

149 FERC ¶ 61,042
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Chairman;
Philip D. Moeller, Tony Clark,
and Norman C. Bay.

California Independent System Operator Corporation Docket No. ER14-2574-000

ORDER ON TARIFF REVISIONS

(Issued October 16, 2014)

1. On August 1, 2014, pursuant to section 205 of the Federal Power Act (FPA),¹ the California Independent System Operator Corporation (CAISO) submitted proposed tariff revisions to establish flexible resource adequacy capacity requirements.² In this order, we conditionally accept the proposed tariff revisions, subject to a compliance filing, to become effective November 1, 2014, as requested.

I. Background

2. California Public Utilities Commission (CPUC) and other local California regulatory authorities have established resource adequacy programs to ensure that sufficient resources are offered into the CAISO markets to maintain reliable grid operation. The CPUC resource adequacy program includes one-year forward and monthly demonstrations by load serving entities that they have procured sufficient capacity to meet the resource adequacy requirements approved by CPUC in its annual resource adequacy proceeding. These requirements have historically consisted of a system-wide component, which is calculated based on the load serving entities' system peak load plus a 15 percent planning reserve margin, and a local component, which is based on CAISO's local capacity technical analysis.³ Through a series of annual rulemaking proceedings, CPUC has expanded the resource adequacy program to include

¹ 16 U.S.C. § 824d (2006).

² Flexible capacity refers to resources that can ramp up and down quickly and start and shut down potentially multiple times per day. CAISO August 1, 2014 Filing at 2 (CAISO Filing).

³ *Id.* at 12.

a flexible capacity framework, within which sufficient ramping and start-up/shut-down capability is made available to manage system variability. In June 2014, CPUC issued a final decision that adopted firm flexible capacity obligations for its jurisdictional load serving entities for the period of 2015 through 2017.⁴ Under the CAISO tariff, scheduling coordinators for resource adequacy resources are required to provide monthly and annual resource adequacy plans to CAISO.⁵

3. CAISO explains that it has designed the flexible capacity framework proposed here to work in conjunction with the resource adequacy programs of CPUC and other local regulatory authorities⁶ to ensure the successful integration of renewable resources and the availability of resources necessary to address the related operational challenges. CAISO states that managing a “greener grid,” with an increased penetration of variable energy resources (VERs) and distributed generation, increases supply and load variability and unpredictability, thereby creating an increased need for flexible capacity. CAISO points out that, at the same time its need for flexible capacity is increasing, resource retirements related to once-through-cooling requirements⁷ will reduce the number of existing resources that are available to provide the flexibility necessary to manage the increased variability and maintain day-to-day reliability.⁸

4. CAISO states that the purpose of the proposed tariff revisions is to ensure that the resources required to meet flexible capacity needs submit economic bids into the CAISO markets and are available so that CAISO can dispatch them. CAISO states that, absent

⁴ *Id.* at 11-14 (citing CPUC, *Decision Adopting Local Procurement and Flexible Capacity Obligations for 2015, and Further Refining the Resource Adequacy Program*, Rulemaking 11-10-023 (June 27, 2013)).

⁵ CAISO Tariff, §§ 40.2.2.4, 40.2.3.4.

⁶ A local regulatory authority is the state or local governmental authority, or the board of directors of an electric cooperative, responsible for the regulation or oversight of a utility. *Id.* Appendix A.

⁷ In 2010, the California State Water Board adopted a policy that requires existing generators that currently withdraw water from California’s oceans and bays for use in a single-pass cooling system to phase out this technology and implement systems to reduce intake flow and velocity or impacts on aquatic life. CAISO states that these requirements affect 13 conventional thermal generators, representing about 17,500 MW. CAISO Filing at 7-8.

⁸ *Id.* at 1-2, 5-9.

such a framework, it may need to rely more heavily on out-of-market exceptional dispatches and procurement through its capacity procurement mechanism (CPM) or, at worst, may not have access to sufficient resources to address operational challenges and maintain grid reliability.⁹

II. CAISO Proposal

5. CAISO's flexible resource adequacy capacity proposal includes seven basic elements, which are described in detail below: (1) a needs determination; (2) three flexible capacity categories; (3) the allocation of the needs in each of the three flexible capacity categories to local regulatory authorities; (4) month-ahead and year-ahead flexible resource adequacy capacity showings by load serving entities; (5) CAISO's evaluation of those showings; (6) the must-offer obligations associated with each flexible capacity category; and (7) CAISO's backstop flexible capacity procurement authority.¹⁰ CAISO requests that the Commission issue an order on the proposed tariff revisions by October 16, 2014, with an effective date of November 1, 2014 to allow sufficient time for load serving entities to make their first flexible resource adequacy capacity showings by November 15, 2014.¹¹

6. CAISO proposes to conduct a flexible capacity needs assessment on an annual basis using a methodology that focuses on maximum upward ramping need and requires that all flexible capacity resources be dispatchable in the five-minute real-time dispatch. CAISO asserts that this simplified initial approach will provide a smooth transition to establishing durable flexible capacity requirements, and commits to reevaluating the effectiveness of this approach in 2016.¹²

7. Under the proposal, CAISO will conduct a study each year to determine the CAISO balancing authority area's flexible capacity need for each month of the next calendar year.¹³ To ensure current and accurate input for the study, CAISO will require scheduling coordinators for load serving entities to submit the in-service status and operating specifications of grid-connected and distributed wind and solar resources, along

⁹ *Id.* at 2.

¹⁰ *Id.* at 3-4.

¹¹ *Id.* at 55.

¹² *Id.* at 19.

¹³ *Id.* at 19-20; CAISO, Proposed Tariff § 40.10.1.

with forecast data.¹⁴ Based on this data, along with the most current full year of actual load data, and the current California Energy Commission-approved load forecast, CAISO will generate minute-by-minute load and net load¹⁵ forecasts for the upcoming resource adequacy compliance year and, subsequently, follow a multi-step methodology to calculate the flexible capacity need. CAISO states that it will, as detailed below, calculate three components of the flexible capacity need: (1) the largest system three-hour net load ramp each month; (2) the higher of the most severe single contingency or 3.5 percent of forecasted peak load for each month; and (3) a forecast adjustment.¹⁶ In the event that a load serving entity submits inaccurate information representing a net error of either 200 MW or one percent of the total MW of wind and solar capacity any month and CAISO has sufficient time to obtain corrected information and re-run the study by May 1 of the current year, CAISO will recalculate the flexible capacity need for the year and post the results by May 1.¹⁷

8. CAISO explains that the first component of the flexible capacity need methodology, the proposed three-hour ramping period, is based on an assessment of one-minute net-load data and represents the system maximum three-hour net load ramp for each month (i.e., the steepest segment of the longest net load ramp for each month).¹⁸ CAISO states that basing the flexible capacity need on the three-hour ramping period will ensure that it can meet its maximum continuous ramping period during the 2014-2017 time period. CAISO states that it has identified general seasonal trends regarding the timing of maximum daily ramps, i.e., during the evening for non-summer months and in the morning for summer months, but notes that the magnitude of these ramps was not consistent on a seasonal basis. Thus, CAISO proposes to establish this component of the

¹⁴ CAISO Filing at 19-20; CAISO, Proposed Tariff § 40.10.1.2. This information must cover the calendar year in which the information is submitted and each year in the next five-year period.

¹⁵ Net load is defined as load minus both wind and solar output. CAISO Filing at 2, fn.2.

¹⁶ CAISO, Proposed Tariff §§ 40.10.1, 40.10.1.3.

¹⁷ CAISO notes that small errors with negligible effect on the calculation will not warrant a rerun. CAISO Filing at 21-22; CAISO, Proposed Tariff § 40.10.1.2.1.

¹⁸ CAISO Filing at 22-23; CAISO, Proposed Tariff § 40.10.1.3.

overall flexible capacity need using the maximum forecasted system three-hour net load ramp for each month.¹⁹

9. Under the second component of the flexible capacity need methodology, CAISO will include the higher of the most severe potential single contingency or 3.5 percent of forecasted peak load for each month.²⁰ CAISO states that this component is necessary because some resources procured as flexible capacity will also likely provide a portion of CAISO's contingency reserves.²¹ Thus, according to CAISO, the purpose of this adjustment is to account for the potential overlap between flexible capacity needs and required contingency reserves and to ensure that CAISO can satisfy both. CAISO also notes that this adjustment will decrease its reliance on its backstop authority to address flexible capacity needs while maintaining sufficient contingency reserves.²²

10. The third component of the flexible capacity need methodology allows CAISO to include a positive or negative forecast adjustment to capture the systemic difference between the value determined as part of the second component of the flexible capacity need methodology and the historic amount of operating reserves met by flexible capacity (forecast adjustment).²³ CAISO explains that the forecast adjustment is necessary because CAISO will not know how closely the adjustment under the second component,

¹⁹ *Id.* at 22-23.

²⁰ *Id.* at 23-24; CAISO, Proposed Tariff § 40.10.1.3.

²¹ CAISO references the current Western Electricity Coordinating Council (WECC) Regional Reliability Standard BAL-002-WECC-2 – Contingency Reserve (Reliability Standard BAL-002-WECC-2) to provide an example of its obligation under this reliability standard to maintain the required amount of contingency reserve. The term “contingency reserve” refers to the provision of capacity deployed by the balancing authority to meet contingency requirements. Glossary of Terms Used in North American Electric Reliability Corporation Reliability Standards, <http://www.nerc.com/pa/Stand/ReliabilityStandardsCompleteSet/RSCCompleteSet.pdf>.

²² CAISO Filing at 23-24.

²³ *Id.* at 24-26; CAISO, Proposed Tariff §§ 40.10.1.3, 40.10.1.4. While the term “contingency reserves” refers specifically to the reserves required by Reliability Standard BAL-002-WECC-2, CAISO defines the term “operating reserves” as the combination of spinning and non-spinning reserves required to meet the applicable reliability standards for reliable operation of the CAISO balancing authority area. CAISO Tariff, Appendix A.

described above, reflects the actual overlap between flexible capacity maintained as operating reserves and flexible capacity that will remain available to meet system flexibility needs until the flexible capacity requirement is in place and actual data becomes available. Thus, CAISO proposes to use this further forecast adjustment, beginning in 2016, to increase or decrease the higher of the 3.5 percent or most severe single contingency based on the actual amount of flexible capacity that is being maintained as operating reserves. In order to limit its discretion in making this forecast adjustment, CAISO proposes parameters to cap the forecast adjustment. The proposed tariff language states that “the amount of the forecast adjustment calculated for each month shall not exceed the forecasted monthly peak Operating Reserves multiplied by the difference between (i) the historic percentage of Operating Reserves met by Flexible [Resource Adequacy] Capacity and (ii) the percentage calculation that results from dividing the quantity determined in [the second component of the flexible capacity need methodology] by the forecasted monthly peak Operating Reserves.”²⁴

11. The proposal also provides that, as part of the flexible capacity needs assessment, CAISO will determine the amounts of flexible capacity needed in each of the following three categories: (1) base ramping flexibility; (2) peak ramping flexibility; and (3) super-peak ramping flexibility.²⁵ Under the proposal CAISO will calculate the minimum quantity of flexible capacity needed in the base ramping category for each month. In contrast, CAISO proposes to set maximum quantities of flexible capacity that may be provided by resources in the peak and super-peak categories.²⁶ The maximum quantity for each month in the peak category will be the difference between the minimum quantity needed in the base ramping category and the total flexible capacity need.²⁷ The maximum quantity in the super-peak category will be set at five percent of the total flexible capacity need.²⁸ CAISO states that it will divide this aspect of the flexible capacity needs determination into two seasons that mirror the existing summer season (i.e., May through September) and non-summer seasons (January through April and

²⁴ CAISO Filing at 24-25; CAISO, Proposed Tariff § 40.10.1.4(c).

