



11.6 PDRs, RDRRs ~~or~~ Distributed Energy Resource Aggregations, Non-Generator Resources

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11.6.5 Settlements of Non-Generator Resources

Settlements for Energy generated or consumed by a Non-Generator Resource or a resource using Non-Generator Resource Generic Modeling functionality will reflect the applicable PNode or Aggregated PNode. For such resources comprising a single PNode, settlement for Energy transactions will reflect the LMP at that PNode. For such resources comprising multiple PNodes settlement for Energy transactions will reflect the weighted average LMP of the PNode(s) based on the applicable Generation Distribution Factors submitted through the resources' Bid or as registered in the Master File. Consistent with the provisions of Section 11.5.2, the CAISO will impose UIE on a resource's Scheduling Coordinator if the resource does not follow a Dispatch Instruction. When operating in a negative range between PMin and 0, the CAISO will not consider a Non-Generator Resource or a resource using Non-Generator Resource Generic Modeling functionality as Measured Demand so long as the resource can generate Energy. If a Non-Generator Resource operates solely as dispatchable demand response, the CAISO will treat the resource as Measured Demand.

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27.10 Election to Use Non-Generator Generic Modeling Functionality (Not Used)

The CAISO employs functionality to model Non-Generator Resources' participation in the CAISO's markets. As further described in the Business Practice Manual and consistent with the CAISO's Full Network Model database release schedule, Scheduling Coordinators may elect to use Non-Generator Resource Generic Modeling functionality for individual resources or an aggregation of resources that have a PMax greater than zero. For these resources, the CAISO will not observe costs normally associated with resource management, including but not limited to Start-Up Costs, Minimum Load Costs, or Transition Costs. The CAISO will not observe these resources' MWh constraints. Consistent with Sections 31.2 and 34.1.5, Bids submitted by resources electing to use Non-Generator Resource Generic

Commented [A1]:
Comment by Department of Market Monitoring
December 7, 2017

Should this be "Non-Generator **Resource** Generic" to be consistent with the references in the text and the newly defined tariff definition appearing below?

Commented [A2]:
Comment by Department of Market Monitoring
December 7, 2017

Given that the section starts with "The CAISO employs functionality to model Non-Generator Resources' participation in the CAISO's markets", should it be clarified more explicitly here that resource types other than Non-Generator Resources may use the Non-Generator Resource Generic modeling framework? It seems that this helps to further differentiate the Non-Generator Resource Generic modeling framework from the Non-Generator Resource resource type. See comment below.



Modeling functionality will be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation, and may use any of the methods under the CAISO's Tariff to establish a Default Energy Bid. Resources electing to use Non-Generator Resource Generic Modeling functionality are not eligible to be Resource Adequacy Resources.

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Comment by Department of Market Monitoring
December 7, 2017

Tariff sections 31.2 and 34.1.5 establish the resource types which are not subject to bid mitigation regardless of modeling framework. This includes Non-Generator resources. As DMM understands, energy storage resources are considered a type of Non-Generator resource, and thus remain exempt from mitigation even if choosing to use the Non-Generator Resource Generic modeling framework. It is important that the tariff is unambiguous in differentiating the Non-Generator Resource Generic modeling framework from the Non-Generator Resource to ensure that Non-Generator Resources such as energy storage remain exempt from market power mitigation at this time.

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29.7 EIM Operations Under Normal And Emergency Conditions.

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- (g) **EIM Manual Dispatch.** The EIM Entity may issue an EIM Manual Dispatch to an EIM Participating 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.

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29.11. Settlements And Billing For EIM Market Participants.

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- (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



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be deemed references to the EIM Base Schedule and that the CAISO will include any Energy from an EIM Manual Dispatch of the EIM Participating Resource in the FMM that is identified by the EIM Entity Scheduling Coordinator prior to the start of the FMM.

- (ii) **Non-Participating Resources.** The CAISO will calculate the FMM Instructed Imbalance Energy of non-participating resources in an EIM Entity Balancing Authority Area 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 prior to the start of the FMM.

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

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

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

(A) **Calculation.**

- (i) **EIM Participating Resources.** The CAISO will calculate an EIM Participating Resource's RTD Instructed Imbalance Energy in the same manner in which it calculates RTD Instructed



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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.

- (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.

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

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

- (3) **Uninstructed Imbalance Energy.**

- (A) **EIM Participating Resources.**

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

Coordinator or the EIM Entity Scheduling Coordinator, as applicable.

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

- (i) **Calculation.** For non-participating resources in an EIM Entity Balancing Authority Area, the CAISO will calculate Uninstructed Imbalance Energy 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 and will treat EIM Balancing Authority Demand in the same manner as the CAISO treats 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.
- (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 and will treat EIM Balancing



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Authority Demand in the same manner as the CAISO treats CAISO Demand under that Section.

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(g) 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 if –

- (1) the EIM Entities provide the CAISO with a mutually agreed upon location for the settlement of such schedule changes; and
- (2) the EIM Entities request that the CAISO provide such information.

(r) EIM Transfer System Resource Settlement.

