

162 FERC ¶ 61,022  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;  
Cheryl A. LaFleur, Neil Chatterjee,  
Robert F. Powelson, and Richard Glick.

California Independent System Operator Corporation      Docket Nos. ER17-1459-000  
ER06-615-000  
ER02-1656-027  
ER02-1656-029  
ER02-1656-030  
ER02-1656-031

ORDER ON COMPLIANCE FILING

(Issued January 18, 2018)

1. On April 21, 2017, the California Independent System Operator Corporation (CAISO) filed a compliance filing in response to the September 21, 2006 Commission order on CAISO's market redesign and technology upgrade (MRTU) proposal addressing six outstanding directives.<sup>1</sup> In this order, we find that CAISO has either complied with the outstanding directives in the September 2006 MRTU Order, or has provided information demonstrating circumstances have changed such that further revisions are not necessary.

**I. Background**

2. On September 21, 2006, the Commission conditionally accepted CAISO's MRTU proposal, which, among other things, established a day-ahead market for energy and ancillary services, a bid cost recovery mechanism, and a residual unit commitment (RUC) process. While the Commission found that certain elements of the MRTU design were acceptable for the initial start-up of MRTU (i.e., "Release 1"), the September 2006 MRTU Order and the April 2007 Rehearing Order directed CAISO to implement or

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<sup>1</sup> *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274 (2006) (September 2006 MRTU Order), *order on reh'g*, 119 FERC ¶ 61,076 (2007) (April 2007 Rehearing Order), *reh'g denied*, 124 FERC ¶ 61,094 (2008), *aff'd*, *Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520 (D.C. Cir. 2010).

examine certain other market enhancements as “Release 2”<sup>2</sup> within three years of the MRTU start-up (i.e., by April 1, 2012). These market enhancements included the six directives that are at issue in the instant filing where the Commission directed CAISO to: (1) work with stakeholders to develop a proposal for a two-tier allocation of real-time bid cost recovery costs,<sup>3</sup> (2) implement bid cost recovery over multiple operating days,<sup>4</sup> (3) implement multi-hour constraints in the RUC process,<sup>5</sup> (4) explore flexibility for ancillary services substitution,<sup>6</sup> (5) implement software functionality to support exports of ancillary services,<sup>7</sup> and (6) initiate a stakeholder process to examine the merits of rebating the over-collection of transmission losses to renewable resources.<sup>8</sup>

3. On March 28, 2012, CAISO filed a motion for extension of time, from April 2012 to April 2014, to implement the six directives listed above (March 2012 Motion). In support of its March 2012 Motion, CAISO stated that an additional two years would allow for consideration of the six market enhancements in the context of larger market design changes CAISO was examining. On June 12, 2012, the Commission granted CAISO’s request for an extension of time until April 30, 2014, acknowledging the stakeholder processes CAISO was engaged in, at that time, and the changing nature of CAISO’s generation mix, noting that such efforts may result in market changes that overlap with the six Commission-directed market enhancements.<sup>9</sup> Subsequently, on

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<sup>2</sup> While anticipated at the time of the September 2006 MRTU Order, CAISO never submitted a specific MRTU Release 2 filing. Instead, CAISO filed various market design enhancements as separate filings.

<sup>3</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 539; April 2007 Rehearing Order, 119 FERC ¶ 61,076 at P 309.

<sup>4</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 534.

<sup>5</sup> *Id.* P 143; April 2007 Rehearing Order, 119 FERC ¶ 61,076 at PP 55-56.

<sup>6</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at PP 301-303; April 2007 Rehearing Order, 119 FERC ¶ 61,076 at P 87.

<sup>7</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 355.

<sup>8</sup> *Id.* P 1373, n.570.

<sup>9</sup> *Cal. Indep. Sys. Operator Corp.*, 139 FERC ¶ 61,206 (2012) (June 2012 Motion Order).

April 30, 2013 (April 2013 Motion),<sup>10</sup> and September 27, 2013 (September 2013 Motion),<sup>11</sup> CAISO filed motions in Docket Nos. ER06-615-000, *et al.* requesting that the Commission find that it had complied with directives (5) and (6) listed above, respectively. Those motions are discussed below.