²⁵ CAISO Filing at 27; CAISO, Proposed Tariff § 40.10.3. As discussed below, CAISO states that it has established technology-neutral eligibility requirements for each category.

²⁶ CAISO Filing at 29-31; CAISO, Proposed Tariff § 40.10.1.5(a)(1).

²⁷ CAISO Filing at 29-31; CAISO, Proposed Tariff § 40.10.1.5(a)(2).

²⁸ CAISO Filing at 29-31; CAISO, Proposed Tariff § 40.10.1.5(a)(3).

October to December) used for resource adequacy and establish fixed percentages needed in each flexible capacity category for each season.²⁹

12. Once CAISO has determined the flexible capacity needs, it will inform each local regulatory authority, at least 120 days prior to the due date for the annual flexible capacity resource adequacy plans, of the share of the overall system flexible capacity requirement attributable to load serving entities under the jurisdiction of the local regulatory authority. In turn, each local regulatory authority will be responsible for establishing procurement obligations for its jurisdictional entities based on the methodology it finds appropriate. CAISO will allocate the monthly system flexible capacity need to each local regulatory authority based on the contribution of its jurisdictional load serving entities to each of the component parts of the need.³⁰ Specifically, CAISO will calculate a local regulatory authority's share of the monthly maximum three-hour net load ramp as the average of the sum of the jurisdictional load serving entities' change in load, during the five highest three-hour net-load changes in a month, minus the change in wind output, solar output, and solar thermal output.³¹

13. CAISO states that resources are eligible to provide flexible resource adequacy capacity in any of the three categories for which they meet the following operational and availability requirements. CAISO explains that flexible capacity resources in the base ramping category will provide CAISO with the greatest all around assistance in meeting flexible capacity needs.³² Specifically, base ramping resources must be able to provide at least six hours of energy at their effective flexible capacity value, have a minimum of two startups per day, and have daily availability seven days a week. Further, a load serving entity may include in this category a "combined resource" consisting of two use-limited

²⁹ CAISO Filing at 29-31.

³⁰ *Id.* at 31-32; CAISO, Proposed Tariff §§ 40.10.2, 40.10.2.2.

³¹ CAISO Filing at 31-33; CAISO, Proposed Tariff § 40.10.2.1(a).

³² CAISO Filing at 27, 36-37.

resources³³ that do not individually meet the minimum requirements, but in combination satisfy the criteria.³⁴

14. CAISO states that peak ramping resources will address less frequent ramping needs than the base ramping category and, therefore, must be capable of providing at least three hours of energy at their effective flexible capacity value, have at least one startup per day, and have daily availability seven days a week.³⁵ CAISO states that the super-peak category will address the most extreme ramping needs each month. Resources in this category must be able to provide at least three hours of energy at their effective flexible capacity value, respond to five dispatches per month, and have daily availability on weekdays that are not a holiday.³⁶ CAISO notes that this category could accommodate, among other types of resources, short discharge battery resources and demand response. CAISO asserts that the differing eligibility requirements and associated must-offer requirements for the three flexible resource adequacy capacity categories should allow all types of resources to provide some form of flexible capacity while ensuring that CAISO can fully meet its flexible resource adequacy capacity needs.³⁷

15. At this time, CAISO proposes to exclude imports other than pseudo-ties or dynamically scheduled import resources from providing flexible resource adequacy capacity. CAISO notes that the minimum dispatch interval for import resources, other than pseudo-ties or dynamically scheduled imports, is 15 minutes. Thus, CAISO asserts that permitting 15-minute or hourly static imports to provide flexible resource adequacy capacity would be inconsistent with its requirement for all flexible resource adequacy capacity to be dispatchable in the five-minute real-time dispatch. CAISO commits to re-evaluating whether 15-minute inertia resources could meet a portion of CAISO's flexible

³³ A use-limited resource is a resource that, due to design considerations, environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, is unable to operate continuously on a daily basis, but is able to operate for a minimum set of consecutive trading hours each trading day. CAISO Tariff, Appendix A.

³⁴ CAISO Filing at 27, 36-37; CAISO, Proposed Tariff § 40.10.3.2.

³⁵ CAISO Filing at 27, 37; CAISO, Proposed Tariff § 40.10.3.3.

³⁶ CAISO Filing at 27, 37; CAISO, Proposed Tariff § 40.10.3.4.

³⁷ CAISO Filing at 27-28.

resource adequacy capacity needs in 2016 once CAISO has more data available to study the matter and conduct a stakeholder process on this issue.³⁸

16. Under the proposal CAISO will calculate an effective flexible capacity value for each resource, which will identify the maximum amount of flexible capacity the resource may provide, unless a local regulatory authority has established criteria for calculating the effective flexible capacity value for eligible resource types. CAISO will calculate the effective flexible capacity value for each resource that submitted at least one economic bid for energy in the real-time market on at least 10 days in the previous calendar year, or in the most recent 12-month period for which data is available, that takes into account a resource's net qualifying capacity, minimum operating level, start-up time, and average ramp rate.³⁹ CAISO proposes to use the effective flexible capacity values it calculates to determine whether a cumulative deficiency exists in the annual and monthly flexible resources adequacy capacity plans of load serving entities, as discussed below.⁴⁰

17. Similar to its existing tariff provisions regarding the submission of annual and monthly resource adequacy plans, CAISO proposes a requirement for scheduling coordinators of load serving entities to demonstrate, in annual and monthly plans, that they have procured flexible capacity to comply with their local regulatory authority's resource adequacy requirements. Annual plans must show that the load serving entity has procured the required amount of flexible capacity, but need not reflect the flexible resource capacity categories. The monthly plans must show that the load serving entity has procured the required amount of flexible capacity and must also show that the requirement for each flexible capacity category is met.⁴¹

18. CAISO states that it will undertake three reviews of the resource adequacy plans. First, it will evaluate the plans of individual load serving entities whose local regulatory authorities have not established flexible capacity requirements.⁴² If CAISO's review identifies a deficiency, it will provide notice of the deficiency to the relevant scheduling coordinator and local regulatory authority at least 25 days in advance of the relevant month, and an opportunity for the deficiency to be cured up to 11 days prior to the first

³⁸ *Id.* at 38-39.

³⁹ *Id.* at 40-41; CAISO, Proposed Tariff § 40.10. 4.

⁴⁰ CAISO Filing at 40.

⁴¹ *Id.* at 42-43; CAISO, Proposed Tariff § 40.10. 5.

⁴² CAISO Filing at 43-44; CAISO, Proposed Tariff § 40.10. 5.3(a).

day of the month covered by the plan.⁴³ Next, for load serving entities whose local regulatory authorities have established flexible capacity requirements, CAISO will not validate the plans, but will compare the monthly and annual plans to determine whether there is a discrepancy between the resources listed or amount of flexible capacity committed, and will provide the same notice and opportunity to cure the discrepancy.⁴⁴ Third, CAISO will review all of the resource adequacy plans to determine whether there is a cumulative deficiency.⁴⁵

19. Specifically, under the proposal, a cumulative deficiency exists in annual plans if the total amount of flexible capacity shown in the plans of all load serving entities, based on the effective flexible capacity value determined by CAISO for each resource, is less than 90 percent of the annual flexible capacity need. A cumulative deficiency exists in monthly plans if (1) the total amount of flexible capacity shown in the plans of all load serving entities, limited on a collective basis to the maximum monthly requirement for each category, is less than the applicable monthly need, or (2) the total amount of base ramping flexible capacity is less than the applicable monthly need.⁴⁶ If CAISO identifies a cumulative deficiency, it will identify each local regulatory authority that did not meet its allocable share of flexible capacity and each load serving entity that (1) is subject to the jurisdiction of a deficient local regulatory authority, and (2) did not meet its flexible capacity requirement. CAISO will provide notice of the cumulative deficiency at least 25 days in advance of the relevant month and an opportunity for the deficiency to be cured up to 11 days prior to the first day of the month covered.⁴⁷

20. Additionally, to address situations where cumulative deficiencies in the flexible resource adequacy capacity showings are not resolved, CAISO's proposal extends authority under its existing CPM to allow for backstop procurement of the needed flexible capacity.⁴⁸ CAISO will allocate flexible capacity CPM costs to the load serving

⁴³ CAISO Filing at 45-46; CAISO, Proposed Tariff § 40.10. 5.4.

⁴⁴ CAISO Filing at 46; CAISO, Proposed Tariff § 40.10. 5.5.

⁴⁵ CAISO Filing at 46; CAISO, Proposed Tariff § 40.10. 5.3(c).

⁴⁶ CAISO Filing at 46, 50-51; CAISO, Proposed Tariff §§ 40.10. 5.3(c), 43.2.7.

⁴⁷ CAISO Filing at 46-47; CAISO, Proposed Tariff § 40.10. 5.6.

⁴⁸ CAISO Filing at 50-53. CAISO proposes revisions throughout section 43 of its tariff to incorporate the proposed flexible capacity CPM designation into its existing CPM tariff provisions. *E.g.*, CAISO, Proposed Tariff § 43.2.7.1.

entities that are deficient and under the jurisdiction of a local regulatory authority whose jurisdictional entities, in the aggregate, submitted deficient plans. CAISO states that it will allocate the costs among the load serving entities using rules established by the local regulatory authority. However, if the local regulatory authority has not established such rules, CAISO will allocate the costs proportionately to each load serving entity that failed to meet its procurement obligation.⁴⁹

21. Finally, under the proposal, all resources included in the flexible capacity resource adequacy demonstration are subject to a must-offer obligation according to their assigned flexible capacity category. Accordingly, scheduling coordinators must bid flexible capacity resources into CAISO's energy and ancillary services market as follows: (1) resources in the base ramping category must submit economic bids for energy and ancillary services for the period from 5:00 a.m. to 10:00 p.m. every day; (2) peak ramping resources must submit economic bids for a five-hour period each day, to be determined by CAISO as part of the annual flexible capacity needs assessment; (3) resources in the super-peak category have the same five-hour obligation as peak ramping resources, and therefore must respond to only five dispatches per month, and will be required to submit economic bids only on non-holiday weekdays.⁵⁰ CAISO notes that use-limited resources will be required to bid in accordance with their resource limitations, but will be required to submit economic bids for both energy and ancillary services to ensure that the flexible capacity provided by these resources is actually available for dispatch by CAISO.⁵¹ In the event that two use-limited resources are combined to provide base ramping flexible capacity, CAISO proposes to subject both resources to the must-offer obligation up to their respective flexible resource adequacy capacity amounts.⁵²

⁴⁹ CAISO Filing at 53; CAISO, Proposed Tariff § 43.8.8.

