**Appendix A**

**- Electric Vehicle Supply Equipment (EVSE)**

Load, Energy, and storage resources consisting of chargingstations, charging docks, or other facilities used to interconnect and supply Energy to electric vehicles.

**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. Proxy Demand Resources using the load-shift methodology described in Section 4.13.4.7 may elect to bid and be dispatched in the Real-Time Market in fifteen (15) minute intervals or 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.

**4.13.4 Performance Evaluation Methodologies for PDRs and RDRRs**

The following methodologies may be utilized to calculate Customer Load Baselines and Demand Response Energy Measurements for Proxy Demand Resources and Reliability Demand Response Resources. Proxy Demand Resources and Reliability Demand Response Resources consisting of residential End Users may elect to use the ten-in-ten methodology, metering generator output methodology, control group methodology, five-in-ten methodology, or weather matching methodology. Proxy Demand Resources and Reliability Demand Response Resources consisting of non-residential End Users may elect to use the ten-in-ten methodology, metering generator output methodology, control group methodology, or weather matching methodology. Proxy Demand Resources with behind-the-meter energy storage also may elect to use the load-shift methodology. If an EVSE elects to participate as a Proxy Demand Resource and use a different methodology than its co-located Load, it must adhere to Section 4.13.4.6. Proxy Demand Resources providing Ancillary Services must submit Meter Data for the intervals immediately preceding, during, and following the Trading Interval(s) in which the Proxy Demand Resources were awarded Ancillary Services. As specified in the Business Practice Manual, the CAISO will retain authority to calculate or correct Customer Load Baselines and Demand Response Energy Measurements for those resources that used the CAISO’s Demand Response System, until all relevant metering, settlement, and correction windows have lapsed since the CAISO retired its ability to calculate on behalf of Scheduling Coordinators in the Demand Response System.

…

**4.13.4.6 EVSEs**

Proxy Demand Resources may include or consist entirely of EVSEs. Proxy Demand Resources may elect to use different methodologies to calculate the Customer Load Baselines and Demand Response Energy Measurements of (i) their EVSEs, including electric vehicle charging Load, and (ii) any other Load or behind-the-meter Generation participating as Proxy Demand Resources. Where a Proxy Demand Resource elects to do so, the EVSE Load must be metered separately from any other Load or Generation. Individual EVSEs may be aggregated into Proxy Demand Resources consistent with Section 4.13.2. Where the Load at the EVSE’s Location also participates as a Proxy Demand Resource, the EVSE must participate in the same Proxy Demand Resource, but may elect to have a separately metered Customer Load Baseline and Demand Response Energy Measurement consistent with this Section. To calculate EVSE Customer Load Baselines and Demand Response Energy Measurements under this section, non-residential EVSEs may use the ten-in-ten methodology, and residential EVSEs may use the ten-in-ten methodology and the five-in-ten methodology. Scheduling Coordinators for EVSEs participating under this section will not apply an adjustment factor pursuant to subsection (c) of either methodology. Non-EVSE Load also participating in the EVSE’s Proxy Demand Resource may use any eligible methodology for its Customer Load Baseline and Demand Response Energy Measurement.

**4.13.4.7 Load-Shift Methodology**

Only Proxy Demand Resources using behind-the-meter energy storage may elect to use the load-shift methodology described in this Section. The energy storage must be metered separately from other Load or Generation. Proxy Demand Resources using this methodology will consist of two Resource IDs:

* A consumption Resource ID to account for the energy storage charging alone; and
* A curtailment Resource ID to account for the energy storage discharging to offset onsite Demand and, including if the Demand Response Provider elects, any Demand curtailment by the onsite Load independent of the energy storage.

The CAISO will use reasonable efforts to optimize both Resource IDs to avoid conflicting Schedules. Scheduling Coordinators will be responsible for calculating separate Customer Load and Generator Output Baselines for the curtailment Resource ID and the consumption Resource ID. (a) Meter Data will be collected for each Resource ID for the fifteen (15) minute interval as the Trading Interval on calendar days preceding the Trading Day on which the Demand Response Event occurred for which the baselines are calculated. To determine the fifteen (15) minute intervals for which the Meter Data will be collected, the calculation will work sequentially backwards from the Trading Day under examination up to a maximum of forty-five (45) calendar days prior to the Trading Day, including only business days if the Trading Day is a business day, including only non-business days if the Trading Day is a non-business day, and excluding intervals in which the Proxy Demand Resource was subject to an Outage or previously provided Demand Response Services (other than capacity awarded for AS or RUC). The calculation will have complete Meter Data for this purpose if and when it is able to collect Meter Data for its target number of intervals the same as the Trading Interval, which target number is ten (10) intervals if the Trading Day is a business day or four (4) intervals if the Trading Day is a non-business day. If these targets cannot be met, a minimum of five (5) intervals if the Trading Day is a business day or a minimum of four (4) intervals if the Trading Day is a non-business day must be collected. If these targets cannot be met, the baselines will be set at zero.

(b) Meter Data for the consumption Resource ID will include only Meter Data at or below 0 MWh. In intervals where the Meter Data is above 0 MWh, the Scheduling Coordinator will consider the Meter Data at 0 MWh for the consumption Resource ID.

