146 FERC ¶ 61,204
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Cheryl A. LaFleur, Acting Chairman;
Philip D. Moeller, John R. Norris,
and Tony Clark.

California Independent System Operator Corporation — Docket No. ER14-480-000

ORDER ON TARIFF REVISIONS

(Issued March 20, 2014)

1. On November 26, 2013, the California Independent System Operator Corporation (CAISO) filed, pursuant to section 205 of the Federal Power Act (FPA),[1] revisions to its tariff to align its market structure with certain reforms mandated in the Commission's Order No. 764[2] and implement additional market enhancements. In this order, we conditionally accept the proposed tariff revisions, to be effective May 1, 2014, subject to further compliance, as discussed below.

I. **Background**

2. CAISO states that, under the current market design, CAISO administers both an hour-ahead scheduling process (HASP) and a real-time market throughout the operating

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[1] 16 U.S.C. § 824d (2012).

[2] *Integration of Variable Energy Resources*, Order No. 764, FERC Stats. & Regs. ¶ 31,331, *order on reh'g*, Order No. 764-A, 141 FERC ¶ 61,232 (2012), *order on reh'g*, Order No. 764-B, 144 FERC ¶ 61,222 (2013) (Order No. 764). On November 27, 2013, CAISO submitted a separate filing in Docket No. ER14-495-000 to comply with the meteorological and forced outage data reporting mandates of Order No. 764 (Compliance Filing). The Commission conditionally accepted the Compliance Filing in an order issued concurrently with this one. *Cal. Indep. Sys. Operator Corp.*, 146 FERC ¶ 61,205 (2014).

day.[3] The real-time market software conducts four runs every hour that look ahead in 15-minute intervals to perform the real-time unit commitment process, which is the process used by CAISO to optimize schedules and dispatches. For internal transactions, the real-time market software then performs real-time dispatch of internal resources in five-minute intervals, which are settled on a ten minute basis using the average of two five minute prices.[4] On the other hand, intertie transactions are currently based on a market run performed 75 minutes before the relevant trading hour and settled on an hourly basis on an hourly price.[5] Hourly locational marginal prices for the HASP are determined by averaging the next hour's four 15-minute prices. These hourly prices are used for the settlement of intertie schedules for energy and ancillary services awards over the interties. CAISO explains that these different scheduling and pricing methods for internal and intertie transactions result in different locational marginal prices for purposes of financial settlement for internal and intertie transactions.[6]

3. CAISO states that it also currently provides the participating intermittent resource program as an option for integrating eligible intermittent resources,[7] now more commonly referred to as variable energy resources (VER), into the CAISO markets. CAISO schedules resources that take part in the participating intermittent resource program in the real-time market based on an hourly aggregated forecast of their expected output, which is posted approximately 90 minutes before the applicable trading hour and is fixed for that hour. This scheduled output is settled in each hour at the average five-minute locational marginal price for the hour. Deviations between a participating intermittent resource's scheduled and actual output are netted over each month and the net deviation for the month is settled at the weighted average of the five-minute locational marginal prices for the month.[8]

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[3] CAISO's existing day-ahead market will not be affected by the tariff revisions proposed here.

[4] CAISO November 26, 2013 Filing at 6-7 (CAISO 205 Filing); CAISO Tariff, § 34.2.

[5] CAISO 205 Filing at 7; CAISO Tariff, §§ 33, 34.2, app. A.

[6] CAISO 205 Filing at 7-8; CAISO Tariff, §§ 11.5.1, 11.5.2, 27.1.1, 33.8, 34.3.1.

[7] Under the current CAISO tariff, wind and solar resources that participate in the CAISO market are referred to as eligible intermittent resources. CAISO Tariff, app. A.

[8] CAISO states that it implemented this program to address the limited ability of many VERs to respond to CAISO dispatch instructions, which could have the result of

(continued…)

4. CAISO reports that differences between HASP and real-time prices led to a number of unintended consequences. CAISO states that these differences led to higher than expected real-time imbalance energy offset charges.[9] CAISO states that, contrary to its expectations, the introduction of convergence bidding[10] in 2011 exacerbated the difference between HASP and real-time prices and, therefore, the offset charges also increased. CAISO attributed this result to the bifurcated settlement structure, under which virtual supply bids at the interties were settled at the HASP price, while internal virtual demand bids were settled at the real-time price.[11]

5. Ultimately, CAISO concluded that discontinuing convergence bidding on the interties was justified, at least until a more comprehensive market redesign initiative could be undertaken to address the issues surrounding the underlying design of the HASP and real-time market. The Commission accepted CAISO's proposal to discontinue convergence bidding at the interties in 2013.[12] In that order, the Commission required that, within 12 months of the issuance of the order, CAISO must either (1) file tariff revisions to reinstate convergence bidding and address the underlying issues with the separate settlement structure, or (2) submit an informational filing explaining why CAISO has not addressed the issues and reinstated convergence bidding.[13]

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exposing a VER to real-time imbalance energy costs. CAISO 205 Filing at 8-9; CAISO Tariff, §§ 6.5.12, 11.5.1, 11.5.2, 11.12.1, 11.12.4, 34.19.2.5, app. Q, § 5.2.

[9] The real-time imbalance energy offset charge is the difference between the total money paid out by CAISO and the total money collected by CAISO for energy settled at the HASP and 5-minute market prices. Surpluses or shortages are allocated to scheduling coordinators based on a *pro rata* share of their measured demand. CAISO 205 Filing at 11.

[10] Convergence bidding, also known as virtual bidding, enables market participants to hedge their market positions and manage exposure to differences between the day-ahead and real-time prices by submitting purely financial bids which, if cleared in the day-ahead market, are automatically liquidated with the opposite buy/sell position at the real-time price. One of the main expected benefits of convergence bidding is a reduction in the difference between day-ahead and real-time prices. *See, e.g., Cal. Indep. Sys. Operator Corp.*, 130 FERC ¶ 61,122, at P 35 (2010).

[11] CAISO 205 Filing at 11.

[12] *Cal. Indep. Sys. Operator Corp.*, 143 FERC ¶ 61,087 (2013) (May 2013 Order).

[13] *Id.* P 76.

6. On June 22, 2012, the Commission issued Order No. 764, which requires each public utility transmission provider to: (1) offer intra-hourly transmission scheduling at 15-minute intervals; and (2) incorporate provisions into the *pro forma* Large Generator Interconnection Agreement (LGIA) requiring interconnection customers whose generating facilities are VERs[14] to provide meteorological and forced outage data to the public utility transmission provider for the purpose of power production forecasting. The Commission also provided guidance regarding the development and evaluation of proposals related to recovering the costs of regulation reserves associated with VER integration.[15]

7. The reforms adopted in Order No. 764 were designed to remove barriers to the integration of VERs and to ensure that the rates, terms, and conditions for Commissionjurisdictional services provided by public utility transmission providers are just and reasonable and not unduly discriminatory or preferential.[16] Upon noting the increasing number of VERs being brought online, the Commission found that reforms were needed to ensure that transmission customers are not exposed to excessive or unduly discriminatory charges, and that public utility transmission providers have the information needed to efficiently manage reserve-related costs.

8. CAISO states that it recognized that, as a result of Order No. 764, balancing authorities in the Western Interconnection will be required to offer 15-minute scheduling and, as such, CAISO will need to accommodate such schedules on the interties. Thus, CAISO initiated a new stakeholder process that led to the instant proposal to change intertie scheduling and settlement from an hourly to a 15-minute basis, and to establish a 15-minute settlement for internal resources and convergence bids. CAISO asserts that these market design enhancements will allow it to more effectively integrate a large amount of VERs into its market, align its market design with the reforms mandated in Order No. 764, and facilitate reinstatement of convergence bidding on the interties.[17]

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[14] Order No. 764 defined a VER as a device for the production of electricity that is characterized by an energy source that: (1) is renewable; (2) cannot be stored by the facility owner or operator; and (3) has variability that is beyond the control of the facility owner or operator. Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 210.

[15] *Id.* P 4.

[16] *Id.* P 1.

[17] CAISO 205 Filing at 1.

9. CAISO requests an effective date of May 1, 2014 for its proposed tariff revisions.[18] Because the requested effective date will be more than 120 days after the filing, CAISO requests waiver of the notice requirement contained in section 35.3 of the Commission's regulations.[19] CAISO contends that good cause exists for the Commission to grant the waiver, as waiver will ensure that CAISO has sufficient time to make the necessary system changes so that it will be able to implement the revised market design by May 1.

II. Notice of Filing and Responsive Pleadings

10. Notice of CAISO's filing was published in the *Federal Register*, 78 Fed. Reg. 73,854 (2013), with protests and interventions due on or before December 17, 2013. Timely motions to intervene, comments, and/or protests were filed by 18 entities, as listed in Appendix A to this order.[20] The Public Utilities Commission of the State of California filed a notice of intervention. San Diego Gas & Electric Company (SDG&E) filed a motion to intervene out-of-time and comments. Answers were filed by CAISO, Six Cities, PG&E, Powerex, and SoCal Edison. On March 10, 2014, CAISO filed a motion requesting that the Commission issue an order by March 20, 2014 granting a May 1, 2014 effective date for the proposed tariff revisions. On March 14, 2014, PG&E filed an answer in support of CAISO's motion.

III. Discussion

A. Procedural Matters

11. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2013), the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to the proceedings in which they were filed. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2013), the Commission will grant SDG&E's late-

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[18] CAISO originally sought an April 1, 2014 effective date for its proposed tariff revisions, but in a March 10, 2014 motion, CAISO requests that the Commission accept the tariff revisions effective May 1, 2014 and issue an order by March 20, 2014 to allow sufficient time to complete testing, staging, and production of market optimization software for a May 1 implementation date. CAISO March 10, 2014 Motion at 1-3.

[19] 18 C.F.R. § 35.3 (2013).

[20] Appendix A also lists abbreviations of select parties' names.

filed motion to intervene given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

12. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2013), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept the filed answers because they have provided information that has assisted us in our decision-making process.

