative Price be set according to the same

rules established in Section 7.7.4 “Intervention In CAISO Market Operations” of the existing CAISO tariff? If so, PG&E recommends a reference to Section 7.7.4 be made in this section.

2. Section 29.10(a) Telemetry Requirements

This section would exclude Generating Units that are under 10 MW from telemetry requirements. The way the section is worded would seem to require that an EIM Resource under 10 MW that is not Generating Unit (*e.g.* a Participating Load, Demand Response Resource) to meet the telemetry requirements. If that is the case, the CAISO should explain why an EIM Resource under 10 MW that is not a Generating Unit must have telemetry while a Generating Unit under 10 MW is excused from having telemetry. If that is not the case, the wording should be changed.

3. Section 29.11(b)(1) FMM Instructed Imbalance Energy

PG&E has two comments on this section. First, this section references existing tariff Sections 11.5.1.1 and 11.5.1.2. PG&E believes the correct reference should be Section 11.5.1.1 alone. Second, the reference to Section 11.5.1.1 applies to both subsections (A) “Calculation” and (B) “Settlement” within this Section 29.11(b)(1) and should be referenced in both subsections or at the section level.

4. Section 29.11(b)(2) RTD Instructed Imbalance Energy

Similar to PG&E’s comment above, the reference to Section 11.5.1.2 in this section applies to both subsections (A) “Calculation” and (B) “Settlement” within this Section 29.11(b)(2) and should be referenced in both subsections or at the section level.

5. Section 29.11(b)(3)(A) EIM Participating Resources

Similarly, the reference to Section 11.5.2 in this section applies to both subsections (i) “Calculation” and (ii) “Settlement” within this Section 29.11(b)(3)(A) and should be referenced in both subsections or at the section level.

6. Section 29.11(b)(3)(B) Non-Participating Resources

This section states that “the CAISO will settle the Uninstructed Imbalance Energy for non-participating resources at the RTD Locational Marginal Price with the EIM Entity Scheduling Coordinator.” PG&E recommends modifying this section to specify which RTD LMP price is to be used (*e.g.*, at the resource’s RTD LMP).

7. Section 29.11(b)(3)(C) Non-Participating Load

Similar to our comment above, PG&E recommends modifying this section to specify the price to be used in settling Uninstructed Imbalance Energy for non-participating load (e.g., the RTD LMP at the appropriate LAP).

8. Section 29.11(c)(2) Settlement

By stating “The CAISO will settle Unaccounted For Energy with the EIM Entity Scheduling Coordinator at the Hourly Real-Time LAP price,” this section seems to assume there can be only one LAP per EIM Entity. PG&E recommends modifying this section so it can be generically applied for EIM Entities that may include multiple LAPs.

9. Section 29.11(d)(1) Under-Scheduling Charges

As written, sub-section (B) “Tier 2” in this section implies that all of the under-scheduled amounts, relative to base schedule, are subject to the 200% hourly real-time LAP price. To be consistent with the approved design, PG&E recommends this sub-section be modified to apply this Tier 2 price only to the under-scheduled amount that exceeds 5% of base schedule. The amount that is under 5% should be charged the Tier 1 price.

10. Section 29.11(d)(2) Over-Scheduling Charges

Similar to our comment above on under-scheduling, sub-section (B) “Tier 2” in this section implies that all of the over-scheduled amounts, relative to base schedule, are subject to the 50% hourly real-time LAP price. To be consistent with the approved design, PG&E recommends this sub-section be modified to apply this Tier 2 price only to the over-scheduled amount that exceeds 5% of base schedule. The amount that is under 5% should be charged the Tier 1 price.

11. Section 29.11(f)(2) Calculation of Real-Time Bid Cost Recovery

This section states that a non-zero EIM Base Schedule will make a participating resource ineligible for the recovery of start-up and min-load costs. However, it does not tie this ineligibility to any commitment period. PG&E recommends changing the language in this section for clarity regarding the recovery of eligible costs in relation to self-commitment periods.

Specifically, PG&E recommends modifying this section as follows:

The CAISO will calculate Real-Time Bid Cost Recovery in accordance with Section 11.8.4, except that the CAISO will treat a non-zero EIM Base Schedule of an EIM Participating Resource as a Self-Schedule and the EIM Participating Resource will not be eligible for recovery of Start-Up Costs and Minimum Load Costs per the treatment of costs during self-commitment intervals in accordance with section 11.8.4.1.2.