⁵⁰ CAISO Filing at 47-49; CAISO, Proposed Tariff § 40.10.6.1.

⁵¹ CAISO Filing at 47-49; CAISO, Proposed Tariff § 40.10.6.1(e). CAISO notes that this requirement differs from the existing option for a use-limited resource to fulfill its general resource adequacy must-offer obligation by self-scheduling. *Id.* at 49.

⁵² CAISO Proposed Tariff § 40.10.3.2(b)(4).

III. Notice and Responsive Pleadings

22. Notice of CAISO's filing was published in the *Federal Register*, 79 Fed. Reg. 46,428 (2014), with interventions and protests due on or before August 22, 2014.⁵³ Timely interventions were filed by Alliance for Retail Energy Markets; Brookfield Energy Marketing LP; Calpine Corporation; Electric Power Supply Association (EPSA); EnerNOC, Inc.; Golden State Water Company; Modesto Irrigation District; NextEra Energy Resources, LLC, and NRG Companies.⁵⁴ E.ON Climate & Renewables North America LLC (E.ON) and Sacramento Municipal Utility District (SMUD) filed out-of-time motions to intervene.

23. CPUC filed a notice of intervention and protest. Timely motions to intervene and comments or protests were filed by California Municipal Utilities Association (CMUA); jointly by the Cogeneration Association of California and the Energy Producers and Users Coalition (collectively, QF Parties); Northern California Power Agency (NCPA); Pacific Gas and Electric Company (PG&E); Powerex Corp. (Powerex); San Diego Gas & Electric Company (SDG&E); the City of Santa Clara, California, doing business as Silicon Valley Power (SVP); the Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (Six Cities); Southern California Edison Company (SoCal Edison); the California Department of Water Resources State Water Project (SWP); and the Western Power Trading Forum (WPTF).

24. On August 25, 2014, EPSA filed a motion to file out-of-time comments. EPSA states that, due to the multiple notices and the time needed to allow for member feedback, it was unable to file its comments by August 22, 2014 and therefore requests leave to file comments out of time.

25. On September 8, 2014, CAISO filed an answer to the comments and protests. On September 22, 2014, NCPA filed an answer to CAISO's answer.

⁵³ On August 8, 2014, CAISO submitted an errata filing to correct an error in its initial filing (Errata Filing). Notice of the Errata Filing was published in the *Federal Register*, 79 Fed. Reg. 49,298 (2014), stating that interventions and protests would be due on or before August 28, 2014. On August 19, 2014, the Commission issued a notice rescinding the notice of the Errata Filing, which had been issued in error, thereby effectively reinstating the originally noticed August 22, 2014 deadline for comments.

⁵⁴ For purposes of this proceeding, the NRG Companies are NRG Power Marketing LLC and GenOn Energy Management, LLC.

IV. Discussion

A. Procedural Matters

26. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2014), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

27. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2014), the Commission will grant E.ON's and SMUD's late-filed motions to intervene given their interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

28. Given EPSA's interest in the proceeding, the early stage of the proceeding, the absence of undue prejudice or delay, and the potential uncertainty created by the erroneous issuance of the notice of the Errata Filing, we will grant EPSA's motion and accept its out-of-time comments.

29. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2014), prohibits an answer to a protest and/or answer unless otherwise ordered by the decisional authority. We will accept CAISO's and NCPA's answers because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

30. We next turn to discussion of the contested features of CAISO's proposal. With respect to the proposed tariff revisions that are not contested, the Commission finds that they are just and reasonable, because they constitute an appropriate set of measures for ensuring that CAISO has access to the flexible capacity it needs to operate the grid reliably. Accordingly, we will conditionally accept those proposed tariff revisions, along with the remaining revisions discussed below, subject to a compliance filing, to become effective November 1, 2014, as requested.

1. Allocation of Flexible Capacity Obligations and Backstop Procurement Costs

a. Comments and Protests

31. CMUA and SVP generally support CAISO's proposed methodology for allocating flexible capacity obligations to entities based on contribution to change in load, change in

solar output, and change in wind output.⁵⁵ However, PG&E, SDG&E, and SoCal Edison raise concerns regarding the fairness of CAISO's proposed methodology for allocating flexible capacity obligations and question whether the proposed allocation adheres to cost causation principles. Specifically, they contend that CAISO's proposal unfairly allocates all flexible capacity needs to local regulatory authorities, while VERs interconnected to the CAISO grid but not contracted to load serving entities in the CAISO balancing authority area (non-contracted VERs) are not allocated any responsibility for their contribution to the system's flexibility requirements.⁵⁶

32. SoCal Edison expresses concern that CAISO plans to include non-contracted VERs in its determination of the overall flexible capacity need, but does not intend to allocate the flexible capacity need attributable to those non-contracted VERs. Thus, SoCal Edison argues that the proposed allocation methodology is materially flawed, as it will either fail to ensure that CAISO will obtain sufficient flexible resource adequacy capacity to meet its needs or force CAISO to rely on its CPM backstop authority and allocate the costs solely to load. According to SDG&E and SoCal Edison, it is unjust and unreasonable for load in CAISO's footprint to pay the price of backstop procurement conducted as a result of non-contracted VERs that benefit loads outside the CAISO service area.⁵⁷

33. PG&E, SDG&E, and SoCal Edison assert that cost-causation principles require that the flexible capacity obligation be allocated to each of the drivers of the need for flexible capacity, which differ from the drivers of the existing resource adequacy capacity

⁵⁵ CMUA August 22, 2014 Protest at 5 (CMUA Protest); SVP August 22, 2014 Comments at 8 (SVP Comments).

⁵⁶ SDG&E August 22, 2014 Protest at 3 (SDG&E Protest); SoCal Edison August 22, 2014 Comments at 6-7 (SoCal Edison Comments); PG&E August 22, 2014 Comments at 5-6 (PG&E Comments).

⁵⁷ SoCal Edison Comments at 2-6. SDG&E also provides the following example: CAISO's annual flexibility capacity requirements study determines a need for 10,000 MW of flexible capacity, but 200 MW of that need is caused by a VER that has contracted with a municipal utility adjacent to CAISO's balancing authority area. Under the instant proposal, CAISO would allocate 9,800 MW to local regulatory authorities based on the resources contracted to load serving entities within the CAISO service area. To address the 200 MW deficiency, CAISO would invoke its backstop procurement authority and spread the costs of procuring the additional 200 MW of flexible capacity to CAISO load, but not to the VER that contributed the unallocated 200 MW of flexible capacity need. SDG&E Protest at 5.

needs. They argue that load is the core driver for the existing resource adequacy program, which is designed to provide reserve margins to meet system-wide peak load. In contrast, they contend that the flexible capacity needs at issue in this proposal are primarily driven by the need to incorporate significant amounts of variable energy resource generation onto the CAISO grid. Thus, PG&E, SDG&E, and SoCal Edison argue that the allocation of flexible capacity obligations and costs need not follow the same methodology as the existing resource obligations, which allocate costs solely to load.⁵⁸

34. Moreover, SoCal Edison argues that there is precedent, in the CAISO market and other markets, for allocating costs related to flexibility needs directly to generation resources. For instance, SoCal Edison contends that CAISO enforces its flexible ramping constraint⁵⁹ and allocates 25 percent of the associated costs to generation, based on real time deviations. In addition, SoCal Edison states that, as currently proposed in the stakeholder process, the costs of CAISO's flexible ramping product will be allocated to load and generation, based on consumption of the product. SoCal Edison also notes that Westar Energy, Inc. and Bonneville Power Administration allocate flexibility costs directly to generation.⁶⁰

35. Further, PG&E and SoCal Edison insist that their concerns are not abstract or theoretical. SoCal Edison notes that SMUD has entered into contracts with a 230 MW wind project located inside CAISO's balancing authority. SoCal Edison explains, however, that because SMUD is outside CAISO's service area it will not be allocated any obligation or charge for the flexible capacity needs imposed by these wind facilities.⁶¹ Furthermore, PG&E claims that there are likely to be an increasing number of merchant wind and solar plants and resources connected to CAISO in the future. If no obligation for flexibility is placed directly on the resources, PG&E claims, VERs will not receive a signal that their intermittency is placing additional costs on the system, thereby reducing

⁵⁸ PG&E Comments at 7; SDG&E at 6-7; SoCal Edison Comments at 6-8.

⁵⁹ In the absence of a bid-based ramping product, CAISO uses the flexible ramping constraint as a constraint that is applied to CAISO's market optimization process to ensure that CAISO has sufficient upward ramping capacity between the 15-minute real-time unit commitment and the five-minute real-time dispatch. CAISO Tariff, §§ 11.25, *et al.*

⁶⁰ SoCal Edison Comments at 8-9.

⁶¹ *Id.* at 4.

their incentive to invest in equipment to control intermittence.⁶² SoCal Edison states that this concern also pertains to VERs that have only a portion of their output contracted to load serving entities (partially contracted) VERs, VERs that participate in the markets prior to a contract effective date with CAISO load serving entities, and VERs located outside of CAISO's balancing authority that dynamically schedule into CAISO.⁶³

36. To address these concerns, SoCal Edison and SDG&E request that the Commission direct CAISO to allocate flexible resource adequacy capacity obligations and associated flexible capacity CPM costs directly to the scheduling coordinators for non-contracted VERs. According to SoCal Edison, this approach would ensure that the correct load will pay for needed flexible capacity, provide appropriate incentives for decisions related to the development of VER technology and dynamic scheduling, and ensure that CAISO assigns obligations for all flexible capacity deemed necessary for grid reliability. Alternatively, given that the large number of existing VER contracts in California, SoCal Edison proposes that CAISO match CAISO's load serving entities with signed VER contracts, as proposed, but also allocate flexible capacity obligations and backstop costs to non-contracted VERs based on causation. Absent modification, SoCal Edison insists that the proposal must be rejected as unjust and unreasonable.⁶⁴ PG&E also argues that a portion of the flexible capacity needs should be allocated to merchant VERs.⁶⁵

37. With respect to the individual procurement obligations of CPUC-jurisdictional load serving entities, CPUC contends that subsection 40.10.5.1(c)(2) of CAISO's proposed tariff revisions may cause confusion.⁶⁶ According to CPUC, the proposed provision would require each load serving entity to demonstrate that it has met monthly requirements within minimum or maximum quantities for each flexible category.⁶⁷

⁶² PG&E Comments at 6-8.

⁶³ SoCal Edison Comments at 4-5.

⁶⁴ *Id.* at 11; SDG&E Protest at 6.

⁶⁵ PG&E Comments at 5-6.

⁶⁶ On pages 21, 25, and 26 of its comments, CPUC appears to have transposed tariff subsection 40.10.5.1(c)(2) with subsection 40.10.5.1(c)(3). Through the context of the comments provided, we understand CPUC's concern to be focused on subsection 40.10.5.1(c)(2), as opposed to subsection 40.10.5.1(c)(3).

