

131 FERC ¶ 61,087  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;  
Marc Spitzer, Philip D. Moeller,  
and John R. Norris.

California Independent System Operator  
Corporation

Docket No. ER10-319-000

ORDER CONDITIONALLY ACCEPTING PROPOSED TARIFF REVISIONS,  
SUBJECT TO FURTHER COMPLIANCE FILINGS

(Issued April 30, 2010)

1. On November 25, 2009, as supplemented on March 1, 2010, the California Independent System Operator Corporation (CAISO) filed proposed revisions to its open access transmission tariff (CAISO Tariff) to expand the scope of the data it receives from Eligible Intermittent Resources, which include generating units powered primarily by wind, solar energy and specific small hydroelectric facilities (November 25, 2009 Filing).<sup>1</sup> The Commission conditionally accepts the proposed CAISO Tariff revisions as modified, subject to further compliance filings.

**I. November 25, 2009 Filing**

2. In its November 25, 2009 Filing, the CAISO estimates that it currently has 3,500 MW of wind and solar generation in its balancing authority area to serve a peak load of 50,000 MW. The CAISO states that utilities will need to access approximately 8,000 MW of additional renewable resource capacity in order to achieve California's 20 percent renewables portfolio standard and significantly more renewable resources will be needed to achieve a proposed 33 percent renewables portfolio standard.<sup>2</sup> The CAISO

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<sup>1</sup> The CAISO Tariff currently defines Eligible Intermittent Resource as “[a] Generating Unit that is powered by one of the following sources, except for a de minimis amount of Energy from other sources: 1) wind, 2) solar energy, or 3) hydroelectric potential derived from small conduit water distribution facilities that do not have storage capability.” CAISO Tariff App. A (Master Definition Supplement).

<sup>2</sup> CAISO November 25, 2009 Filing at 4.

states that the variability and uncertainty of energy output from Eligible Intermittent Resources pose challenges to reliable system operation.<sup>3</sup>

3. The CAISO states that it needs better intermittent resource forecasts to mitigate the operational impacts of wind and solar production fluctuations on the CAISO system.<sup>4</sup> The CAISO explains that the experience it gained through its administration of the Participating Intermittent Resource Program (PIRP) demonstrates that poor data significantly undermines forecasting accuracy.<sup>5</sup> The CAISO states that, by expanding the scope of data it receives from Eligible Intermittent Resources, it will be able to obtain better intermittent resource forecasts, which will improve its ability to acquire the appropriate level of reserves. The CAISO states that it engaged in a year of stakeholder discussions to develop its proposed CAISO Tariff revisions and associated modifications to its Business Practice Manuals.

4. The CAISO proposes two primary changes to the scope of its Eligible Intermittent Resource data requirements. First, the CAISO proposes to revise CAISO Tariff sections 9.3.10.3 and 9.3.10.3.1 to require Eligible Intermittent Resources with a total capacity over 10 MW to report outages impacting more than 1 MW of their capacity.<sup>6</sup> The existing forced outage reporting CAISO Tariff provisions require the operator of a generating unit to report an unanticipated forced outage that reduces the capability of the generating unit by the greater of 10 MW or 5 percent of the generating unit's maximum value, to the extent the forced outage lasts longer than 15 minutes.<sup>7</sup> In addition, where the operator has to remove from service, or reduce the output capability of, a generating unit by 10 MW or more to prevent a likely forced outage within the next twenty-four hour period, the operator must similarly notify the CAISO. The CAISO states that, given the variability of intermittent resource production and the expected significant increase in the amount of intermittent resource capacity that will be interconnected to the grid in the future, the existing 10 MW threshold for triggering the outage reporting obligation conflicts with the goal of reliable and efficient grid operations. The CAISO explains that forecast service providers must have accurate information on the output capability of

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<sup>3</sup> *Id.* at 1.

<sup>4</sup> *Id.* at 2.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* at 3.

<sup>7</sup> *Id.* at 5.

Eligible Intermittent Resources so that their forecasting algorithms accurately reflect the resources' characteristics and provide accurate energy forecasts.<sup>8</sup>

5. To address this situation, the CAISO proposes CAISO Tariff language that would lower the forced outage reporting threshold to 1 MW for Eligible Intermittent Resources that have executed a participating generator agreement (PGA) or a qualifying facility (QF) PGA. The CAISO states that this obligation will apply to a generating facility, not a generating unit, because many Eligible Intermittent Resources may be composed of many small or modular generating units that individually are less than 1 MW.<sup>9</sup> The CAISO notes that Eligible Intermittent Resources with a total capacity of less than 10 MW will not have a forced outage reporting requirement. The CAISO states that this modification eliminates a significant source of forecasting error by ensuring that it will have accurate information regarding the capacity actually available to produce electricity during the time frame of the operational forecasts.

