

California Independent System Operator Corporation
Fifth Replacement Electronic Tariff

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Appendix Q

Eligible Intermittent Resources Protocol (EIRP)

July 1, 2013

1 SCOPE

1.1 Scope of Application to Parties

This EIRP applies to the CAISO and to:

- (a) Scheduling Coordinators (SCs);
- (b) Eligible Intermittent Resources; and
- (c) Participating Intermittent Resources.

1.2 Liability of the CAISO

Any liability of the CAISO arising out of or in relation to this EIRP shall be subject to Section 14 of the CAISO Tariff as if references to the CAISO Tariff were references to this EIRP.

2 REQUIREMENTS FOR ELIGIBLE AND PARTICIPATING INTERMITTENT

RESOURCES

2.1 No Mandatory Participation

Eligible Intermittent Resources may elect to be scheduled and settled as the CAISO Tariff provides for Generating Units, and are not required to seek certification as Participating Intermittent Resources.

2.2 Minimum Certification Requirements

Those Eligible Intermittent Resources and Participating Intermittent Resources must meet the following requirements, as applicable.

2.2.1 Agreements

The following agreements must be executed by the owner or operator of any Eligible Intermittent Resource, unless that resource is not subject to any of these agreements pursuant to the CAISO Tariff, such as an Eligible Intermittent Resource of an MSS Operator:

- (a) A Participating Generator Agreement, Net Scheduled PGA, Dynamic Scheduling Agreement for Scheduling Coordinators, or Pseudo-Tie Participating Generator Agreement that, among other things, binds the Eligible Intermittent Resource to comply with the CAISO Tariff; and
- (b) A Meter Service Agreement for CAISO Metered Entities, for all Eligible Intermittent Resources other than Dynamic System Resources.

If an Eligible Intermittent Resource intends to become a Participating Intermittent Resource, it must also execute a letter of intent, which when executed and delivered to the CAISO shall initiate the process of certifying the Participating Intermittent Resource. The form of the letter of intent shall be specified by the CAISO in a Business Practice Manual.

2.2.2 Composition of a Participating Intermittent Resource

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The CAISO shall develop criteria to determine whether one or more Eligible Intermittent Resources may be included within a Participating Intermittent Resource. Such criteria shall include:

- (a) A Participating Intermittent Resource must be at least one (1) MW rated capacity.
- (b) A Participating Intermittent Resource may include one (1) or more Eligible Intermittent Resources that have similar response to weather conditions or other variables relevant to forecasting Energy, as determined by the CAISO.
- (c) Each Participating Intermittent Resource shall be electrically connected at a single point on the CAISO Controlled Grid, except as otherwise permitted by the CAISO on a case-by-case basis as may be allowed under the CAISO Tariff. Interconnection to a portion of the CAISO Controlled Grid outside or not contiguous to the CAISO Balancing Authority Area does not make an Eligible Intermittent Resource that is a Dynamic System Resource or Pseudo-Tie Generating Unit eligible to be included within a Participating Intermittent Resource.
- (d) The same Scheduling Coordinator must schedule all Eligible Intermittent Resources aggregated into a single Participating Intermittent Resource.

2.2.3 Equipment Installation

An Eligible Participating Intermittent Resource must install and maintain the communication equipment required pursuant to Section 3 of this EIRP, and the equipment supporting forecast data required pursuant to Section 6 of this EIRP.

2.2.4 Forecast Model Validation

The CAISO must determine that sufficient historic and real-time telemetered data are available to support an accurate and unbiased forecast of Energy generation by a Participating Intermittent Resource, according to the forecasting process validation criteria described in Section 4 of this EIRP.

2.2.5 Information Requirements For Participating Intermittent Resource Export Fee

In order for the CAISO to administer, implement and calculate the Participating Intermittent Resource Export Fee, each Participating Intermittent Resource jointly with, and through, its Scheduling Coordinator must provide the CAISO with the following information and documents under the schedule and conditions set forth in this section.

The CAISO will maintain the confidentiality of all information and documents received under this section in accordance with CAISO Tariff Section 20 et seq.

- (a) A certification, in the form set for in a Business Practice Manual, signed by an officer of the Participating Intermittent Resource and its Scheduling Coordinator, identifying (1) the PIR Export Percentage under Section 5.3.2 of this EIRP, if any, and basis thereof, and (2) each contract to sell Energy or capacity from the Participating Intermittent Resource, including for each such contract, the counterparty, start and end dates, delivery point(s), quantity in MW, other temporal terms, i.e., seasonal or hourly limitations.

