

137 FERC ¶ 61,165
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Jon Wellinghoff, Chairman;
Philip D. Moeller, John R. Norris,
and Cheryl A. LaFleur.

California Independent System Operator Corp.

Docket Nos. ER11-4353-000

ORDER ACCEPTING PROPOSED TARIFF REVISIONS

(Issued November 30, 2011)

1. On August 22, 2011, pursuant to section 205 of the Federal Power Act (FPA)¹ and section 35 of the Commission's regulations,² the California Independent System Operator Corporation (CAISO) submitted proposed revisions to its tariff to implement regulation energy management.³ In this order, we accept CAISO's proposed changes to Appendix K of its tariff (Appendix K) to become effective December 1, 2011, as requested. We accept all other proposed tariff revisions to become effective April 10, 2012, as requested.

¹ 16 U.S.C. § 824d (2006).

² 18 C.F.R. § 35 (2011).

³ CAISO August 22, 2011 Regulation Energy Management Filing, Docket No. ER11-4353-000 (CAISO Filing). Scheduling coordinators for non-generator resources may request to certify resources as those that use regulation energy management in order to provide regulation service consistent with the continuous energy requirements. Regulation energy management is "a market feature for resources located within the CAISO Balancing Authority Area that require Energy from the Real-Time Market to offer their full capacity as Regulation." Resources that choose to use regulation energy management must sign a participating generator agreement or a participating load agreement. The resources that choose to use regulation energy management must also define their ramp rate for operating as generation and load and allow CAISO to control their operating set point. *See* CAISO tariff Appendix A; tariff section 8.4.1.2.

I. Background

2. Order No. 890 required that all regional transmission organizations (RTO) and independent system operators (ISO) allow non-generation resources, such as demand response, to provide ancillary services when technically capable.⁴ Subsequently, in Order No. 719, the Commission directed all RTOs and ISOs to allow demand response resources to participate in ancillary services markets.⁵

3. Consistent with the requirements of Order No. 890 and Order No. 719, on March 26, 2010, the Commission accepted a CAISO pilot program to allow Sano Regulation Center, an operator of non-generator facilities, to submit bids for regulation service on an interim basis into CAISO's ancillary services market.⁶ CAISO states that this pilot program allowed it to assess the operational and technical issues associated with non-generator resources participating in ancillary services market.⁷

4. On September 10, 2010, the Commission accepted CAISO's tariff revisions to facilitate the provision of ancillary services by non-generator resources⁸ by modifying the operating characteristics and technical requirements for ancillary services providers.⁹ The Commission accepted CAISO's proposal to reduce the continuous energy requirement for ancillary services from two hours to 30-minutes for spinning and non-spinning reserves, 60-minutes for day-ahead regulation and 30-minutes for real-time

⁴ See *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

⁵ *Wholesale Competition in Regions with Organized Electric Markets*, Order No. 719, FERC Stats. & Regs. ¶ 31,281 (2008); *order on reh'g*, Order No. 719-A, FERC Stats. & Regs. ¶ 31,292 (2009); *order on reh'g*, Order No. 719-B, 129 FERC ¶ 61,252 (2009).

⁶ *Cal. Indep. Sys. Operator Corp.*, 130 FERC ¶ 61,242 (2010).

⁷ CAISO Filing at 2.

⁸ Non-generator resources may include battery storage, flywheels, and dispatchable demand-side processes. See *id.* at 1.