B. Intra-Hour Scheduling

1. Order No. 764 Requirements

13. In Order No. 764, the Commission amended the *pro forma* Open Access Transmission Tariff (OATT) to provide all transmission customers the option of using more frequent transmission scheduling intervals within each operating hour, at 15-minute intervals.[21] The Commission found transmission customers' inability to adjust their transmission schedules within the hour to reflect changes in generation output can cause charges for Schedule 9 generator imbalance service to be unjust and unreasonable or unduly discriminatory. Thus, this reform was designed to allow transmission customers the flexibility to adjust their transmission schedules, in advance of real-time, to reflect the variability of output in generation, more accurate power production forecasts, and other changes in load profiles and system conditions.[22] It was also designed to allow public utility transmission providers, over time, to use fewer reserves to maintain overall system balance.[23] Finally, the Commission implemented this reform to ensure that charges for generator imbalance service under Schedule 9 of the *pro forma* OATT and for other ancillary services through which reserve-related costs are recovered are just and reasonable and are not unduly discriminatory.[24]

14. In Order No. 764, in response to concerns regarding the cost of implementing intra-hour scheduling and possibly required changes in settlement procedures, the Commission stated that to the extent a public utility transmission provider believes that aligning the imbalance settlement with the intra-hour scheduling interval or implementing sub-hourly dispatch will result in more efficient operations, provide appropriate price

[21] Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 91.

[22] *Id.* P 92.

[23] *Id.* P 95.

[24] *Id.* P 93.

signals to customers, or address other potential issues, it may seek any authorizations necessary from the Commission to do so under section 205 of the FPA. Such proposal could be submitted contemporaneously with the compliance filing in response to Order No. 764.[25] In addition, in response to requests for regional variation in scheduling protocols, the Commission acknowledged that future market enhancements in addition to existing 30-minute scheduling practices and other tools might yield equivalent or greater benefits to transmission customers and public utility transmission providers when reducing the scheduling interval from 30 to 15 minutes and thus could be consistent with or superior to the Order No. 764 intra-hour scheduling requirements. Thus, the Commission affirmed the ability of a public utility transmission provider to submit alternative proposals that are consistent with or superior to the intra-hour scheduling requirements. Specifically, the Commission required that a public utility transmission provider demonstrate on compliance how its proposal provides equivalent or greater opportunities for transmission customers to mitigate Schedule 9 generator imbalance charges, and for the public utility transmission provider to lower its reserve-related costs, compared to market practices already in place within the region.[26]

2. CAISO Proposal

15. CAISO proposes to change intertie scheduling and settlement from an hourly to a 15-minute basis, while still retaining hourly scheduling options to prevent seams issues in the region. CAISO states that the 15-minute market design will leverage the existing real-time unit commitment process, and notes that using this existing functionality will greatly reduce implementation complexity, time, and costs.[27]

16. CAISO claims that use of the 15-minute market for both internal and intertie transactions is consistent with or superior to the intra-hour scheduling requirement in Order No. 764 because it will provide numerous benefits beyond providing scheduling flexibility at the interties and greater opportunity to participate economically in CAISO markets. CAISO states that these benefits include more efficient scheduling through the use of more granular schedules with shorter lead times, elimination of the settlement uplift charges currently attributable to settling internal and intertie transactions at different prices, more flexibility for CAISO to accommodate changes in VER output and

[25] *Id.* P 105.

[26] *Id.* PP 106-107.

[27] CAISO 205 Filing at 19-20.

other changes in supply that cannot be anticipated in the HASP, and better matching of the level of imports to the level of demand.[28]

17. CAISO states that, consistent with the current market design, scheduling coordinators must submit all bids between the time the day-ahead market results are posted up to 75 minutes prior to the applicable trading hour.[29] Additionally, VERs will be able to update their forecasts, and generators will be able to revise their outage information, up to the start of the market run 37.5 minutes before each 15-minute interval. CAISO explains that the 15-minute market run will begin 37.5 minutes before each 15-minute interval and the results will be sent to market participants 22.5 minutes before that interval.[30] CAISO states that the purpose of this timing is to initiate the software run in as short a time as possible prior to the 15-minute interval, while also allowing CAISO to comply with the 20-minute e-tag deadline required by the Western Electricity Coordinating Council (WECC). CAISO states that these enhancements will result in a significant reduction in lead-time for scheduling VERs and thus a reduction in renewable energy forecast error because of the use of a more current forecast. CAISO explains that these enhancements will also lead to more optimal intertie schedules because the 37.5-minute lead time will be much less than the 75-minute lead time under the current HASP.[31]

18. CAISO notes that participating load, proxy demand resources, and other dispatchable demand response will continue to be able to participate in the 15-minute market and real-time dispatch. CAISO explains that, under the new market design, load will continue to clear the real-time markets based on CAISO's demand forecast, just as it does under the current design. Therefore, load serving entities and non-participating load[32] will not be able to participate in the 15-minute market.[33]

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[28] *Id.* at 3-5, 21.

[29] This includes economic bids and self-schedules for energy and ancillary services, both at internal nodes and at the interties. *Id.* at 22.

[30] *Id.*

[31] *Id.* at 23.

[32] Non-participating load is load that does not operate under an express agreement with CAISO to provide curtailable demand.

[33] CAISO 205 Filing at 24.

19. CAISO states that for load that is metered hourly, differences in load from day-ahead schedules will be settled at the hourly weighted average of the 15-minute and five-minute prices. CAISO adds that the prices will be weighted by the megawatts cleared in the 15-minute and five-minute market runs. CAISO states that load that is not metered hourly, such as load following metered subsystems, will be settled in a manner similar to how it is settled under the current market design. CAISO explains that in the 15-minute market, load following metered subsystems will need to balance their load and supply. CAISO adds that in the real-time dispatch, load following subsystems must balance their load supply in the five-minute interval within the established threshold or be subject to deviation penalties.[34]

20. The proposed market structure will also include a limited version of the HASP for scheduling on the interties. CAISO states that the hourly options are designed to minimize seams issues with other balancing authority areas as they transition to 15-minute scheduling over time. CAISO explains that the new HASP will establish binding intertie schedules only, but not prices, for hourly bids. CAISO states that HASP results for fixed block schedules will be published 45 minutes before the start of the applicable hour.[35]

21. CAISO proposes to exclude hourly bids on the interties from eligibility for bid cost recovery. CAISO asserts that this proposal is appropriate for a number of reasons. First, CAISO contends that providing bid cost recovery for hourly schedules would undermine the goal of encouraging market participants to submit flexible 15-minute bids on the interties. Also, CAISO cautions that, if bid cost recovery were permitted, market participants could submit offsetting hourly and 15-minute schedules that would generate net revenues when hourly prices were greater than 15-minute prices, but would not provide any net energy to the CAISO system. CAISO notes that the Department of Market Monitoring concurs that providing bid cost recovery for hourly intertie schedules would essentially reinstate the same "bid or better" settlement rules for hourly intertie transactions that submitted offsetting import and export bids and, thus, provided no net energy to the CAISO system, but led to over $33 million in uplift costs during the time those rules were in effect.[36]

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[34] *Id.* at 24-25.

[35] *Id.* at 22.

[36] *Id.* at 30-31. CAISO also notes that not permitting bid cost recovery under the hourly option is consistent with the approach taken by the New York Independent System Operator in implementing 15-minute scheduling on external interfaces. *Id.* at 31 (citing *New York Indep. Sys. Operator, Inc.*, 134 FERC ¶ 61,186 (2011)).

22. In addition to the new scheduling process, CAISO also proposes a revised market structure that will produce financially binding 15-minute schedules and prices for energy and ancillary services. CAISO states that the prices generated by this new 15-minute market will be used to settle all internal transactions and the transactions of market participants who choose to schedule on the interties on a 15-minute basis, including transactions by VERs.[37] CAISO states that, by aligning the market design for internal and intertie transactions, the 15-minute market will allow internal and intertie resources to compete with one another and be priced on an equal 15-minute basis. Further, CAISO asserts that the new settlement method will significantly reduce real-time imbalance energy offset charges that have been caused by the separate settlement structure for HASP and real-time under its current market.[38] CAISO proposes to settle hourly schedules on the interties using the four 15-minute prices over the hour.[39]

23. CAISO specifies that any differences between the 15-minute schedules and day-ahead schedules for internal and intertie transactions will be settled at the 15-minute prices. CAISO adds that differences between the 15-minute schedules and metered output for internal transactions, and any differences between the 15-minute schedules for intertie transactions and 15-minute energy schedules on e-tags, will be settled at the corresponding five-minute price.[40] Deviations by VERs, unless they are subject to the protective measures discussed below,[41] will be settled on the same basis as other resources. CAISO proposes to apply either an intertie decline charge[42] or the five-minute price, depending on the circumstances, to other hourly intertie schedules that are not delivered.

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[37] *Id.* at 19.

[38] *Id.* at 20.

[39] *Id.* at 30.

[40] *Id.* at 23.

[41] *See* discussion *infra* at PP 64-65.

[42] CAISO assesses an intertie decline charge when a resource's net deviations from schedule surpass CAISO's monthly threshold of the higher of 300 MW or 10 percent of total imports or exports. The decline charge is calculated by multiplying the MWh quantity not delivered by the greater of $10/MWh or 50 percent of the 15-minute market locational marginal price. CAISO 205 Filing at 32, 34, Attachment J (Declaration of Donald Trethaway) at 39-40, CAISO Tariff, § 11.31.

24. CAISO also proposes a number of revisions specific to the scheduling of VERs under the new market structure. Under the proposal, CAISO will develop 15-minute schedules for internal and dynamically scheduled VERs using resource-specific rolling multi-hour forecasts with five-minute granularity. Non-dynamically scheduled VERs transacting on the interties will have the option of using 15-minute scheduling or the hourly scheduling options discussed above. CAISO proposes to allow VERs the option to use the CAISO forecast or its own output forecast for scheduling and settlement purposes. CAISO requests authority to rescind a VER's self-submission authority if the resource's forecast is significantly less accurate than CAISO's over time, or CAISO has reason to suspect the use of strategically inaccurate forecasts.[43] Also, CAISO proposes to apply the intertie schedule decline charge to VERs that routinely submit high forecasts to the revised HASP because their submission of high forecasts will displace other intertie resources.[44]

25. CAISO proposes several other VER-specific revisions in addition to those proposed in the Compliance Filing. Specifically, CAISO proposes to add "variable energy resource" as a new defined term in its tariff and modify its definition of "eligible intermittent resource" to align it with the definition of "variable energy resource," consistent with the definition set forth in Order No. 764.[45]

3. Comments and Protests

26. SoCal Edison generally supports CAISO's 15-minute market proposal,[46] but cautions that, before ruling on the CAISO proposal, the Commission should direct CAISO to explain the causes of price divergence among day-ahead, hour-ahead, 15-minute pre-dispatch, and five-minute real-time dispatch prices.[47] SoCal Edison and PG&E assert that CAISO's Department of Market Monitoring found that in 2013, the 15-

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[43] *Id.* at 23- 24.