The certification must be updated by resubmission to the CAISO (1) upon a request to modify the composition of the Participating Intermittent Resource under Section 2.4.2 of this EIRP; or (2) within ten (10) calendar days of final

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execution of a new contract or any change in counterparty, start and end dates, delivery point(s), quantity in MW, or other temporal terms, as described above, for any prior certified contract. All other contractual changes will not trigger the obligation for recertification;

(b) Copies of all contracts, including changes, identified in the above-referenced certification; however, price information may be redacted from the contracts provided.

Each Participating Intermittent Resource, as of November 1, 2006, must initially provide the information requested by this Section 2.2.5 in accordance with a Market Notice provided by the CAISO to Participating Intermittent Resources. All other Eligible Intermittent Resources must satisfy this Section 2.2.5 in order to become a Participating Intermittent Resource after November 1, 2006.

2.3 Notice of Certification of a Participating Intermittent Resource

When all requirements described in Section 2.2 of this EIRP applicable to Participating Intermittent Resources have been fulfilled, the CAISO shall notify the Scheduling Coordinator and the representatives of the Eligible Intermittent Resources comprising the Participating Intermittent Resource that the Participating Intermittent Resource has been certified, and is eligible for the settlement terms provided under Section 11.12 of the CAISO Tariff, as conditioned by the terms of this EIRP.

2.4 Additional Requirements

2.4.1 Forecast Fee

An Eligible Intermittent Resource must pay the Forecast Fee for all metered Energy generated by the Eligible Intermittent Resource, as specified in CAISO Tariff Appendix F, Schedule 4.

2.4.2 Modification of Participating Intermittent Resource Composition

A Participating Intermittent Resource may seek to modify the composition of the Participating Intermittent Resource (e.g., by adding or eliminating an Eligible Intermittent Resource from the Participating Intermittent Resource). Such changes shall not be implemented without prior compliance with the written approval by the CAISO. The CAISO will apply consistent criteria and expeditiously review any proposed changes in the composition of a Participating Intermittent Resource.

2.4.3 Changes in Scheduling Coordinator

This EIRP does not impose any additional requirement for CAISO approval to change the Scheduling Coordinator for an approved Participating Intermittent Resource than would otherwise apply under the CAISO Tariff to changes in the Scheduling Coordinator representing a Generating Unit.

2.4.4 Continuing Obligation

A Participating Intermittent Resource or Eligible Intermittent Resource must meet all applicable obligations established for Participating Intermittent Resources or Eligible Intermittent Resources under the CAISO Tariff and this EIRP, and must fully cooperate in providing all data, other information, and authorizations the CAISO reasonably requests to fulfill its obligation to validate forecast models, explain deviations, and implement the Participating Intermittent Resource Export Fees.

2.4.5 Failure to Perform

If the CAISO determines that a material deficiency has arisen in the Participating Intermittent Resource's fulfillment of its obligations under the CAISO Tariff and this EIRP, and such Participating Intermittent Resource fails to promptly correct such deficiencies when notified by the CAISO, then the eligibility of the Participating Intermittent Resource for the settlement accommodations provided in Section 11.12 of the CAISO Tariff shall be suspended until such time that the unavailable data is provided or other material deficiency is corrected to the CAISO's reasonable satisfaction. Such suspension shall not relieve the Scheduling Coordinator for the deficient Participating Intermittent Resource from paying the Forecast Fee over the duration of the period covered by the letter of intent described in Section 2.2.1(c) of this EIRP.

3 COMMUNICATIONS

3.1 Forecast Data

The CAISO may require various data relevant to forecasting Energy from the Eligible Intermittent Resource to be telemetered to the CAISO, including appropriate operational data, meteorological data or other data reasonably necessary to forecast Energy.

3.2 Standards

The standards for communications shall be the monitoring and communications requirements for Generating Units providing only Energy; as such standards may be amended from time to time, and published on the CAISO Website.

3.3 Cost Responsibility

An Eligible Intermittent Resource is responsible for expenses associated with engineering, installation, operation and maintenance of required communication equipment.

4 FORECASTING

The CAISO is responsible for overseeing the development of tools or services to forecast Energy for Participating Intermittent Resources. The CAISO will use its best efforts to develop accurate and unbiased forecasts, as limited by the availability of relevant explanatory data. Objective criteria and thresholds for unbiased, accurate forecasts shall be set forth in a Business Practice Manual, and shall be used to certify Participating Intermittent Resources in accordance with Section 2.2.4 of this EIRP.

4.1 Hour-Ahead Forecast

The CAISO shall develop expert, independent hourly forecasts of Energy generation for each Participating Intermittent Resource. A forecast shall be published each hour for each of the next seven (7) operating hours. Other forecasts, including a Day-Ahead forecast, may be developed at the CAISO's discretion. The Scheduling Coordinator representing the Participating Intermittent Resource must use the hour-ahead forecast that is available thirty (30) minutes prior to the deadline for submitting the HASP/RTM Bids. The CAISO shall use best efforts to provide reliable and timely forecasts. However, if the CAISO fails to deliver the hour-ahead forecast to the Scheduling Coordinator prior to fifteen (15) minutes before the deadline for submitting HASP/RTM Bids, then the hour-ahead forecast shall be the most recent Energy forecast provided by the CAISO to the Scheduling Coordinator for the operating hour for which Bids are next due.