⁹ *Cal. Indep. Sys. Operator Corp.*, 132 FERC ¶ 61,211 (2010) (September 10, 2010 Order).

regulation.¹⁰ The Commission noted that the changes represented an incremental step towards removing the barriers to comparable treatment of non-generator resources to provide ancillary services products.¹¹ However, the Commission recognized that regulation energy management could eliminate the current barriers to full participation of limited energy storage resources in CAISO's ancillary services market but found that regulation energy management was beyond the scope of the proceeding. Notwithstanding, the Commission granted CAISO's request to examine regulation energy management as part of its renewable integration market product review initiative through its stakeholder processes.¹²

5. In the instant filing, CAISO proposes to implement regulation energy management. CAISO states that proposed revisions to its tariff will increase the quantity of regulation that can satisfy the continuous energy requirements accepted in the September 10, 2010 Order. Specifically, CAISO proposes: (1) amendments to implement regulation energy management; (2) amendments that apply generally to non-generator resources,¹³ including how CAISO will recognize the operational constraints of non-generator resources that do not use regulation energy management; and (3) clarifications to the voice communications requirements of Appendix K to make them consistent with CAISO's current business practices.

II. Notice and Responsive Pleadings

6. Notice of CAISO's filing was published in the *Federal Register*, 76 Fed. Reg. 53,897 (2011), with interventions and comments due on or before September 12, 2011. Timely motions to intervene were filed by Acquion Energy; the Cities of Anaheim, Azusa, Banning, Colton, Pasadena & Riverside, CA; the City of Santa Clara, CA and M-S-R Public Power Agency; Modesto Irrigation District; and Northern California Power Agency. A123 Systems, Inc (A123 Systems); Beacon Power Corporation (Beacon); California Department of Water Resources State Water Project (SWP); California Energy

¹⁰ *Id.* P 3.

¹¹ *Id.* P 26.

¹² *See id.* P 33-34.

¹³ Non-generator resources are defined by CAISO as “[r]esources that operate as either Generation or Load and that can be dispatched to any operating level within their entire capacity range but are also constrained by a MWh limit to (1) generate Energy, (2) curtail the consumption of Energy in the case of demand response, or (3) consume energy.” *See* CAISO tariff, Appendix A.

Storage Alliance; and Electricity Storage Association filed timely motions to intervene and comments. ENBALA Power Networks filed a motion to intervene out-of-time.

7. On September 27, 2011, CAISO submitted an answer.

III. Discussion

A. Procedural Matters

8. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2011), the timely, unopposed motions to intervene serve to make the entities that filed them parties to the proceeding. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R § 385.214(d), the Commission will grant ENBALA Power Networks late-filed motion to intervene given their interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

9. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2011), prohibits an answer to a protest and/or an answer unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process

B. Substantive Matters

CAISO's Filing

10. CAISO proposes tariff revisions to implement regulation energy management in order to allow for greater participation of non-generator resources in CAISO's ancillary services market. CAISO notes that, without regulation energy management, non-generator resources are limited to providing only a portion of their available capacity to the regulation market. CAISO states that regulation energy management will allow non-generator resources to bid their capacity more effectively and in a manner consistent with the requirement in its tariff for continuous energy regulation service.

11. Under the proposal, scheduling coordinators for non-generator resources within CAISO's balancing authority area may elect to, but are not required to, use regulation energy management if they are not capable of bidding or self-scheduling their full capacity as regulation due to the continuous energy requirement.¹⁴ Some resources in CAISO can only sustain the maximum energy they are capable of withdrawing or injecting for no more than 15-minutes. Such non-generator resources that elect to use

¹⁴ CAISO Filing at 4.

regulation energy management will be able to bid or self-schedule capacity equal to four-times the maximum energy they can provide or curtail for 15 minutes after a dispatch instruction to provide regulation services in order to satisfy the 60-minute continuous energy requirement.¹⁵

12. In order to meet the continuous energy requirements of regulation, the scheduling coordinator will procure imbalance energy from the real-time market as necessary, so that the non-generator resource can satisfy its regulation capacity award. Non-generator resources using regulation energy management may not provide energy other than energy associated with regulation.¹⁶