(c) Meter Data for the curtailment Resource ID will include only Meter Data at or above 0 MWh. In intervals where the Meter Data is below 0 MWh, the Scheduling Coordinator will consider the Meter Data at 0 MWh for the curtailment Resource ID. The Scheduling Coordinator will exclude Meter Data for Energy from the curtailment Resource ID that exceeds the onside Demand.

 (d) The Scheduling Coordinator will be responsible for calculating the simple hourly average of the collected Meter Data to determine the baseline amounts of Energy provided or consumed by each Resource ID.

The Demand Response Provider may elect to include Demand Response Energy Measurements for the onsite Load, which the Scheduling Coordinator will add to the Demand Response Energy Measurement for the curtailment Resource ID pursuant to Section 11.6.7. If the Demand Response Provider elects to do so, the Scheduling Coordinator will calculate a separate Customer Load Baseline for the onsite Load, excluding the Energy or Demand from the energy storage. If the onsite Load is residential, the Scheduling Coordinator may calculate its Customer Load Baseline using the ten-in-ten methodology, five-in-ten methodology, or weather matching methodology performance methodology. If the onsite Load is non-residential, the Scheduling Coordinator may calculate its Customer Load Baseline using the ten-in-ten methodology or weather matching methodology performance methodology.

**11.6.7 Settlement of Proxy Demand Resources using the Load-Shift Methodology**

The CAISO will settle separately the consumption Resource ID and curtailment Resource ID of a Proxy Demand Resource using the load-shift methodology. The Demand Response Energy Measurement for the consumption Resource ID will be the quantity of Energy equal to the difference between (i) its Customer Load Baseline calculated pursuant to Section 4.13.4.7 and (ii) its actual underlying negative Energy for a Demand Response Event. The Demand Response Energy Measurement for the curtailment Resource ID will be the quantity of Energy from the behind-the-meter energy storage equal to the difference between (i) its Generation Output Baseline calculated pursuant to Section 4.13.4.7 and (ii) its actual underlying production for a Demand Response Event. If the Proxy Demand Resource elects to curtail local onsite Demand independent of the behind-the-meter energy storage, the Scheduling Coordinator will add the Demand Response Energy Measurement calculated for the onsite Load pursuant to this Section 11.6 to the Demand Response Energy Measurement of the curtailment Resource ID. Scheduling Coordinators will be responsible for calculating and submitting Demand Response Energy Measurements in 5-minute intervals. For monitoring, compliance, and audit purposes, Scheduling Coordinators must submit in the Settlement Quality Meter Data Systems the Customer Load Baselines, as applicable, and the actual underlying consumption or Energy during all hourly intervals for the calendar days for which the Meter Data was collected to develop the Customer Load Baseline pursuant to Section 4.13.4. Only Demand Response Energy Measurements will be considered Settlement Quality Meter Data. Demand Response Energy Measurements for Proxy Demand Resources will only be settled in intervals where their total Expected Energy is above zero. The CAISO will calculate the respective bid cost recoveries for each Resource ID consistent with Section 11.8. The consumption Resource ID will not recover Start-Up Costs, Minimum Load Costs, Pumping Costs, Pump Shut-Down Costs, or Transition Costs, but may recover Energy Bid Costs.

**30.6.1.2 Bidding and Scheduling of Proxy Demand Resources using the Load-Shift Methodology**

Scheduling Coordinators for Proxy Demand Resources using the load-shift methodology described in Section 4.13.4.7 will submit separate Economic Bids for the curtailment Resource ID and the consumption Resource ID that comprise the Proxy Demand Resource. The CAISO will use reasonable efforts to optimize both Resource IDs to avoid sending conflicting Schedules

The CAISO will only accept the following types of Bids for the curtailment Resource ID:

(i) Economic Bids for Energy or Ancillary Services;

(ii) submissions to Self-Provide Ancillary Services;

(iii) submissions of Energy Self-Schedules where the curtailment Resource ID has provided Submissions to Self-Provide Ancillary Services;

(iv) submissions of Energy Self-Schedules in the Real-Time Market up to curtailment Resource ID’s Day-Ahead Market Schedule in the same Trading Hour; and

(v) RUC Availability Bids.

All Economic Bids for Energy for the curtailment Resource ID must be above the Market Clearing Prices established in Section 30.6.3. For the consumption Resource ID, the CAISO will only accept Economic Bids for Energy and submissions of Energy Self-Schedules in the Real-Time Market up to its Day-Ahead Market Schedule in the same Trading Hour. All Economic Bids for the consumption Resources must be below $0/MWh.

**40.8.1.13 Proxy Demand Resources**

A Proxy Demand Resource must have the ability to (i) be dispatched for at least twenty-four hours per month, (ii) be dispatched on at least three consecutive days, and (iii) respond for at least four hours per dispatch in order to qualify as Resource Adequacy Capacity. The Qualifying Capacity of a Proxy Demand Resource, for each month, will be based on the resource’s average monthly historic demand reduction performance during that same month during the Availability Assessment Hours, as described in Section 40.9.3, using a three-year rolling average. For a Proxy Demand Resource with fewer than three years of performance history, for all months for which there is no historic data, the CAISO will utilize a monthly megawatt value as certified and reported to the CAISO by the Demand Response Provider; otherwise, where available, the CAISO will use the average of historic demand reduction performance data available, by month, for a Proxy Demand Resource. Where a Proxy Demand Resource uses the load-shift methodology to calculate its Demand Response Energy Measurements, its Qualifying Capacity will exclude demand reduction performance from the consumption Resource ID.