

quality is fundamental to achieving the objective of better intermittent resource forecasts. The filing explained that to improve data quality received from all intermittent resources, the ISO proposes tariff revisions to expand the scope of its data requirements in two primary ways:

- Extending the scope of resources subject to the obligation to install specified forecasting and telemetry equipment and to communicate relevant data to the ISO to include all Eligible Intermittent Resources, and
- Reducing the threshold for reporting a forced outage of an Eligible Intermittent Resource with total capacity of greater than 10 MW from the current outage capacity level of 10 MW to one MW.

Only the Metropolitan Water District of Southern California (MWD) expresses any objection to the expansion of the obligation to install forecasting and telemetry equipment, and then only as it could potentially apply to small conduit hydroelectric facilities. However, the comments of Pacific Gas and Electric Company (PG&E) and the late-filed protest of NextEra Energy Resources, LLC seek to undermine the ISO's efforts to obtain more accurate information regarding intermittent resources by asking the Commission to reject the ISO's proposed reduction of the threshold for reporting forced outages of intermittent resources. The requests of PG&E and NextEra should be rejected as inconsistent with the ISO's efforts to maintain the reliability of the ISO's operations while imposing only a small incremental burden on operators of wind and solar resources.

I. ANSWER

A. The ISO's expansion of forced outage reporting requirements is needed for improved energy forecast accuracy and is designed to minimize impacts on wind and solar resources.

In its comments, PG&E asserts that the ISO should remove the proposed additions to Sections 9.3.10.3 and 9.3.10.3.1 of its tariff that would impose increased forced outage reporting requirements applicable only to intermittent resources down to 1 MW. PG&E asserts that this level of reporting detail is unnecessarily onerous from an implementation standpoint, may not materially affect the quality of ISO intermittent resource energy forecasts, and represents an unfair burden on applicable intermittent resources, given that this new standard would not apply to conventional resources. In its protest, NextEra similarly argues that the ISO's proposal to reduce the threshold for reporting forced outages is unduly discriminatory and preferential in comparison to the treatment of thermal and certain hydroelectric resources.

PG&E and NextEra overstate the extent of the burden of the proposed additional forced outage reporting requirements and ignore the need for these requirements as explained by the ISO in its filing. The existing 10 MW threshold for triggering the forced outage reporting obligation conflicts with reliable and efficient grid operation given the anticipated, significant increase in installed capacity of wind and solar resources to meet California's aggressive renewable portfolio standards. Accurate energy forecasts from Eligible Intermittent Resources are increasingly critical as wind and solar resources become a greater percentage of California's energy portfolio. It is much more difficult to

develop accurate energy forecasts for wind and solar resources by their very intermittent nature. Consequently, there is a much greater need for additional information regarding their forced outages than is necessary for thermal and other more conventional resources. The ISO's proposed application of the expanded forced outage reporting requirements only to Eligible Intermittent Resources is fully justified by this distinction.

All the reasons justifying the additional forced outage reporting requirements were presented in detail in the ISO's stakeholder process.² The ability of forecast service providers to provide accurate energy forecasts hinges, in large part, on receipt of accurate information on the output capability of wind and solar resources. The forecast service providers' forecast algorithms and neural networks go through a training period to correlate the characteristics of an intermittent resource to its fuel source. Part of the algorithm is an input from the ISO's outage reporting system. Once the forecast service provider's algorithm has "learned" the resource'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 Eligible Intermittent Resources.³

² All the documents providing a history of the ISO's stakeholder process on this matter are posted on the ISO website at the following link: <http://www.caiso.com/1817/181783ae9a90.html>. In this regard, despite PG&E's active participation in the stakeholder process, PG&E did not submit any written comments objecting to the new outage reporting proposal. Nor did PG&E raise any issues at the ISO Board of Governors meeting seeking approval for this filing. PG&E raised its objection to the new reporting requirement for the first time only after the underlying policy was discussed and approved by the ISO Board of Governors.

³ Assume a 100 MW wind resource produces 50 MW at 15 meters/second 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

In conjunction with the stakeholder process to develop these amendments, the ISO performed a root cause study regarding forecasting errors. As a result of performing the root cause study, the ISO also determined that scheduling coordinators frequently fail to accurately report unit availability. As maintenance schedules change and turbines are forced offline, the maximum output for the site can change from hour to hour. Consequently, the accuracy of the forecast is affected. The forecast service provider requires accurate reporting of generation MW capacity in order to develop accurate forecasts. If generation capacity is inaccurately stated, the associated forecast will reflect the inaccurate capacity. For instance there have been cases where the forecast has exceeded the capacity of a wind park due to unreported outages.