⁶⁷ CPUC August 22, 2014 Protest at 20 (CPUC Protest). Subsection 40.10.5.1(c)(2) provides that a load serving entity's monthly plan must demonstrate that

CPUC alleges that this provision enables CAISO to move beyond its role as grid operator into that of resource planner. CPUC argues therefore that the proposed subsection is in conflict with the framework approved by the CAISO Board of Governors (Board), which permits CAISO to enforce procurement within the flexible capacity categories on a system-wide basis, but not for individual load serving entities.⁶⁸ CPUC also contends that this provision will create internal inconsistencies in the tariff because the remainder of the proposed flexible resource adequacy capacity requirements reflect the intent that CAISO will have a “backstop only” function for enforcing procurement requirements within each flexible capacity category.⁶⁹

38. Moreover, CPUC contends that the proposed subsection is not necessary for CAISO to exercise backstop procurement authority to cure a collective deficiency in a flexible capacity category. CPUC argues that CAISO will have sufficient information to determine if the total amount of flexible resources submitted fulfills the system-wide flexible capacity needs, and that CAISO may issue a backstop CPM designation if a collective deficiency is not cured by load serving entities.⁷⁰ Finally, CPUC warns that the proposed tariff subsection could give rise to conflicting procurement obligations if CPUC adopts a different approach to the use of the flexible capacity categories in the future. CPUC thus requests that the Commission require CAISO to remove proposed subsection 40.10.1.5 (c)(2) from its tariff.⁷¹

the load serving entity met the total monthly requirement determined by CAISO within the minimum or maximum quantity, as applicable, for each flexible capacity category; or, if the local regulatory authority has established its own flexible capacity requirement, it must show that it has met the total monthly requirement determined by the local regulatory authority within the minimum or maximum quantity for each flexible capacity category required by the local regulatory authority, if applicable.

⁶⁸ CPUC notes that this was major point of compromise for it regarding this proposal, as CPUC staff had concerns that CAISO’s proposal could expand CAISO’s role of ensuring reliable grid operations into resource planning. *Id.* at 22.

⁶⁹ *Id.* at 21.

⁷⁰ *Id.* at 24.

⁷¹ For instance, CPUC states that it could adopt an approach in the future in which it relied on aggregate showings of CPUC-jurisdictional load serving entities to meet CAISO’s overall system flexibility needs, as opposed to load serving entities-specific procurement requirements within each flexible capacity category. If this were to occur, CPUC states that confusion could arise if CAISO were to intervene and require each load

(continued ...)

39. While SVP generally supports CAISO's proposed allocation methodology, it seeks clarification regarding CAISO's proposed methodology for determining the allocation of the maximum three-hour net-load ramp. Specifically, SVP notes that load serving entities provide load data in different levels of granularity, i.e., 10-minute or hourly. SVP claims that CAISO has not sufficiently explained how it "smoothes" this data to develop the one-minute load data that it uses to calculate each load serving entity's contribution to the change in load.⁷² SVP expresses concern that CAISO may unfairly penalize load serving entities that provide more granular load data, as such data will be more volatile than the hourly data some load serving entities submit. In addition, SVP states that CAISO appears to allocate the system one-minute load variability to all load serving entities, which could unfairly allocate system load variability to load serving entities with very stable load. Thus, SVP asserts that until CAISO has access to one-minute load data from load serving entities representing most of CAISO's load, hourly load data should be used, which is the most granular data that is commonly available, to determine each load serving entity's contribution to the need for flexible capacity.⁷³

b. Answers

40. In response to CPUC, CAISO clarifies that the purpose of section 40.10.5.1(c)(2) is not to require load serving entities to procure sufficient flexible capacity to meet the flexible resource adequacy capacity requirements or to meet specified quantities of flexible capacity within each flexible capacity category. Rather, it explains, section 40.10.5 only requires load serving entities to submit informational showings to CAISO that identify the resources on which they intend to rely to provide flexible resource adequacy capacity, and show how that flexible resource adequacy capacity is divided among the flexible capacity categories. According to CAISO, this information is necessary to (1) validate the flexible resource adequacy plans for load serving entities in local regulatory authorities that did not adopt flexible capacity requirements, (2) evaluate whether there is a cumulative flexible capacity deficiency, and (3) determine that the plans meet the minimum or maximum quantity requirements for each flexible capacity category. Additionally, CAISO asserts that this information is needed to provide notice

serving entity to demonstrate that it met CAISO-determined procurement needs in each category. *Id.* at 24-26.

⁷² SVP Comments at 8-9.

⁷³ *Id.* at 9-10.

to load serving entities if they have not met the requirements, and that they are at risk of incurring backstop procurement costs.⁷⁴

41. CAISO states that if clarification is necessary to avoid any potential confusion, it would not object to revising proposed section 40.10.5.1(c)(2) on compliance, if so ordered by the Commission, to clarify that the provision imposes only an information submission requirement, and not a procurement requirement, on load serving entities.⁷⁵

42. With respect to CPUC's assertion that section 40.10.5.1(c)(2) might cause confusion in the event CPUC changes its flexible capacity resource adequacy requirements in the future, CAISO states that speculation about potential future changes to requirements should not stand as a barrier to CAISO fulfilling its reliability and backstop responsibilities.⁷⁶

43. In response to SVP's request that CAISO include in the tariff additional detail about how it will develop one-minute load data, CAISO states that the business practice manual will include a detailed description of how it will perform the necessary calculations. CAISO avers that this level of detail is not necessary in the tariff.⁷⁷

c. Commission Determination

44. We conditionally accept CAISO's proposal to allocate flexible capacity obligations among local regulatory authorities based on the contributions of their respective jurisdictional load serving entities to the system flexible capacity need, subject to CAISO's submission of an informational report, as discussed below. We find that CAISO's proposed methodology effectively captures differences among load serving entities' loads and resource portfolios and reflects their contributions to CAISO's flexible capacity needs. Further, CAISO's proposed allocation methodology preserves local regulatory authorities' primary role in establishing procurement obligations for their jurisdictional load serving entities, while also ensuring that CAISO will meet its total flexible capacity need.

⁷⁴ CAISO September 5, 2014 Answer at 14-16, 19-20 (CAISO Answer).

⁷⁵ *Id.* at 17.

⁷⁶ *Id.* at 18.

⁷⁷ *Id.* at 32.

45. We reject protesters' arguments that a portion of the flexible resource adequacy capacity obligation and/or flexible capacity CPM costs should be allocated directly to non-contracted VERs. We are not persuaded by the record here that the impact of excluding non-contracted VERs in the overall flexible capacity need will result in unallocated flexible capacity or drive the need for CAISO to use its backstop authority to compensate for the contributions of non-contracted VERs. Other than providing a single example of a 230 MW wind project that is under contract to SMUD, protesters offer no actual data to support their assertions. Further, we note that CAISO has rarely used CPM and has not used CPM to backstop resource adequacy deficiencies, and there is no current evidence to persuade us that this trend will change.⁷⁸

46. However, while we will not require CAISO to develop an alternate allocation at this time we agree that if VERs that do not have contracts with CAISO load serving entities prove, in the future, to be more than a *de minimis* contributor to CAISO's flexible capacity needs, a methodology that allocates a portion of the obligations and/or costs to these resources or other appropriate entity would conform more closely to cost causation principles. Accordingly, we direct CAISO to submit, within 12 months of the date of implementation of the flexible capacity requirements, *i.e.*, January 1, 2016, an informational filing that quantifies the documented and projected impact of non-contracted VERs on CAISO's flexible capacity needs.⁷⁹ This report should include information on any use of CPM to procure backstop flexible capacity as a result of this subset of resources, if applicable. It should also evaluate options for allocating flexible capacity obligations and backstop costs in a manner that would allocate a share of the burden proportionally to non-contracted VERs or other appropriate entity.

47. Further, we note that CAISO's proposed methodology for allocating flexible capacity CPM costs will be part of section 43 of the tariff, which, pursuant to the terms of a Commission-approved settlement,⁸⁰ will expire along with the remainder of the CPM provisions in February 2016. We encourage CAISO, as it works with its stakeholders to

⁷⁸ For example, in 2013, CAISO used its CPM backstop authority only twice. In both instances, this was related to exceptional dispatch, and not for the purpose of curing resource adequacy deficiencies. CAISO Department of Market Monitoring, 2013 Annual Report on Market Issues and Performance at 245, *available at*: <http://www.caiso.com/Documents/2013AnnualReport-MarketIssue-Performance.pdf>.

⁷⁹ The report is for informational purposes only and will not be noticed for comment or subject to Commission action.

⁸⁰ *Cal. Indep. Sys. Operator Corp.*, 134 FERC ¶ 61,211, at P 13 (2012).

develop a replacement for the CPM, to consider the contribution of non-contracted VERs on the need for backstop procurement and how best to allocate costs.

48. With regard to CPUC's claim that proposed section 40.10.5.1(c)(2) of CAISO's tariff may cause confusion or expand CAISO's role in enforcing procurement obligation, we find that CAISO's proposal in its answer to modify the text of this provision on compliance would sufficiently clarify that the provision at issue functions only as an information submission requirement, and not as a procurement requirement for individual load serving entities. Accordingly, we direct CAISO to submit, within 30 days of the date of this order, a compliance filing with tariff language clarifying that section 40.10.5.1(c)(2) only imposes an information submission requirement on load serving entities. Further, because this provision does not impose procurement requirements within the flexible capacity categories, we find no merit in CPUC's concern that this provision may cause confusion in the event CPUC changes its flexible capacity resource adequacy requirements in the future. That said, we encourage CAISO to continue to coordinate closely with CPUC to maximize alignment between CPUC's procurement requirements and CAISO's flexible capacity needs.

49. Finally, we will not require CAISO to use hourly load data, as requested by SVP. We find that SVP's assertion that the proposal may unfairly penalize load serving entities that provide more granular load data is speculative. Further, we find that the level of detail regarding the calculation of each local regulatory authority's allocable share of the flexible capacity need in CAISO's proposed tariff revisions is sufficient. We agree with CAISO that the more detailed description of the processes CAISO will use for the calculation can be appropriately reflected in its business practice manuals.⁸¹

2. Forecast Adjustment

a. Comments and Protests

50. CMUA, Six Cities, and PG&E argue that the proposed forecast adjustment should be rejected entirely, asserting that CAISO has not demonstrated that such an adjustment is necessary to maintain reliability. They insist that CAISO's proposed methodology for determining flexible capacity needs already accounts for an overlap of resources that can

⁸¹ See, e.g., *Cal. Indep. Sys. Operator Corp.*, 148 FERC ¶ 61,089, at P 62 (2014) (finding that details regarding the modeling of the anticipated flow of electricity in CAISO's full network model are appropriately included in the business practice manuals); *Cal. Indep. Sys. Operator Corp.*, 140 FERC ¶ 61,070, at P 47 (2012) (accepting CAISO's proposal to include the methodology for conducting deliverability assessments in the business practice manuals).

provide flexible capacity and resources maintained as contingency reserves by increasing the forecast each month in an amount equal to the greater of the most severe single contingency or 3.5 percent of the forecasted peak load.⁸² Moreover, CMUA and Six Cities contend this proposed monthly adjustment will be sufficient to satisfy the revised WECC requirements for contingency reserves.⁸³ They argue that, in light of the revised WECC standards, along with the overall amount of capacity with flexible attributes in the existing fleet of resources available to CAISO, the proposed forecast adjustment is not necessary. CMUA and SVP aver that the appropriate metric for determining the overall flexible obligation should be accuracy, to reflect actual system needs and ensure cost effective procurement, based on the best judgment of CAISO working in collaboration with local regulatory authorities, rather than a “more is better” approach.⁸⁴

51. Similarly, PG&E questions the need for the proposed forecast adjustment and contends that the mere use of a flexible resource to provide contingency reserves does not necessarily indicate a need for additional flexible resource adequacy capacity. PG&E posits that the proposed forecast adjustment might significantly increase the amount of flexible resource adequacy needs calculated by CAISO. PG&E also argues that the forecast adjustment tariff language filed at the Commission was not vetted with stakeholders and substantially changes the calculation that CAISO presented to its Board for approval.⁸⁵

⁸² CMUA Protest at 5-7; SVP at 5; Six Cities Protest at 3-5; PG&E Comments at 9-10. SVP notes that it concurs with CMUA’s arguments on this issue. SVP Comments at 5.