[44] *Id.* at 32. Hourly bids on the interties that are not delivered will be subject to the intertie decline charge. 15-minute schedules that are not delivered will be charged the five-minute price.

[45] *Id.* at 35.

[46] Calpine and NRG submitted comments in support of CAISO's 15-minute market proposal. Calpine December 17, 2013 Comments; NRG December 17, 2013 Comments at 5 (NRG Comments).

[47] SoCal Edison December 17, 2013 Comments at 2-3 (SoCal Edison Comments).

minute real-time pre-dispatch prices exceeded day-ahead prices by about 19 percent, and five-minute real-time prices by about 26 percent. Further, SoCal Edison and PG&E point out that the Department of Market Monitoring concluded that CAISO's use of the flexible ramping constraint,[48] which is enforced only in the real-time pre-dispatch market run, is a factor in the price divergence. PG&E urges the Commission to require CAISO to continue to test its 15-minute market model and hold open stakeholder discussions to ensure that the new 15-minute market will not improperly send high price signals that differ significantly from the corresponding day-ahead and five-minute real-time prices.[49]

27. SoCal Edison argues that the Commission should reject CAISO's proposed method for allocating any uplift that results from changes in CAISO's forecast of net load between the 15- and five-minute markets. SoCal Edison contends that the use of CAISO's proposed method, which would use a weighted average that nets the cost of extra, unneeded procurement at higher prices in the 15-minute market against the revenue earned by selling back that excess energy at the lower 5-minute price, would disguise uplift costs and unfairly charge uplift costs only to those load serving entities that have deviated between the day-ahead and real-time markets. SoCal Edison argues that CAISO should instead allocate uplift created by discrepancies between the 15-minute and five-minute markets to all entities that contribute to inaccurate CAISO procurement. SoCal Edison requests that the Commission direct CAISO to explore the most equitable and transparent method for both identifying and allocating these uplift costs.[50]

28. Powerex, Six Cities and SoCal Edison assert that the new market design will permit "implicit virtual bidding" between the 15-minute and five-minute markets on the interties.[51] They argue that the proposed market design could potentially reward market

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[48] 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.*

[49] SoCal Edison Comments at 3; PG&E December 17, 2013 Comments at 19-21 (PG&E Comments).

[50] SoCal Edison Comments at 13-15.

[51] As previously described, implicit virtual bidding is the practice of "scheduling physical bids in the day-ahead market with no intention of physically delivering on the schedule, for the purpose of liquidating the schedule in the HASP." *Cal. Indep. Sys. Operator*, 133 FERC ¶ 61,039, at P 130 (2010 Convergence Bidding Order). Here, the CAISO proposes changes to § 11.32 of the tariff, formerly known as the HASP reversal

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participants for failing to deliver their 15-minute intertie schedules in order to take advantage of differences between the 15-minute and five-minute prices.[52] To prevent implicit virtual bidding between the 15-minute and real-time markets, Powerex, Six Cities, and SoCal Edison propose a "worse of" pricing rule. Under such a rule, if a resource fails to perform its 15-minute schedule, the transaction would not automatically settle at the real-time price; rather, it would be settled at the "worse of" the 15-minute price or real-time price. As a result, resources could not profit through implicit virtual bidding.[53]

29. Alternatively, SoCal Edison suggests that CAISO enforce a consistent intertie decline charge that would penalize parties for non-performance of 15-minute market schedules. SoCal Edison asserts that, the decline charge proposed by CAISO would apply only to hourly block schedules, so resources could still profit through implicit virtual bidding between the 15-minute and real-time markets, even with the charge.[54] Six Cities assert that CAISO's suggestion of the potential future development of generally applicable uninstructed deviation penalties is not adequate to address stakeholder concerns about implicit virtual bidding. Thus, Six Cities request that the Commission direct CAISO to develop and implement measures to deter implicit virtual bidding prior to or at the same time as implementation of the 15-minute market.[55]

30. Powerex asserts that, in order to prevent deliberate failures to perform, CAISO should implement three measures: (1) an explicit day-ahead e-tag requirement for all physical awards;[56] (2) settlement treatment that differentiates physical supply awards

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settlement rule, to deter implicit virtual bidding between the day-ahead and the 15-minute markets. No commenter objected to those proposed changes.

[52] For example, if five-minute prices are lower than 15-minute prices, a resource could profit by not delivering its bid to sell power at an intertie and, instead, simply "buy back" the power at the five-minute price. Thus, by not performing on its 15-minute award, the resource has created a profitable implicit virtual bid.

[53] Six Cities December 17, 2013 Comments at 5 (Six Cities Comments); SoCal Edison Comments at 7-9; Powerex December 17, 2013 Protest at 25-26 (Powerex Protest).

[54] SoCal Edison Comments at 9-10.

[55] Six Cities Comments at 5.

[56] Powerex notes that a requirement for day-ahead e-tags is customary in commercial contracts in the West outside of CAISO. Powerex Protest at 23-25.

backed by resources from prospective physical supply awards, consistent with the Commission's cost-causation principles; and (3) incentives to discourage deliberate failures to provide valid and timely e-tags. Powerex asserts that it does not object to the Commission's temporary approval of CAISO's proposed settlement framework for deviations from day-ahead and real-time awards, but recommends that this issue be addressed in a stakeholder process.[57]

31. WPTF objects to CAISO's proposal to not provide bid cost recovery for hourly intertie bids. WPTF contends that this approach shifts risks to intertie participants because the hourly schedules will be based on prices projected in the HASP, but will be settled using 15-minute prices. WPTF claims that some intertie participants will be constrained from shifting fully to 15-minute scheduling, particularly because several of CAISO's neighboring, non-Commission jurisdictional balancing authorities will have no obligation to offer such service. Thus, WPTF asserts that without a transition period with partial bid cost recovery for hourly intertie bids, liquidity at the interties may be adversely affected by CAISO's proposal.[58]

32. WPTF requests that the Commission direct CAISO to incorporate a gradual reduction in bid cost recovery over the next three years. WPTF argues that this gradual method will provide an immediate incentive for participants to move to 15-minute scheduling whenever possible, while also recognizing that scheduling practices cannot change overnight. WPTF also requests that CAISO be directed to file quarterly reports with the Commission, reporting metrics about the liquidity of imports and exports at the interties, as well as providing a comparison between metrics measuring exceptional dispatch before and after the implementation of CAISO's proposal.[59]

33. SoCal Edison, Powerex, NRG, and PG&E support CAISO's proposal to provide bid cost recovery on the interties only for those real-time scheduling options that are responsive to 15-minute economic dispatch. They agree with CAISO that this approach will encourage the transition to 15-minute scheduling while protecting against excessive uplift costs and other unintended consequences.[60]

[57] *Id.* at 26-28.

[58] WPTF December 17, 2013 Comments at 5-6 (WPTF Comments).

[59] *Id.* at 7-8.

[60] SoCal Edison Comments at 4-5; Powerex Protest at 4; NRG Comments at 5; PG&E Comments at 7-11.

34. Six Cities argue that load serving entities should be allowed the opportunity to adjust demand schedules in the 15-minute market. Six Cities assert that allowing adjustments to demand as part of the 15-minute market could create favorable incentives and enable allocation of cost responsibility that aligns better with cost causation. Six Cities request that the Commission direct CAISO to initiate a stakeholder process to address this concern.[61]

35. NCPA filed comments in support of CAISO's proposal, but requests clarification from CAISO and the Commission that CAISO intends to account for and allocate certain neutrality charges pursuant to section 11.5.4.2 of the CAISO tariff. NCPA also asserts that all references to "Instructed Imbalance Energy" in that tariff section should instead refer to "Fifteen Minute Market Instructed Imbalance Energy" and "RTD Instructed Imbalance Energy," both of which are defined terms in the tariff.[62]

36. Imperial Irrigation requests that the Commission direct CAISO to clarify and explain the financial and operational impacts of its proposed tariff revisions on holders of transmission ownership rights and e-tagging and operational coordination with neighboring balancing authorities.[63]

37. SoCal Edison also expresses concern over the accuracy of congestion prediction by the real-time local market power mitigation process under the new market structure and urges the Commission and CAISO to closely monitor the performance of these measures.[64]

4. <u>Answers</u>

38. CAISO contends that it is already addressing issues related to price divergence under the current market design. CAISO explains that, in order to address this issue, it is exploring ways to fine-tune the use of the flexible ramping constraint to enhance convergence between the 15-minute and five-minute prices. Moreover, CAISO

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[61] Six Cities Comments at 5-6.

[62] NCPA December 17, 2013 Comments at 3-4.

[63] Imperial Irrigation December 17, 2013 Comments at 4-6.

[64] *Id.* at 15.

maintains that the proposed market design already incorporates changes, such as settling all virtual bids at the 15-minute price, which should contribute to price convergence.[65]

39. CAISO opposes SoCal Edison's request for a revised uplift allocation methodology, arguing that the settlement impact of hourly metering by load-serving entities is one of the main drivers of the uplift costs at issue. Thus, CAISO maintains that there is no basis for allocating these uplift costs to other entities.[66]

40. CAISO argues that there is no need to adopt a "worse of" pricing approach for intertie transactions. CAISO states that one of the primary benefits of the market design enhancements is the reduction of uplift and contends that a "worse of" price rule could increase uplift by creating differences between the settlement of deviations at internal nodes and on the interties. Further, CAISO contends that a "worse of" settlement approach would be a departure from the fundamental principle of locational marginal price-based markets that a deviation should be paid or charged at the price existing in the timeframe in which the deviation occurs in order to determine the value or cost of the undelivered energy.[67]

41. CAISO also disagrees that there is a need for a "worse of" price rule, asserting that the risk of implicit virtual bidding between the 15-minute market and real-time dispatch on the interties under the new market design is expected to be small. CAISO states that the e-tagging deadline for 15-minute energy schedules is 20 minutes prior to flow. Thus, would-be implicit virtual bidders will not have visibility to actual real-time dispatch pricing to make a strategic decision not to e-tag their energy schedules from the 15-minute market. Further, CAISO emphasizes that the proper legal standard to apply is whether CAISO's proposed approach for settlement of deviations is just and reasonable under section 205 of the FPA.[68] CAISO argues that, because its proposal is just and

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[65] CAISO January 2, 2014 Answer at 14-22 (CAISO Answer).