6. The CAISO explains that several stakeholders opposed lowering the outage reporting threshold but that their position was based, in large part, on a misunderstanding of the reporting burden. The CAISO states that the reporting burden is minimal because the CAISO's system allows for automated reporting of forced outages. In addition, the CAISO states that the current 10 MW threshold excludes small-scale photovoltaic resources, a group that may have significant aggregate capacity over which the CAISO must have visibility. Finally, the CAISO states that with more accurate forecasts it will incorporate intermittent output into market commitment and dispatch systems and the more accurate forecasts will promote more efficient market outcomes.<sup>10</sup>

7. In response to stakeholders' comments, the CAISO will establish exemptions from the reporting requirements in its Business Practices Manuals. Also, in response to stakeholders' comments, the CAISO has limited the potential sanctions that could otherwise apply for failure to comply with these additional forced outage reporting requirements. The CAISO notes that the additional reporting requirements will apply to smaller, geographically diverse generating units that, CAISO states fairness dictates, should not be subject to the full extent of the sanctions that apply for failure to comply with ordinary reporting requirements.<sup>11</sup>

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<sup>8</sup> *Id.* at 5-6.

<sup>9</sup> *Id.* at 6.

<sup>10</sup> *Id.* at 8.

<sup>11</sup> *Id.*

8. Second, the CAISO proposes to revise CAISO Tariff Appendix Q, Eligible Intermittent Resources Protocol, to require all Eligible Intermittent Resources with a PGA or QF PGA to install specified forecasting and telemetry equipment and to communicate relevant data to the CAISO.<sup>12</sup> Currently, these requirements only apply to PIRP participants. The CAISO states that it anticipates that most, if not all, new intermittent capacity will elect to participate in PIRP. But the CAISO adds that, even if a resource does not elect to participate in PIRP, the resource should communicate vital forecasting data to the CAISO so as not to prevent the CAISO from maintaining adequate monitoring of all intermittent resources to maintain reliability and operational efficiency.

9. The CAISO states that its proposed forecasting data gathering and communications requirements will ensure that the CAISO will have access to the data necessary to forecast expected output from resources with intermittent production whether or not a resource participates in PIRP. The CAISO explains that this visibility will help the CAISO maintain reliability and possibly lower the costs for integrating variable energy resources. The CAISO states that the Business Practices Manuals will provide exemptions from these requirements, including an exemption stating that wind facilities with an existing or approved meteorological station tower configuration as of the proposed CAISO Tariff revision effective date will not have to alter its configuration, and wind resources without an installed nacelle anemometer, which is used to measure wind velocity and direction, will not have to retrofit.<sup>13</sup>

10. The CAISO also proposes to expand the forecast fee<sup>14</sup> applied to all Eligible Intermittent Resources because forecasts are needed for all intermittent resources connected to the CAISO's grid. The CAISO states that the CAISO Tariff currently provides a forecast fee of up to \$0.10 per MWh on metered energy from PIRP resources. The CAISO explains that the amount of the forecast fee is determined by dividing the aggregate forecast program costs by the projected annual energy production of all forecast fee payers.<sup>15</sup> Thus, the per-MWh fee will decrease over time as more intermittent resources come online. The CAISO notes that, in response to stakeholder concerns that very small resources may be burdened by the forecast fee, and recognizing

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<sup>12</sup> *Id.* at 3 (The CAISO explains that it has refined the requirements for the forecasting and communications equipment applicable to wind and solar resources and that these requirements will be specified in the Business Practices Manuals.).

<sup>13</sup> *Id.* at 4.

<sup>14</sup> *See* CAISO Tariff Appendix Q, section 2.4.1; CAISO Tariff Appendix F, Schedule 4.

<sup>15</sup> November 25, 2009 Filing at 7.

that such resources are likely to have only a minimal impact on reliability, the CAISO will establish exemptions from the forecast fee for small resources in its Business Practices Manual.

11. The CAISO also proposes to revise the CAISO Tariff definition of Eligible Intermittent Resources to include a generating unit of 1 MW or larger. The CAISO states this change is consistent with the 1 MW minimum required to be a participating generator and will ensure that very small resources will not be subject to the proposed data requirements.<sup>16</sup>

12. The CAISO requests an effective date of February 1, 2010 for its proposed CAISO Tariff revisions.

## **II. Deficiency Letter and CAISO Response to the Deficiency Letter**

13. On January 29, 2010, the Commission issued a letter informing the CAISO that the November 25 Filing was deficient and required more information (Deficiency Letter). In the Deficiency Letter, the Commission requested further information and support for the proposed CAISO Tariff revisions. Specifically, the Commission requested justification for the reduced threshold for outage reporting applicable to Eligible Intermittent Resources from 10 MW to 1 MW, including any differences between intermittent resources and other generation resources that may justify the different outage reporting requirement. The Commission requested that the CAISO provide information on any analyses or studies done on the more stringent outage reporting requirement applicable to Eligible Intermittent Resources, including analysis of alternative outage reporting requirement thresholds.

14. The Commission also sought justification for the requirement that all Eligible Intermittent Resources install extra telemetry and forecasting equipment. The Commission requested extra support for any distinguishing characteristics between intermittent resources and other generation that justify requiring Eligible Intermittent Resources to install additional telemetry and forecasting equipment. The Commission sought further support for the extra telemetry and forecasting equipment requirement that would be applied to all Eligible Intermittent Resources, including those that choose not to participate in the voluntary PIRP. The Commission inquired about the cost of the telemetry and forecasting equipment that Eligible Intermittent Resources would bear in order to satisfy the proposed CAISO Tariff requirement.