4. On March 24, 2014, in anticipation of the April 30, 2014 deadline, CAISO filed a motion seeking permanent waiver of directives (1) - (4) listed above or, in the alternative, an extension of time (March 2014 Waiver Request). In support of its March 2014 Waiver Request, CAISO argued that there was no stakeholder interest in pursuing the four directives, particularly in light of then-upcoming market design enhancements, including the 15-minute and energy imbalance markets. On September 4, 2014, the Commission denied CAISO's request for permanent waiver, stating that "a motion for 'permanent waiver' is not the appropriate vehicle to seek relief from compliance directives in a Commission order."<sup>12</sup> The Commission found that CAISO had not sufficiently explained whether or how subsequent market design changes had rendered the prior Commission directives (1) - (4) obsolete or unnecessary, noting that CAISO provided little analysis or data on which to compare the costs and benefits of implementing the various directives.<sup>13</sup> Instead, the Commission granted CAISO's alternative request for extension of time to implement these directives until April 30, 2017, stating that, "any request to deviate or abstain from a directive in a Commission order after the expiration of the rehearing period must be made, as appropriate, in a filing pursuant to section 205 or section 206 of the [Federal Power Act]."<sup>14</sup>

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<sup>10</sup> Report of the California Independent System Operator Corporation on Developing Software Functionality to Support Exports for Ancillary Services and Motion to Eliminate Commission Directive, Docket No. ER06-615-000 (filed Apr. 30, 2013).

<sup>11</sup> Report and Motion of the California Independent System Operator Corporation on the California Energy Commission's Proposal Concerning Rebate of Over-Collected Transmission Losses to Renewable Resources, Docket Nos. ER06-615-000, *et al.* (filed Sept. 27, 2013).

<sup>12</sup> *Cal. Indep. Sys. Operator Corp.*, 148 FERC ¶ 61,173, at P 25 (2014) (September 2014 Waiver Order).

<sup>13</sup> *Id.* P 27.

<sup>14</sup> *Id.* PP 25, 29.

## II. Instant Filing

5. In the instant filing, CAISO explains that its operational needs have changed significantly since the Commission issued the September 2006 MRTU Order, particularly due to the large number of variable energy resources that have interconnected to the CAISO grid and the expected increase in variable energy resources over the next several years as California progresses toward a 50 percent renewable portfolio standard.<sup>15</sup> CAISO asserts that its changing resource mix requires sufficient ramping capability to meet two net load ramps per day and the ability to respond to variability in variable energy resources' output, including output from non-dispatchable, behind-the-meter resources. CAISO states that it plans to focus future market changes and stakeholder initiatives on proposals that will help address these challenges and enable CAISO to reliably manage its grid during the transition, specifically incentivizing investment in enhanced resource dispatch flexibility. CAISO argues that the six outstanding Commission directives from the September 2006 MRTU Order no longer add the anticipated value given its current and expected system needs and, therefore, it would be unjust and unreasonable for the Commission to require CAISO and its stakeholders to devote resources to implementing these directives. Moreover, CAISO contends that implementing the six directives may cause unjust and unreasonable outcomes because of the potential impact on efficient market operations.<sup>16</sup>

6. Therefore, as described in more detail below, CAISO requests that the Commission find that directives (1) - (4) are no longer necessary due to changed circumstances. CAISO also requests that the Commission find that it complied with directives (5) - (6) or, in the alternative, find that directives (5) - (6) are no longer necessary due to changed circumstances.<sup>17</sup>

## III. Notice and Responsive Pleadings

7. Notice of CAISO's filing was published in the *Federal Register*, 82 Fed. Reg. 19,713 (2017), with interventions and protests due on or before May 12, 2017. Timely motions to intervene were filed by the Alliance for Retail Energy Markets; Southern California Edison Company; the City of Santa Clara, California, and the M-S-R Public Power Agency; Modesto Irrigation District; and the Northern California Power Agency. Timely motions to intervene and comments or protests were filed by Pacific Gas and

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<sup>15</sup> CAISO Filing at 5.

<sup>16</sup> *Id.* at 6.

<sup>17</sup> *Id.* at 2, 6.

Electric Company (PG&E) and the Western Area Power Administration (Western). On May 30, 2017, CAISO filed an answer.

#### **IV. Discussion**

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

8. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2017), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

9. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2017), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept CAISO's answer because it has provided information that assisted us in our decision-making process.