[66] *Id.* at 22.

[67] *Id.* at 8-10.

[68] *Id.* at 11 (citing *Calpine Corp. v. Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,271, at P 41 (2009) ("Upon finding that CAISO's Proposal is just and reasonable, we need not further consider the merits of alternative proposals."); *New England Power Co.*, 52 FERC ¶ 61,090, at 61,336 (1990), *aff'd sub nom. Town of Norwood v. FERC*, 962 F.2d 20 (D.C. Cir. 1992) (rate design proposed need not be perfect, it merely needs to be reasonable)).

reasonable, there is no reason to consider the merits of the alternatives proposed by interveners.[69]

42. Similarly, CAISO argues that it should not be required to apply the intertie decline charge to all intertie transactions in order to address the potential for implicit virtual bidding. CAISO states that as part of the new market design, it proposes to apply the intertie schedules decline charge only to HASP transactions that do not otherwise incur a financial obligation in the market for the undelivered energy. CAISO notes that it is committed to monitoring for deviations when the new market design goes into effect and, if experience indicates that deviations are a significant problem, it will conduct a stakeholder process to develop a comprehensive solution to this now-hypothetical problem.[70]

43. CAISO also contends that there is no need to require day-ahead e-tagging. CAISO points out that its tariff already includes a mechanism to deter the implicit virtual bidding practices referenced by Powerex. CAISO asserts that the Commission previously found that the HASP reversal settlement rule,[71] which reverses cleared day-ahead transactions when those schedules are reduced in the HASP and the scheduling coordinator fails to submit the proper e-tag, is a just and reasonable means of addressing implicit virtual bidding.[72] CAISO explains that it is proposing a revision to this rule so that it will also apply to a scheduling coordinator that withdraws an e-tag prior to 45-minutes before the trading hour. CAISO claims that, pursuant to this rule, e-tags must be maintained through the HASP and, therefore, implicit virtual bids submitted in the day-ahead market can never be closed out at a profit in the 15-minute market.[73]

44. CAISO posits that Powerex's request for mandatory day-ahead e-tagging is inconsistent with the Commission's findings in Order No. 764 because it would limit the added scheduling flexibility of 15-minute scheduling.[74]

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[69] *Id.*

[70] *Id.* at 12-14.

[71] CAISO Tariff, §11.32.

[72] CAISO Answer at 23 (citing 2010 Convergence Bidding Order, 133 FERC ¶ 61,039 at P 134; May 2013 Order, 143 FERC ¶ 61,087 at P 70).

[73] *Id.* at 24.

[74] *Id.* at 26 (citing Order No. 764-A, 141 FERC ¶ 61,232 at PP 48, 97).

45. CAISO also defends its proposal to deny bid cost recovery to market participants using hourly intertie scheduling options. CAISO reiterates that it provides hourly schedulers with a number of options to address any associated risks, such as reflecting the impact of their ineligibility for bid cost recovery in their hourly intertie bids, or participating in the day-ahead market. CAISO states that a transition period, as suggested by WPTF, was considered in the stakeholder process but rejected because it would eliminate the incentive to submit 15-minute economic bids in the early years of the new market, defeating one of the main benefits of the enhanced market design. With regard to WPTF's request for a reporting requirement, CAISO states that it already publishes regular reports and data on the frequency and volume of exceptional dispatches and, therefore, market participants already have the data necessary to make the comparisons proposed by WPTF.[75] PG&E and Six Cities also filed answers that oppose WPTF's proposal for a bid cost recovery transition mechanism for hourly intertie bids.[76]

46. In response to Imperial Irrigation's comments, CAISO clarifies that the instant filing does not propose, and will not result in, any changes to the treatment of the holders of transmission ownership rights or the treatment of such rights themselves. CAISO notes that it does not anticipate that the market design enhancements will cause seams issues, and commits to confer with Imperial Irrigation to discuss how the new market design will avoid such issues. CAISO clarifies that CAISO entities in another balancing authority that are affected by changes to e-tags after the CAISO automated update will be notified about any such changes.[77]

47. CAISO confirms NCPA's interpretation of the tariff regarding the allocation of uplift and agrees to the proposed revisions to section 11.5.4.2 of the CAISO tariff. CAISO proposes to make those changes in a compliance filing.[78]

48. PG&E states that it does not have a conceptual objection to Six Cities' request that load-serving entities be allowed to adjust demand in the 15-minute market. However,

[75] *Id.* at 26-29.

[76] PG&E January 2, 2014 Answer at 2 (PG&E Answer); Six Cities January 2, 2014 Answer at 7-8 (Six Cities Answer).

[77] CAISO Answer at 30-31.

[78] *Id.* at 46.

PG&E recommends that this market feature not be added at this time, particularly not without a robust stakeholder process on the issue.[79]

49. Powerex claims that CAISO failed to address the need for a mechanism to prevent or discourage deliberate non-performance in any market, or implicit virtual bidding between the 15-minute and five-minute prices. Powerex contends that CAISO's proposed HASP reversal settlement rule does not apply to such implicit virtual bidding and leaves open the option of non-performance of real-time dispatch. Powerex claims that implicit virtual bidding is not about responding to five-minute prices once those prices are known, but about engaging in activity that is designed and intended to settle at the five-minute price from the outset.[80]

50. Powerex refutes CAISO's claim that a "worse of" settlement rule would increase uplift for two reasons. First, Powerex points out that CAISO already relies on the existing HASP reversal settlement rule to eliminate profits from offsetting day-ahead and real-time awards that have not been e-tagged. Powerex asserts that CAISO has not offered any reason why uplift resulting from extending a similar rule to deviations from real-time awards would be unacceptable. Second, Powerex contends that any resulting uplift amounts should be small because the threat of the "worse of" price rule would deter activity that would cause the uplift.[81]

51. Powerex and SoCal Edison also question CAISO's assertion that a "worse of" price rule would delay implementation of the 15-minute market. They recommend that the Commission could permit the temporary implementation of the 15-minute market without a "worse of" price rule, subject to the requirement of the rule's implementation within a reasonable amount of time after the Commission's order.[82] SoCal Edison requests that CAISO should be directed to track monthly net profits from implicit virtual bidding during the period between implementation of the 15-minute market and implementation of the "worse of" price rule and should be required to resettle these transactions if combined market-wide profits exceed a threshold of $1 million.[83]

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[79] PG&E Answer at 3-4.

[80] Powerex January 9, 2014 Answer at 3-7 (Powerex Answer).

[81] *Id.* at 8-9.

[82] *Id.* at 9-10; SoCal Edison January 9, 2014 Answer at 4-6 (SoCal Edison Answer).

[83] SoCal Edison Answer at 6-7.

52. In addition, Powerex maintains that most in the West include the day-ahead e-tag requirement as a standard term. Powerex also contends that, because parties can permit e-tags to be changed up until the 20-minute WECC deadline, nothing about submitting a day-ahead e-tag limits scheduling flexibility.[84]

5. Commission Determination

53. We will conditionally accept CAISO's proposed tariff revisions to implement the new 15-minute market in compliance with Order No. 764. We find that CAISO's proposal to establish 15-minute scheduling and settlement for all transactions, both internal and at the interties, offers numerous benefits in addition to complying with the minimum requirements of Order No. 764. These benefits include: more efficient scheduling of all resources due to more granular forecasts and shortened lead times, consistent settlements of internal and intertie transactions in one market at one price, options for retaining hourly scheduling on the interties to avoid seams issues while other balancing authorities in the West transition to 15-minute scheduling, and more appropriate treatment of VERs than the existing participating intermittent resource program. Further, we find that the remainder of CAISO's market redesign proposal is just and reasonable and will therefore conditionally accept it, subject to further compliance, as discussed below.

54. We note that while Order No. 764 retains the 20-minute prior notification period (or a reasonable time that is generally accepted in the region) for the submission of transmission schedules or schedule changes,[85] CAISO proposes to require VERs to submit output forecasts 37.5 minutes before the 15-minute interval. We find that the proposed 37.5-minute requirement is an improvement over the current 90-minute deadline and should help to reduce VERs' exposure to imbalance energy costs due to more accurate output forecasts, submitted or generated closer in time to the dispatch interval. Other resources will have the same ability to reduce their exposure to imbalance energy costs by updating their outage information 37.5 minutes prior to the 15-minute interval. Further, we find that this timeline is reasonable given CAISO's need to complete the market run prior to the WECC e-tag deadline of 20-minutes before the operating interval and the general complexity of the CAISO and western markets. Thus, we find that the 37.5-minute requirement is consistent with and superior to the requirements of Order No. 764.

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[84] Powerex Answer at 10-13.

[85] Order No. 764, FERC Stats. & Regs. ¶ 31,331 at P 118.

55. We are not convinced by commenters' assertions that the current price divergence between CAISO markets warrants delay or modification of the new market design. We find that the proposed market design should enhance price convergence between the markets due to the use of shorter lead times, more granular forecasts, and the elimination of the dual market settlement structure between the HASP and real-time market. Further, we find that CAISO has adequately explained how the flexible ramping constraint has contributed to price divergence,[86] and has committed to fine-tuning its use of the flexible ramping constraint, which should improve price convergence between the 15-minute and 5-minute prices.

56. We are not persuaded that additional measures to deter implicit virtual bidding are necessary at this time. First, we find that CAISO's proposal includes an enhanced HASP reversal settlement rule that should help to deter implicit virtual bidding between the day-ahead and real-time markets. The Commission previously accepted CAISO's HASP reversal settlement rule as "an important deterrent against implicit virtual bidding."[87] The revised settlement rule proposed here should be a more effective deterrent against implicit virtual bidding because it requires e-tags to be maintained through the HASP, whereas the existing rule merely requires the e-tag to be submitted at some point before the HASP, but does not impose a penalty for withdrawing the e-tag during the HASP.