15. Finally, the Commission requested support regarding the application of the forecast fee to all Eligible Intermittent Resources that are subject to a PGA or QF PGA,

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<sup>16</sup> *Id.* at 9.

regardless of whether or not they elect to participate in PIRP. The Commission asked for an explanation of how the CAISO proposes to use its authority to establish exemptions to these proposed CAISO Tariff requirements and how that authority mitigates concerns that intermittent resources will be unduly burdened by the proposed CAISO Tariff revisions.

16. On March 1, 2010, as amended,<sup>17</sup> the CAISO filed a response to the Deficiency Letter (CAISO Response to the Deficiency Letter). It includes declarations of two CAISO employees; a 2007 CAISO study on integrating renewable resource into the grid; a study of wind power production forecasts; the comments of Viasyn (an energy scheduling and renewable energy consulting services company) from the CAISO's stakeholder process supporting the 1 MW outage reporting threshold; data on the cost of installing telemetry and communications equipment; and a draft sheet of the CAISO's Business Practice Manual indicating that each meteorological station must have a backup power source.<sup>18</sup>

17. The CAISO states that its November 25, 2009 Filing is designed to ensure that the CAISO will have the information needed to address the operational challenges created by the integration of large amounts of intermittent resources into the electric system operated by the CAISO. The CAISO explains that the new data requirements will allow the CAISO's forecast provider to produce more detailed forecasts, will allow the CAISO to make better unit commitment and dispatch decisions, and will reduce the need to procure regulation and load-following services, a portion of which is directly related to intermittent resources.<sup>19</sup>

18. The CAISO explains that it chose 1 MW as the threshold for outage reporting because 1 MW is the typical size of a single wind turbine in new wind farms and because 1 MW is the minimum size of a resource that the CAISO's system can recognize as an intermittent resource.<sup>20</sup>

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<sup>17</sup> On March 2, 2010, the CAISO filed an errata.

<sup>18</sup> Pursuant to 18 C.F.R. § 388.112, the CAISO requested privileged treatment of the study of wind power production forecasts and the data on the cost of installing telemetry and communications equipment. *See* CAISO Response to the Deficiency Letter at 21-22.

<sup>19</sup> *Id.* at 3.

<sup>20</sup> *Id.* at 5.

19. The CAISO states that anything less stringent than 1 MW will have a detrimental impact on forecast accuracy.<sup>21</sup> The CAISO explains that a 50 MW wind farm with a 1 MW outage reporting requirement has an inherent margin of error of less than 2 percent. This margin of error doubles to 4 percent with a 2 MW outage reporting requirement, and it jumps to 18 percent with a 9 MW outage reporting requirement. The CAISO further explains that poor outage data makes immediate forecasts less accurate and affects future forecasts because the past data is an input in the forecast algorithm.

20. The CAISO contends that there is no single just and reasonable level for intermittent resource outage reporting but the 1 MW threshold is within the zone of reasonableness. The CAISO states that it did not compare the 1 MW requirement with other levels. Finally, the CAISO notes that Viasyn commented that it already enters outages as small as 1 MW into its scheduling software and that it is neither difficult nor time consuming.<sup>22</sup>

21. The CAISO explains that different operational characteristics of intermittent resources and other generation resources justify the more extensive forced outage reporting. The CAISO points out that, in contrast to traditional generation, the expected output of intermittent resources contains inherent uncertainty that is related to its fuel source. The CAISO states that the more granular reporting requirement attempts to minimize the error between the types of resources' forecasts.<sup>23</sup> Further, the CAISO argues that the additional regulation and load-following services needed to accommodate intermittent resource participation create a need for the proposed outage reporting requirements.

22. The CAISO asserts that resource-specific telemetry equipment requirements are necessary because intermittent resource generator output is directly linked to localized meteorological conditions that can vary within a single wind farm or solar installation. The CAISO emphasizes that its need for more data from intermittent resources is exacerbated by renewables portfolio standards and the expected increase in intermittent resources coming online. The CAISO states that the Commission has recognized on numerous occasions that the different characteristics of intermittent resources may justify tariff provisions that treat these resources differently from other resources.<sup>24</sup>

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<sup>21</sup> *Id.* at 5-6.

<sup>22</sup> *Id.* at 6-7.

<sup>23</sup> *Id.* at 7.

<sup>24</sup> *Id.* at 8-9 (citing *Southwest Power Pool, Inc.*, 127 FERC ¶ 61,283, at P 29 (2009); *N.Y. Indep. Sys. Operator, Inc.*, 127 FERC ¶ 61,130, at P 16 (2009)).