##### **B. Substantive Matters**

10. We discuss each of the outstanding directives in the September 2006 MRTU Order below.

#### **1. Two-Tier Allocation of Real-Time Bid Cost Recovery Costs**

##### **a. CAISO Filing**

11. As part of its MRTU proposal to implement a bid cost recovery mechanism, CAISO proposed to allocate real-time bid cost recovery costs to all load-serving entities in a single-tier allocation based on their measured demand, which included all metered demand plus exports. In contrast, CAISO proposed to allocate day-ahead bid cost recovery costs in two tiers: (1) first based on the difference between a scheduling coordinator's day-ahead load schedule minus self-scheduled generation and imports, and (2) second based on scheduling coordinators measured demand, which included all metered demand plus exports.

12. In the September 2006 MRTU Order, the Commission agreed with protestors that CAISO had not justified the socialized allocation of real-time bid cost recovery uplift costs, and agreed that a two-tier allocation method for bid cost recovery similar to its method for allocating day-ahead uplift would be reasonable.<sup>18</sup> Thus, the Commission directed CAISO to submit a compliance filing implementing a two-tier allocation method for real-time bid cost recovery within 60 days of issuance of the September 2006 MRTU Order. However, on rehearing, the Commission revised this directive, agreeing with CAISO regarding the difficulties in accurately assigning costs to specific market

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<sup>18</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 539.

participants because of disparities between the day-ahead load forecast and real-time demand. The Commission also acknowledged CAISO's argument that cost causation principles are difficult to follow in situations where procurements are made in order to assure grid reliability. To resolve this issue, the Commission directed CAISO to work with stakeholders to develop a proposal for a two-tier real-time bid cost recovery allocation methodology for its MRTU Release 2.<sup>19</sup>

13. In the instant filing, CAISO states that it conducted a stakeholder process in 2016 and 2017 to explore designing a two-tier real-time bid cost recovery cost allocation methodology and to determine how structuring a first allocation tier based on real-time deviations from day-ahead schedule would align cost allocation with cost causation. CAISO asserts that its analysis demonstrates no strong correlation between deviations and real-time bid cost recovery uplift, arguing instead that uplift occurs primarily because of differences in the inputs between day-ahead market and the real-time market runs that conduct unit commitment.<sup>20</sup> In light of these findings, CAISO contends that it is difficult to definitively determine what causes commitment costs in any real-time market run and, moreover, develop a first tier that is substantially different than the single tier.<sup>21</sup> CAISO also argues that, since its analysis demonstrates that implementing a two-tier allocation methodology for real-time bid cost recovery would not advance cost causation principles, its current tariff, which allocates real-time bid cost recovery costs to a single tier, is just and reasonable without implementing the prior Commission directive.<sup>22</sup>

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<sup>19</sup> April 2007 Rehearing Order, 119 FERC ¶ 61,076 at P 309.

<sup>20</sup> CAISO identified the following contributing factors for real-time unit commitment leading to bid cost recovery uplift costs: changes in load forecast between real-time unit commitment market runs not reflected in the day-ahead market, changes in variable energy resource forecasts between real-time unit commitment market runs not reflected in the day-ahead market, outages of resources with day-ahead schedules not reflected in the previous real-time unit commitment market run, changes in net import positions between the two hour-ahead scheduling processes that were not reflected in the day-ahead market, transmission outages/de-rates, congestion management, generation deviations, and resources available in the real-time market that were not available in the day-ahead market resulting in a real-time market solution that commits a different set of resources with higher associated uplift costs. CAISO Filing at 9-10.

<sup>21</sup> *Id.* at 10; *see also* CAISO's Bid Cost Recovery Straw Proposal at 8-10 ([https://www.caiso.com/Documents/StrawProposal\\_BidCostRecoveryEnhancements.pdf](https://www.caiso.com/Documents/StrawProposal_BidCostRecoveryEnhancements.pdf)).

<sup>22</sup> CAISO Filing at 10.