⁸³ The previous WECC standard provided that minimum contingency reserve must equal the greater of: (1) the loss of generating capacity due to forced outages of generation or transmission equipment that would result from the most severe single contingency, or (2) the sum of five percent of load responsibility served by hydro generation and seven percent of the load responsibility served by thermal generation. Under the new standard, which became effective October 1, 2014, the required amount of contingency reserve is based on the greater of: (1) the amount of contingency reserves equal to the loss of the most severe single contingency, or (2) the amount of contingency reserves equal to the sum of three percent of hourly integrated load plus three percent of hourly integrated generation. CMUA Protest at 6-7; Six Cities Protest at 4-5.

⁸⁴ CMUA Protest at 6.

⁸⁵ PG&E Comments at 8-10.

52. CPUC expresses support for the concept of the forecast adjustments, but requests that the Commission reject CAISO's proposed formula for setting a maximum amount of additional flexible capacity it can add to the flexible capacity need by way of the proposed forecast adjustment. CPUC argues that a further stakeholder process and CAISO Board approval are necessary for developing any such formula. Indeed, according to CPUC, the proposal approved by the Board only contemplated a forecast adjustment based on an assessment of how well the first two components of the flexible capacity formula reflect the real-world flexible capacity needs. CPUC contends that CAISO did not present the formula for setting a cap on the adjustment until the tariff-drafting phase when stakeholders objected to a forecast adjustment with set parameters. CPUC emphasizes that this formula should not be approved without further stakeholder debate, as the formula could result in overly conservative estimates of flexibility need or yield an ineffective solution.⁸⁶

53. CPUC also asserts that the Commission should reject the proposed cap on the forecast adjustment because its impact on procurement requirements, while potentially significant, cannot yet be assessed. CPUC states that CAISO does not yet have the data necessary (i.e., the historic percentage of operating reserves met by flexible resource adequacy capacity) for the Commission to determine whether the proposed cap on the forecast adjustment is reasonable, or whether it might set a cap that is so high as to provide no objective boundary at all.⁸⁷ Moreover, CPUC argues that Commission policy provides that jurisdictional utilities must file practices that significantly affect rates and services if the practices are realistically susceptible of specification, but argues that the forecast adjustment proposed here is not "realistically" susceptible to specification at this time.⁸⁸

54. In addition, CPUC argues that rushing to impose a cap on the forecast adjustment developed outside of the stakeholder process is not necessary or practical at this time. First, CPUC argues that the proposed tariff includes an implicit cap because section 40.10.1.4(a) allows CAISO to include a forecast adjustment to the flexible capacity need determination, and section 40.10.1.4(b) requires CAISO to determine this adjustment in consultation with CPUC and other local regulatory authorities. CPUC emphasizes that requiring CAISO to set the cap in consultation with CPUC and the other local regulatory authorities will allow greater opportunity for stakeholder input on the issue. Further, CPUC asserts that Commission approval of the formula proposed by CAISO to cap the

⁸⁶ CPUC Protest at 11-14.

⁸⁷ *Id.* at 13.

⁸⁸ *Id.* at 17-20.

forecast adjustment could effectively foreclose CPUC's opportunity to explore or adopt a different approach to calculating an error term, or lead to conflicting results whereby CAISO could engage in flexible capacity backstop procurement even after CPUC has determined that such resources are not needed for reliability. CPUC also argues that CAISO will not use the proposed forecast adjustment in 2015 and avers that CAISO will actually not be able to use it until 2017 at the earliest because it will not have adequate data until then. Thus, CPUC contends that rejection of the proposed cap on the forecast adjustment now will allow ample time for CAISO, with input from CPUC and other stakeholders, to consider alternatives and submit a revised proposal.⁸⁹

55. Finally, CMUA, and Six Cities contend that CAISO provides no description or analysis of the basis for allocating responsibility to satisfy the amount of any forecast adjustment. Therefore, they assert that the proposed forecast adjustment formula would allow CAISO unreasonably broad discretion and is unsupported by any evidence that would allow the Commission to determine whether the allocation tracks cost causation principles.⁹⁰

b. Answers

56. In response to assertions that the proposed forecast adjustment was not properly vetted by stakeholders, CAISO states that it has requested stakeholder input on this issue since the initial straw proposal in December, 2012, and that it first mentioned the possibility of a cap on the adjustment factor in October, 2013. With respect to protesters' contentions that the proposed forecast adjustment and cap did not receive Board approval, CAISO asserts that the proposed forecast adjustment and the cap not only fall within the policy approved by its Board, but limit, rather than expand, the scope of the approved policy by adding specificity to the calculation of the forecast adjustment and curbing CAISO's discretion in this area.⁹¹

57. In response to Six Cities and CMUA's comments that the forecast adjustment may not be needed since the flexible capacity need methodology already accounts for contingency reserves in determining the monthly maximum three-hour net load ramp, CAISO maintains it will not know the size of the overlap of resources that are procured as flexible capacity but are expected to provide a portion of contingency reserves until it

⁸⁹ *Id.*

⁹⁰ CMUA Protest at 6-7; Six Cities Protest at 3-4.

⁹¹ CAISO Answer at 3-4.

has actual monthly data about flexible capacity resource commitment.⁹² Thus, CAISO argues that it needs the forecast adjustment to fine-tune the flexible capacity needs determination to ensure there is enough flexible capacity to address system flexible capacity need and maintain the proper contingency reserves.⁹³ In addition, CAISO stresses that, as the quantity of flexible capacity needed is a system-wide reliability issue, CAISO is uniquely qualified to quantify and calibrate the accuracy of this need.⁹⁴

58. With respect to allocating the responsibility for any changes in need due to application of the forecast adjustment, CAISO agrees with Six Cities and CMUA that proposed section 40.10.2.1(c) could be interpreted as providing CAISO with more discretion than it intended. Accordingly, CAISO states that, if directed by the Commission, it will revise this section to specify that any forecast adjustment is applied to the total flexible capacity requirement and allocated in accordance to proposed section 40.10.2.1(b).⁹⁵

59. CAISO disputes PG&E's notion that the cap on the forecast adjustment is an attempt to determine the forecast adjustment without a stakeholder process. To the contrary, CAISO claims it will evaluate the precise level of the forecast adjustment and the cap in an annual stakeholder process, as provided by proposed section 40.10.1.1. In addition, CAISO explains that this process will be similar to the Commission-approved process it uses to determine local generic capacity requirements.⁹⁶

⁹² CAISO also contends that the proposed adjustment factor will be able to adapt to the change in Reliability Standard BAL-002-WECC-2, since the objective cap on the adjustment factor is tied to forecasted monthly peak operating reserves and is not a fixed number or percentage. *Id.* at 6-9.

⁹³ *Id.* at 7.

⁹⁴ *Id.* at 13.

⁹⁵ *Id.* at 9-10.

⁹⁶ *Id.* at 5-6 (citing CAISO March 12, 2014 Memorandum to Board of Governors, *Decision on Flexible Resource Adequacy Criteria and Must-offer Obligation*, at 4 (stating that “[CA]ISO will establish the system flexible capacity need for each month based on the system’s forecasted maximum upward net load change over a three-hour period. This system flexible capacity need will include additional amounts to account for contingency reserves and for forecast error.”)).

60. In response to CPUC's request that the Commission reject the cap on the forecast adjustment, CAISO contends that CPUC did not demonstrate why CAISO's methodology for calculating the cap is unjust or unreasonable. Furthermore, CAISO disputes CPUC's contention that the proposed cap should be rejected simply because the data does not yet exist to determine the extent to which forecast adjustments could alter the flexible capacity need. CAISO also denies that it rushed to include a cap on the forecast adjustment in the proposal after the stakeholder process concluded, as suggested by CPUC. Instead, CAISO maintains that it developed the cap as a direct response to requests to reign in its discretion to adjust the flexible capacity need.⁹⁷

61. Finally, CAISO argues that the possibility that CPUC may want to consider the issue of a cap on the forecast adjustment in the future is not a reason to reject the cap in the instant proposal. CAISO reiterates that the proposed cap provides reasonable limits on its discretion, as the cap is based on objective criteria and incorporates stakeholder input. In the event that the proposed cap does not allow CAISO to establish accurate flexible capacity needs, CAISO states that it will make a filing with the Commission requesting modifications as needed.⁹⁸

c. Commission Determination

62. We accept the proposed forecast adjustment, including the associated cap, to commence in 2016, as proposed by CAISO. As an initial matter, we find that protesters' arguments that the forecast adjustment was not authorized by the Board are not persuasive. Because CAISO's proposal to its Board included the concept of adjusting the flexible capacity need to account for contingency reserves and forecast error, we find that CAISO's proposed forecast adjustment falls squarely within the policy approved by the Board. Further, imposing a cap on this adjustment serves to limit, rather than expand, CAISO's discretion to make adjustments. As such, we also find that the proposed cap is within the bounds of the framework approved by the Board.

63. With regard to the merits of the proposed forecast adjustment and cap, we find that CAISO's proposed approach is just and reasonable. The forecast adjustment is a necessary component of the overall flexible capacity needs assessment as it will allow CAISO to address the actual overlap between flexible capacity maintained as contingency reserves and flexible capacity that will remain available to meet system flexibility needs, as well as to make adjustments to account for forecast error. We disagree with protesters' arguments that the forecast adjustment may not be needed since,

⁹⁷ *Id.* at 10-13.

⁹⁸ *Id.* at 13.

according to the protesters, the flexible capacity need methodology already accounts for contingency reserves. As CAISO explains, while the flexible capacity needs methodology accounts for some overlap between flexible capacity maintained for contingency reserves and flexible capacity available to meet system flexibility needs, CAISO will not know how closely that factor reflects the actual overlap until the flexible capacity requirements are in place and data becomes available. Thus, we agree that CAISO must have the flexibility to make adjustments to ensure that the appropriate amount of flexible capacity is procured and available to address system-wide reliability issues.