23. With respect to its proposal to apply expanded telemetry, forecasting and communications requirements to all intermittent resources instead of just PIRP resources, the CAISO notes that only four intermittent resources with a combined 7.1 MW capacity have a PGA but have not joined PIRP.<sup>25</sup> The CAISO adds that all intermittent resources create operational challenges whether or not they join PIRP. The CAISO estimates that it will cost approximately \$165,000 for the tower and \$7,500 for the communications equipment.<sup>26</sup> The CAISO stated that it has not conducted a cost-benefit study of these requirements. The CAISO asserts that improved forecasts will benefit intermittent resource operators by providing them with a resource-specific forecast.<sup>27</sup>

24. In response to the question about the CAISO's proposal applying to resources beyond PIRP, the CAISO explains that PIRP was established as a voluntary program to allow intermittent resources to avoid uninstructed deviation penalties, not for operational purposes.<sup>28</sup> The CAISO also states that PIRP was established at a time when intermittent resources were a very small part of the overall resource mix. The CAISO asserts that, operationally, PIRP resources are indistinguishable from non-PIRP resources. The CAISO adds that other parts of the CAISO Tariff treat PIRP and non-PIRP resources the same. The CAISO explains that the CAISO Tariff does not require that communications and telemetry requirements to be identical for intermittent and non-intermittent resources. The CAISO states that, to the contrary, its current Eligible Intermittent Resources Protocol contains specific telemetry requirements for PIRP resources and its proposal seeks to expand these requirements to all Eligible Intermittent Resources.<sup>29</sup>

25. The CAISO justifies its proposal to expand the applicability of the forecast fee by explaining that the fee pays for the third-party forecasting service providers, which is needed regardless of whether a resource joins PIRP. The CAISO notes that the forecast fee is consistent with practices in other regional transmission organizations.<sup>30</sup>

26. The CAISO explains that its most significant proposed exemptions and limitations to the proposed CAISO Tariff revisions are in the proposed revisions themselves. The

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<sup>25</sup> *Id.* at 9.

<sup>26</sup> *Id.* at 10.

<sup>27</sup> *Id.* at 11.

<sup>28</sup> *Id.*

<sup>29</sup> *Id.* at 13.

<sup>30</sup> *Id.* at 14 (citing *N.Y. Indep. Sys. Operator, Inc.*, 123 FERC ¶ 61,267, at P 14 (2008)).

CAISO states that it will use its Business Practice Manuals for very limited exemptions. The CAISO explains that the proposed exemptions would not constitute waivers of the generally-applicable CAISO Tariff requirements but would be granted in response to specific requests from entities that meet the very limited set of standard criteria set forth in the Business Practice Manual. The CAISO further notes that it has attempted to distinguish between exemption criteria significant enough to merit incorporation in the CAISO Tariff, such as the 10 MW threshold for the outage reporting requirement, from exemptions that should be established as a matter of business practice based on potentially changing circumstances for which Commission acceptance of each minor change would be a burden on the Commission and others.<sup>31</sup> In addition to the exemptions discussed above,<sup>32</sup> the CAISO states that it has proposed a forecast fee exemption for small existing QFs that do not participate in PIRP to relieve small existing resources that have historically been exempt from the forecast fee due to potential financial hardship.<sup>33</sup> With respect to limitations on expanded telemetry and communications equipment, the CAISO states that it has given certain existing facilities six months to comply with the proposed requirement to install a second meteorological station and the CAISO proposes to allow some resources that are not in the PIRP to share a meteorological station in order to mitigate costs.<sup>34</sup>

27. Finally, the CAISO states that the Business Practice Manuals currently contain proposed revisions that will require a backup power source independent of the primary power source. The CAISO states that its November 25, 2009 Filing would apply this requirement to non-PIRPs.<sup>35</sup>

### **III. Notice of Filing and Pleadings**

28. Notice of the November 25, 2009 Filing was published in the *Federal Register*, 74 FR 65114 (2009), with interventions and comments due on or before December 16, 2009. Notice of the CAISO Response to the Deficiency Letter was published in the *Federal Register*, 75 FR 12535 (2010), with interventions and comments due on or before March 23, 2010.

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<sup>31</sup> *Id.* at 15-16.

<sup>32</sup> *See supra* P 7, 9, 10.

<sup>33</sup> CAISO Response to the Deficiency Letter at 17-18.

<sup>34</sup> *Id.* at 19.

<sup>35</sup> *Id.* at 20-21.

29. In response to the November 25, 2009 Filing, the Cities of Anaheim, Azusa, Banning, Colton, Pasadena and Riverside, California (collectively, the Six Cities); the California Municipal Utilities Association; the Modesto Irrigation District; and the Sacramento Municipal Utility District filed timely motions to intervene. Pacific Gas and Electric Company (PG&E), the City of Santa Clara, California and the M-S-R Public Power Agency (collectively, SVP/M-S-R); and the Metropolitan Water District of Southern California (Metropolitan) filed timely motions to intervene and protests. NRG Companies (NRG) and NextEra Energy Resources, LLC (NextEra) filed motions to intervene out-of-time, and NextEra filed a protest. The CAISO filed an answer.

30. NextEra also filed an untimely protest to the CAISO Response to the Deficiency Letter.

#### **IV. Discussion**

##### **A. Procedural Matters**

31. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2009), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R § 385.214(d) (2009), the Commission will grant NRG and NextEra's late-filed motions to intervene given their interests in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

32. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2009), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept the CAISO's answer because it has provided information that assisted us in our decision-making process.