14. CAISO also asserts that certain market design changes implemented since its 2006 MRTU proposal—such as the 15-minute market, the netting of day-ahead and real-time costs and revenues separately for bid cost recovery purposes, and the flexible ramping product—obviate the need for a two-tier real-time uplift allocation methodology.<sup>23</sup> CAISO asserts that these market changes have helped improve resource commitment and positioning, have encouraged economic bidding from dispatchable resources, and have reduced the need for real-time out-of-market actions, all of which reduce overall uplift costs. CAISO adds that future market enhancements, such as moving real-time resource commitment from the 15-minute market to the five-minute market, will further reduce overall uplift costs and inefficiencies.<sup>24</sup> Therefore, based on the results of its stakeholder process and recent market design enhancements, CAISO argues that implementing a two-tier real-time bid cost recovery allocation methodology is no longer necessary.

**b. Comment**

15. PG&E disagrees with CAISO that this stakeholder initiative is no longer practical, arguing that a two-tier real-time bid cost recovery allocation methodology will more fairly allocate costs based on cost causation.<sup>25</sup> PG&E asserts that this change will incentivize better market behavior and reduce the overall magnitude of real-time bid cost recovery, which it states is approximately \$50 million annually. However, PG&E states that it understands and agrees with CAISO's logic for suspending the stakeholder initiative on this issue following the Commission's issuance of a proposed rulemaking addressing real-time uplift cost allocation and transparency.<sup>26</sup> Thus, PG&E requests that the Commission delay its decision on CAISO's request for relief until the final rule on real-time cost uplift cost allocation and transparency is published.

**c. CAISO Answer**

16. CAISO argues that PG&E has presented no evidence or argument to contradict its finding that there is no strong correlation between deviations from schedules and real-time unit commitment decisions that may result in bid cost recovery uplift. Moreover, CAISO reiterates its argument that a two-tier allocation of real-time bid cost recovery

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<sup>23</sup> *Id.* at 11.

<sup>24</sup> *Id.* at 12.

<sup>25</sup> PG&E Protest at 3-4.

<sup>26</sup> *Id.* at 4 (citing *Uplift Cost Allocation and Transparency in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 158 FERC ¶ 61,047 (2017) (Uplift NOPR)).

does not meet cost causation principles because numerous factors drive real-time uplift costs. CAISO explains that the causes of individual real-time unit commitment deviations vary and are not based on specific or local conditions, but also on system-wide economics and system-wide conditions, which makes developing an applicable first tier for real-time bid cost recovery uplift problematic.<sup>27</sup> Thus, CAISO asserts that developing a two-tier allocation approach is tenuous from a causation perspective and may not achieve the objective of reducing real-time unit commitments.

17. CAISO also argues that the lack of a strong correlation among the causes of real-time unit commitment undermines any expectation that a two-tier allocation approach will incentivize market participants to modify their market behavior to mitigate these costs. Therefore, without a new first tier that would effectively track cost causation and incentivize market behavior to avoid real-time commitments, CAISO contends that any new two-tier allocation methodology would not be just and reasonable. CAISO adds that this failure further supports its claim that the single tier methodology reflected in its current tariff does not need further modification because, without an effective first tier allocation, demand would continue to shoulder the majority of real-time bid cost recovery uplift in a two-tier cost allocation.<sup>28</sup> Finally, CAISO asserts that, since its current tariff does not contain a deviation-based methodology, and because, according to CAISO, the Uplift NOPR does not propose to require regional transmission organizations and independent system operators to adopt one, the Commission should not delay making a decision in this proceeding.<sup>29</sup>

**d. Commission Determination**

18. We find that CAISO has not determined an appropriate first tier allocation to real-time deviations from the day-ahead schedule based on cost causation, despite studying the issue and undertaking a stakeholder process. Given modifications to CAISO's tariff implemented since the September 2006 MRTU Order, and that CAISO and its stakeholders have not advanced in determining cost causation, we find that CAISO need not modify its tariff to provide for a two-tier allocation method for real-time bid cost recovery.

19. We also disagree with PG&E that it is necessary to delay our finding here until the Commission issues a final rule on the Uplift NOPR. We note, however, that our finding that CAISO need not comply with the relevant directive in the September 2006 MRTU Order does not prejudice whether CAISO will need to make any future filings to

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<sup>27</sup> CAISO Answer at 4.

<sup>28</sup> *Id.* at 5.

<sup>29</sup> *Id.* at 5-6.

align with the Commission's determinations in any final rule resulting from the Uplift NOPR proceeding.

