**Appendix A**

**- FMM Schedule**

The binding output of the FMM resulting from Bids submitted to the RTM. The portion of a Hourly Block Schedule or HASP Block Intertie Schedule for either Energy or Ancillary Services that becomes financially binding shall constitute a FMM Schedule.

**- HASP Block Intertie Schedule**

The output of the HASP resulting from accepted Self-Schedule Hourly Blocks and awarded Economic Hourly Block Bids (but excluding an Economic Hourly Block Bid with Intra-Hour option). A HASP Block Intertie Schedule can include Energy and AS. HASP Block Intertie Schedules, as modified after accepted, are settled at the applicable FMM LMP and FMM ASMPs. HASP Block Intertie Schedules are advisory only in that they may be curtailed by the CAISO for Reliability reasons. Otherwise, the MWH quantity of a HASP Block Intertie Schedule is financially binding.

**- Hourly Block**

A Bid or Schedule in the Real-Time Market from eligible resources for the same MWh quantity over an entire Trading Hour. Binding Hourly Block Schedules result in contiguous FMM Schedules.

# 4. Roles and Responsibilities

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## 4.13 DRPs, RDRRs, and PDRs

### 4.13.1 Relationship Between CAISO and DRPs

### Consistent with Section 30.6, the CAISO shall only accept Bids from Reliability Demand Response Resources and Proxy Demand Resourcesif such Reliability Demand Response Resources or Proxy Demand Resources are represented by a Demand Response Provider that has entered into a Demand Response Provider Agreement with the CAISO, has accurately provided the information required in the Demand Response System, has satisfied all Reliability Demand Response Resource or Proxy Demand Resource registration requirements, and has met standards adopted by the CAISO and published on the CAISO Website.  Reliability Demand Response Resources and Proxy Demand Resources may not participate in a Distributed Energy Resource Aggregation. The CAISO shall not accept submitted Bids for Energy or Ancillary Services from a Demand Response Provider other than through a Scheduling Coordinator, which Scheduling Coordinator may be the Demand Response Provider itself or another entity. Proxy Demand Response Resources providing Ancillary Services must submit Meter Data for the interval preceding, during, and following the Trading Interval(s) in which they were awarded Ancillary Services for the purposes of determining settlement pursuant to Section 8.10.8.4.13.2 Applicable Requirements for RDRRs, PDRs and DRPs

A single Demand Response Provider must represent each Reliability Demand Response Resource or Proxy Demand Resource and may represent more than one (1) Reliability Demand Response Resource or Proxy Demand Resource. Each Reliability Demand Response Resource or Proxy Demand Resource that is not within a MSS must be associated with a single Utility Distribution Company. A Demand Response Provider may be, but is not required to be, a Load Serving Entity or a Utility Distribution Company. Each Reliability Demand Response Resource or Proxy Demand Resource is required to be located in a single Sub-LAP. All underlying Locations of a Reliability Demand Response Resource or Proxy Demand Resource must be located in a single Sub-LAP. Each Demand Response Provider is required to satisfy registration requirements and to provide information to allow the CAISO to establish performance evaluation methodologies in accordance with Section 4.13.4 and the applicable Business Practice Manuals. Registration of a Location for participation in Reliability Demand Response Resources or Proxy Demand Resources requires the approval of the CAISO resulting from its registration process. As part of the submitted registration process, both the appropriately Demand Response Provider designated Load Serving Entity(s) and Utility Distribution Company will have an opportunity to review the registered Location detail and provide comments with regard to its accuracy. Disputes regarding the acceptances or rejections of a registration of a Location shall be undertaken with the applicable Local Regulatory Authority and shall not be arbitrated or in any way resolved through a CAISO dispute resolution mechanism or process. A Location cannot be registered to both a Reliability Demand Response Resource and a Proxy Demand Resource for the same Trading Day.

### 4.13.3 Identification of RDRRs and PDRs

Each Demand Response Provider shall provide data, as described in the Business Practice Manual, identifying each of its Reliability Demand Response Resources or Proxy Demand Resources and such information regarding the capacity and the operating characteristics of the Reliability Demand Response Resource or Proxy Demand Resource as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources. Demand Response Providers for Proxy Demand Resources may elect to specify in the Master File how the Proxy Demand Resource will bid and be dispatched in the Real-Time Market: in (i) Hourly Blocks, (ii) fifteen (15) minute intervals, or (iii) five (5) minute intervals. If Demand Response Providers do not submit an election in the Master File, the CAISO will set five (5) minute intervals as the default.