12. Section 29.11(i)(2) EIM Entity Calculation

This section specifies the method that will be used to calculate the MWh for an EIM Entity that will be subject to the EIM Administrative Charge. As part of this calculation, the tariff proposes to “sum of the gross FMM Instructed Imbalance Energy, gross RTD Imbalance Energy, and gross Uninstructed Imbalance Energy of the EIM Market Participant’s Supply.” It also proposes to use “the gross Uninstructed Imbalance Energy of the EIM Market Participant’s Demand.”

Several aspects of this calculation are unclear:

- Does CAISO propose to sum over all Market Participants in the EIM Entity the above imbalances that are calculated for each EIM Market Participant in the EIM Entity?
- Does CAISO propose to consider imbalances for non-participating resources in the EIM Entity when calculating the MWh subject to the Administrative Charge since such imbalances are also cleared through the EIM Real-Time Market process? If not, why is the EIM Entity allowed to use the EIM to treat such imbalances arising from non-participating resources without paying the EIM Administrative Charge for the energy bought or sold?
- Does CAISO propose to sum the MWh of Supply subject to the Administrative Charge and the MWh of Demand subject to the Administrative Charge to calculate the total MWh subject to the Administrative Charge?
- If a supply resource decreases its output as compared to its base schedule, will the MWh that the resource sells into the EIM be subject to the Administrative Charge? It would seem to be a matter of equity for it to be subject to the Administrative Charge. If that is the case, specifying that the MWh subject to the Administrative Charge is based on the absolute value of the corresponding imbalance would clarify the intent.

Furthermore, as written, this section states that the minimum MWh each EIM Entity is subject to the Administrative Charge is based on gross supply and gross demand from only EIM participants. PG&E recommends changing this so the calculation of gross supply and gross demand would include non-participants. This recommendation is consistent with the derivation of the \$0.19/MWh administrative charge rate, which is calculated based on the projected volume of gross supply and gross demand in an EIM Entity that included all participants within that BAA. It is important for the CAISO to keep the method used in calculating the MWh volume consistent with the approach it used to come up with the corresponding \$/MWh rate.

Specifically, PG&E recommends modifying this section as follows:

EIM Entity Calculation. The CAISO will calculate MWh subject to the EIM Administrative Charge rate for each EIM Entity as the sum of —

- (i) *the greater of the (a) the total of (i) the sum over all EIM Market Participants in the EIM Entity of the sum of the ~~gross~~ absolute value of FMM Instructed Imbalance Energy for each Resource in the EIM Market Participant's Supply, ~~gross~~ the absolute value of RTD Imbalance Energy for each Resource in the EIM Market Participant's Supply, and ~~gross~~ the absolute value of Uninstructed Imbalance Energy for each Resource in the EIM Market Participant's Supply, and (ii) the sum over all non-participating supply resources in the EIM Entity of the absolute value of Uninstructed Imbalance Energy for each non-participating resource or (b) five percent of the total gross Supply of all EIM Market Participants and of non-participating supply resources in the EIM Entity; plus*
- (ii) *the greater of (a) the total of (i) the sum over all EIM Market Participants in the EIM Entity of the ~~gross~~ absolute value of the Uninstructed Imbalance Energy of the EIM Market Participant's Demand and (ii) the sum over all non-participating demands of the absolute value of the Uninstructed Imbalance Energy of the non-participating demand, or (b) five percent of the total gross Demand of all EIM Market Participants and of non-participating loads in the EIM Entity.*

13. Section 29.11(i)(3) Allocation

The CAISO will collect Administrative Fees based on the MWh calculated in Section 29.11(2) and the EIM Administrative Charge rate. The method specified in this section is unclear regarding the inputs to this calculation and the parties that will be charged. Assuming that the MWh subject to the charge will be defined similar to our recommendation to Section 29.11(i)(2) above, PG&E would recommend clarifications as given below.