(1) EIM Transfer System Resource Registration. The CAISO will provide EIM Entities with financially binding Settlement of Energy transfer schedule changes from their respective base schedules between EIM Entity Balancing Authority Areas if –

- (A) each EIM Entity that shares an EIM Internal Intertie and desires such Settlement agrees upon a to/from EIM Transfer system resource pricing location in their respective EIM Entity Balancing Authority Area;
- (B) each EIM Entity Scheduling Coordinator registers the agreed upon to/from EIM Transfer system resource pricing locations, including the ratio of the pricing at each location to be shared among them, in accordance with the procedures in the Business Practice Manual for the Energy Imbalance Market; and
- (C) each EIM Entity Scheduling Coordinator submits E-Tags that associate Energy transfer schedule changes with the registered 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 ratio of the Locational Marginal Prices for each registered financial EIM Transfer system resource location; and
- (D) excluding any contribution that the base EIM Transfer system resource might have otherwise had on the Real-Time Imbalance Energy Offset pursuant to Section 29.11(e)(3) and RTM Bid Cost Recovery pursuant to Section 29.11(f).

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29.27 CAISO Markets And Processes.

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- (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 can automatically EIM Mirror the schedule change using the relevant EIM Mirror System Resource.
- (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.

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29.34 EIM Operations

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(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 –
 - (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).

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30.5.6 Non-Generator Resource Bids

Scheduling Coordinators must ensure that Non-Generator Resource Bids or bids from resources using Non-Generator Resource Generic Modeling functionality contain the Bid components specified in this Section 30.5 based on how the ~~Non-Generator Resource~~ resource is then participating in the CAISO Markets, namely, whether it is providing Supply, Demand, and/or Ancillary Services Bids. In addition to the Bid components listed in this Section 30.5, Scheduling Coordinators representing Non-Generator Resources may submit Bids including the State of Charge for the Day-Ahead Market to indicate the forecasted starting physical position of the Non-Generator Resource. Scheduling Coordinators representing Non-Generator Resources using Regulation Energy Management must submit Bids compliant with the requirements of Section 8.4.1.2.

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31.2 Day-Ahead MPM Process

After the Market Close of the DAM, and after the CAISO has validated the Bids pursuant to Section 30.7, the CAISO will perform the MPM process, which is a single market run that occurs prior to the IFM Market Clearing run. The Day-Ahead MPM process determines which Bids need to be mitigated in the IFM and when RMR Proxy Bids should be considered in the IFM for RMR Units. The Day-Ahead MPM process optimizes resources to meet Demand reflected in Demand Bids, including Export Bids and Virtual Demand Bids, and to procure one hundred (100) percent of Ancillary Services requirements based on Supply Bids submitted to the DAM. Virtual Bids and Bids from Demand Response Resources, Participating Load, and Non-Generator Resources are considered in the MPM process, but are not



subject to Bid mitigation. Bids from Participating Load resources that are not subject to Bid mitigation will also be considered in the MPM process. Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation. The mitigated or unmitigated Bids and RMR Proxy Bids identified in the MPM process for all resources that cleared in the MPM are then passed to the IFM. The CAISO performs the MPM process for the DAM for the twenty-four (24) hours of the targeted Trading Day.

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34.1.5 Mitigating Bids in the RTM

34.1.5.1 Generally

After the Market Close of the RTM, after the CAISO has validated the Bids pursuant to Section 30.7 and Section 34.1.4, and prior to conducting any other RTM processes, the CAISO conducts a MPM process. The results are used in the RTM optimization processes. Bids on behalf of Demand Response Resources, Participating Load, and Non-Generator Resources are considered in the MPM process but are not subject to Bid mitigation. Bids from resources comprised of multiple technologies that include Non-Generator Resources will remain be subject to all applicable market power mitigation under the CAISO Tariff, including Local Market Power Mitigation.

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Appendix A – Master Definitions Supplement

- EIM Auto-Match

The automatic matching of an EIM Entity's intertie schedule change outside the Market Clearing of the Real-Time Market because of changes to Interchange E-Tags at a designated EIM Intertie or Scheduling Point with matching changes to an associated EIM non-participating resource EIM Base Schedule.



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- EIM Mirror System Resource

A System Resource at a Scheduling Point registered to an EIM Entity for mirroring CAISO intertie schedules at that Scheduling Point, when the associated Energy is generated at, wheeled through, or consumed at the corresponding EIM Entity Balancing Authority Area.

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- EIM Mirror

The process by which an EIM Entity balances a CAISO intertie schedule associated with Energy that originates, is consumed in, or wheels through the EIM Entity Balancing Authority Area with an intertie schedule for the EIM Mirror System Resource. CAISO imports are mirrored as EIM Entity Balancing Authority Area exports and CAISO exports are mirrored as EIM Entity Balancing Authority Area imports.

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- Non-Generator Resource Generic Modeling

Non-Generator Resource Generic Modeling is a functionality used by the CAISO to recognize that a resource or aggregation of resources may be dispatched to any operating level within a continuous generating operating range from a negative PMin to a positive PMax.