### 4.13.5 Characteristics of PDRs and PDRRs

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**11. CAISO Settlements and Billing**

**11.5 Real-Time Market Settlements**

**11.5.2.4 [Not used]**

**11.6.4 Settlements of Proxy Demand Resources in the Real-Time Market**

The CAISO will calculate RTM Schedules and Awards for Proxy Demand Resources at the relevant RTM LMP at the relevant Scheduling Point consistent with Section 11.5. The portion of an Hourly Block Schedule for Energy that becomes financially binding will constitute an FMM Schedule. A cleared Economic Hourly Block Bid is not eligible for Bid Cost Recovery. Ramping Energy Deviations, Residual Imbalance Energy, and Standard Ramping Energy do not apply to Proxy Demand Resources with Hourly Block or FMM Schedules.

**11.6.5 Settlement of Distributed Energy Resource Aggregations**

Settlements for Energy provided by a Distributed Energy Resource Provider from a Distributed Energy Resource Aggregation shall be based on the applicable PNode or Aggregated PNode of the Distributed Energy Resource Aggregation. For Distributed Energy Resource Aggregations comprising a single PNode, settlement for Energy transactions would reflect the LMP at that PNode. For Distributed Energy Resource Aggregations comprising multiple PNodes settlement for Energy transactions would be the weighted average LMP of the PNode(s) based on the applicable Generation Distribution Factors submitted through the Distributed Energy Resource Aggregation’s Bid or as registered in the Master File. Consistent with the provisions of Section 11.5.2, the CAISO will impose UIE on a Distributed Energy Resource Provider if the Distributed Energy Resource Provider’s Distributed Energy Resource Aggregation does not follow a Dispatch Instruction.

**11.6.6 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.

# 30. Bid and Self-Schedule Submission for all CAISO Markets

**30.6 Bidding and Scheduling of PDRs and RDRRs**

**30.6.1 Bidding and Scheduling of PDRs**

Unless otherwise specified in the CAISO Tariff and applicable Business Practice Manuals, and subject to Section 30.6.3, the CAISO will treat Bids for Energy and Ancillary Services on behalf of Proxy Demand Resources like Bids for Energy and Ancillary Services on behalf of other types of supply resources. The CAISO will only accept the following types of Bids from Proxy Demand Resources:

1. Economic Bids for Energy or Ancillary Services;
2. submissions to Self-Provide Ancillary Services;
3. submissions of Energy Self-Schedulesfrom Proxy Demand Resources that have provided Submissions to Self-Provide Ancillary Services;
4. submissions of Energy Self-Schedules in the Real-Time Market up to the Proxy Demand Resource’s Day-Ahead Market Schedule in the same Trading Hour; and
5. RUC Availability Bids.

A Scheduling Coordinator for a Demand Response Provider representing a Proxy Demand Resource may Self-Provide Ancillary Services for which it is certified. The Demand Response Provider's Demand Response Services for Proxy Demand Resources will be bid separately and independently from the LSE's underlying Demand Bid.

**30.6.1.1 Bidding and Scheduling of PDRs in the Real-Time Market**

Pursuant to Section 4.13.3, Scheduling Coordinators for Proxy Demand Resources may submit Economics Bids for Energy and Ancillary Services in the FMM and RTD. Pursuant to Section 30.5.1(s), Scheduling Coordinators for Proxy Demand Resources may submit Economic Hourly Block Bids to be considered in the HASP, and to be accepted as binding Schedules with the same MWh award for each of the four FMM intervals. A cleared Economic Hourly Block Bid is not eligible for Bid Cost Recovery. Scheduling Coordinators for Proxy Demand Resources may not submit Economic Hourly Block Bids with an Intra-Hour Option.

**30.6.2 Bidding and Scheduling of RDRRs**

Unless otherwise specified in the CAISO Tariff and applicable Business Practice Manuals, and subject to Section 30.6.3, the CAISO will treat Bids for Energy on behalf of Reliability Demand Response Resources like Bids for Energy on behalf of other types of supply resources. The CAISO will only accept Economic Bids for Energy from Reliability Demand Response Resources. A Scheduling Coordinator for a Demand Response Provider representing a Reliability Demand Response Resource may submit Economic Energy Bids for the Reliability Demand Response Resource only in the Day-Ahead Market and in the Real-Time Market, but may not submit Energy Self-Schedules for the Reliability Demand Response Resource, may not Self-Provide Ancillary Services from the Reliability Demand Response Resource, and may not submit RUC Availability Bids or Ancillary Service Bids for the Reliability Demand Response Resource. The Demand Response Provider’s Demand Response Services for Reliability Demand Response Resources will be bid separately and independently from the LSE’s underlying Demand Bid.