33. Pursuant to Rule 211 of the Commission's Rules of Practice and Procedure, 18 C.F.R § 385.211 (2009), the Commission will accept NextEra's untimely protest given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

##### **B. Outage Reporting Requirement**

###### **1. Comments on November 25, 2009 Filing**

34. NextEra and PG&E protest the CAISO's proposal to reduce the threshold for reporting forced outages for Eligible Intermittent Resources to 1 MW because the new standard does not apply to conventional resources. NextEra and PG&E argue that the CAISO has not justified why this outage reporting requirement and accompanying

penalties apply only to Eligible Intermittent Resources when the nature of electrical output between an intermittent and conventional resource is indistinguishable.<sup>36</sup> NextEra argues that this manner of lowering the threshold and the increased risk of penalties for failing to report outages in a timely manner unduly disadvantages Eligible Intermittent Resources as compared to other generation resources that entered into PGAs.<sup>37</sup> PG&E asserts that the proposed 1 MW level of reporting detail is unnecessarily onerous from an implementation standpoint and may not materially affect the quality of the CAISO's intermittent resource forecasts.<sup>38</sup>

35. PG&E argues that, if the Commission accepts the lower forced outage reporting threshold for Eligible Intermittent Resources, then no penalties should apply for failure to report forced outages under 10 MW.<sup>39</sup> PG&E claims that a 10 MW outage reporting requirement is consistent with the treatment afforded other resources.<sup>40</sup> NextEra requests that, if the Commission accepts the proposed outage reporting requirement revision, the Commission should, at a minimum, give Eligible Intermittent Resources until March 31, 2010 to automate their systems in order to ensure compliance.<sup>41</sup> NextEra states that the delay will not cause any immediate harm.

## **2. CAISO Answer to Comments on November 25, 2009 Filing**

36. The CAISO argues that PG&E and NextEra overstate the extent of the burden of the proposed additional forced outage reporting requirements for Eligible Intermittent Resources and ignore the need for these requirements. The CAISO states that 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.

37. The CAISO reiterates that an accurate forecast requires that the forecasting algorithms reflect the Eligible Intermittent Resource's characteristics, including accurate

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<sup>36</sup> NextEra December 17, 2009 Protest at 2, 3 (NextEra Protest); PG&E December 16, 2009 Protest at 3 (PG&E Protest).

<sup>37</sup> NextEra Protest at 4.

<sup>38</sup> PG&E Protest at 3.

<sup>39</sup> *Id.* at 3-4.

<sup>40</sup> *Id.* at 4.

<sup>41</sup> *Id.* at 6.

input from the CAISO's outage reporting system.<sup>42</sup> The CAISO explains that energy forecasts for Eligible Intermittent Resources are important because they will be incorporated into the CAISO's market systems and play a role in the residual unit commitment procurement target and estimates of ramping requirements.<sup>43</sup> The CAISO reiterates that the reporting burden is minimal because its scheduling and logging system allows for the automated reporting of forced outages.<sup>44</sup>

38. With respect to enforcement action, the CAISO argues that, in its proposed CAISO Tariff revisions, it reached an appropriate compromise that balances the need for some enforcement and the risk to generators of a violation. The CAISO explains that fully exempting Eligible Intermittent Resources from any compliance penalties would remove the incentive for accurate reporting, while the reduced penalties protect these resources from undue financial impacts.<sup>45</sup> The CAISO also argues that its proposal is not unduly discriminatory. The CAISO asserts that, if the Commission accepts the need for the expanded forced outage reporting requirements for Eligible 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.<sup>46</sup>

39. The CAISO agrees with NextEra 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 reporting requirements. The CAISO agrees to an approximate 60-day extension of the effective date but requests that the new requirements take effect on the first of the month.<sup>47</sup>

### **3. Comments to the CAISO Response to the Deficiency Letter**

40. NextEra claims that the adoption of the proposed outage reporting requirements is premature, the CAISO has not demonstrated an acute reliability problem that warrants a reduced outage reporting requirement, and the lower limit is unsupported and unduly

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<sup>42</sup> CAISO November 25, 2009 Filing at 5-6; CAISO December 31, 2009 Answer at 4-5.

<sup>43</sup> CAISO December 31, 2009 Answer at 5-6.

<sup>44</sup> CAISO November 25, 2009 Filing at 8.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 7-8.

<sup>47</sup> CAISO December 31, 2009 Answer at 8.

discriminatory. NextEra contends that the increased telemetry and communication requirements, which are unopposed by NextEra, should first be adopted and then the necessity of a decreased outage reporting threshold can be assessed. NextEra argues the increased telemetry and communication requirements “hold the promise of improving the deviations between supply and demand attributable to solar and wind.”<sup>48</sup> However, NextEra claims that, while the CAISO states that the telemetry data may be used to determine the availability of individual turbines from moment to moment, the CAISO does not provide an explanation of how telemetry could provide this data.