13. CAISO proposes to settle regulation capacity awarded to, or self-scheduled by, resources using regulation energy management as it does for conventional resources providing regulation. Resources that utilize regulation energy management will be paid the locational marginal price for providing regulation up and regulation down. The real-time energy produced or consumed to maintain the resources' regulation capability to satisfy the 60-minute continuous energy requirement will be settled at the real-time locational marginal price for instructed imbalance energy.¹⁷ CAISO notes that scheduling coordinators may not recover commitment costs for these resources. CAISO will manage the resources' operating set point and treat the resources as if they are online. CAISO states that, consequently, the scheduling coordinators for these resources should not face decisions that would result in commitment costs such as start-up and minimum load costs. CAISO adds that non-generator resources using regulation energy management will remain eligible to recover other bid costs, including energy bid costs, residual unit commitment availability payments and ancillary service bid costs.¹⁸ CAISO also proposes to exempt the portion of demand of non-generator resources using

¹⁵ For example, consider a 20 MW non-generator resource that is only capable of providing 20 MW for one continuous 15-minute period. Due to the 60-minute continuous energy requirement, the resource would only be capable of providing 5 MW in the day-ahead market. With regulation energy management, the resource could satisfy the 60-minute continuous energy requirement by providing 20 MW for four 15-minute periods.

¹⁶ *Id.* at 3, 6.

¹⁷ *Id.* at 7.

¹⁸ *Id.* at 9.

regulation energy management that it dispatches as regulation from any charges or payments applicable to measured demand.¹⁹

14. If CAISO determines that there is not sufficient energy available to serve CAISO demand in the real-time, and therefore insufficient energy to support the non-generator resource's provision of regulation capacity, CAISO proposes to disqualify the non-generator resource that is using imbalance energy to supports its regulation capacity. CAISO proposes to rescind regulation capacity payments, if the resource is unable to satisfy its regulation capacity, whether or not the resource uses regulation energy management.²⁰ CAISO expects such an event to be rare and disqualification of capacity award or self-schedules will result in a rescission of regulation capacity payments.

15. CAISO will require the scheduling coordinator to enter into a participating generator and/or a participating load agreement on behalf of the non-generator resource.²¹ CAISO proposes to revise Appendix K, Part A to allow non-generator resources using regulation energy management to define a ramp-rate for operating as generation and a ramp rate for operating as load,²² respectively. Finally, CAISO proposes to modify the monitoring and voice communications requirements in Appendix K to include provisions for resources electing to use regulation energy management.

16. CAISO commits to reviewing the design of regulation energy management based on the quantity of resources that register to use regulation energy management, and notes that additional operating experience may give rise to the need for refinements to the market design. CAISO also states that it intends to examine a mileage payment (or pay-for-performance) in phase 2 of its renewable integration market and product review stakeholder initiative.²³ CAISO states that it will also comply with any requirement to

¹⁹ *Id.* at 7.

²⁰ CAISO tariff sections 8.10.8.4 and 8.10.8.6.

²¹ CAISO Filing at 6.

²² Ramp rate is the "Bid component that indicates the Operational Ramp Rate, Regulation Ramp Rate, and Operating Reserve Ramp Rate for a generating unit, and the Load drop rate and Load pick-up rate for Participating Loads, for which the Scheduling Coordinator is submitting Energy Bids or Ancillary Services Bids." *See* CAISO tariff, Appendix A.

²³ CAISO Filing at 2; CAISO September 27, 2011 Answer, Docket No. ER11-4353-000, at 7 (CAISO Answer).

develop a mileage payment arising from the Commission's proposed rulemaking into frequency regulation compensation in organized wholesale markets.²⁴

17. CAISO requests an effective date of December 1, 2011 for the changes to Appendix K to harmonize the voice communication requirements in the CAISO's tariff and business practice manual.²⁵ CAISO requests waiver of the requirement of 18 C.F.R. § 35.3 that a rate schedule be filed no more than 120 days from the effective date, so that all other proposed tariff revisions may become effective on April 10, 2012. CAISO states that it needs sufficient time to work with non-generator resource owners and scheduling coordinators on testing and other readiness activities that will allow non-generator resource owners to participate as of April 10, 2012.