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4.2 [Not Used]

4.3 Confidentiality

The CAISO shall maintain the confidentiality of proprietary data for each Participating Intermittent Resource in accordance with Section 20 of the CAISO Tariff.

5 SCHEDULING AND SETTLEMENT

5.1 Schedules

Scheduling Coordinators shall be required to submit HASP/RTM Bids(MWh) for the Generating Units that comprise each Participating Intermittent Resource that are identical, in the aggregate, to the hour-ahead forecast published for that Participating Intermittent Resource (MWh).

5.2 Settlement

After a Participating Intermittent Resource is certified, Settlement shall be determined for each Settlement Period based on consistency of Bids submitted on behalf of such Participating Intermittent Resource with the rules specified in the CAISO Tariff and this EIRP.

5.3 Participating Intermittent Resource Export Fee

5.3.1 Exemptions

After November 1, 2006, Participating Intermittent Resources shall be subject to the Participating Intermittent Resource Export Fee, as set forth in Schedule 4 of Appendix F, for Energy generated, except to the extent the Participating Intermittent Resource is exempt under one or more of the following conditions:

- (a) The owner of a Participating Intermittent Resource, as of November 1, 2006, utilizes the Energy generated from the Participating Intermittent Resource to meet its own Native Load outside the CAISO Balancing Authority Area. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will not apply to the added capacity unless exempt under another subsection of this Section 5.3.1.

If the Participating Intermittent Resource subject to this exemption changes ownership, the Participating Intermittent Resource Export Fee will apply, except where the prior exempt owner demonstrates that the entire output of the Participating Intermittent Resource continues to be delivered to the exempt owner under a power purchase agreement for the purpose of serving the prior exempt owner's Native Load. The exemption will then continue only for the period of the power purchase agreement as provided in accordance with Section 2.2.5 of this EIRP and cannot exceed the MW quantity originally exempted.

- (b) A Participating Intermittent Resource demonstrates in its certification under Section 2.2.5(a) of this EIRP an export contract with a starting term prior to November 1, 2006. An export contract is any power purchase agreement to sell Energy to any entity other than a Load Serving Entity with an obligation under law or franchise to serve Demand within the CAISO Balancing Authority Area.

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The exemption will apply to any extension of the current export contract through an evergreen or other existing extension provision. The exemption terminates upon termination of the export contract. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will apply only to Energy generated up to the contract quantity, unless the Participating Intermittent Resource demonstrates a basis for exemption under subsection (c) for the expanded capacity.

- (c) A Participating Intermittent Resource demonstrates in its certification under Section 2.2.5(a) of this EIRP a contract to sell Energy to a Load Serving Entity with Native Load within the CAISO Balancing Authority Area. Energy service providers with contractual obligations with customers within the CAISO Balancing Authority Area would be deemed a Load Serving Entity with an obligation to serve Native Load within the CAISO Balancing Authority Area.

The exemption will apply to any extension of the current contract through an evergreen or other existing extension provision. The exemption terminates upon termination of the contract. Should any Participating Intermittent Resource subject to this exemption increase its PMax set forth in the CAISO's Master File by modification under Section 2.4.2 of this EIRP, the exemption will continue to apply only to Energy generated up to the contract quantity unless the Participating Intermittent Resource demonstrates a basis for exemption under this subsection (c) for the expanded capacity.

5.3.2 Participating Intermittent Resource Export Percentage

Based on the information required in Section 2.2.5 of this EIRP and application of the exemptions to the Participating Intermittent Resource Export Fee in Section 5.3.1 of this EIRP, the CAISO will determine a PIR Export Percentage for each Participating Intermittent Resource that will be calculated as the ratio of the Participating Intermittent Resource's PMax in the CAISO Master File minus the MW, subject to an exemption under Section 5.3.1 of this EIRP on a MW basis to the Participating Intermittent Resource's PMax in the CAISO Master File. For example, a Participating Intermittent Resource with a PMax of 100 MW and a contract with a CAISO Balancing Authority Area Load Serving Entity for 40 MW would have a PIR Export Percentage of $(100-40)/100 = 60\%$. A Participating Intermittent Resource with a PIR Export Percentage greater than zero (0) will be deemed an Exporting Participating Intermittent Resource. The CAISO will notify the Participating Intermittent Resource and its Scheduling Coordinator of the facility's PIR Export Percentage. Any dispute regarding the CAISO's determination of the PIR Export Percentage shall be subject to the dispute resolution procedures under Section 13 of the CAISO Tariff.