41. NextEra also asserts that the CAISO has neither provided a quantitative analysis explaining what portion of reserves is attributable to variable energy resources nor an explanation of the costs from such deviations. NextEra reiterates that the CAISO’s proposal is premature and should be rejected because it is made in anticipation of a problem that may arise. Finally, NextEra states that conventional resources are only required to report changes to the maximum output capability of at least 10 MW or 5 percent. NextEra contends that CAISO’s proposal is unduly discriminatory because it would place a higher intrinsic value on outage reporting for variable energy resources than most other resources and subject variable energy resources to increased risks of penalties for failing to report outages in a timely manner without explanation or justification. NextEra asks the Commission to reject these proposed CAISO Tariff revisions.

#### **4. Commission Determination**

42. We find that the CAISO’s proposed revisions to CAISO Tariff sections 9.3.10.3 and 9.3.10.3.1 to lower the threshold for Eligible Intermittent Resource outage reporting from 10 MW to 1 MW is a reasonable means to address variability and uncertainty in Eligible Intermittent Resource output. We agree that the reporting of Eligible Intermittent Resources outages greater than 1 MW will improve forecast accuracy and therefore enhance market efficiency and increase reliability.

43. We disagree with NextEra and PG&E’s assertion that the CAISO proposal to have different outage reporting for Eligible Intermittent Resources and conventional generation results in undue discrimination. The Commission has determined that discrimination is undue when there is a difference in rates or services among similarly situated customers that is not justified by some legitimate factor.<sup>49</sup> Prior Commission precedent has recognized the unique circumstances of particular types of generators and has concluded that dissimilar treatment of dissimilar resources does not constitute undue

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<sup>48</sup> NextEra March 29, 2010 Protest at 4.

<sup>49</sup> *El Paso Natural Gas Co.*, 104 FERC ¶ 61,045, at P 115 (2003).

discrimination.<sup>50</sup> Here, the CAISO has explained its difficulty in forecasting intermittent resources due to their variable fluctuations of output and the uncertain timing of these variations. Its proposal to require increased outage information from Eligible Intermittent Resources is reasonably designed to enable the CAISO to account for these characteristics, unique to these resources, and to produce the more accurate forecasts that will better enable the CAISO to operate its system reliably.

44. Variable energy resources that participate in the PIRP are uniquely situated because they are required to bid their hour-ahead forecasts in the real-time market and hour-ahead scheduling process.<sup>51</sup> While a traditional fossil-based generator can predict its fuel availability with a high degree of accuracy and commit to meet its schedules, variable energy resources must use a forecast that is more dependent on natural occurrences that are more difficult to predict accurately. Their schedules are, by nature, not as accurate. The CAISO's proposal to require alternative outage reporting requirements seeks to reduce this inaccuracy.

45. In addition, the CAISO's proposal explains that wind power forecasts rely on advanced computer modeling and statistical tools to refine their models based on past performance.<sup>52</sup> Accurate analysis of past performance requires the ability to differentiate between forced outages and wind events in which wind generation is equal to zero because of the weather.<sup>53</sup> The November 25, 2009 Filing and studies provided explain that outage information will help the CAISO develop more accurate forecasts and determine the appropriate amount of reserves necessary to manage variability.<sup>54</sup> We find

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<sup>50</sup> See *Westar Energy Inc.*, 130 FERC ¶ 61,215, at P 35-36 (2010) (allowing Westar to assess different generator regulation charges for intermittent resources); *Southwest Power Pool, Inc.*, 127 FERC ¶ 61,283, at P 29 (2009) (allowing the Southwest Power Pool to modify its eligibility requirements and corresponding cost allocation methodology in order to designate wind resources as network resources); *Cal. Indep. Sys. Operator Corp.*, 119 FERC ¶ 61,061, at P 69 (2007) (accepting a CAISO proposal with special rate treatment for the costs of interconnection facilities for location constrained resources).

<sup>51</sup> See CAISO Tariff Appendix Q § 4.1.

<sup>52</sup> CAISO Response to the Deficiency Letter at 6.

<sup>53</sup> See, e.g., CAISO December 31, 2009 Answer at 5 n.4 (citing *Improving Forecasting Through Accurate Data* at 4-5 (Nov. 2008), available at <http://www.aiso.com/208a/208a86fd68120.pdf>).

<sup>54</sup> See e.g. November 25, 2009 Filing at 5-6, 8; CAISO December 31, 2009 Answer at 3-6; CASIO Response to the Deficiency Letter at 2-6, Att. C. *CAISO*

(continued...)

that the CAISO's proposal identifies operating characteristics that differentiate variable energy resources from traditional fossil-based generation and that, by improving forecasts, the CAISO's operation of its system will be more efficient and reliable.

46. We disagree with NextEra's argument that the necessary outage data can be extrapolated from telemetry data. The generator outage information affects the forecasted output, and telemetry of the present output does not reveal generator outages.

47. We also reject PG&E's proffered alternative penalty provision. As stated above, the CAISO has justified its need for a different outage reporting requirement for Eligible Intermittent Resources, and we agree that these same justifications support a reduced penalty provision as reasonable for this expanded reporting requirement.