Comments

18. A123 Systems, Beacon, California Energy Storage Alliance, and Electricity Storage Association support CAISO's proposed tariff modifications. Electricity Storage Association and Beacon state that the regulation energy market design is consistent with the Commission-accepted tariff provisions in New York Independent System Operator, Inc. (NYISO), pertaining to Limited Energy Storage Resources,²⁶ and by Midwest Independent System Operator, Inc. (MISO) pertaining to stored energy resources.²⁷ Electricity Storage Association and Beacon also note that CAISO's proposal to settle energy from non-generator resources associated with the provision of regulation as

²⁴ CAISO Filing at 14 (citing *Frequency Regulation Compensation in the Organized Wholesale Power Markets*, Notice of Proposed Rulemaking, FERC Stats. & Regs. ¶ 32,672 (2011) (Notice of Proposed Rulemaking on Frequency Regulation Compensation or NOPR)). We note that the Commission recently issued a final rule on this issue. See *Frequency Regulation Compensation in the Organized Wholesale Markets*, Order No. 755, 137 FERC ¶ 61,064 (2011).

²⁵ CAISO Filing at 10.

²⁶ See Electricity Storage Association September 12, 2011 Comments, Docket No. ER11-4353-000, at 8 (citing *New York Indep. Sys. Operator, Inc.*, 127 FERC ¶ 61,135 (2009)) (Electric Storage Association Comments). See also Beacon September 12, 2011 Comments, Docket No. ER11-4353-000, at 9 (Beacon Comments).

²⁷ See Electric Storage Association Comments at 8 (citing *Midwest Indep. Sys. Operator, Inc.*, 129 FERC ¶ 61,303 (2009)). See also Beacon Comments at 9.

instructed imbalance energy is consistent with the tariff provisions effective in NYISO, MISO, and PJM Interconnection, L.L.C.²⁸

19. Electricity Storage Association and Beacon contend that fast ramping resources are significantly more effective at providing regulation than slower ramping generation resources because they can move more quickly to their tagged regulation dispatch and provide more energy in real time to correct system imbalances. Electricity Storage Association and Beacon assert that, because of their greater effectiveness at correcting area control errors, their use on the grid can lower the overall amount of regulation that needs to be purchased by California ratepayers to maintain system reliability.

20. But Electricity Storage Association and Beacon argue that paying a non-generator resource the locational marginal price for regulation without an additional payment based on their fast-ramping ability does not send adequate price signals to encourage faster ramping capability into the market.²⁹ California Energy Storage Alliance and Electricity Storage Association note that payment for regulation is based only on the amount of capacity offered into CAISO's regulation market, not the speed or quality of response that an energy storage resource can provide. California Energy Storage Alliance and Electricity Storage Association claim that under CAISO's proposal regulation service provided by fast-ramping energy storage resources is not fully compensated for superior performance.³⁰ California Energy Storage Alliance and Electricity Storage Association support CAISO's commitment to develop a mileage payment.

21. SWP submitted comments in support but seeks clarification of several points. SWP states that, although the CAISO proposes to undertake real-time energy dispatches to support the resources self-provided regulation capacity, it is unclear what criteria will be used to determine when and how CAISO will assist resources. SWP adds that the cost of CAISO's support of certain resources is not clearly spelled out. SWP further asks whether the costs of real-time dispatch to support these resources will be allocated to the

²⁸ See Electric Storage Association Comments at 9 (citing *PJM Interconnection, L.L.C.*, 132 FERC ¶ 61,203 (2010)). See also Beacon Comments at 10.

²⁹ See Electricity Storage Association Comments at 11; Beacon Comments at 14.