57. Further, with regard to the potential for implicit virtual bidding between the 15-minute and real-time markets, we are not persuaded that implementation of a "worse of" pricing rule, or any other measures to discourage deliberate non-performance, are necessary at this time. As noted above, the new market structure should, in itself, result in better convergence of prices between the 15-minute market and real-time market, thereby reducing the incentive and opportunity to arbitrage price differences using implicit virtual bidding. We find CAISO's proposed approach to settling deviations to be appropriate because 5-minute energy prices, which CAISO will use to settle these deviations, should reflect the market value of the undelivered energy. We also agree with CAISO's assertion that the potential for implicit virtual bidding is not solely an intertie

[86] CAISO notes that in the real-time unit commitment process, it makes unit commitment decisions, procures incremental ancillary services as needed, and resolves the flexible ramping constraint. In contrast, in the day-ahead process, CAISO does not enforce the flexible ramping constraint, and in five-minute real-time dispatch, CAISO does not procure ancillary services or enforce the flexible ramping constraint in the financially binding interval. CAISO states that the structural differences in the various market processes, including changes in system conditions that occur, drive the price differentials across these three markets. CAISO Answer at 15.

issue, and therefore find that a piecemeal solution that addresses only the interties would not be prudent, particularly given the complexity of the market design changes proposed here. In addition, as CAISO notes, applying a "worse of" pricing rule could reintroduce the real-time imbalance energy charges related to differences in settlement procedures at internal nodes versus the interties, which the revised settlement structure was designed to eliminate. For the same reasons, we will not require CAISO to modify its proposed application of the intertie decline charge. As CAISO points out, the proposed rule is designed to target only those transactions that have no exposure to 15-minute or five-minute energy prices and therefore incur no financial obligation for failure to deliver their schedules. Thus, we find that application of the intertie decline charge only to hourly schedules is just and reasonable.

58. We note that CAISO has committed to monitor for deviations when the 15-minute market goes into effect and to initiate a stakeholder process, if deviations pose a reliability threat, to consider possible solutions.[88] Accordingly, we reject Six Cities' request to direct CAISO to begin an initiative to consider deviation penalties on a comprehensive basis. However, in order to provide transparency regarding the success of the new market structure at discouraging implicit virtual bidding or deliberate non-performance, we direct CAISO to submit a report that includes at least six months of market data.[89] This report should analyze whether and to what degree the new market design has resulted in the anticipated price convergence, and whether CAISO has seen any evidence of market participants attempting to exploit any remaining price bias through implicit virtual bidding or deliberate non-performance.

59. We accept CAISO's proposal to provide bid cost recovery only for intertie bids that offer bids into the 15-minute market or use dynamic transfers as just and reasonable. An important goal of the revised market design, and one of the objectives of Order No. 764, is to encourage flexible scheduling on 15-minute intervals. We find that providing bid cost recovery for hourly bids would detract from this objective and effectively reinstate the prior "bid or better" rule, which created gaming opportunities and resulted in substantial uplift costs.[90] We find that CAISO has provided hourly schedulers with

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[88] CAISO Answer at 12.

[89] CAISO may include this information as part of the report required prior to reinstatement of intertie convergence bidding, as discussed below. If prepared as a separate report, this filing must be submitted no later than 120 days prior to reinstatement of convergence bidding on the interties on May 1, 2015. We note that all of the reports directed in this order are for informational purposes only and will neither be noticed nor require Commission action.

[90] CAISO 205 Filing at 30-31.

adequate opportunities to address any risks by, for example, participating in the day-ahead market or by reflecting the impact of their ineligibility for bid cost recovery in their hourly intertie bids. We also find that CAISO already provides the type of data requested by WPTF regarding intertie liquidity and out-of-market activity[91] and therefore will not impose an additional reporting requirement.

60. We reject SoCal Edison's request to require CAISO to revise its proposed method for allocating uplift costs that result from changes in CAISO's forecast of net load between the 15- and five-minute markets. As CAISO notes in its answer, SoCal Edison's argument conflates the consequences of deviation for supply resources and load. Under CAISO's proposal, supply resources that cannot meet their 15-minute schedules buy back at real-time prices. We find CAISO's proposal to be just and reasonable, as the current real-time dispatch price would be the appropriate market price for such deviation. Furthermore, we find that CAISO's proposal is consistent with the Commission's cost-causation principles, as one of the main drivers of these uplift costs is the settlement impact of hourly metering by load-serving entities.

61. We also reject Six Cities' recommendation that CAISO permit load-serving entities to adjust demand schedules in the 15-minute market. We find CAISO's retention of its current practice of clearing load based on CAISO's forecast demand to be just and reasonable. We agree that allowing adjustments to demand may provide additional opportunities for load-serving entities to manage their exposure to costs. However, this request is beyond the scope of this proceeding. We encourage CAISO to continue to work with its stakeholders to develop any appropriate market design enhancements.

62. Consistent with CAISO's agreement to the tariff revisions proposed by NCPA, we direct CAISO to submit a compliance filing, within 30 days of the date of this order, that makes the agreed-upon changes to tariff section 11.5.4.2. With regard to Imperial Irrigation's request for clarification, we find that CAISO's answer adequately explains that the revisions proposed here will not affect transmission ownership rights or operational coordination with neighboring balancing authorities and therefore will not direct CAISO to provide any additional explanation.

63. With regard to CAISO's VER-specific revisions, we find that CAISO's proposal for revoking VERs' self-forecasting privileges provides CAISO with too much discretion for both deciding whether a VER's forecasts have been "significantly" less accurate than CAISO's, and for CAISO unilaterally determining the motives behind inaccurate forecasts. The proposed tariff provisions lack objective standards and permit CAISO to engage in a subjective analysis of the intent behind a VER's submitted output forecasts.

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[91] *See* CAISO Answer at 29.

Thus, we direct CAISO to submit a compliance filing within 30 days of the date of issuance of this order, to delete the clause pertaining to revocation of self-forecasting privileges, without prejudice to CAISO proposing a substitute clause with an objective threshold to determine whether a resource's forecasts are significantly less accurate than CAISO's.

C. Protective Measures for Variable Energy Resources

1. CAISO Proposal

64. CAISO states that under its proposal, VERs utilizing older technology or having power purchase agreements that explicitly prohibit them from voluntarily responding to real-time price signals will have the option to participate in a three-year transition period in order to give those resources sufficient time to adapt to the new real-time market structure (Protective Measures).[92] To qualify for the Protective Measures, CAISO proposes that a VER must meet the following criteria: (1) the resource has specific technological or contractual limitations on its ability to curtail its output;[93] (2) the resource owner must be responsible for real-time energy settlement; (3) the resource owner must agree to engage in good faith efforts to address contractual limitations or upgrade the resource to address physical limitations during the transition period; and (4) the resource owner must sign an affidavit certifying the resource meets all of the criteria listed above.[94]

65. CAISO proposes that VERs that meet all of the qualification requirements must request to be subject to the Protective Measures within 30 days of the effective date of the market design changes. CAISO also proposes that resources that apply and meet the qualifications for the Protective Measures must operate under those provisions for the entire three-year period or until they enter into a new bilateral agreement, whichever comes first. CAISO indicates that VERs qualifying for the Protective Measures will be subject to a settlement method that is similar to existing settlement procedures for participating intermittent resources (i.e., deviations will be netted over each month and

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[92] CAISO 205 Filing at 38.

[93] Under CAISO's proposed tariff section 4.8.3.2.2, more than 50 percent of the resource must be composed of technology that is unable to curtail output and cannot be made to do so without significant investment or the resource is subject to an existing bilateral agreement for power purchases that prohibits the resource from curtailing its output in response to a CAISO dispatch.

[94] CAISO 205 Filing at 39-40.

settled at the output-weighted average of five-minute locational marginal prices over the month and costs will be allocated to each scheduling coordination with net negative deviations). CAISO asserts that it may not have the systems ready on the first day of the enhanced market design to make financial adjustments for those resources utilizing the Protective Measures, but will plan to true-up any settlements.[95]

66. CAISO states that it anticipates a small group of VERs will seek to operate under the Protective Measures. CAISO recognizes that the Protective Measures and the associated cost allocation methodology will add incrementally to the complexity and costs of implementing the market design changes. However, CAISO states that the impact on a relatively small group of resources should not lead to lengthy delays in implementing the market design enhancements and that three years should be a sufficient amount of time for those VERs to adapt to the new real-time market structure.[96]

67. Other than resources qualifying for the Protective Measures described above, CAISO proposes to eliminate monthly netting of real-time energy imbalances for VERs. CAISO states that there is no need to continue this practice because under the proposed market design, deviations by VERs will be substantially reduced as a result of being measured against more accurate forecasts and more granular 15-minute schedules.[97]

2. Comments and Protests

68. PG&E contends that there is no need for the Protective Measures under the proposed market design as both market and technology changes are bringing VERs closer to participating in the market. PG&E states that by eliminating any special protections, the CAISO market will function more efficiently by providing better incentives for VERs to schedule accurately and by giving scheduling coordinators of intermittent resources clearer price signals.[98]

69. PG&E also argues that the Protective Measures are detrimental to existing contractual arrangements. PG&E maintains that it could end up paying twice for the imbalance costs the resource should be bearing under the contracts; first through the implicit premium it pays to the resource for the energy delivered and second by bearing a

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[95] *Id.* at 40.

[96] *Id.* at 41, 43.

[97] *Id.* at 42.

[98] PG&E Comments at 16-17.

portion of the costs that the Protective Measures impose on the market. PG&E remains opposed to the Protective Measures, but would be willing to have those protections granted for one year to resources that meet CAISO's proposed eligibility requirements.[99]

70. SoCal Edison and SDG&E argue that CAISO's current proposal to spread the costs associated with Protective Measures to all negative real-time deviations does not adhere to cost causation principles.[100] SoCal Edison states that if a load-serving entity amends and/or clarifies all of its contracts so that the affected intermittent resources in its portfolio no longer require these measures, the principle of cost causation dictates that the load-serving entity's customers should not be exposed to the costs of the Protective Measures by other market participants.[101] SoCal Edison and SDG&E recommend allocating these costs only to scheduling coordinators with resources that utilize the Protective Measures.[102]

71. SoCal Edison also requests that CAISO's tariff be modified to include a process for providing refunds of Protective Measure payments made to resources that are ultimately found through dispute resolution to be ineligible for such Protective Measures.[103]

72. NRG is concerned with CAISO's proposal to eliminate monthly netting of VERs imbalances and whether such proposal will adequately mitigate the risk of exposure to high real-time energy prices as a result of deviations from forecasts. NRG states that the success of the proposed changes in mitigating VER imbalance risk hinges on the accuracy of CAISO's five-minute VER output forecasts, which is not yet known. Due to such concerns, NRG requests that the Commission direct CAISO to provide to the Commission and market participants monthly reports on the performance of Protective Measures.[104]

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[99] *Id.* at 17-18.