The ISO's study concluded that it is essential for scheduling coordinators to accurately report site capacity via the ISO's outage reporting system. In the case of line outages, generator derates, and maintenance at a wind park, the park's scheduling coordinator should ensure that all parties, including the ISO, are accurately notified of the outage. The study recommended that all outages down to 1 MW should be reported.⁴

Energy forecasts for Eligible Intermittent Resources will also be incorporated into the ISO's market systems. For instance, the ISO's Residual Unit Commitment (RUC) procurement target may be adjusted based on the ISO's forecasted deliveries from Eligible Intermittent Resources. RUC operates to

important, the forecasting algorithm accumulates this errant data in its knowledge base, which leads to calculating further erroneous energy forecasts.

⁴ The ISO's study is posted on the ISO website at the following link:
<http://www.caiso.com/208a/208a86fd68120.pdf>.

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 ISO's forecast for the next day's demand. Since the schedules from Eligible Intermittent Resources in the day-ahead market may differ from the ISO's forecasted deliveries from Eligible Intermittent Resources in real-time, the 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 Eligible Intermittent Resource output may, therefore, potentially lead to inefficient RUC outcomes.⁵

Similarly, the ISO is developing an operational tool that will utilize market outcomes and load and Eligible Intermittent Resource forecasts to estimate the ability of committed and available resources to respond to ramping requirements. To the extent the forecasts of the energy from Eligible Intermittent Resources are inaccurate, the efficacy of the operational tool may be impacted.

Finally, as part of the stakeholder process to develop the expanded forced outage reporting requirements, one scheduling coordinator provided comments describing the minor impact the additional reporting requirement would have. The commenter related that it already enters outages down to 1 MW into the ISO's outage reporting system more or less daily and hourly if needed and that it is neither difficult nor time consuming. The commenter related that as long as the wind (or solar) facility has a system that provides an alert when a turbine (or panel) is malfunctioning and the facility operator knows how much energy the

⁵ See ISO tariff section 31.5.3.4.

equipment is capable of generating, then it is not burdensome to keep the availability updated in the ISO's outage reporting system.⁶

B. The ISO's proposal for reduced penalties for violation of the expanded forced outage reporting requirements is designed to minimize impacts on wind and solar resources.

PG&E asserts that if the Commission approves the ISO's proposal to lower the forced outage reporting threshold, then any penalties, external reporting, or other sanctions should not be imposed on this class of forced outage reporting (*i.e.*, 1-10 MW of forced outages for Eligible Intermittent Resources). NextEra asserts in footnote 3 of its protest that the reduced penalty provisions proposed by the ISO are discriminatory, asserting that if the Commission approves this amendment, it should clarify that the ISO may not apply penalties at a level different for Eligible Intermittent Resources and other system resources, as doing so would be unduly discriminatory and preferential.

In the proposed tariff amendment, the ISO has reached an appropriate compromise that balances the need for some enforcement incentive and the risk to generators of violation. Fully exempting Eligible Intermittent Resources from any compliance penalties would remove the incentive for accurate reporting. The effort in the proposed amendment to restrict the extent of the penalty protects Eligible Intermittent Resources against undue financial impacts of the increased reporting burden.

Nor is the provision unduly discriminatory. If the Commission accepts the need for the expanded forced outage reporting requirements for Eligible

⁶ See the comments of Viasyn posted on the ISO website at the following link: <http://www.caiso.com/2393/2393b26d63e10.pdf>.

Intermittent Resources, then it follows that such resources are not similarly situated to other generating resources and that the greater potential for violations resulting from the expanded reporting requirements justifies the varying enforcement regimes. The Commission should accept the ISO's proposed reduced compliance penalties as filed.

C. The ISO agrees with NextEra that the effective date for the expanded forced outage reporting requirements should be deferred for two months in order to permit automation of reporting systems.

