

# **CALIFORNIA ISO ISSUE PAPER REGARDING POTENTIAL MODIFICATIONS TO OUTAGE REPORTING AND OTHER REQUIREMENTS OF THE EIRP**

## **Introduction**

California's existing Renewable Portfolio Standard (RPS) requires that twenty percent of energy consumed must be supplied from renewable resources by 2010.<sup>1</sup> To achieve this objective, California will have to more than double the currently installed capacity of renewable resources to approximately 13,000 to 14,000 MW. The bulk of this new capacity will be in the form of intermittent wind and solar generation. However, intermittent power production, with its inherent variability and uncertainty, presents challenges to reliable system operation. A critical means to address these challenges as well as facilitate compliance with RPS mandates is to increase the production forecast accuracy for intermittent resources.

In this paper, the California ISO describes two proposed changes to its Eligible Intermittent Resources Protocol (EIRP) intended to promote more accurate intermittent resource forecasts. The proposed modifications are:

- Extending the obligation to install specified forecasting and telemetry equipment and communicate relevant data to the California ISO from Participating Intermittent Resources (PIR) to all interconnecting Eligible Intermittent Resources (EIR) with a Participating Generator Agreement (PGA) or Qualifying Facility Participating Generator Agreement (QF PGA), unless otherwise exempted as discussed herein.<sup>2</sup>
- Reducing the threshold for reporting a Forced Outage at an EIR with either a PGA or QF PGA from the current 10 MW level to 1 MW. However, the obligation for all Generating Units, including EIRs, to "explain" the Forced Outage will continue to apply only to Forced Outages of 40 MW or more.

## **Discussion**

1. Expansion of Equipment Installation and Data Communication Requirement

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<sup>1</sup> Although the effective Renewable Portfolio Standard legislation (SB 107) requires load serving entities to achieve the 20% target by 2010, the California Public Utilities Commission acknowledges that the more realistic compliance date is likely 2012. (See [http://docs.cpuc.ca.gov/word\\_pdf/report/85936.pdf](http://docs.cpuc.ca.gov/word_pdf/report/85936.pdf))

<sup>2</sup> Capitalized terms shall have the meaning set forth in Appendix A of the CAISO Tariff (MRTU Tariff).

The California ISO anticipates that most, if not all, new intermittent wind and solar capacity will elect to become a PIR. Nevertheless, the California ISO believes that, regardless of a particular resource's decision whether or not to participate in EIRP, it is appropriate for the intermittent resource to communicate vital forecasting data to the California ISO for operational use. Again, given the need for approximately 6,000 to 7,000 MW of additional renewable resources to achieve the 20% RPS goal, the lack of visibility of anticipated production from such resources presents an unacceptable operational risk. Therefore, the California ISO is proposing that all EIRs interconnected, or interconnecting, to the CAISO Controlled Grid with a PGA or QF PGA be required to meet the forecasting data gathering and communication requirements of the EIRP, subject to certain exemptions which are explained in greater detail in the technical requirements document entitled, "CAISO Wind Generator Communication and Forecasting Data and Equipment Requirements" <http://www.caiso.com/1817/181783ae9a90.html> . The exemptions generally provide that EIRs with existing or approved meteorological station tower configurations prior to the effective date of the proposed tariff change would not be required to perform any modifications. Similarly, those EIRs without installed nacelle anemometer as of the effective date of the tariff changes would have no retrofitting obligation.

The California ISO contemplates incorporating this requirement in the EIRP, rather than generally through amendments to interconnection standards. The California ISO takes this approach largely because of the modifications' narrow application to intermittent resources, which is the subject of the EIRP.

The EIRP applies to EIRs. (EIRP 1.1.) EIRs may, but are not required, to be scheduled and settled as any other Generating Unit under the Tariff. (EIRP 2.1.) However, should the EIR elect to become a PIR, it must obtain certification. (EIRP 2.2.) Currently, it is the requirements for certification that impose the various forecasting and communication requirements. This would change. Under the modifications, all EIRs, regardless of their certification status and unless otherwise exempt, would be subject to some, but not all, of the substantive provisions of the EIRP. In particular, EIRP 2.2.3 provides that PIRs 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." The mandate of EIRP 2.2.3 would be enlarged to include EIRs. As such, EIRP 3 and 6, referenced in EIRP 2.2.3, would also then apply to EIRs. Other sections, such as EIRP 5 relating to the Scheduling and Settlement, EIRP 4 relating to CAISO forecasting obligations (except as a basis for determining forecasting requirements), EIRP 7 relating to Program Monitoring, and EIRP 8 relating to Amendments, would not apply.