48. For these reasons, we find that the CAISO revisions to CAISO Tariff sections 9.3.10.3 and 9.3.10.3.1 to revise its outage reporting requirements and corresponding penalties for failure to meet these requirements are just and reasonable and not unduly discriminatory. Finally, to reflect NextEra and the CAISO's agreement to a 60-day extension of the effective date for the outage reporting requirement and the CAISO's request that the effective date commence on the first of the month, we conditionally accept these proposed CAISO Tariff revisions to become effective July 1, 2010.<sup>55</sup> We direct the CAISO to submit a compliance filing within 30 days of issuance of this order revising the relevant CAISO Tariff sheets to reflect an effective date of July 1, 2010.

**C. Expansion of Resources Subject to Installation of Forecasting and Telemetry Equipment and Communication of Data to the CAISO and Definition of Eligible Intermittent Resources**

**1. Comments on November 25, 2009 Filing**

49. SVP/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 the resources elect to be participating generators.<sup>56</sup> Therefore, SVP/M-S-R claim that the

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*Integration of Renewable Resources* at 113 (Nov. 2007), Att. D, *CAISO PIRP Wind Power Production Forecast Performance 2007* at 55 (April 2008), available at <http://www.caiso.com/2083/2083706b19380.pdf>.

<sup>55</sup> In the CAISO's December 31, 2009 Answer, it specified that a 60-day extension would result in a April 1, 2010 effective date. See CAISO December 31, 2009 Answer at 11. However, given the filing of the CAISO Response to the Deficiency Letter, the 60-day extension results in an effective date of July 1, 2010.

<sup>56</sup> SVP/M-S-R December 16, 2009 Protest at 7.

proposed revision to the definition of Eligible Intermittent Resource in CAISO Tariff Appendix A, Master Definition Supplement to apply to generating units of 1 MW or larger goes beyond the intent stated in the November 25, 2009 Filing.<sup>57</sup> SVP/M-S-R contend that it would expand the reach of the CAISO's provisions to entities that are not participating generators.<sup>58</sup> SVP/M-S-R are concerned that the proposal appears to conflict with SVP's metered subsystem agreement, which takes the place of the CAISO's PGA.<sup>59</sup>

50. Metropolitan is concerned that the CAISO's proposed exemption for small conduit hydroelectric facilities from the weather and telemetry equipment requirement is conditional and could be deleted at a later date.<sup>60</sup> Metropolitan asserts that it is not feasible for the CAISO to forecast its generation output from weather data because its output is a function of its individual water system's operations.<sup>61</sup> Metropolitan requests that the Commission direct the CAISO to proceed with its intended modification of the definition of Eligible Intermittent Resources and delete the reference to small conduit hydroelectric resources.<sup>62</sup> Alternatively, Metropolitan requests that the Commission direct the CAISO to remove from its proposed CAISO Tariff revisions all text referencing the conditional nature of its exemption.<sup>63</sup>

## **2. CAISO Answer to Comments on the November 25, 2009 Filing**

51. The CAISO agrees with SVP/M-S-R that the proposed revision to the definition of Eligible Intermittent Resource is intended to apply only to participating generator resources and that the drafting of this proposed CAISO Tariff revision does not make this sufficiently clear.<sup>64</sup> To make this intent more clear, the CAISO proposes to revise the

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<sup>57</sup> *Id.*

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> Metropolitan December 16, 2009 Protest at 5-6.

<sup>61</sup> *Id.* at 5.

<sup>62</sup> *Id.* at 6-7.

<sup>63</sup> *Id.* at 7.

<sup>64</sup> CAISO December 31, 2009 Answer at 10-11.

definition of an Eligible Intermittent Resource to specify that it is limited only to wind and solar resources subject to a PGA or qualifying facility PGA.<sup>65</sup>

52. The CAISO also agrees with Metropolitan that small conduit hydroelectric facilities should not be treated like wind and solar resources.<sup>66</sup> To address Metropolitan's concerns, the CAISO proposes to revise the definition of an Eligible Intermittent Resource to remove the reference to small conduit hydroelectric facilities. The CAISO states that it has not been able to identify any facilities other than Metropolitan's facilities that fit this category and has no desire to force Metropolitan's facilities to remain in this category if Metropolitan prefers that they be excluded.<sup>67</sup>

### **3. Commission Determination**

53. We accept the CAISO's proposal to revise CAISO Tariff Appendix Q, Eligible Intermittent Resources Protocol, so that all Eligible Intermittent Resources with a PGA or QF PGA would be subject to the obligation to install specified forecasting and telemetry equipment and to communicate relevant data to the CAISO. The CAISO has explained the need for local weather data to produce accurate forecasts for all intermittent resources by showing that improved forecasts will benefit system reliability and the market. Specifically, one CAISO study showed a 20 percent improvement in forecast accuracy when the forecasts considered the additional data regarding power production, turbine availability, and meteorological data.<sup>68</sup> The CAISO has also explained its operational need for generators' local weather data and that this need applies to all participating generators, regardless of whether they elect the PIRP billing procedures. The renewables portfolio standards requirements require the CAISO to integrate a large percentage of intermittent resources into its overall resource mix. This proposed telemetry and forecasting equipment requirement, which is not protested,<sup>69</sup> will help mitigate this operational challenge by increasing the quality of data the CAISO receives from these resources. It will thus avoid potential reliability concerns (when forecasts are overstated)

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<sup>65</sup> *Id.* at 11.