**2. Bid Cost Recovery Over Multiple Operating Days**

**a. CAISO Filing**

20. In its MRTU proposal, CAISO proposed to determine a resource's eligibility for bid cost recovery based on the resource's commitment during a trading day so that, if the resource's commitment spanned two trading days, CAISO would only consider the resource's revenues and bid costs from the first trading day, and not the second day, when calculating bid cost recovery.<sup>30</sup> In response to concerns raised by protestors,<sup>31</sup> CAISO agreed that its proposal did not fully consider units with run times greater than 24 hours, but stated that it would be too difficult to implement the necessary changes in Release 1.<sup>32</sup> Thus, in the September 2006 MRTU Order, the Commission directed CAISO to develop and file a plan for units facing these types of constraints for implementation no later than MRTU Release 2.<sup>33</sup>

21. In the instant filing, CAISO explains that it conducted a stakeholder process to explore implementing this directive by evaluating two years of data (i.e., May 2014 through April 2016) to assess the potential benefits of changing its bid cost recovery payment calculations for resources operating over multiple days. CAISO states its analysis revealed that only \$2.93 million (or 1.5 percent) of bid cost recovery payments associated with start-up costs during this period were made to resources operating over two trading days.<sup>34</sup> CAISO asserts that only a small number of resources received the \$2.93 million in bid cost recovery payments, and only eight resources received payments over \$100,000. CAISO asserts that seven of these eight resources, which represent

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<sup>30</sup> CAISO Filing at 13.

<sup>31</sup> Since CAISO's proposed methodology did not include the revenue that a resource received in the second trading day in calculating whether the resource received sufficient revenue to cover its commitment costs (i.e., it only considered the revenue from the first trading day), protestors argued that CAISO's proposal would result in these units receiving artificially inflated uplift payments. *Id.*; *see also* September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 531.

<sup>32</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 532.

<sup>33</sup> *Id.* P 533.

<sup>34</sup> CAISO Filing at 14.

73 percent of the \$2.93 million in payments, plan to retire soon because they utilize once-through-cooling technology.<sup>35</sup> Thus, CAISO contends that implementing bid cost recovery over multiple operating days would have a *de minimis* financial benefit to its market.<sup>36</sup>

22. CAISO also argues that its market should not incentivize resources with long run times and should instead promote resources with greater ramping flexibility. Given its need for additional resource flexibility, CAISO states that resources with long run times will have diminished value as resource adequacy resources and it is highly improbable that such resources will be added to the CAISO-controlled grid in the future. CAISO also notes that existing resources may be retrofit to reduce their minimum run times to provide flexible capacity and remain viable as part of an evolving fleet of resources necessary to respond to generation over-supply and ramps in fewer than three hours. Therefore, CAISO asserts that not only would the cost of implementing bid cost recovery over multiple operating days outweigh the benefit given how its system is moving away from such resources, but doing so would not help address CAISO's increasing need for resource flexibility. Thus, CAISO states that it is unnecessary to revise its tariff to implement bid cost recovery over multiple days given the minimal financial benefit.<sup>37</sup>

**b. Commission Determination**

23. We find that CAISO's analysis of bid cost recovery payments between May 2014 and April 2016 indicates that resources for which the market enhancement was directed will retire in the near future.<sup>38</sup> This new information demonstrates that its current tariff, which calculates a resource's eligibility for bid cost recovery based on its commitment during the specific 24-hour operating day, does not require further modification as contemplated in the September 2006 MRTU Order. Specifically, CAISO's analysis demonstrates that over a two-year study period, resources operating over multiple days received only \$2.93 million (1.5 percent of the total) in bid cost recovery payments, with eight resources receiving 73 percent of this amount. In addition, CAISO states that seven of these eight resources plan to retire soon, further reducing the already diminutive amount of bid cost recovery payments going to such resources. Based on this

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<sup>35</sup> CAISO states that these resources' retirements will comply with the California State Water Resource Control Board's approved once-through-cooling policy. *Id.*

<sup>36</sup> *Id.* at 13-14.

<sup>37</sup> *Id.* at 16.

<sup>38</sup> Notably, CAISO's resource mix has changed dramatically since the September 2006 MRTU Order and now includes more intermittent resources and resources with greater flexibility as well as fewer resources with longer run times.

information, we agree with CAISO that the benefits of implementing bid cost recovery over multiple operating days are minimal, particularly given CAISO's need for resources with greater flexibility as more renewable resources come on line. Therefore, we find that CAISO's current tariff provisions addressing eligibility for bid cost recovery, which is based on the resource's commitment during a trading day, do not require the further modification.