The California ISO will also apply the Forecasting Fee to all EIRs. (EIRP 2.4.1.) The reason for this lies in the fact that the California ISO utilizes a third-party Forecast Service Provider(s) (FSP) to produce forecasts for intermittent

resources, including those that will be incorporated into operational tools. As more energy is produced by EIRs, the proportionate cost per MWh will be reduced. Finally, the continuing obligation to provide the California ISO with all data, information and authorizations reasonably requested as necessary to validate forecasting models under EIRP 2.4.4 will apply. EIRP 2.4.5, in contrast, regarding the effect of a failure to comply would not apply. Instead, compliance with those sections applicable to EIRs would be covered by the Tariff's general Enforcement Protocol provisions.

## 2. Lowering of Forced Outage Threshold Requirement

Section 9.3.10 of the California ISO Tariff governs the reporting of Forced Outages. Under Section 9.3.10.3.1, the Operator of a Generating Unit must report an unanticipated Forced Outage that reduces the maximum capability of the Generating Unit by the greater of 10 MW or five percent (5%) of the Generating Unit's Pmax value to the extent the Forced Outage lasts longer than 15 minutes. In addition, where the Operator has to remove from service, or reduce the output capability of, a Generating Unit by 10 MW to prevent a likely Forced Outage within the next twenty-four (24) hour period, the Operator must similarly notify the CAISO pursuant to Section 9.3.10.3. The CAISO believes that the 10 MW threshold for triggering the reporting obligation conflicts with reliable and efficient grid operation given the anticipated, significant increase in EIR installed capacity to meet California's aggressive renewable portfolio standards.

Accurate energy forecasts from EIRs are increasing critical as renewable resources become a greater percentage of California's energy portfolio. Such forecasts will be incorporated into the ISO market systems. For instance, the Residual Unit Commitment (RUC) procurement target may be adjusted based on the California ISO forecasted deliveries from EIRs. RUC operates to commit additional capacity to make up for any difference between the capacity committed by the Integrated Forward Market and that needed to reliably serve the California ISO's forecast for the next day's Demand. Since, the schedules from EIRs in the Day-Ahead Market may differ from the California ISO forecasted deliveries from EIRs in Real-time, the California ISO may account for this discrepancy by making either a Supply side adjustment when the scheduled quantity is less than the forecast or a Demand side adjustment when the scheduled quantity is greater than the forecast. An inaccurate forecast of likely EIR output may, therefore, potentially lead to inefficient RUC outcomes. (See, California ISO Tariff Section 31.5.3.4.)

Similarly, the California ISO is developing an operational tool that will utilize market outcomes and Load and EIR forecasts to estimate the ability of committed and available resources to respond to ramping requirements. To the

extent the forecasts of the EIRs are inaccurate, the efficacy of the operational tool may be impacted.<sup>3</sup>

The ability of forecast service providers (FSP) to provide accurate energy forecasts hinges, in large part, on receipt of accurate information on the output capability of EIRs. The FSPs' forecast algorithms/neural networks go through a training period to correlate the characteristics of an EIR to its fuel source. Part of the algorithm is an input from the California ISO SLIC<sup>4</sup> system. Once the FSP's algorithm has "learned" the EIR's characteristics, unknown changes to the energy availability will affect the forecast. Accordingly, the absence of any obligation to report Forced Outages of less than 10 MW may lead to significant errors in forecasting for EIRs.<sup>5</sup>

Therefore, to address this situation, the CAISO proposes to alter the capability reporting threshold for Forced Outages from 10 MW to 1 MW for all EIRs based on the EIR's Generating Facility, not Generating Unit. **This reporting requirement will not apply to EIRs with a current nameplate capacity 10 MWs and below. Exemption does not apply to units that re-power to a greater MW value.**-.The reporting requirements for all other non-EIR Generating Units will remain unchanged. The special accommodation for deviation charges under PIRP justifies the differentiated treatment between EIRs and other Generating Units. The proposed modifications will be reflected in future revisions to Sections 9.3.10.3 and 9.3.10.3.1 that would require California ISO Board approval. These changes will not effect Section 9.3.10.6 relating to the provision of a Forced Outage explanation and report.

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<sup>3</sup> Further, if an EIR that schedules according to the forecast, i.e., becomes a Participating Intermittent Resource in the Participating Intermittent Resource Program, scheduled to the forecast, but produced 9 MW less than the forecast, the negative production deviation would be added to the settlements balancing account and thereby falsely skew the account toward spreading deviation costs across the market.

<sup>4</sup> CAISO's Scheduling Logging for the ISO of California (SLIC) reporting system.

<sup>5</sup> Assume a 100 MW EIR produces 50 MW at 15 M/S wind speed. The forecast and schedule is 50 MW. However, with an unknown 9 MW reduction in production, the forecast error is 18%. This leads to the skewing of the settlement deviation account, but equally important, the forecasting algorithm accumulates this errant data in its knowledge base, which leads to calculating further erroneous energy forecasts.