NextEra asserts that if the Commission approves the proposed outage amendment, the interface with the ISO's outage reporting system will need to be automated and that such automation cannot occur by the effective date proposed by the ISO. NextEra argues that at a minimum, the Commission should give Eligible Intermittent Resources until March 31, 2010 to automate their systems in order to ensure compliance. While the ISO cannot verify the extent of the automation effort described by NextEra in its protest, the ISO agrees that it is appropriate to provide additional time for the automation of forced outage reporting systems in order to minimize the burden of compliance with the expanded forced outage reporting requirements. As the ISO prefers to have the new requirements take effect on the first of the month, the ISO proposes that the Commission order that the effective date for the expanded forced outage reporting provisions to tariff sections 9.3.10.3 and 9.3.10.3.1 be April 1, 2010.

D. The ISO agrees with MWD that small conduit hydroelectric facilities should be excluded from the definition of Eligible Intermittent Resources and thus from the application of the proposed amendment.

MWD is concerned that the ISO's proposed exemption for small conduit hydroelectric facilities is conditional "until such time as the ISO elects to adopt a forecasting program for this specific type of Eligible Intermittent Resource."

MWD requests that the Commission direct the ISO to proceed now with its intended modification of the definition of Eligible Intermittent Resources to delete the reference to small conduit hydroelectric resources. Alternatively, MWD requests that the Commission direct the ISO to remove from its proposed tariff changes all text referencing the conditional nature of the established exemptions for small conduit hydroelectric facilities.

The ISO agrees with MWD that small conduit hydroelectric facilities should not be treated the same as wind and solar resources. To address MWD's concerns, the ISO proposes to revise the definition of an Eligible Intermittent Resource in a compliance filing to remove the reference to small conduit hydroelectric facilities. The ISO has not been able to identify any facilities other than those of MWD that fit this category and has no desire to force MWD's facilities to remain in this category if MWD prefers that they be excluded.

However, if the Commission chooses not to order the ISO to make this revision on compliance, the Commission should accept as filed the proposed provisions providing the ISO with discretion to extend the provisions of the amendment to small conduit hydroelectric facilities through its business practice manual change management process. The ISO disagrees with MWD that the

conditional language of the exemptions proposed in the tariff amendments is unreasonable. If the ISO were to elect to perform centralized forecasting for small conduit hydroelectric facilities at some point in the future and consequently determine a need for increased forecasting and telemetry data and forced outage reporting for such facilities, the ISO would have to provide a justification for this need. If MWD continued to disagree with the revised requirements in response to the ISO's proposal at the time, it would have recourse through the business practice manual change management process or through the filing of a complaint with the Commission.

- E. The ISO agrees with SVP/M-S-R that the provisions of the proposed amendment should be revised to make clear that the additional data reporting requirements are limited to intermittent resources of a participating generator.**

The City of Santa Clara, California and the M-S-R Public Power Agency (SVP and M-S-R) point out that the definition of Eligible Intermittent Resource applies to all wind, solar, and small conduit hydropower generating units, regardless of whether or not the resources elect to be participating generators. Accordingly, the proposed tariff change goes beyond the intent stated in the ISO's transmittal letter, and would expand the reach of the ISO's provisions to entities that are not even participating generators. SVP and M-S-R express concern that the proposal appears to conflict with SVP's metered subsystem agreement, which takes the place of the ISO's Participating Generator Agreement (PGA).

The ISO agrees with SVP and M-S-R that the proposed tariff amendments are not intended to apply to resources that are not those of a participating

generator and that the drafting of the proposed tariff revisions does not make this sufficiently clear. To make this intent more clear, the ISO proposes to revise the definition of an Eligible Intermittent Resource in a compliance filing to specify that it is limited only to wind and solar resources subject to a PGA or QF PGA.

II. CONCLUSION

The ISO urges the Commission to deny the requests of PG&E and NextEra to reject its proposed reduction of the threshold for reporting forced outages of wind and solar resources and accept the amendments to tariff sections 9.3.10.3 and 9.3.10.3.1 as filed. The ISO supports an effective date of April 1, 2010 for the amendments to sections 9.3.10.3 and 9.3.10.3.1. The ISO also proposes that the Commission order the additional revisions proposed by the ISO to address the concerns of MWD, SVP, and M-S-R described above.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all parties on the official service list compiled by the Secretary in the above-captioned proceeding, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Folsom, California this 31st day of December 2009.

Anna Pascuzzo

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