

# **ELIGIBLE INTERMITTENT RESOURCES PROTOCOL**

**ELIGIBLE INTERMITTENT RESOURCES PROTOCOL**

**Table of Contents**

<b>EIRP 1</b>	<b>OBJECTIVES, DEFINITIONS AND SCOPE</b> .....	<b>851</b>
<b>EIRP 1.1</b>	<b>Objectives</b> .....	<b>851</b>
<b>EIRP 1.2</b>	<b>Definitions</b> .....	<b>851</b>
	EIRP 1.2.1 Master Definitions Supplement .....	851
	EIRP 1.2.2 Special Definitions for this Protocol.....	851
	EIRP 1.2.3 Rules of Interpretation.....	851
<b>EIRP 1.3</b>	<b>Scope</b> .....	<b>852</b>
	EIRP 1.3.1 Scope of Application to Parties .....	852
	EIRP 1.3.2 Liability of the ISO .....	852
<b>EIRP 2</b>	<b>PARTICIPATING INTERMITTENT RESOURCE CERTIFICATION</b> .....	<b>852</b>
<b>EIRP 2.1</b>	<b>No Mandatory Participation</b> .....	<b>852</b>
<b>EIRP 2.2</b>	<b>Minimum Certification Requirements</b> .....	<b>852</b>
	EIRP 2.2.1 Agreements .....	852
	EIRP 2.2.2 Composition .....	852
	EIRP 2.2.3 Equipment Installation.....	853
	EIRP 2.2.4 Forecast Model Validation.....	853
<b>EIRP 2.3</b>	<b>Notice of Certification</b> .....	<b>853</b>
<b>EIRP 2.4</b>	<b>Requirements After Certification</b> .....	<b>853</b>
	EIRP 2.4.1 Forecast Fee .....	853
	EIRP 2.4.2 Modification of Participating Intermittent Resource Definition.....	853
	EIRP 2.4.3 Changes in Scheduling Coordinator.....	853
	EIRP 2.4.4 Continuing Obligation .....	854
	EIRP 2.4.5 Failure to Perform .....	854
<b>EIRP 3</b>	<b>COMMUNICATIONS</b> .....	<b>854</b>
<b>EIRP 3.1</b>	<b>Forecast Data</b> .....	<b>854</b>
<b>EIRP 3.2</b>	<b>Standards</b> .....	<b>854</b>
<b>EIRP 3.3</b>	<b>Cost Responsibility</b> .....	<b>854</b>
<b>EIRP 4</b>	<b>FORECASTING</b> .....	<b>854</b>
<b>EIRP 4.1</b>	<b>Hour-Ahead Forecast</b> .....	<b>854</b>
<b>EIRP 4.2</b>	<b>Forecast Calibration</b> .....	<b>855</b>

<b>EIRP 4.3</b>	<b>Confidentiality</b> .....	<b>855</b>
<b>EIRP 5</b>	<b>SCHEDULING AND SETTLEMENT</b> .....	<b>855</b>
<b>EIRP 5.1</b>	<b>Schedules</b> .....	<b>855</b>
<b>EIRP 5.2</b>	<b>Settlement</b> .....	<b>855</b>
<b>EIRP 6</b>	<b>DATA COLLECTION FACILITIES</b> .....	<b>855</b>
<b>EIRP 6.1</b>	<b>Wind Resources</b> .....	<b>855</b>
<b>EIRP 6.2</b>	<b>Other Eligible Intermittent Resources</b> .....	<b>856</b>
<b>EIRP 7</b>	<b>PROGRAM MONITORING</b> .....	<b>856</b>
<b>EIRP 8</b>	<b>AMENDMENTS</b> .....	<b>856</b>

**ELIGIBLE INTERMITTENT RESOURCES PROTOCOL (EIRP)**

**EIRP 1 Objectives, Definitions and Scope**

**EIRP 1.1 Objectives**

The objectives of this Protocol are to:

- (a) Implement those sections of the ISO Tariff which involve Eligible Intermittent Resources and Participating Intermittent Resources;
- (b) Describe the requirements for Eligible Intermittent Resources that intend to be certified as Participating intermittent Resources;
- (c) Describe the ISO's responsibilities for certification, forecasting and performance monitoring of Participating Intermittent Resources; and
- (d) Describe the responsibilities of Participating Intermittent Resources for operating and maintaining facilities, providing information in support of Energy forecasts, and scheduling Energy.

**EIRP 1.2 Definitions**

**EIRP 1.2.1 Master Definitions Supplement**

Unless the context otherwise requires, any word or expression defined in the Master Definitions Supplement to the ISO Tariff shall have the same meaning where used in this Protocol. A reference to a Section or an Appendix is a reference to a Section or an Appendix of the ISO Tariff. References to EIRP are to this Protocol or to the stated paragraph of this Protocol.