### **3. Implementation of Multi-Hour Constraints in the RUC Process**

#### **a. CAISO Filing**

24. CAISO proposed to implement the RUC process (which ensures that sufficient resources are available to satisfy CAISO's demand forecast while optimizing individual hourly constraints) as part of its MRTU proposal. The proposal did not include an explicit bidding parameter for resources outside CAISO, also known as system resources, with multi-hour block constraints.<sup>39</sup> CAISO explained that the RUC process honors a resource's multi-hour block constraints when it clears the day-ahead market, but stated that the RUC process does not honor the constraint if the resource does not clear the day-ahead market and instead bids into and clears the RUC process. In response to CAISO's MRTU proposal, protestors argued that by not honoring multi-hour block constraints, CAISO may commit a system resource for a period that is inconsistent with the scheduling coordinator's offer for the resource and that the RUC process should honor all bid parameters. In the September 2006 MRTU Order, the Commission found that the protestors' request was reasonable and directed CAISO to examine whether it could revise its software by Release 1 to honor multi-hour block constraints as a bidding parameter in the RUC process and, if not, to report back to the Commission concerning when it could do so.<sup>40</sup>

25. On rehearing, CAISO argued that the Commission should not require implementation of a multi-hour block constraint bidding parameter in Release 1 because doing so would cost approximately \$500,000 and take up to 14 additional weeks to develop and test.<sup>41</sup> Based on this information, the Commission granted CAISO's request for rehearing, finding that the costs of implementing the changes and potential delay to

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<sup>39</sup> These are non-physical, operational constraints that result in the system resource being dispatched at the same output level across contiguous hours of the trading day.

<sup>40</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 143.

<sup>41</sup> CAISO Filing at 16.

implementing MRTU outweighed the potential benefits at that time, and directed CAISO to implement this bidding parameter in MRTU Release 2.<sup>42</sup>

26. In the instant filing, CAISO argues that implementing this directive is no longer necessary because the costs of implementing this directive continue to outweigh the benefits to the small number of resources with multi-hour block constraints that currently bid into the RUC process. CAISO asserts that most system resources with the multi-hour block constraints clear the day-ahead market, which honors multi-hour block constraints. Thus, according to CAISO, only a small number of system resources with multi-hour block constraints bid into the RUC process, which does not honor these constraints. CAISO states, over the past two years, the monthly average of the resource adequacy capacity comprising block intertie resources was fewer than 400 MW in all months except August, with most of the capacity clearing the day-ahead market. CAISO adds the amount of resource adequacy capacity from system resources with multi-hour operating constraints that has not cleared the day-ahead market, and is therefore offered into the RUC, was approximately 200 MW in the summer months and much less in other months.<sup>43</sup> Thus, CAISO argues that its data demonstrate that the majority of existing resources do not need a specific biddable parameter in the RUC process to recognize their multi-hour block constraints.<sup>44</sup>

27. Furthermore, CAISO argues that implementing this directive contravenes its current market initiatives that must address over-supply conditions and system ramp requirements by encouraging more flexible resources. CAISO asserts that resources with static operating constraint levels over multiple hours can exacerbate over-supply conditions and present an operational challenge that contravene the flexibility CAISO needs on its system. Thus, CAISO asserts that implementing this directive is no longer necessary given the *de minimis* financial benefits it would provide to the small number of multi-hour block constrained system resources, as well as CAISO's growing need for resources with greater dispatch flexibility.<sup>45</sup>

**b. Commission Determination**

28. We find that new information submitted by CAISO, based upon several years of operating experience, supports a finding that CAISO's tariff provisions (which do not provide a biddable parameter to recognize a system resource's multi-hour block

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<sup>42</sup> April 2007 Rehearing Order, 119 FERC ¶ 61,076 at PP 55-56.

<sup>43</sup> CAISO Filing at 18.