³⁰ A123 Systems, Beacon, California Energy Storage Alliance, and Electricity Storage Association cite to the two-part payment mechanism proposed in the Commission's Notice of Proposed Rulemaking on Frequency Regulation Compensation as a compensation structure that will ensure that fast-ramping regulation resources are justly and reasonably compensated for the additional value they provide to the grid.

resources or to other entities. SWP asks whether the real-time dispatch entails CAISO purchases of imbalance energy or something else. Additionally, SWP also asks what criteria will be used to disqualify resources and rescind regulation capacity payments if CAISO determines that it will not have sufficient energy in the real-time market to support the resource's award or self-schedule. In such a way, SWP requests clarification of how CAISO's independence might be impacted by its assistance to a certain category of market participants "so that the resource can satisfy its regulation capacity award."³¹

22. SWP argues that CAISO should exempt not only the portion of demand of non-generator resources using regulation energy management that it dispatches as regulation, but also pumped storage and participating load that is actively providing reliability service to the grid, from any charges or payments applicable to measured demand. SWP argues that pumped storage should also be exempt from these charges because, like non-generator resources using regulation energy management, pumped storage demand and participating load consume energy during a settlement interval and then return it to the market as output at a later interval.

CAISO Answer

23. In response to SWP's comments, CAISO clarifies that, if a resource cannot physically provide continuous energy to satisfy its self-provided or awarded regulation up or regulation down in the next dispatch interval, it will allow the scheduling coordinator for the resource using regulation energy management to use real-time energy dispatches to allow the resource to meet the continuous energy requirements. CAISO adds that the real-time energy produced or consumed by a resource to maintain the resources regulation capability to satisfy the continuous energy requirements will be settled at the real-time locational marginal price for instructed imbalance energy.³²

24. CAISO reiterates that it will only disqualify a non-generator resource using regulation energy management when CAISO believes that there is insufficient energy available to serve CAISO demand in real-time based on the forecasted demand and available supply resource. CAISO states that it expects disqualification to be rare.

25. CAISO argues that its independence will not be impacted by the proposed market enhancement. CAISO states that it is not participating in the market it operates through regulation energy management and emphasizes that scheduling coordinators for resources using regulation energy management will be submitting self-schedules or bids for

³¹ CAISO Filing at 3.

³² CAISO Answer at 3.

regulation-up and regulation-down and must procure imbalance energy as needed to support the self-provision or awards of regulation capacity. CAISO notes that its proposal is consistent with other organized wholesale electric markets.

26. CAISO argues that, contrary to SWP's assertion, it has justified the exemption of resources using regulation energy management when dispatched for regulation from payments and charges applicable to measured demand. CAISO points out that the use of regulation energy management is conditioned upon allowing CAISO to control the non-generator resource's operating point so that CAISO can manage the need for dispatches from the real-time market to support regulation capacity either self-provided by or awarded to the resource. CAISO states that scheduling coordinators for the participating resources are prohibited from submitting energy bids and must procure energy at the applicable price when necessary to maintain the resources' preferred operating set point. CAISO further states that a resource using regulation energy management cannot manage its exposure to charges applicable to measured demand through the use of economic bids because CAISO controls the operating set point of the resource.

27. CAISO argues that SWP has not shown that the two classes of customers (i.e., non-generator resources using regulation energy management and pumped storage demand/participating load) are similarly situated for the purposes of a rate and that there are no factual considerations that would justify differential rate treatment.³³ CAISO states that resources such as pumped storage can control their own operation through the use of self-schedules and bids. CAISO notes that scheduling coordinators for conventional pumped storage resources may submit a day-ahead schedule with ancillary service bid and must have a day-ahead energy schedule to provide regulation down.³⁴ CAISO contends that, therefore, pumped storage resources receive the day-ahead price for its energy schedule and pay the real-time price when providing regulation down. CAISO points out that conventional resources do not incur charges allocated to measured demand when providing regulation down. CAISO states that SWP does not recognize that the regulation energy management proposal and associated non-generator model provide a platform for participating load to self-provide or submit bids for regulation. CAISO notes that participating load will be able to provide regulation through regulation energy management as long as it can meet the operating and technical requirements to provide regulation. CAISO states that, when participating load is providing regulation

³³ *Id.* at 6 (citing "*Complex*" *Consol. Edison Co. v. FERC*, 165 F. 3d 992, 1012-13 (D.C. Cir. 1999)).