64. Notably, without the forecast adjustment, the effectiveness of the flexible resource adequacy capacity requirements could be limited. If CAISO under-counts the overlap between flexible capacity and contingency reserves, a problem that should be resolved by prospective adjustments to the flexible capacity need may instead need to be resolved through real-time operations and exceptional dispatches. Meanwhile, over-counting the overlap could lead to excess procurement costs and the forecast adjustment would allow CAISO to reduce the amount of flexible capacity needed to avoid unnecessary costs. We therefore find that the forecast adjustment is necessary to fine-tune the flexible capacity needs assessment, together with stakeholders,⁹⁹ to make adjustments to improve the accuracy of flexible resource adequacy capacity needs determination. Accordingly, we find that accepting the forecast adjustment is a just and reasonable measure for ensuring there is enough flexible capacity to address the flexible capacity need and the required level of contingency reserves, and for improving the accuracy of the flexible capacity needs assessment.

65. We also find that protesters' reliance on the Reliability Standard BAL-002-WECC-2 is misplaced. The fact that Reliability Standard BAL-002-WECC-2 became effective on October 1, 2014 does not obviate CAISO's need for flexibility in determining flexible capacity needs. Further, because neither the proposed forecast adjustment nor the proposed cap are fixed numbers or percentages, but rather are tied to the level of operating reserves, we find that CAISO's proposal is just and reasonable, as well as necessary, within the context of the Reliability Standard BAL-002-WECC-2.

66. We also disagree with CPUC's argument that we should accept the forecast adjustment but reject CAISO's proposed cap on that adjustment. We find it appropriate to establish parameters to cap the upward adjustment to limit CAISO's discretion.

⁹⁹ Proposed section 40.10.1.4(b) of its tariff provides that CAISO will determine the need for a forecast adjustment in consultation with local regulatory authorities, and as part of the stakeholder process allowing stakeholders to review and provide input on the study methodology, assumptions, and draft study results.

Importantly, including this provision effectively serves as an objective default provision to guard against over-procurement by limiting the upward adjustment in any single year. We recognize that if, through consultation with CPUC and other local regulatory authorities, CAISO determines that the forecast adjustment will be lower than the maximum allowable adjustment under the proposed cap, the cap will not be relevant to the flexible capacity needs determination. On the other hand, the cap is useful to limit the potential for overly conservative estimates of need. Thus, removing the proposed cap provision from the tariff runs counter to the concern expressed by CPUC, which is that the cap may provide CAISO with too much discretion to set procurement levels too high.

67. With regard to CPUC's argument that accepting the proposed cap could lead to conflicting requirements if CPUC opts to establish a different adjustment factor in a future resource adequacy proceeding for load serving entities subject to its jurisdiction, we find that concern to be premature. Moreover, we believe that CAISO is the entity best suited to establish the forecast adjustment for system flexible capacity needs because, although load serving entities under the jurisdiction of CPUC account for a majority of CAISO's system-wide flexible capacity requirements,¹⁰⁰ CAISO is responsible for the reliable operation of the entire grid, which includes entities not under CPUC jurisdiction. The tariff provides that CPUC and other local regulatory authorities will have an opportunity to provide input as part of the procedure for determining the forecast adjustment, which should mitigate the possibility of conflicting requirements.

68. We also disagree with CPUC's contention that the proposed cap should be rejected because it is not realistically susceptible to specification.¹⁰¹ Although the proposed forecast adjustment cap is based on estimated data, it will nevertheless be determined through an objective formula based on forecasted monthly peak operating reserves and will ultimately use actual data and take into account stakeholder input. In addition, CAISO has committed to reevaluating the effectiveness of the flexible capacity requirements in a 2016 stakeholder proceeding. Therefore, CAISO will have an opportunity to refine the cap based on historical data and with input from CPUC and other stakeholders. We encourage CAISO to include the issues of the forecast adjustment

¹⁰⁰ CPUC represents that the requirements adopted by CPUC for its jurisdictional load serving entities account for 94 to 98 percent of CAISO system flexible capacity needs. CPUC Protest at 6.

¹⁰¹ To the extent CPUC is arguing that the forecast adjustment and associated cap should not be included in the tariff, we disagree. As explained above, we find that the proposed forecast adjustment and cap are necessary and appropriate measures to ensure that appropriate amount of flexible capacity are procured and made available to CAISO.

and cap in its 2016 stakeholder initiative, based on data collected during 2015 regarding the overlap between contingency reserves and flexible capacity.

69. Finally, with respect to comments that its proposal does not adequately address the allocation of responsibilities resulting from any changes in flexible capacity needs due to application of the forecast adjustment, CAISO states in its answer that it does not object to filing further tariff revisions to specify how it intends to allocate such responsibilities. Accordingly, we direct CAISO to file, within 30 days of the date of this order, further revisions to explain how it will apply the allocation of responsibilities resulting from any changes in flexible capacity needs due to application of the forecast adjustment.

3. Eligibility to Provide Flexible Capacity

a. Comments and Protests

70. Powerex asserts that CAISO has failed to justify the exclusion of 15-minute imports from providing flexible capacity. Powerex explains that the primary justification that CAISO provides for its proposal to exclude 15-minute imports is that flexible ramping capacity cannot be used unless it is dispatched on a five-minute basis. However, Powerex argues that nothing in CAISO's filing substantiates its asserted need to dispatch flexible resources on a five-minute basis, as opposed to the 15-minute dispatch granularity. Moreover, Powerex references CAISO's analysis which indicates at least 80 percent of the flexible resource requirement can be met by resources that take more than 15 minutes to respond to dispatch instructions. In contrast, Powerex claims that extending eligibility to provide flexible resource adequacy capacity to static import resources could be highly effective at improving liquidity in CAISO's 15-minute market. For these reasons, Powerex argues that CAISO's proposed criteria for providing the different types of flexible capacity further is arbitrary and constitutes undue discrimination. Finally, Powerex argues that the exclusion of 15-minute imports will lead to higher costs and an inefficient resource mix, which will harm consumers.¹⁰²

71. WPTF asks the Commission to direct CAISO to begin stakeholder consideration of permitting static imports to provide flexible resource adequacy capacity in 2015, to submit a status report by the end of 2015, and to allow imports to provide flexible capacity in 2016 for the 2017 resource adequacy cycle. WPTF asserts that this proposed schedule will ensure that the most efficient supplies of flexible capacity can be made available to buyers without undue delay.¹⁰³

¹⁰² Powerex August 22, 2014 Protest at 9 (Powerex Protest).

¹⁰³ WPTF August 22, 2014 Comments at 6-7 (WPTF Comments).

72. Six Cities argue that, similar to the option for combined use-limited resources to qualify for the base ramping flexibility category, the eligibility requirements for peak and super-peak ramping flexibility category resources should include provisions allowing a combination of use-limited resources to satisfy the requirements. Six Cities state that although the peak and super-peak ramping flexibility category resources eligibility requirements are somewhat less stringent than the base ramping flexibility category resources requirements, there is no reason for denying the opportunity to combine resources if necessary to meet the eligibility criteria. In contrast, Six Cities argue that allowing this combination would assist load serving entities in avoiding unnecessary and duplicative capacity costs and expand the pool of flexible resources available to CAISO.¹⁰⁴ Finally, SWP states that its pumping loads, many of which are CAISO participating loads, are particularly well suited to mitigate the problem of over generation. Accordingly, SWP urges CAISO to develop a more comprehensive flexible capacity framework in the future that considers how participating load can provide valuable and much-needed flexible capacity.¹⁰⁵

b. Answers

73. CAISO disputes Powerex's assertion that at least 80 percent of the flexible resource requirement can be met by 15-minute static imports. CAISO explains that its proposed flexible capacity requirement is intended to cover net load variations that can occur between five-minute intervals. CAISO further explains that its optimization process dispatches all bids from internal resources on a five-minute basis, which is not compatible with static imports, which can only be dispatched at 15-minute intervals. CAISO argues that the analysis on which Powerex relies did not take into account the five-minute net load ramps within the 15-minute ramp, and therefore does not provide the necessary information regarding the degree to which CAISO can rely on 15-minute static imports.¹⁰⁶

74. Further, because intertie resources are not dispatchable on a five-minute basis, but only on a minimum of a 15-minute basis, CAISO maintains that static imports are not similarly situated to internal resources and denies Powerex's claim that CAISO's proposal is unduly discriminatory. CAISO states that it has not completed the necessary analysis to determine what portion of CAISO's flexibility needs could be supplied by

¹⁰⁴ Six Cities Protest at 6-7.

¹⁰⁵ SWP August 22, 2014 Comments at 12-13 (SWP Comments).

¹⁰⁶ CAISO Answer at 21-23.

15-minute static imports and therefore contends that the current risk and uncertainty justify their interim exclusion from eligibility.¹⁰⁷

75. CAISO contends that if it were to rely too heavily on 15-minute static imports and consequently could not meet five-minute ramping needs, it could be forced to rely on exceptional dispatch or backstop procurement. CAISO explains that this increase in total flexible capacity procurement costs would result in load serving entities unnecessarily paying twice to meet the system flexible capacity needs, once for the ineffective static import and again for the exceptional dispatch or CAISO-procured backstop resource. CAISO reiterates that this proposal is transitional and commits to reevaluating whether enhancements to the flexible resource adequacy capacity framework are necessary to provide opportunities for static imports to participate.¹⁰⁸

76. With regard to Powerex's arguments about reduced market liquidity and increased costs if imports are excluded, CAISO notes that none of the load serving entities that would bear the costs object to this aspect of the proposal. Further, CAISO highlights that CPUC has also precluded CPUC-jurisdictional entities from procuring flexible resource adequacy capacity from 15-minute static imports. Accordingly, CAISO argues that even without the interim exclusion of 15-minute static imports, resources with 15-minute static schedules would have minimal, if any, opportunity to provide resource adequacy flexible capacity. CAISO reiterates that it intends to continue its analysis of the viability of including imports and states that it will work with CPUC and other regulatory authorities to ensure the ability of 15-minute static resources to provide flexible resource adequacy capacity in the future.¹⁰⁹

77. In response to Six Cities' request that CAISO permit load serving entities to combine multiple resources to provide peak and super-peak flexible capacity, CAISO asserts that the operational capabilities of peak and super-peak resources would prevent them from meeting the must-offer obligation. Further, CAISO denies that such an accommodation is necessary because there are very few, if any, resources that would fail to meet the eligibility requirements of the super-peak flexible capacity category.¹¹⁰

¹⁰⁷ *Id.* at 23.

¹⁰⁸ *Id.* at 21-22.

¹⁰⁹ *Id.* at 23-24.

¹¹⁰ *Id.* at 28-29.

c. Commission Determination

78. The Commission denies requests to require CAISO to permit imports, other than pseudo-ties or dynamically scheduled imports, to provide flexible resource adequacy capacity. We disagree with Powerex's assertions that CAISO's proposal unduly discriminates against imports. In contrast to internal resources that can be dispatched every five minutes, static imports can only be dispatched every 15 minutes. As CAISO explained in its answer, five-minute dispatchability is essential to its proposed approach to flexible capacity requirements, and it has not completed an analysis of the extent to which 15-minute static imports can meet CAISO's ramping needs. Thus, due to the risk and uncertainty regarding the effectiveness of 15-minute static imports at meeting CAISO's flexible capacity needs, we agree with CAISO that expanding eligibility to allow static imports to provide flexible resource adequacy capacity would not be prudent at this time.