- (3) **Allocation.** *The CAISO will calculate the total of the amount of the EIM Administrative Charge for each EIM ~~Market Participant~~Entity by multiplying the rate specified in Section 29.11(i)(1) by the MWh calculated pursuant to Section 29.11(i)(2). ~~and will allocate~~ The CAISO will first allocate a share of that charge to each EIM Market Participant Scheduling Coordinator representing a Market Participant in the EIM Entity. —*
- (i) *A Market Participant Scheduling Coordinator for a Market Participant will be allocated a charge equal to the EIM Administrative Charge rate times the total of (i) the sum of the ~~gross~~ absolute value of FMM Instructed Imbalance Energy for each Resource in the EIM Market Participant's Supply, ~~gross~~ the absolute value of RTD Imbalance Energy for each Resource in the EIM Market Participant's Supply, and ~~gross~~ the absolute value of Uninstructed Imbalance Energy for each Resource in the EIM Market Participant's Supply, and (ii) the absolute value of the*

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

- (ii) *to the extent not all EIM Administrative Charges are allocated pursuant to Section 29.11(i)(3)(i), the remaining amounts will be charged to the EIM Entity Scheduling Coordinator.*

14. Section 29.34(e)(4) Contents

Subsections (C) and (D) are ungrammatical and should be corrected. PG&E recommends the following modification:

Reserves capacity ~~of providing~~ meeting the WECC requirements for regulating reserves...

15. Section 29.39(c) Locational Marginal Price Decomposition

Subsection (D) references a structural competitive assessment. PG&E asks the CAISO to provide additional details regarding this assessment (e.g., information on how it will be conducted, and when the CAISO will present the results to the board for approval).

Furthermore, as currently stated in subsection (c)(3), “*EIM Resources shall be mitigated to relieve congestion on uncompetitive constraints within the same Balancing Authority Area in which the EIM Resources are located except as described in Section 29.39(c)(4)*”. Given that a resource in one EIM Entity may have a significant effect on congestion on a constraint in another EIM Entity, it is possible that a resource in one EIM Entity’s BAA can exert market power on a congested constraint in another EIM Entity’s BAA. PG&E believes the CAISO should also assess that possibility and consider modifying the tariff to allow mitigation of resources in one EIM Entity that can exert market power to relieve congestion on uncompetitive constraints in another EIM Entity’s BAA.

C. Comments on Specific Modifications to the Existing CAISO Tariff

1. Section 11.5.4.1(b) Initial Calculation

This section describes the calculation of a Real-Time Market neutrality amount for each EIM Entity BAA. However, it fails to address how this amount is calculated for the CAISO BAA. PG&E recommends expanding this description to include the calculation for the CAISO BAA as well.

2. Section 11.25.1 Compensation

This section states that there will be a Flexible Ramping Constraint Derived Price associated with each resource. PG&E asks for clarification on whether there will be a single Flexible Ramping Constraint Derived Price (FRCDP) for the total MW amount of Flexible Ramping Constraint (FRC) that a resource is contributing across the entire EIM Area, or will different FRCDPs be calculated for a given resource that corresponds to each specific FRC constraint (e.g., groupings or individual BAA) that the resource contributed to?

More importantly, PG&E recommends defining a separate and distinct Flexible Ramping Constraint Derived Price (FRCDP) for the EIM. This is appropriate because the parameters and logic that underlies the existing FRCDP for the CAISO BAA may not be available or logical for an EIM Entity. For example, the CAISO has already identified that for an EIM Entity there is no ancillary services price, which is a core component of the current FRCDP. As such, it would be inappropriate to then apply the same logic behind the current FRCDP, which is to reduce the flexible ramping constraint shadow price by 75% of the energy component of the LMP.

PG&E recommends defining a new EIM Flexible Ramping Constraint Derived Price, and calculate it based on the flexible ramping constraint shadow price alone. This approach seems to make sense since there is no backstop of paying the spinning reserve price to resources providing ramp capability in those areas so the reduction by 75% of System Marginal Energy Cost (SMEC) seems to be extreme. This approach is also more consistent with the approved design.¹

3. Section 11.25.3 Allocation of Costs

The second paragraph in this section describes how the total Flexible Ramping Constraint costs are allocated to each Balancing Authority Area (BAA), but it is hard to follow and understand. As a result, it is unclear whether the proposed language is consistent with the approved design.² PG&E recommends modifying this paragraph for clarity.

¹ Page 72 of the DFP states that “the shadow price of the individual BAA constraint will determine the cost of the BAA meeting its flexible ramping requirements.”

² The draft final proposal indicates that FRC costs will be allocated based on the FRC requirements for each BAA, and no BAA shall bear the cost of meeting the FRC requirement of another BAA.