[100] SoCal Edison Comments at 10; SDG&E December 20, 2013 Comments at 5 (SDG&E Comments).

[101] SoCal Edison Comments at 10-11.

[102] *Id.* at 11; SDG&E Comments at 5-6.

[103] SoCal Edison Comments at 11-12.

[104] NRG Comments at 5-6.

3. Answers

73. CAISO asserts that the eligibility requirements, three-year transition period, and other components of the Protective Measures strike an appropriate balance between allowing qualifying resources to resolve their contractual issues and enhance their systems to enable them to participate in the CAISO markets more effectively, and ensuring that all VERs will be subject to the new market design after a suitable period.[105] CAISO states that it is appropriate to extend the existing cost allocation methodology that was approved by the Commission for the participating intermittent resources program[106] to the Protective Measures because they effectively are a temporary extension of that program. Moreover, CAISO asserts that SoCal Edison and SDG&E have failed to demonstrate how intervening events have caused the previously approved cost allocation methodology to become unjust and unreasonable.[107]

74. CAISO states that, in contrast to SoCal Edison's claims, the proposed tariff revisions include a process for providing refunds of Protective Measure payments made to resources that are ultimately found through dispute resolution to be ineligible for the Protective Measures.[108]

75. In response to NRG, CAISO states that the Commission should not require CAISO to prepare special monthly reports on the performance of the Protective Measures. CAISO states that it continually monitors the performance of its markets and issues various market reports on a regular basis, including reports on settlement charges and quarterly and annual reports by the Market Monitor. CAISO also states it conducts regular meetings of the Market Performance and Planning Forum which give stakeholders an opportunity to discuss all reports. CAISO notes further that NRG and other market participants will have data available through their settlement statements to allow them to perform their own analyses as to how the market settlement affects them.[109]

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[105] CAISO Answer at 33.

[106] *Cal. Indep. Sys. Operator Corp.*, 98 FERC ¶ 61,327, at 62,376-77 (2002).

[107] CAISO Answer at 33-34.

[108] *Id.* at 34 (citing CAISO Tariff, Proposed § 4.8.3.1.2.2).

[109] *Id.* at 34-35.

76. SoCal Edison responds that the prior cost allocation for participating intermittent resources has become unjust and unreasonable. SoCal Edison maintains that it took action in response to a CAISO Board directive to negotiate with counterparties and resolve contractual disputes so as to obviate the need for those resources to receive Protective Measures. SoCal Edison asserts that at the time of the CAISO Board directive, CAISO was proposing that the costs of the Protective Measures would be allocated to load-serving entities that had contracts with resources receiving Protective Measures. SoCal Edison states that even though it took action to mitigate its market impact, under CAISO's current proposal SoCal Edison will now face costs from other entities that did not reach the same position.[110] Therefore, SoCal Edison asserts that the allocation under the participating intermittent resource program, while not very different from the current allocation, results in a very different outcome that will not closely resemble cost causation.[111]

4. Commission Determination

77. The Commission will conditionally accept CAISO's proposal to institute the transitional Protective Measures, subject to a compliance filing on the refund process for Protective Measure payments made to resources that are ultimately found through dispute resolution to be ineligible for such Protective Measures.

78. A three year transition period should provide the time necessary for VERs utilizing older technology or having power purchase agreements that explicitly prohibit them from voluntarily responding to real-time price signals to upgrade technology or to negotiate any necessary changes to power purchase agreements and participate in the market. CAISO asserts that a comparatively small group of VERs will seek to operate under the Protective Measures. In fact, some of the load-serving entities, SoCal Edison and SDG&E, indicate in comments they have negotiated with their counterparts to ensure resources will not be subject to the Protective Measures.[112] Given that the group of VERs seeking to operate under the Protective Measures will likely be small, there is no evidence that the associated costs of such measures will be unreasonable, and the Protective Measures will only be in place for three years, we find transition measures for VERs with the technological or contractual limitations described by CAISO to be just and reasonable.

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[110] SoCal Edison Answer at 3.

[111] *Id.* at 4.

[112] SoCal Edison Comments at 11; SDG&E Comments at 5.

79. We disagree with CAISO that its proposed tariff revisions include a process for providing refunds of Protective Measure payments made to resources that are ultimately found through dispute resolution to be ineligible for the Protective Measures. Proposed tariff section 4.8.3.1.2.2 provides, "Unless, the parties together request the CAISO to reverse any previously applied [participating intermittent resource program] Protective Measures, the CAISO will not undo any Settlement of the [participating intermittent resource program] Protective Measures."[113] We do not find this provision adequately addresses SoCal Edison's concern regarding a refund process for VERs found to be ineligible for the Protective Measures. We, therefore, direct CAISO to submit in a compliance filing within 30 days of the date of this order, revised tariff language setting forth a process for distribution of refunds if a VER, subject to the Protective Measures, is found ineligible following the dispute resolution process. The process should account for how eligibility for refunds will be determined, who would be eligible to receive a refund, and how and when refunds would be distributed.

80. We decline to grant NRG's request for CAISO to publish monthly reports on the performance of the Protective Measures. As CAISO notes, it issues reports on settlement charges and the Market Monitor issues quarterly and annual reports on market issues and performance. In addition, Market Performance and Planning Forum meetings are conducted regularly to provide stakeholders with an opportunity to discuss all reports. We do not see the need for any additional reporting requirements related to the Protective Measures at this time, especially given that the group of resources will likely be small.

D. Reinstatement of Convergence Bidding at the Interties

1. CAISO Proposal

81. CAISO states that, consistent with the Commission's directive in the May 2, 2013 Order, CAISO and its stakeholders have developed a comprehensive, long-term structural solution that will permit the reinstatement of convergence bidding on the interties. CAISO explains that, under the design enhancements proposed here, convergence bids for both internal nodes and the interties will be settled at the average of the four 15-minute market prices for the hour. CAISO asserts that this modification to its settlement rules will fully address the separate settlement structure, which was the primary reason for the discontinuation of convergence bidding on the interties.[114]

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[113] CAISO Tariff, Proposed § 4.8.3.1.2.2.

[114] CAISO 205 Filing at 44-45.

82. CAISO adds that the revisions proposed in the instant filing will also address a second issue that led to discontinuation of convergence bidding on the interties. CAISO states that it previously used two software constraints. For scheduling, CAISO enforced a physical-only constraint to ensure that net physical imports or exports did not exceed the scheduling limit at the intertie, consistent with the applicable reliability standards of WECC and the North American Reliability Corporation (NERC). The second constraint ensured that the physical and virtual transactions did not exceed the scheduling limit and also established a congestion price at each intertie. CAISO reports that the use of the two constraints periodically caused market clearing prices on the interties to be inconsistent with the bid prices offered by a physical exporter or importer. To resolve this issue, CAISO proposes to enforce in the day-ahead market only the constraint that includes both physical and virtual intertie transactions. To prevent the award of physical schedules that exceed an intertie's capacity, CAISO proposes to accept e-tags in economic merit order of the cleared intertie bids up to an intertie's capacity; any cleared bids beyond that amount will not be allowed to e-tag prior to the start of the real-time market. CAISO explains that, because the real-time market does not consider virtual intertie schedules, the physical intertie schedules produced by the real-time market will always be within each intertie's capacity.[115] Consequently, CAISO will be able to accept e-tags for all physical intertie schedules in accordance with WECC's real-time e-tag deadline of 20 minutes prior to the operating interval.[116]

83. CAISO states that it anticipates that the proposed solutions will permit a successful reintroduction of convergence bidding on the interties, but states that it is mindful of the need to proceed carefully, particularly in light of the other significant market changes proposed here. Thus, as a precautionary measure, CAISO proposes to reinstate convergence bidding on the interties 12 months after implementation of the other market design changes. Further, when convergence bidding on the interties is permitted, CAISO proposes to phase it in gradually through the use of position limits, which limit the megawatt quantity of convergence bids that may be submitted to a specified percentage of the intertie transfer capability. Specifically, CAISO proposes the following schedule:

(1) a limit of five percent for the first eight months after reinstatement;
(2) a 25 percent limit for months nine through twelve;
(3) a 50 percent limit for the thirteenth through sixteenth month; and
(4) no limits beginning in the seventeenth month after reinstatement of

[115] *Id.* at 45.

[116] *Id.* (referencing reliability standard INT-008-3 at 6-7).

convergence bidding on the interties.[117]

CAISO notes that the time periods and position limits proposed here are consistent with those authorized by the Commission when the Commission originally approved convergence bidding on the interties.[118]

2. Comments and Protests

84. WPTF asserts that the market design changes proposed here by CAISO will fully remedy the issues that impeded efficient intertie convergence bidding and argues that no reasonable basis exists for delaying the reinstatement of convergence bidding on the interties. Further, WPTF disagrees with CAISO's claim that the proposed implementation schedule is consistent with the one previously approved by the Commission because the previously-approved schedule did not impose a 12-month delay. WPTF requests that the Commission direct CAISO to file revised tariff language to reinstate intertie convergence bidding without the 12 month delay with the same gradual lifting of position limits.[119]

85. Multiple parties oppose CAISO's proposal to reinstate convergence bidding on the interties. PG&E agrees with CAISO that convergence bidding on the interties should be reinstated on a gradual basis, but argues that reinstatement should be conditioned on CAISO revising the way that uplift related to convergence bidding is allocated, such that the virtual bidders that cause uplift costs share in those costs.[120] SDG&E notes that the Department of Market Monitoring recommended that CAISO consider alternate cost allocation options for mitigating the financial impact of convergence bidding, both internal and at the interties, on uplift costs.[121] SDG&E, Powerex, and SoCal Edison argue that reinstatement is not appropriate until CAISO has addressed structural price divergence issues that led to the discontinuation of convergence bidding on the

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[117] *Id.* at 46-47.