79. However, we are persuaded by WPTF and Powerex that eventually allowing imports to provide flexible resource adequacy capacity has the potential of conferring benefits to CAISO's market by expanding the resource mix and reducing costs. Accordingly, we direct CAISO to assess the feasibility of permitting static import resources to provide flexible resource adequacy capacity and to include this assessment in the informational report ordered above.¹¹¹ We also direct CAISO to indicate in the report whether it is feasible to expand the eligibility to include imports and, if so, when it will do so. Alternatively, CAISO should explain why the inclusion of imports continues to be infeasible. Additionally, we encourage CAISO to consider in its 2016 stakeholder proceeding evaluating options for participating load resources to provide flexible resource adequacy capacity and propose refinements to the flexible capacity requirements as appropriate.

80. Regarding Six Cities' request that CAISO be required to allow multiple resources to combine to provide peak and super-peak flexible capacity, we find that CAISO has not explained why this is not a feasible option. In its answer, CAISO appears to dispute the feasibility of allowing two super-peak resources to combine to provide base or peak - ramping flexibility. Based on our assessment of the availability requirements for peak and super-peak resources, we find no reason why combined use-limited resources would not be effective in providing flexible resource adequacy capacity in these categories, provided that they are capable of satisfying the associated must-offer obligations. Thus, we direct CAISO to submit a compliance filing, within 30 days of the date of this order, to add provisions for combined peak and super-peak resources, or to explain why this option is not feasible.

¹¹¹ See *supra* at P 46.

4. Calculation of Effective Flexible Capacity

a. Comments and Protests

81. CMUA, NCPA, and SVP claim that CAISO's proposal to calculate an effective flexible capacity value only for those resources that submitted an economic bid for energy in the prior year forecloses the opportunity for resources that have traditionally self-scheduled to be eligible to provide flexible resource adequacy capacity. Further, they claim that the proposed prior-economic bid requirement will artificially shrink the supply of flexible capacity and unnecessarily limit the amount of flexible capacity that is available to CAISO.¹¹² Additionally, CMUA and NCPA assert that when determining the amount of flexible capacity a resource can provide, CAISO should only consider whether the resource has the necessary operational characteristics to provide the flexible service, and argue that whether the resource submitted a prior economic bid has nothing to do with the resource's ability to provide flexible capacity. They argue that refusing to allow resources that previously self-scheduled to bid economically in this new program would be an unjust and unreasonable result.¹¹³

82. SVP acknowledges that CAISO's proposed tariff revisions in section 40.10.4.2(a) include an alternate mechanism whereby resources that do not meet the prior-bid requirement may request CAISO to include such resources on the qualifying list for the next year. However, SVP contends that the proposed provision is impermissibly vague and gives CAISO too much discretion because the proposed process does not clearly identify the resource attributes that will be considered, the information required, or the process CAISO will use to evaluate such a request. SVP claims that, due to its vagueness, the proposed provision does not cure the burden placed on resources that do not satisfy the prior-bid requirement.¹¹⁴

83. PG&E asserts that the proposed counting rules for determining the effective flexible capacity of energy storage resources are discriminatory because, under the proposal, storage resources that are not providing regulation energy management would be required to transition smoothly from charge to discharge in order to count the resource's charging capability as part of its effective flexible capacity value, while holding no other technology types to such a standard. PG&E contends that this

¹¹² CMUA Protest at 8-9; NCPA August 22, 2014 Comments at 4-5 (NCPA Comments); SVP Comments at 5-8.

¹¹³ CMUA Protest at 8; NCPA Comments at 4-5.

¹¹⁴ SVP Comments at 7-8.

requirement inappropriately favors storage resources that can transition immediately between charge and discharge, such as batteries and flywheels, over storage resources like compressed air energy storage and small pumped hydro, which require a brief transition period between charging and discharging. Accordingly, PG&E requests that CAISO be required to modify its proposal to allow storage resources to be credited with their full capability to ramp over three hours, even if they may require a short transition period between charging and discharging.¹¹⁵

84. QF Parties contend that CAISO's proposed method for calculating the effective flexible capacity value for combined heat and power resources appears to be inconsistent with operational realities of combined heat and power resources. QF Parties explain that the generation of a combined heat and power resource may be largely non-dispatchable as the delivery of electrical energy is dependent on the thermal demand and operational constraints of its host facility. Consequently, the QF Parties explain, the only flexible capacity that a combined heat and power resource is able to offer is the margin of generating capacity above the non-dispatchable generation that must be self-scheduled and delivered under the agreement with its combined heat and power host. However, the QF Parties claim that the proposed method for calculating a combined heat and power resource's effective flexible capacity does not reflect these operational constraints. Accordingly, the QF Parties request that the Commission direct CAISO to clarify this language.¹¹⁶

b. Answers

85. CAISO asserts that protesters' concerns that the prior-bid requirement will unnecessarily limit the eligibility of resources to provide flexible capacity is unfounded. CAISO points out that proposed tariff section 40.10.4.2 provides an alternate mechanism for resources that do not meet the prior-bid threshold to request that CAISO calculate an effective flexible capacity value. CAISO states that the process for submitting such a request, and the details regarding CAISO's review of requests, will be addressed in the business practice manual. Thus, CAISO asserts that resources that have not previously submitted economic bids are not precluded from providing flexible resource adequacy capacity.¹¹⁷

¹¹⁵ PG&E Comments at 10-12.

¹¹⁶ QF Parties August 22, 2014 Protest at 4-6 (QF Parties Protest).

¹¹⁷ CAISO Answer at 24-25.

86. With regard to SVP's claim that the proposed process for the alternate mechanism is too vague, CAISO explains that it will include in the business practice manual a detailed description of the process for submitting requests and how CAISO will review such requests. CAISO contends that this level of detail need not be included in the tariff, consistent with CAISO's treatment of other procedural steps and information submission requirements.¹¹⁸

87. CAISO finds problematic PG&E's suggestion that a short transition period should be allowed for a storage resource as it changes back and forth between charging and discharging. First, CAISO argues that there is no currently defined CAISO product that would facilitate such an accounting, and PG&E's proposal would require the development of an entirely new product that is beyond the scope of this proceeding. Second, PG&E's proposal raises potential reliability issues because CAISO has not had the opportunity to assess the potential reliability impacts of treating storage load that is not dispatched under the non-generator resource model as flexible capacity. CAISO states that it requires additional time to study the reliability challenges and obtain stakeholder input before it can propose to accommodate additional resources. Finally, CAISO adds that PG&E made a similar argument in the CPUC resource adequacy proceeding, and that CPUC declined to include the charging capabilities of resources that cannot transition smoothly between charge and discharge in the calculation of the resource's flexible capacity.¹¹⁹

88. CAISO agrees that the revisions suggested by QF Parties will improve the clarity of the calculation that CAISO will perform for calculating the effective flexible capacity values for combined heat and power resources. Accordingly, CAISO states that, if directed by the Commission, it will modify this provision on compliance to reflect QF Parties suggestions.¹²⁰

89. NCPA repeats its objection to the proposed prior-bid requirement. NCPA observes that, despite the prior-bid requirement, CAISO will not use any prior economic bids to perform the proposed calculation of effective flexible capacity values. Thus, NCPA insists that this proposed requirement serves no legitimate purpose, and CAISO has not explained why it is necessary. NCPA argues that unlike the effective flexible capacity value that CAISO will calculate automatically for resources with the required economic bid history, resources that wish to seek an effective flexible capacity value will

¹¹⁸ *Id.* at 32.

¹¹⁹ *Id.* at 30-31.

¹²⁰ *Id.* at 31-32.

be subject an additional burden, pursuant to an as-of-yet undefined process to be set forth in the business practice manuals. Further, NCPA asserts that, because the details of the process for the alternative method will be in the business practice manuals and not the tariff, the requirements could be changed without Commission approval. Thus, NCPA contends that the proposed prior-bid requirement discriminates without good cause between resources that have submitted economic bids that those that have not.¹²¹

c. Commission Determination

90. We conditionally accept CAISO's proposed tariff revisions pertaining to effective flexible capacity values, subject to further compliance to remove the prior-bid requirement. CAISO has not adequately explained how a resource's prior-bid history impacts the effective flexible capacity that the resource can provide in the future. Further, we agree with CMUA, NCPA, and SVP that the operational characteristics of a resource, and not the prior-bid history, should be the relevant factors for determining if a resource can provide flexible resource adequacy capacity. Although CAISO proposes an alternate mechanism for resources to obtain effective flexible capacity values, we agree with SVP that CAISO has not demonstrated why a resource should be burdened with a separate process simply by virtue of its history of self-scheduling. Thus, we direct CAISO to submit a compliance filing, within 30 days of the date of this order, to remove the prior-bid requirement from section 40.10.4 of its tariff.

91. Furthermore, CAISO has committed to set forth in the business practice manual the specific documentation required to support an entity's request to meet the criteria for effective flexible capacity. We agree with CAISO that the specific details of this process are implementation details better suited to the business practice manual than to the tariff. We believe that the addition of this information in the business practice manual addresses SVP's concern.

92. With regard to PG&E's request that energy storage resources should be credited with their full capability to ramp over three hours, even if they require a transition period between charging and discharging, we share CAISO's concern that it may be premature to adopt provisions for such resources. Importantly, as CAISO explains in its answer, it has not had the opportunity to assess the potential reliability impacts of treating storage load that is not dispatched under the non-generator resource model as flexible capacity. Given the lack of analysis on this issue, we do not believe it is practical at this time to require CAISO to amend its proposal to adopt provisions for non-generator resource storage resources that require transition times without first understanding the operational and reliability impacts.

¹²¹ NCPA September 22, 2014 Answer at 2-4.

93. Thus, we decline to require CAISO to amend its proposal to allow storage resources that require a transition period between charging and discharging to be credited with their full capability to ramp over three hours. However, we agree with CAISO that this issue requires further consideration and support its inclusion as a topic in the Reliability Services Initiative for resolution. In addition, we encourage CAISO to conduct studies to understand the reliability impacts associated with treating these resources as flexible capacity and evaluate options to allow for the participation of these resources in the flexible resource adequacy capacity framework.

94. Finally, we agree with QF Parties that CAISO's proposed tariff language in section 40.10.4.1(f), which provides the method for calculating the effective flexible capacity of a combined heat and power resource, may not accurately reflect the operational characteristics of combined heat and power resources. CAISO likewise agrees in its answer and suggests improving the clarity of this provision on compliance. Thus, we direct CAISO to submit a compliance filing, within 30 days of the date of this order, that clarifies the calculation set forth in section 40.10.4.1(f)(ii) to reflect the revisions suggested by QF Parties in order to better reflect the operating requirements of combined heat and power resources.¹²²

5. Must-Offer Obligations

a. Comments and Protests

95. SWP argues that hydroelectric resources should not be subject to an ancillary services must-offer obligation, as proposed by CAISO. SWP notes that this type of restriction is problematic for use-limited resources such as hydroelectric resources, because the use of ancillary service bids in addition to energy bids would make it impossible to predict how often such bids will translate into actual energy usage. SWP explains that this is because hydroelectric resources are constrained by environmental conditions such as minimum streamflow, fish protection measures, and water quality. SWP also explains that in its case, operations of its hydroelectric facilities can be further limited by the water delivery and management, flood control, irrigation and other obligations imposed by California state law. SWP points out that the Commission has previously ruled in favor of exempting hydroelectric resources in CAISO from abiding by an ancillary service must-offer requirement for these reasons.¹²³

¹²² *Id.* at 31-32.