**EIRP 1.2.2 Special Definitions for this Protocol**

In this Protocol, the following words and expressions shall have the meanings set opposite them:

**"Forecast Fee"** means the charge imposed on a Participating Intermittent Resource pursuant to the terms of this Protocol and ISO Tariff Appendix F, Schedule 4.

**"Hour Ahead Forecast"** means the Energy forecast to be used by the Scheduling Coordinator representing a Participating Intermittent Resource for its Preferred Hour Ahead Schedule, in accordance with EIRP 5.

**EIRP 1.2.3 Rules of Interpretation**

- (a) Unless the context otherwise requires, if the provisions of this Protocol and the ISO Tariff conflict, the ISO Tariff will prevail to the extent of the inconsistency. The provisions of the ISO Tariff have been summarized or repeated in this Protocol only to aid understanding.
- (b) A reference in this Protocol to a given agreement, ISO Protocol or instrument shall be a reference to that agreement or instrument as modified, amended, supplemented or restated through the date as of which such reference is made.
- (c) The captions and headings in this Protocol are inserted solely to facilitate reference and shall have no bearing upon the interpretation of any of the terms and conditions of this Protocol.
- (d) This Protocol shall be effective as of the date posted on the ISO Home Page.
- (e) Time references in this Protocol are references to prevailing Pacific time.

**EIRP 1.3 Scope**

**EIRP 1.3.1 Scope of Application to Parties**

This Protocol applies to the ISO and to:

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

**EIRP 1.3.2 Liability of the ISO**

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

**EIRP 2 PARTICIPATING INTERMITTENT RESOURCE CERTIFICATION**

**EIRP 2.1 No Mandatory Participation**

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

**EIRP 2.2 Minimum Certification Requirements**

Those Eligible Intermittent Resources that intend to become Participating Intermittent Resources must meet the following requirements.

**EIRP 2.2.1 Agreements**

The following agreements must be executed:

- (a) A Participating Generator Agreement that, among other things, binds the Participating Intermittent Resource to comply with the ISO Tariff;
- (b) A Meter Service Agreement for ISO Metered Entities; and
- (c) A letter of intent to become a Participating Intermittent Resource, which when executed and delivered to the ISO shall initiate the process of certifying the Participating Intermittent Resource. The form of the letter of intent shall be specified by the ISO and published on the ISO Home Page.

**EIRP 2.2.2 Composition**

The ISO 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 1 MW rated capacity.
- (b) A Participating Intermittent Resource may include one or more Eligible Intermittent Resources that have similar response to weather conditions or other variables relevant to forecasting Energy, as determined by the ISO.
- (c) Each Participating Intermittent Resource shall be electrically connected at a single point on the ISO Controlled Grid, except as otherwise permitted by the ISO on a case-by-case basis as may be allowed under the ISO Tariff.
- (d) The same Scheduling Coordinator must schedule all Eligible Intermittent Resources aggregated into a single Participating Intermittent Resource.

**EIRP 2.2.3 Equipment Installation**

A Participating Intermittent Resource must install and maintain the communication equipment required pursuant to EIRP 3, and the equipment supporting forecast data required pursuant to EIRP 6.

**EIRP 2.2.4 Forecast Model Validation**

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

**EIRP 2.3 Notice of Certification**

When all requirements described in EIRP 2.2 have been fulfilled, the ISO 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 11.2.4.5 of the ISO Tariff, as conditioned by the terms of this EIRP.

**EIRP 2.4 Requirements After Certification**

**EIRP 2.4.1 Forecast Fee**

Beginning on the date first certified, a Participating Intermittent Resource must pay the Forecast Fee for all metered Energy generated by the Participating Intermittent Resource over the duration of the commitment indicated in the letter of intent described in EIRP 2.2.1(c).

The amount of the Forecast Fee shall be determined so as to recover the projected annual costs related to developing Energy forecasting systems, generating forecasts, validating forecasts, and monitoring forecast performance, that are incurred by the ISO as a direct result of participation by Participating Intermittent Resources in ISO markets, divided by the projected annual Energy production by all Participating Intermittent Resources.

The initial rate for the Forecast Fee, and all subsequent rate changes as may be necessary from time to time to recover costs incurred by the ISO for the forecasting conducted on the behalf of Participating Intermittent Resources, shall be posted on the ISO Home Page. In no event shall the level of the Forecast Fee exceed the amount specified in ISO Tariff Appendix F, Schedule 4.

**EIRP 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 written approval by the ISO. The ISO will apply consistent criteria and expeditiously review any proposed changes in the composition of a Participating Intermittent Resource.