[118] *Id.* at 47 (citing 2010 Convergence Bidding Order, 133 FERC ¶ 61,039, at PP 95, 121-23, 125-26, *reh'g denied*, 134 FERC ¶ 61,070 at PP 17-23).

[119] WPTF Comments at 8-12.

[120] PG&E Comments at 13-15.

[121] SDG&E Comments at 3-4 (citing *Department of Market Monitoring Comments on FERC Order 764 Compliance 15-Minute Scheduling and Settlement Draft Final Proposal* (April 24, 2013) at p. 4).

interties.[122] SDG&E, Powerex, and Six Cities recommend that CAISO initiate a stakeholder process to comprehensively reevaluate the convergence bidding structure.[123]

86. Powerex contends that CAISO has not demonstrated why convergence bidding on the interties will be effective at improving price convergence and improving market efficiency, nor has CAISO sufficiently addressed the concerns raised by stakeholders about the potential for unintended and undesirable consequences. Powerex contends that market inefficiencies should be expected to continue because CAISO has not addressed all the root causes of price divergence and congestion-related uplift. In particular, Powerex argues that the non-transparent co-mingling of physical intertie supply with bids that may be implicit virtual bids, compounded by CAISO's lack of a day-ahead unit commitment process on the interties, contribute to market distortions.[124] Further, Powerex argues that CAISO must address the congestion revenue right clawback rule, which authorizes CAISO to adjust congestion revenue rights payments under specified circumstances,[125] because the current rule exempts convergence bidding at the interties and could deter efficient market activity and may fail to deter inappropriate behavior.[126]

87. Powerex and Six Cities emphasize that even CAISO's Department of Market Monitoring suggests that the 15-minute market will not fully resolve the problem of high real-time imbalance energy offset charges, which contributed to the suspension of intertie convergence bidding.[127] Powerex and SDG&E argue that compliance with Order No. 764 does not require the reinstatement of convergence bidding on the interties at any particular time and, given the unresolved issues and lack of stakeholder consensus, intertie convergence bidding should not be approved at this time.[128] Six Cities claim that

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[122] *Id.* at 3; Powerex Protest at 11; SoCal Edison Comments at 5-6.

[123] *Id.* at 4; Powerex Protest at 11; Six Cities Comments at 4-5. [124]

Powerex Protest at 8-13, 19-22.

[125] CAISO Tariff, § 11.2.4.6.

[126] Powerex Protest at 21.

[127] *Id.* at 14-15 (citing CAISO Filing, Attachment H at 1, 4); Six Cities Comments at 4. The Department of Market Monitoring concludes that, "large real-time revenue imbalances could still occur if transmission limits are adjusted downward after the day-ahead market to account for unscheduled flows when congestion occurs." CAISO Filing, Attachment H at 4.

[128] Powerex Protest at 11.

convergence bidding on the interties is likely to inflate uplift costs simply because the volume of bids that give rise to such costs will increase. Thus, Six Cities assert that reinstatement should not be "hardwired" to resume 12 months after implementation of the 15-minute market.[129]

88. Powerex and SoCal Edison contend that CAISO has not demonstrated that its dual constraint solution is just and reasonable. Powerex asserts that CAISO's practices differ from those used in the rest of the west and, therefore, create a seam issue that is harmful to the CAISO markets and market participants. Powerex argues that, to the extent CAISO grants a physical award to a resource but denies approval of an e-tag pursuant to its dual constraint solution, the resource could be in default of its commercial agreement because most commercial contracts outside of CAISO require day-ahead e-tags. Powerex adds that e-tags would improve day-ahead transparency by indicating which supply awards have secured transmission for physical delivery.[130] SoCal Edison argues that, by limiting the acceptance of e-tags, merely to accommodate intertie convergence bidding, CAISO's proposal may threaten intertie liquidity because participation of physical supply may be reduced relative to a scenario where only physical supply participates on the interties.[131]

89. SoCal Edison argues that CAISO has not expressly considered the reinstatement of convergence bidding on the interties within the context of other market design changes such as the planned energy imbalance market. SoCal Edison reports that, with the introduction of the energy imbalance market, the market models for day-ahead and realtime optimizations will, by permanent design, be different. Thus, SoCal questions how, under that market structure, convergence bidding, particularly on the interties, can either result in price convergence, or be funded without uplift.[132]

90. In the event that the Commission does permit the reinstatement of convergence bidding on the interties, Powerex objects to CAISO's proposed position limits. Powerex contends that the intertie-specific method proposed by CAISO is unjust and unreasonable because it may harm market efficiency by preventing a competitive response without a corresponding benefit in reducing uplift costs. Powerex instead recommends a

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[129] Six Cities Comments at 4.

[130] Powerex Protest at 23-25.

[131] SoCal Edison Comments at 6-7. [132]

Id. at 6.

scheduling coordinator aggregate position limit across all interties if position limits are used.[133]

3. Answers

91. CAISO argues that the 12-month delay in reinstating intertie convergence bidding is an appropriate period that will allow time for CAISO and market participants to identify any unintended outcomes of the revised market design before reinstatement and will allow CAISO to more readily show that intertie convergence bidding does not have adverse consequences under the new market design. CAISO notes that the Department of Market Monitoring endorsed this approach.[134]

92. CAISO also argues that commenters have not shown any compelling reason to delay the reinstatement of intertie convergence bidding beyond the 12-month period proposed by CAISO. CAISO asserts that the Commission accepted CAISO's proposal to suspend intertie convergence bidding based on CAISO's representation that it would address issues related to the separate settlement structures for HASP and the real-time market. CAISO contends that the current proposal addresses those issues and is therefore consistent with the Commission's directives in the May 2013 Order.[135]

93. CAISO claims that other issues raised by commenters are beyond the scope of this proceeding because they are unrelated to the dual settlement structure that led to the suspension of intertie convergence bidding in the first place. CAISO also maintains that the Commission should accept its proposed dual constraint solution. CAISO asserts that the arguments made by Powerex and SoCal Edison create the false impression that, but for reinstatement of intertie convergence bidding, all market participants can be assured that their intertie transactions will receive e-tags. CAISO clarifies that, even under the current market design, intertie bidders already accept some risk that their transactions will not receive e-tags. Moreover, CAISO explains that the conditions under which a physical bid that cleared the market in the day-ahead, but would not be allowed to e-tag, are the same as under the constraints that were used on the interties prior to the suspension of intertie convergence bidding. CAISO notes that its experience during that period shows that e-tags were infrequently disallowed for day-ahead physical awards and, therefore, expects this situation to remain infrequent. Thus, CAISO expects that its

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[133] Powerex Protest at 22.

[134] CAISO Answer at 45-46.

[135] *Id.* at 37-38 (citing May 2013 Order, 143 FERC ¶ 61,087 at P 75).

proposal will have no adverse impact on intertie liquidity.[136] CAISO also rejects Powerex's claim that day-ahead e-tagging is mandatory in the West, noting that both WECC and the Western Systems Power Pool (WSPP) allow parties flexibility by not requiring e-tags on day-ahead schedules.[137]

94. Powerex again argues that the issues cited in its protest must be addressed prior to reinstating convergence bidding on the interties. Powerex insists that these issues are within the scope of this proceeding. Specifically, Powerex notes that CAISO proposes revisions to its congestion revenue rights clawback rule, placing a review of these provisions squarely within the scope of this proceeding.[138] Powerex also claims that CAISO is wrong to argue that convergence bidding on the interties will necessarily be just and reasonable once the primary issues for its earlier suspension are addressed. Rather, Powerex asserts that CAISO must show that intertie convergence bidding will be just and reasonable under the new market design before it can be reinstated.[139]

95. PG&E and Six Cities oppose WPTF's proposal for immediate reinstatement of convergence bidding on the interties, repeating many of the arguments made in the initial comments on CAISO's proposal regarding issues that should be resolved prior to reinstatement.[140]

4. <u>Commission Determination</u>

96. We will conditionally accept CAISO's proposal to reinstate convergence bidding on the interties 12 months after the implementation of the 15-minute market. We find that allowing for a 12-month period before reinstating convergence bidding at the interties will provide sufficient time for CAISO to gain experience with the new market enhancements and permit CAISO to better assess the potential impact of reinstating intertie convergence bidding, and also to address any lingering concerns. Thus, we reject WPTF's request for an immediate phase-in of intertie convergence bidding.

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[136] *Id.* at 43-44.

[137] *Id.* at 24-25 (citing WECC, Interchange Prescheduling, INT-003-WECC-RBP-2.1, at 3 (Dec. 6, 2012); WSPP, First Revised Rate Schedule FERC No. 6, Service Schedule C, § C-3.2).

[138] Powerex Answer at 19 (citing CAISO Tariff, Proposed § 11.2.4.6). [139]

Id. at 17-19.

[140] PG&E Answer at 3; Six Cities Answer at 3-7.

97. We also find that CAISO's proposed approach of using phased position limits, based on the position limits previously approved by the Commission, is appropriate as an additional safeguard upon reinstatement. The Commission previously accepted CAISO's proposal for position limits on the interties as an "appropriately cautious" approach.[141] The Commission rejected commenters' concerns that the proposed position limits would limit the benefits of intertie convergence bidding, finding that CAISO's proposed approach struck a "reasonable balance between the potential benefits of implementing convergence bidding and introducing a new market design feature that attempts to avoid unintended consequences."[142] We find that Powerex has not shown any change in circumstances that would render the previously accepted approach unjust and unreasonable. Thus, we find that the intertie-specific approach to position limits continues to be just and reasonable.

98. Similarly, we are not persuaded that reinstatement of intertie convergence bidding should be conditioned on CAISO revising its methodology for allocating uplift costs associated with convergence bidding. PG&E has not shown any changes in circumstances that would have caused CAISO's current method for allocating uplift costs to become unjust and reasonable.

99. We also find that Powerex's other concerns are beyond the scope of this proceeding. These market modifications were not necessary prior to the introduction of intertie convergence bidding and were not among the issues that led to its suspension. In the May 2013 Order, the Commission found that "the issues stemming from operating under a dual real-time market structure, including the significant uplift costs and their allocation, will need to be addressed before intertie convergence bidding is reinstated."[143] Thus, the Commission directed CAISO to "focus its efforts on developing a comprehensive, long-term structural solution that will permit for the reinstatement of intertie convergence bidding with just and reasonable outcomes."[144] Based on the evidence and testimony presented by CAISO in this proceeding, we are persuaded that the 15-minute market and associated market design enhancements constitute an appropriate long-term structural solution that should address many of the price divergence issues that justified the suspension.