**…**

**30.6.3 Net Benefits Test for PDRs or PDRRs**

In accordance with Section 11.5.2.4, the CAISO will apply a net benefits test to determine a threshold Market Clearing Price for Proxy Demand Resources. The CAISO will not accept Proxy Demand Resource or Reliability Demand Response Resource Bids for Energy below this threshold Market Clearing Price in the CAISO Markets.

will be the final threshold Market Clearing Price.

**30.6.3.2 Information Posted on CAISO Website**

The net benefits test will be posted on the CAISO website, along with supporting documentation and the threshold Market Clearing Prices that were in effect in the previous twelve (12) months, and any updated supply curve analysis. The CAISO will post the threshold Market Clearing Prices determined for each month on the CAISO Website by the fifteenth (15th) day of the immediately preceding month.

**31. Day-Ahead Market**

The DAM consists of the following functions performed in sequence: the MPM, IFM, and RUC. Scheduling Coordinators may submit Bids for Energy, Ancillary Services and RUC Capacity for an applicable Trading Day. The CAISO shall issue Schedules for all Supply and Demand, including Participating Load, Reliability Demand Response Resources, and Proxy Demand Resources, pursuant to their Bids as provided in this Section 31.

# 34. Real-Time Market

**34.4 Fifteen Minute Market**

The CAISO conducts the Fifteen Minute Market using the second interval of each RTUC run horizon as follows: (1) at approximately 7.5 minutes prior to the first Trading Hour, for T-45 minutes to T+60 minutes where the binding interval is T-30 to T-15; (2) at approximately 7.5 minutes into the current hour for T-30 minutes to T+60 minutes where the binding interval is T-15 to T; (3) at approximately 22.5 minutes into the current hour for T-15 minutes to T+60 minutes for the binding interval T to T+15; and (4) at approximately 37.5 minutes into the current hour for T to T+60 minutes for the binding interval T+15 to T+30, where T is the beginning of the next Trading Hour. In these intervals the CAISO conducts the FMM to (1) determine financially binding FMM Schedules and corresponding LMPs for all Pricing Nodes, including all Scheduling Points; (2) determine financially and operationally binding Ancillary Services Awards and corresponding ASMPs, procure required additional Ancillary Services and calculate ASMP used for settling procured Ancillary Service capacity for the next fifteen-minute Real-Time Ancillary Service interval for all Pricing Nodes, including Scheduling Points; (3) determine LAP LMPs that are the basis for settling Demand; and (4) determine FMM Uncertainty Awards. In any FMM interval that falls within a time period in which a Multi-Stage Generating Resource is transitioning from one MSG Configuration to another MSG Configuration, the CAISO: (1) will not award any incremental Ancillary Services; (2) will disqualify any Day-Ahead Ancillary Services Awards; (3) will disqualify Day-Ahead qualified Submissions to Self-Provide Ancillary Services Award, and (4) will disqualify Submissions to Self-Provide Ancillary Services in RTM. Each particular FMM market optimization produces binding settlement prices for Energy, Flexible Ramping Product, and Ancillary Services for the first FMM interval in the FMM horizon but the optimization considers the advisory results from subsequent market intervals within the FMM horizon. The CAISO settles Hourly Block Schedules from Proxy Demand Resources, Hourly Intertie Schedules, and Hourly Ancillary Services Awards accepted in the HASP as FMM Schedules and FMM Ancillary Services Awards in accordance with Section 11.5 and 11.10.1.2, respectively. In the event that a FMM run fails, the CAISO reverts to Day-Ahead Market Ancillary Services Awards and RUC Schedules results corresponding to the same interval, or the corresponding interval from the previous RTUC. The FMM will clear Supply against the CAISO Forecast Of CAISO Demand and exports. The FMM issues Energy Schedules and Ancillary Services Awards by twenty-two and a half minutes prior to the binding fifteen-minute interval.