**EIRP 2.4.3 Changes in Scheduling Coordinator**

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

**EIRP 2.4.4 Continuing Obligation**

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

**EIRP 2.4.5 Failure to Perform**

If the ISO determines that a material deficiency has arisen in the Participating Intermittent Resource's fulfillment of its obligations under the ISO Tariff and this EIRP, and such Participating Intermittent Resource fails to promptly correct such deficiencies when notified by the ISO, then the eligibility of the Participating Intermittent Resource for the settlement accommodations provided in Section 11.2.4.5 of the ISO Tariff shall be suspended until such time that the unavailable data is provided or other material deficiency is corrected to the ISO'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 EIRP 2.2.1(c).

**EIRP 3 COMMUNICATIONS**

**EIRP 3.1 Forecast Data**

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

**EIRP 3.2 Standards**

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

**EIRP 3.3 Cost Responsibility**

An applicant for certification as a Participating Intermittent Resource is responsible for expenses associated with engineering, installation, operation and maintenance of required communication equipment.

**EIRP 4 FORECASTING**

The ISO is responsible for overseeing the development of tools or services to forecast Energy for Participating Intermittent Resources. The ISO 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 published on the ISO Home Page, and shall be used to certify Participating Intermittent Resources in accordance with EIRP 2.2.4.

**EIRP 4.1 Hour-Ahead Forecast**

The ISO shall develop expert, independent hourly forecasts of Energy generation on each Participating Intermittent Resource. A forecast shall be published each hour on the half hour for each of the next seven operating hours. Other forecasts, including a day-ahead forecast, may be developed at the ISO's discretion. The Scheduling Coordinator representing the Participating Intermittent Resource must use the Hour Ahead Forecast that is available 30 minutes prior to the deadline for submitting the Preferred Hour-Ahead Schedule as specified in SP 3.3.1.

The ISO shall use best efforts to provide reliable and timely forecasts. However, if the ISO fails to deliver the Hour-Ahead Forecast to the Scheduling Coordinator prior to 15 minutes before the deadline for submitting Preferred Hour-Ahead Schedules, then the Hour-Ahead Forecast shall be the most recent Energy forecast provided by the ISO to the Scheduling Coordinator for the operating hour for which Preferred Schedules are next due.

**EIRP 4.2 Forecast Calibration**

The ISO shall calibrate the forecast to eliminate bias as measured by net MWh deviations across any and all relevant time periods to minimize the expected cumulative net charges or payments that are recovered or allocated through Section 11.2.4.5 of the ISO Tariff.

**EIRP 4.3 Confidentiality**

The ISO shall maintain the confidentiality of proprietary data for each Participating Intermittent Resource in accordance with Section 20.3 of the ISO Tariff.

**EIRP 5 SCHEDULING AND SETTLEMENT**

**EIRP 5.1 Schedules**

Scheduling Coordinators shall be required to submit Preferred Hour Ahead Energy Schedules (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).

**EIRP 5.2 Settlement**

After a Participating Intermittent Resource is certified, settlement shall be determined for each Settlement Period based on consistency of Schedules and bids submitted on behalf of such Participating Intermittent Resources with the rules specified in the ISO Tariff and this Protocol.

No Supplemental Energy bids or Adjustment Bids may be submitted on behalf of a Participating Intermittent Resource. Submitting such bids shall render the Participating Intermittent Resource ineligible for settlement according to Section 11.2.4.5 of the ISO Tariff for that Settlement Period. Such activity will be monitored in accordance with EIRP 7.

**EIRP 6 DATA COLLECTION FACILITIES**

The Participating Intermittent Resource must install and maintain equipment to collect, record and transmit data that the ISO reasonably determines is necessary to develop and support a forecast model that meets the requirements of EIRP 4.

**EIRP 6.1 Wind Resources**

A Participating 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 published on the ISO Home Page. Such data must be gathered and telemetered to the ISO in accordance with EIRP 3.

If objective standards developed by the ISO indicate that the meteorological data may not be sufficiently representative of conditions affecting Energy output or changes in Energy output by that Participating Intermittent Resource, then the ISO 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 Participating Intermittent Resource or the ISO, shall be the responsibility of the Participating Intermittent Resource.

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 Participating 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 ISO 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 ISO determines that a sufficiently accurate and unbiased forecast can be generated from a single relocated meteorological tower.

**EIRP 6.2 Other Eligible Intermittent Resources**

Eligible Intermittent Resources other than wind projects that wish to become Participating Intermittent Resources 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 posted on the ISO Home Page.

**EIRP 7 PROGRAM MONITORING**

The ISO 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 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 ISO Tariff Section 11.2.4.5.

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

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

**EIRP 8 AMENDMENTS**

If the ISO determines a need for an amendment to this Protocol, the ISO will follow the requirements as set forth in Section 16 of the ISO Tariff.