5.3.3 Quarterly Application of Participating Intermittent Resource Export Fee

Each quarter the CAISO will charge Exporting Participating Intermittent Resources the Participating Intermittent Resource Export Fee, as set forth in Schedule 4 of Appendix F.

5.3.4 Allocation of Credit for Participating Intermittent Resource Export Fees Received

Payments received by the CAISO from application of the Participating Intermittent Resource Export Fee in accordance with this Section 5.3 shall be allocated as a credit on a quarterly basis to Scheduling Coordinators with Net

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Negative Uninstructed Deviations in proportion to the to the amount of Net Negative Uninstructed Deviations that each Scheduling Coordinator was assessed for Participating Intermittent Resources Settlement charges for the applicable CAISO Charge Code during the prior quarter.

5.3.5 Recording of Exemptions and Notice of Termination

The CAISO will record any exemption period ending date, if applicable, for each Participating Intermittent Resource. At the conclusion of the exemption period, the CAISO will notify the Scheduling Coordinator for the Participating Intermittent Resource that the facility is no longer exempt from the Participating Intermittent Resource Export Fee.

5.3.6 Annual Confirmation

On December 31 of each calendar year, each Participating Intermittent Resource shall confirm in the form set forth in a Business Practice Manual, signed by an officer of the Participating Intermittent Resource, that the operations of the Participating Intermittent Resource are consistent with any certification(s) provided to the CAISO under Section 2.2.5 of this EIRP.

5.3.7 Audit Rights

In addition to the rights set forth in CAISO Tariff Section 4.6.9, the CAISO shall have the right to contact any counterparty to a contract relied upon under Section 5.3.1 of this EIRP for purposes of determining compliance with this EIRP.

6 DATA COLLECTION FACILITIES

An Eligible Intermittent Resource not otherwise exempt must install and maintain equipment to collect, record and transmit data that the CAISO reasonably determines is necessary to develop and support a forecast model that meets the requirements of Section 4 of this EIRP.

6.1 Wind Resources

An Eligible Intermittent Resource powered by wind must install at least one meteorological tower at a project location that is representative of the microclimate within the project boundary.

The meteorological tower must rely on equipment typically used in the wind industry to continuously monitor weather conditions at a wind resource site. Data collected shall be consistent with requirements set forth in a Business Practice Manual. Such data must be gathered and telemetered to the CAISO in accordance with Section 3 of this EIRP.

If objective standards developed by the CAISO indicate that the meteorological data may not be sufficiently representative of conditions affecting Energy output or changes in Energy output by that Eligible Intermittent Resource, then the CAISO may require that additional meteorological equipment be temporarily installed at another location within the project boundary. The cost of such equipment, which may be temporarily installed by the Eligible Intermittent Resource or the CAISO, shall be the responsibility of the Eligible Intermittent Resource.

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If objective standards indicate that the data collected from such a temporary site contribute significantly to the development of an accurate and unbiased forecast, then the Eligible Intermittent Resource shall be responsible for installing and arranging for the telemetry of data from an additional permanent meteorological tower at such site, and for the reasonable cost, if any, that the CAISO may have incurred to install and remove the temporary equipment. Relocation of the original meteorological tower to the new site will be allowed if the CAISO determines that a sufficiently accurate and unbiased forecast can be generated from a single relocated meteorological tower.

The CAISO may establish exemptions from requirements of this Section 6.1 in a Business Practice Manual.

6.2 Other Eligible Intermittent Resources

Eligible Intermittent Resources other than wind projects will be required to provide data of comparable relevance to estimating Energy generation. Standards will be developed as such projects are identified and will be specified in a Business Practice Manual.

7 PROGRAM MONITORING

The CAISO shall monitor the operation of these rules, and will in particular seek to eliminate any gaming opportunities provided by the flexibility provided Participating Intermittent Resources to self-select participation on an hourly basis.

Participating Intermittent Resources are expected to bid, schedule, and otherwise perform in good faith, and not seek to act strategically in a manner that causes financial gain through systematic behavior, where such gain results solely from the settlement accommodations provided under CAISO Tariff Section 11.12.

If requirements specified in this EIRP are not met, then Participating Intermittent Resource certification may be revoked pursuant to Section 2.4.5 of this EIRP. Any patterns of strategic behavior by Participating Intermittent Resources will be tracked, and the statistical significance of such deviations will be used by the CAISO to evaluate whether changes in the rules defined in this EIRP are appropriate.

The CAISO will monitor the impact of rules for Participating Intermittent Resources on Imbalance Energy and Regulation costs to the CAISO.

8 AMENDMENTS

If the CAISO determines a need for an amendment to this EIRP, the CAISO will follow the requirements as set forth in Section 15 of the CAISO Tariff.