<sup>66</sup> *Id.* at 9.

<sup>67</sup> *Id.*

<sup>68</sup> See CAISO Response to the Deficiency Letter, Att. A, Declaration of James Blatchford on Behalf of the CAISO at 9; CAISO Response to the Deficiency Letter, Att. D, *CAISO PIRP Wind Power Production Forecast Performance 2007* at 55 (April 2008), available at <http://www.caiso.com/2083/2083706b19380.pdf>.

<sup>69</sup> See NextEra March 29, 2010 Protest at 2-3.

and/or excessive reserve procurement associated with poor forecasts. For these reasons, we find that these proposed revisions are just and reasonable. Accordingly, we accept the proposed revisions to the CAISO Tariff Appendix Q, Eligible Intermittent Resources Protocol, subject to the compliance filings discussed below, to become effective February 1, 2010, as requested.

54. We agree with the CAISO and SVP/M-S-R that, as defined, the term “Eligible Intermittent Resource” includes all solar and wind facilities, contrary to the CAISO’s stated intent. As such, we direct the CAISO to follow through on its commitment to revise its CAISO Tariff definition of Eligible Intermittent Resource to specify that the term is limited only to wind and solar resources subject to a PGA or QF PGA. We also direct the CAISO to make corresponding revisions to CAISO Tariff section 2.2.1 as needed so that metered subsystem operators such as SVP/M-S-R are not inadvertently required to execute a PGA.<sup>70</sup> Accordingly, we direct the CAISO to submit a compliance filing within 30 days of issuance of this order with these revisions.

55. We agree with Metropolitan and the CAISO that it is appropriate to remove small conduit hydroelectric facilities from the definition of Eligible Intermittent Resources because installation of telemetry equipment will not provide the CAISO with more accurate output forecasts for small conduit hydroelectric resources. Accordingly, we direct the CAISO to submit a compliance filing within 30 days of the issuance of this order to remove any reference to small conduit hydroelectric resources in its definition of Eligible Intermittent Resources.

56. We also accept the CAISO’s proposed revisions to CAISO Tariff Appendix Q section 2.4.1 and CAISO Tariff Appendix F, Schedule 4 to levy a forecast fee on Eligible Intermittent Resources as a reasonable way of recovering third-party forecasting costs, consistent with the practices of other regional transmission operators.<sup>71</sup> Accordingly, we accept the revisions to CAISO Tariff Appendix Q, section 2.4.1 and Appendix F, Schedule 4 to become effective on February 1, 2010, as requested.

57. However, we find that the CAISO’s proposed exemption from the forecast fee should be included in the CAISO Tariff. The Commission has explained that whether provisions included in the Business Practice Manuals must be filed under section 205 of

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<sup>70</sup> See SVP/M-S-R December 16, 2009 Protest at 7 (noting that the CAISO’s proposed tariff language in Attachment B, Appendix Q, section 2.2.1(a) requires all Eligible Intermittent Resources to execute a PGA or qualifying facility PGA).

<sup>71</sup> See New York Independent System Operator Market Services Tariff, section 5.8a, “Collection and Communication of Meteorological Data by Intermittent Power Resources that Depend on Wind as Their Fuel.”

the Federal Power Act (FPA)<sup>72</sup> and made part of the CAISO Tariff is determined through the “rule of reason.”<sup>73</sup> The Commission’s policy, implemented through the rule of reason, is that only those practices that significantly affect rates, terms and conditions fall within the directive of section 205(c) of the FPA. In its filings, the CAISO has stated that it planned to exempt from the forecast fee, small QFs that do not participate in PIRP and that this exemption would be in the Business Practice Manual.<sup>74</sup> We find that, because the applicability of the forecast fee will significantly affect the rates, terms and conditions of service for an entity, the exemption criteria for the forecast fee should be in the CAISO Tariff. Because the CAISO has already explained its proposed exemption for small QFs in this proceeding, and no party has objected, we direct the CAISO to submit this language in a compliance filing within 30 days of issuance of this order.

The Commission orders:

(A) The proposed CAISO Tariff revisions are hereby conditionally accepted, subject to further compliance filings, to become effective on February 1, 2010 and July 1, 2010, as discussed in the body of this order.

(B) The CAISO is hereby directed to submit compliance filings within 30 days of issuance of this order, as discussed in the body of this order.

By the Commission.

( S E A L )

Kimberly D. Bose,  
Secretary.

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<sup>72</sup> 16 U.S.C. § 824d (2006).

<sup>73</sup> *Cal. Indep. Sys. Operator Corp.*, 122 FERC ¶ 61,271, at P 16 (2008).

<sup>74</sup> CAISO Response to the Deficiency Letter at 17-18 (citing proposed Business Practice Manual Language in the document entitled “Document: Proposed PIRP bpm lang 1\_04\_10jb.doc”, available at <https://bpm.caiso.com/bpm/prr/show/PRR000000000132>).

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