³⁴ CAISO tariff section 30.5.2.6.

service through the use of regulation energy management, charges applicable to measured demand will not apply to the load dispatched as regulation energy.³⁵

Commission Determination

28. We accept CAISO's proposed tariff revisions to implement regulation energy management. We find that the implementation of regulation energy management reduces the barriers preventing comparable treatment of non-generator resources in CAISO's ancillary services markets, consistent with Order No. 890. In such a way, regulation energy management allows non-generator resources to participate more fully in CAISO's regulation market consistent with the continuous energy requirements. We therefore accept CAISO's proposed changes to Appendix K to become effective December 1, 2011, as requested. We also find good cause to grant waiver of the 120 day advance notice requirement to allow all other proposed tariff revisions to become effective April 10, 2012, as requested.

29. With respect to intervenors' arguments relating to compensation, the Commission has recently determined that including a performance payment system will ensure just and reasonable rates, based on actual service provided at costs established by competitive processes, and resulting in efficient price signals and appropriately compensating resources that are asked to do more work."³⁶ As a result, CAISO is required to comply with the performance-based compensation requirements of the Commission's Order No. 755 in a separate compliance filing.

30. We reject SWP's arguments. We find that CAISO's proposal to use real-time energy dispatches to maintain a non-generator resource's state of charge if it cannot satisfy its self-provided or awarded regulation-up or regulation-down in the next dispatch interval is just and reasonable. We also find that settling the real-time energy dispatches at the locational marginal price for imbalance energy produced or consumed to maintain the resource's regulation provision is just and reasonable. We note that the proposed tariff revisions state that the real time dispatch is imbalance energy procured by the scheduling coordinator, not by CAISO. Specifically, the tariff states that a scheduling coordinator will procure imbalance energy as needed to satisfy the 60-minute continuous energy requirement for regulation awards in the day-ahead market.³⁷ Therefore, we find that CAISO has made sufficiently clear when real time energy dispatches will be

³⁵ CAISO Answer at 6-7.

³⁶ See Order No. 755, 137 FERC ¶ 61,064 at P 2, 66-68.

³⁷ CAISO tariff section 8.4.1.2.

provided. Further, we note that, like all imbalance energy, the payments and charges for instructed imbalance energy attributable to each resource in each settlement interval will be settled by debiting or crediting, as appropriate, the specific scheduling coordinator's imbalance energy settlement amount.³⁸ We also reject SWP's concerns regarding the criteria CAISO will use to disqualify resources and rescind regulation capacity payments. If CAISO does not have the capability through real-time dispatch forecasts to support awarded resources, it is just and reasonable for CAISO to disqualify those resources.

31. We do not find that CAISO's independence will be impacted by the proposed tariff provisions. As CAISO points out, scheduling coordinators for resources using regulation energy management submit self-schedules and bids, and procure imbalance energy as needed to support the provision of regulation energy management. We find that, although CAISO will utilize its energy management system to maintain the resources' preferred operating set point and will recognize any MWh constraints, CAISO will not exercise control over the bids, self-schedules, or procurement of imbalance energy of resources utilizing regulation energy management, and, therefore, it will continue to remain independent of market participants.

32. Finally, we reject SWP's assertions that pumped storage acting as a participating load should be treated like resources providing regulation energy management and be exempt from charges or payments applicable to measured demand. We agree with CAISO that non-generator resources providing regulation energy management are not similarly situated to pumped storage resources. The restrictions applicable to non-generator resources providing regulation energy management, including that CAISO will control the operating set point and that they cannot provide any other energy for sale, are among the characteristics that distinguish non-generator resources providing regulation energy management from pumped storage resources acting as a participating load.

The Commission orders:

CAISO's proposed tariff revisions are hereby accepted, as discussed in the body of this order, to become effective on the dates specified in the body of this order.

By the Commission. Commissioner Spitzer is not participating.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

³⁸ CAISO tariff section 11.5.1.

Document Content(s)

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