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[141] 2010 Convergence Bidding Order, 133 FERC ¶ 61,039 at P 121.

[142] *Id.* P 122.

[143] May 2013 Order, 143 FERC ¶ 61,087 at P 72.

[144] *Id.* P 73.

100. We find that the reforms requested by Powerex fall outside the scope of the structural solutions required by the May 2013 Order. The congestion revenue rights clawback rule did not factor into the Commission's determination to permit CAISO to suspend intertie convergence bidding. Powerex is correct that CAISO does propose some revisions to the tariff regarding the clawback rule, but we find that Powerex's concerns with these revisions to be misplaced. Powerex's stated concern relates to exemptions for convergence bidding on the interties and the potential for CAISO's existing methodology to produce false positives or false negatives. Our review of CAISO's proposed tariff revisions indicate that CAISO does not propose revisions for its methodology for determining when the clawback rule will apply, nor does CAISO propose to modify any existing exemptions from the rule. Thus, we will not require CAISO to reconsider and/or modify this rule prior to reinstatement of intertie convergence bidding.

101. Likewise, we find that Powerex has failed to provide an explanation of how the reinstatement of previously-accepted convergence bidding tariff provisions will render the existing residual unit commitment process to be unjust and unreasonable. In the May 2013 Order, the Commission noted the potential for inefficient unit scheduling as a result of net virtual supply positions to create an increased reliance on the residual unit commitment process, but did not require CAISO to modify this process as a condition of reinstatement.[145] Powerex has not presented any new reasons to require CAISO to make those revisions prior to reinstatement.

102. We accept CAISO's proposed dual constraint solution. We find that CAISO's proposal to enforce in the day-ahead market only the constraint that considers physical and virtual transactions should eliminate the price inconsistency issues that arose prior to suspension. We also find that CAISO's proposal for accepting e-tags, in economic order, up to the intertie's capacity, is an appropriate method for ensuring that day-ahead awards do not exceed that capacity. We find that the concerns expressed by Powerex and SoCal Edison that this proposed solution poses a risk to intertie liquidity are unsupported because, as CAISO points out, even without intertie convergence bidding, transactions on the interties are not guaranteed to receive e-tags. Also, as stated in both the WECC and WSPP master agreements, day-ahead e-tagging, while perhaps customary, is not required for all contracts in the West. Counterparties to these contracts, and not CAISO, are in the best position to manage financial risks associated with the receipt of day-ahead e-tags. Further, we note that, based on experience with similar constraints on the interties, CAISO expects e-tags to be infrequently denied. Thus, we find that Powerex has not shown that the reinstatement of intertie convergence bidding will be unjust and unreasonable in the absence of mandatory day-ahead e-tagging.

[145] *Id.* P 65.

103. Because we find that CAISO's proposal to reinstate convergence bidding on the interties is just and reasonable, we will not require CAISO to initiate a stakeholder process to consider further reforms to the design of convergence bidding. However, in light of the previous issues with substantial uplift that led to the suspension of intertie convergence bidding, and the magnitude of the market design changes being proposed here, we will condition our acceptance of CAISO's proposal to reinstate convergence bidding, 12 months after implementation of the 15-minute market, on CAISO filing a report to demonstrate that the new market structure is providing the expected price convergence and that the issues that resulted in the suspension of intertie convergence bidding have been resolved. This report should demonstrate that the new market design is working to reduce systemic price divergence and should also discuss whether the anticipated benefits of intertie convergence bidding outweigh any expected market inefficiencies,[146] including any risk of market manipulation. We direct CAISO to file this report no later than 120 days prior to the scheduled reinstatement date of May 1, 2015, and to incorporate as much data as possible based on experience with the new market structure. Further, to ensure transparency on the impacts of intertie convergence bidding, once reinstated, we direct CAISO to file a follow-up report within 30 days after 12 months of operation that details the performance of intertie convergence bidding, including the associated uplift costs and a measure of the market benefits provided, and any market inefficiencies. In addition, due to the possibility that reinstating intertie convergence bidding could present new opportunities for market manipulation, we note that the Commission will closely monitor transactions on the interties and the impact of intertie convergence bidding on market outcomes.

E. Miscellaneous Issues

1. Comments and Protests

104. SoCal Edison requests that the Commission order CAISO to provide a comprehensive version of the tariff that includes language encompassing both 15-minute settlement as well as the separation of day-ahead and real-time bid cost recovery. SoCal Edison states that the two sets of market design changes have a direct impact on each other, and the integration of these changes require further consideration and review prior to implementing one or the other.[147]

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[146] May 2013 Order, 143 FERC ¶ 61,087 at P 75 (stating Commission would accept reinstatement of convergence bidding "where it will not contribute to market inefficiencies and where anticipated benefits can be realized.").

[147] SoCal Edison Comments at 16.

105. Powerex argues that the Commission should act on the pending filing independently from any proposals, including the Energy Imbalance Market proposal, not currently pending before it.[148]

2. CAISO Response

106. In response to SoCal Edison, CAISO states that it has filed the revisions in accordance with the Commission's procedures and they are available for public review. CAISO also notes that in cases in which there is an overlap between the tariff language contained in the instant filing and the filing regarding the separation of the day-ahead and real-time bid cost recovery market, CAISO showed both sets of changes in this docket. CAISO asserts that as a result, all market participants, including SoCal Edison, have had an opportunity to review the tariff revisions in both proceedings in a comprehensive manner.[149]

3. Commission Determination

107. We agree with CAISO that market participants have access to the material necessary to review the comprehensive tariff changes and will not require any further tariff submissions by CAISO as requested by SoCal Edison. We also note, in response to Powerex, that any proposal before the Commission is evaluated on its own merits based on the record in the proceeding. The instant proposal will be evaluated on that same basis.

108. We will grant CAISO's request for waiver and its motion to allow an effective date of May 1, 2014, more than 120 days after filing, because CAISO has shown that it needs this additional time to implement the necessary software modifications.

The Commission orders:

(A) CAISO's proposed tariff revisions are hereby conditionally accepted, subject to further compliance, effective May 1, 2014, 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.

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[148] Powerex Protest at 28-29.

[149] CAISO Answer at 47.

(C) CAISO is hereby directed to submit reports regarding the performance of the revised market structure and the impact of convergence bidding on the interties, no later than 120 days prior to May 1, 2015, as discussed in the body of this order.

(D) CAISO is hereby directed to submit a report to evaluate the market impacts of convergence bidding on the interties, no later than 30 days after 12 months after the reinstatement of intertie convergence bidding, as discussed within the body of this order.

By the Commission. Commissioner Clark is dissenting in part with a separate statement attached.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Appendix A
Timely Motions to Intervene and Short Citations for Select Parties

1. California Department of Water Resources State Water Project	
2. California Wind Energy Association	
3. Calpine Corporation	Calpine
4. The Cities of Anaheim, Azusa, Benning, Colton, Pasadena, and Riverside, California	Six Cities
5. The City of Santa Clara, California	
6. Dynegy Marketing and Trade, LLC; Dynegy Moss Landing, LLC; and Dynegy Oakland, LLC (collectively)	
7. E.ON Climate & Renewables North America, LLC	
8. Exelon Corporation	
9. Imperial Irrigation District	Imperial Irrigation
10. J.P. Morgan Ventures Energy Corporation	
11. Modesto Irrigation District	
12. Northern California Power Agency	NCPA
13. The NRG Companies*	NRG
14. Pacific Gas & Electric Company	PG&E
15. PowerexCorp.	Powerex
16. Sacramento Municipal Utility District	
17. Southern California Edison Company	SoCal Edison
18. Western Power Trading Forum	WPTF

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corp. Docket No. ER14-480-000

(Issued March 20, 2014)

CLARK, Commissioner, *dissenting in part*:

I generally support the California Independent System Operator Corporation (CAISO) market design changes approved in this order. I write separately to express my concerns about the reimplementation of convergence bidding at intertie scheduling points. While the market redesign addresses several structural issues (such as dual settlement and intertie modeling) that previously contributed to CAISO's decision to suspend intertie convergence bidding, CAISO has not demonstrated that intertie convergence bidding, even with these changes, is just and reasonable.

CAISO proposes to reinstate intertie convergence bidding 12 months *after* implementation of the market redesign, and then only gradually over time. This cautious approach recognizes the significant risks and uncertainty connected to the practice. Due, in part, to congestion and significant imports into California, the interties have been fertile ground for market manipulation.[1] Providing opportunities at the interties for virtual bidders expands the number of players and the associated risks without any assurance that anticipated benefits can be realized.

The draft order directs CAISO to file a report 12 months after implementation of the 15-minute market "to demonstrate that the new market structure is providing the expected price convergence and that the issues that resulted in the suspension of intertie convergence bidding have been resolved. The report should demonstrate that the new market design is working to reduce systemic price divergence and should also discuss whether the anticipated benefits of intertie convergence bidding outweigh any expected market inefficiencies, including risks of market manipulation."[2] The order also directs CAISO to file a second report detailing the operation of convergence bidding 12 months after its reinstatement.

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[1] *See, e.g. Deutsche Bank Energy Trading*, 142 FERC ¶ 61,056 (2013) (order approving settlement); *Gila River Power LLC*, 141 FERC ¶ 61, 136 (2012) (order approving settlement).

[2] *Cal. Indep. Sys. Operator Corp.*, 146 FERC ¶ 61,204 (2014) at P 103.

While the reporting requirements are appropriate measures given the associated risks, they also demonstrate that the order prematurely accepts intertie convergence bidding without sufficient basis for finding it just and reasonable. There is not a record demonstrating that the market redesign will provide the anticipated price convergence between internal nodes and the interties, or if it will address other concerns such as significant uplift that caused the suspension of intertie convergence bidding. Given this uncertainty, rather than preapproving something that has not been proven to be just and reasonable, I would reject the proposal without prejudice to CAISO proposing intertie convergence bidding once it could provide evidence that the anticipated, theoretical benefits of intertie convergence bidding could be realized.

Accordingly, I respectfully dissent in part,

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Tony Clark, Commissioner