¹²³ SWP Comments at 6-7 (citing *Cal. Indep. Sys. Operator Corp.*, 127 FERC ¶ 61,298, at PP 122-24 (2009)).

96. Additionally, SWP argues that an ancillary services must-offer obligation for use-limited resources is unnecessary because they compose a small fraction of CAISO's ancillary services needs. SWP explains that CAISO obtains the vast majority of its ancillary services from resources designated as generic resource adequacy capacity, self-provision of ancillary services, and market bids for ancillary services. SWP states that CAISO has not shown that it will have any difficulty meeting its ancillary services requirements if use-limited resources designated as flexible capacity are exempt from the ancillary services must-offer obligation.¹²⁴

97. Six Cities also contend that CAISO's proposal includes unduly burdensome must-offer obligations for use-limited resources. Six Cities claim that, although CAISO's proposal allows a load serving entity to combine two use-limited resources to meet the eligibility requirements for the base ramping flexibility category, both resources would be required to comply with the must-offer obligation up to their individual flexible resources adequacy capacity amounts. Six Cities assert that this requirement would impose a must-offer obligation at least double the level of flexible resource adequacy credit received by the resource combination, and would expose both resources to the risks of either violating use limitations or being exposed to non-availability penalties. Six Cities argue that the must-offer obligations for use-limited resource combinations should be commensurate with the level of flexible resource adequacy credit received by the combination, and that the scheduling coordinator should be able to satisfy the must-offer obligation during any hour by submitting economic bids for either resource up to the level of flexible resource adequacy credit.¹²⁵

b. Answers

98. CAISO states that it has given further consideration to SWP's position regarding the ancillary services must-offer obligation and has determined that allowing a limited exception for use-limited resources would not severely undermine the effectiveness of CAISO's proposal. Thus, CAISO states that, if so directed by the Commission, it will submit revisions on compliance to establish such an exception.¹²⁶

99. CAISO argues that Six Cities' recommendation that combined flexible capacity resources should only have a must-offer obligation for a single resource in the combination is unworkable because it would not ensure that resources, as a combination,

¹²⁴ *Id.* at 8-9.

¹²⁵ Six Cities Protest at 6-7.

¹²⁶ CAISO Answer at 27-28.

would meet the requirements of the category in which they are providing flexible resource adequacy capacity.¹²⁷

c. Commission Determination

100. We agree with SWP that a limited exception from the ancillary services must-offer obligation is appropriate for use-limited resources. Hydroelectric resources and other use-limited resources are constrained by environmental conditions as well as other obligations imposed by California state law. We agree with SWP that these constraints make an ancillary service must-offer obligation problematic for use-limited resources due to the uncertainty as to how often such bids will result in energy production. Accordingly, we find that an obligation to submit both ancillary services and energy bids could reduce the effectiveness of these resources to provide flexible resource adequacy capacity. Furthermore, in its answer, CAISO agrees that allowing this exception will not undermine the effectiveness of the flexible resource adequacy capacity framework. Thus, we direct CAISO to submit a compliance filing, within 30 days of the date of this order, establishing a limited exception for use-limited resources from the ancillary services must-offer obligation.

101. We reject Six Cities' request to require CAISO to modify the must-offer obligation for combined use-limited resources. If either resource in the combination could satisfy the availability requirements on its own, it would not need to combine in order to be eligible to provide flexible resource adequacy capacity. We agree with CAISO that reducing this obligation to an amount equal to the resource adequacy credit received by the combination could defeat the purpose of combining the resources. Thus, we find CAISO's proposed must-offer obligation to be reasonable because it ensures that the combined flexible capacity of both resources is available to CAISO.

6. Miscellaneous

a. Comments and Protests

102. Commenters express concern with CAISO's proposed definitions of "Flexible Capacity" and "Flexible [Resource Adequacy] Capacity." QF Parties contend that the proposed definition of "Flexible [Resource Adequacy] Capacity" is circuitous because it includes the term being defined (i.e., flexible resource adequacy capacity) in the definition.¹²⁸ Accordingly, QF Parties requests that the Commission direct CAISO to

¹²⁷ *Id.* at 29.

¹²⁸ CAISO proposes to define "flexible capacity" as "the capacity of a resource that is operationally able to respond to Dispatch Instructions to manage variations in load

revise the definition.¹²⁹ Similarly, WPTF asserts that the definitions of “Flexible Capacity” and “Flexible [Resource Adequacy] Capacity” create ambiguity that could require a supplier to offer flexible capacity beyond that which it contracted to provide.¹³⁰ WPFT argues that careful tariff drafting is required to ensure that the flexible resource adequacy capacity must-offer obligation is limited to the capacity that has been sold as flexible resource adequacy capacity. According to WPTF, a failure to clearly limit the must-offer obligation to the range sold will create must-offer or noncompliance risks for suppliers with such limitations.¹³¹

103. EPSA urges the Commission to approve the CAISO filing but requests that the Commission direct CAISO to implement a market-based program for procuring backstop flexible capacity no later than 24 months after the effective date of the order in the instant filing. Specifically, EPSA takes issue with the CAISO proposal because it uses an administrative price for backstop procurement compensation. EPSA asserts that CAISO’s proposal fails as a market tool and fails to send the appropriate signals for needed investment because it administratively determines when backstop is needed, who provides the service, and at what price.¹³²

104. WPTF argues that the proposal does not provide incentive premiums and penalties for flexible resource adequacy capacity. WPTF asserts that the lack of incentive premiums and penalties creates risk for load serving entities in their procurement of flexible resource adequacy capacity, which in turn increases procurement costs. WPTF

and variable energy resource output.” CAISO proposes to define “flexible resource adequacy capacity” as “Flexible Capacity with an obligation to provide Flexible [Resource Adequacy] Capacity during a resource adequacy month.”

¹²⁹ QF Parties Protest at 6.

¹³⁰ WPTF offers the example of a 500 MW combined heat and power resource that has an effective flexible capacity of 350 MW, which is the range between its 150 MW minimum operating level and its maximum output of 500 MW. However, in this example, due to a host steam requirement, the resource cannot run at an output level below 300 MW. WPTF asserts that under this scenario, it is not clear from CAISO’s proposed tariff language that the supplier is required to only provide 200 MW of flexible resource adequacy capacity, which is the range between 300 MW and 500 MW. WPTF Comments at 5.

¹³¹ *Id.* at 5.

¹³² EPSA August 25, 2014 Comments at 4-6.

expresses concern that the timeline for a market proposal for flexible resource adequacy capacity will lag behind CAISO's ongoing efforts to address performance incentives through its Reliability Services Initiative, which is scheduled to be addressed by the Board in the first quarter of 2015. Thus, WPTF recommends that the Commission require CAISO to accelerate its timeline for implementing market-based reforms and revised performance incentives for flexible resource adequacy capacity to the first quarter of 2015. WPTF also stresses the critical need for a market-based replacement for the CPM mechanism in time for the expiration of the CPM mechanism in 2016.¹³³

105. PG&E and Six Cities identify a number of ministerial errors and omissions in CAISO's proposed tariff language and requests that CAISO be directed to make the necessary changes on compliance.¹³⁴

b. Answers

106. CAISO agrees with the assertions of WPTF and QF Parties that the definition of "Flexible [Resource Adequacy] Capacity" should be clarified and agrees to modify the definition on compliance if directed to do so by the Commission.¹³⁵

107. With regard to the timeline for implementing performance incentives and a market-based replacement for CPM, CAISO emphasizes that it is moving forward on both fronts and asserts that the earliest reasonable time it can submit proposals to the Board will be in the first quarter of 2015. CAISO contends that it cannot accelerate its current timetable without sacrificing other stakeholder initiatives to which it has committed. Further, CAISO points out that the expiration of the CPM in February 2016 was established pursuant to a settlement. Thus, CAISO argues that the Commission cannot impose an earlier effective date for a replacement mechanism without unwinding the settlement.¹³⁶

¹³³ WPTF Comments at 7-8.

¹³⁴ These corrections include items such as correcting an erroneous cross-reference or inserting a missing word. PG&E Comments at 12; Six Cities Protest at 8.

¹³⁵ CAISO Answer at 33.

¹³⁶ *Id.* at 26-27.

108. CAISO also notes that proposed tariff section 40.10.1.4(a) erroneously refers to section 40.10.3(3) and states that the reference should be corrected on compliance to 40.10.1.3(3).¹³⁷

c. Commission Determination

109. We will direct CAISO to submit a compliance filing, within 30 days of the date of issuance of this order, to revise the definition of “Flexible [Resource Adequacy] Capacity” as described by CAISO in its answer.¹³⁸ We find that this clarification should also address WPTF’s concern that CAISO’s proposed definitions create ambiguity regarding the amount of capacity subject to the flexible resource adequacy capacity must-offer obligations. We also direct CAISO to submit a compliance filing, within 30 days of the date of this order, to correct the minor errors and omissions identified by PG&E and Six Cities, as well as the erroneous reference identified by CAISO in its answer.

110. We will not require CAISO to accelerate its timeline for implementing market-based reforms and performance incentives for flexible resource adequacy capacity such that these proposals are submitted to the Commission in the first quarter of 2015, as requested by WPTF. CAISO has not proposed performance incentives in the instant filing, and WPTF has not alleged or demonstrated that the instant proposal is unjust and unreasonable without such incentives. Further, we note that CAISO is already addressing the issue of flexible resource adequacy performance incentives in a separate proceeding and expects to submit its proposal to the Board as early as the first quarter of 2015.¹³⁹ Nevertheless, we will require CAISO to submit, within 12 months of implementing the flexible capacity requirements, an informational filing that demonstrates the progress made towards developing a flexible capacity performance incentive mechanism, and indicates when it plans to file its proposal with the Commission.¹⁴⁰

111. With respect to CAISO filing a market-based replacement for the CPM, we note that CAISO’s current capacity procurement mechanism expires in February 2016. As noted above, the February 2016 expiration date was established pursuant to a settlement approved by the Commission. Accordingly, we will not impose an earlier effective date

¹³⁷ *Id.* at 33.

¹³⁸ *Id.* at 32-33.

¹³⁹ *Id.* at 26.

¹⁴⁰ We note that this information can be part of the informational report discussed above.

for a replacement mechanism. However, we strongly encourage CAISO and its stakeholders to develop a solution in time for the February 2016 expiration of the existing capacity procurement mechanism.

The Commission orders:

(A) CAISO's proposed tariff revisions are hereby conditionally accepted, subject to compliance filing, to become effective November 1, 2014, as requested, as discussed in the body of this order.

(B) CAISO is hereby directed to submit a compliance filing, within 30 days of the date of this order, as discussed in the body of this order.

(C) CAISO is hereby directed to submit an informational report, within 12 months of the implementation of the flexible resource adequacy capacity requirements, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.