<sup>44</sup> *Id.*

<sup>45</sup> *Id.* at 18-19.

constraint in the RUC process) do not require further modification as directed in the September 2006 MRTU Order. Specifically CAISO's analysis demonstrates that only a small amount of capacity—200 MW during summer months and much less during other months—is bid into the RUC process and would benefit from adding this bidding parameter to recognize their multi-hour block constraints. Moreover, as CAISO continues to incentivize the participation of resources with greater flexibility, the amount of capacity with multi-hour block constraints bidding into the RUC process will further decrease. Based on this information, and CAISO's previous cost estimate, we agree with CAISO that the costs of implementing this bidding parameter outweigh the benefits and find that CAISO's current tariff, which honors a resource's multi-hour block constraints in the day-ahead market only, need not be revised.

#### 4. Flexibility for Ancillary Services Substitution

##### a. CAISO Filing

29. As part of its MRTU proposal, CAISO proposed to allow scheduling coordinators to substitute ancillary service resources after the day-ahead market closed only in the event of an outage. In response, several protestors argued that scheduling coordinators should have the ability to substitute an ancillary service resource for reasons other than an outage, such as economic reasons. In the September 2006 MRTU Order, the Commission agreed with protestors that additional flexibility could increase the efficiency of the ancillary services procurement process, but found reasonable CAISO's proposal to limit substitution opportunities for MRTU Release 1. In light of CAISO's commitment to explore further resource substitution, the Commission directed it to address the ancillary services flexibility issue in future MRTU releases,<sup>46</sup> reaffirming this directive in the April 2007 Rehearing Order.<sup>47</sup>

30. In the instant filing, CAISO argues that requiring the development and implementation of this functionality will not promote market efficiency because the substitution of ancillary service resources will present an arbitrage opportunity whereby scheduling coordinators would be able to substitute a high-cost resource for a low-cost resource. CAISO asserts that this arbitrage opportunity will benefit neither the market nor ratepayers because of the minimum and maximum ancillary service procurement requirements within regions that limit which resources could feasibly substitute for other resources.<sup>48</sup> CAISO also states that allowing ancillary services substitution in situations

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<sup>46</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at PP 301-303.

<sup>47</sup> April 2007 Rehearing Order, 119 FERC ¶ 61,076 at P 87.

<sup>48</sup> CAISO Filing at 21.

that do not involve an outage may exacerbate over-supply conditions if the resource that is being used as a substitute must be dispatched at its minimum operating level to provide ancillary services. Thus, CAISO argues that additional ancillary services substitution could increase the operational challenges that it already encounters while providing no benefit to ratepayers.<sup>49</sup> Finally, CAISO asserts that allowing resource substitutions for reasons other than outages could negatively impact its markets because after-the-fact shuffling of a fleet of resources would result in market participants making optimization decisions without the benefit of understanding system constraints.<sup>50</sup>

**b. Comment**

31. Western asserts that the Commission should require CAISO to develop the flexibility for ancillary services substitution for situations other than outages. Western argues that, contrary to CAISO's position, market participants substitute ancillary services for reasons other than arbitrage opportunities. For example, Western explains that it sells ancillary service products to CAISO using intertie points and that it is sometimes necessary to change the delivery point due to transmission constraints outside CAISO's balancing authority area (BAA). Western contends that CAISO's current substitution rules force it to submit a request to nullify the ancillary service award and to rebid the ancillary services into CAISO's real-time markets at an alternative intertie point. Western explains that this can expose it to price uncertainty when there is a difference between the day-ahead and real-time price.<sup>51</sup>

32. Finally, Western argues that CAISO's proposal not to implement this directive is unjust and unreasonable because the proposal does not comport with section 22 of the *pro forma* Open Access Transmission Tariff (OATT), which allows a transmission customer, on a non-firm basis, to substitute delivery points. Western requests that the Commission require CAISO to implement procedures that will allow ancillary services delivery point substitution when a constraint on third-party transmission facilities makes the delivery of ancillary services at the scheduled delivery point infeasible.

**c. CAISO Answer**

33. CAISO argues that Western has misinterpreted the directive in the September 2006 MRTU Order. CAISO asserts that the directive contemplated permitting market participants that self-schedule or sell capacity to CAISO in the day-ahead market to

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<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> Western Protest at 4.

substitute different resources in the hour-ahead market, provided the substitute capacity meets the relevant ancillary services performance and locational requirements. Contrary to Western's request, CAISO states that the Commission's directive did not pertain to allowing scheduling coordinators to select alternative delivery points to address constraints on third-party transmission systems.<sup>52</sup> Accordingly, CAISO asserts that Western's request goes beyond the scope of the directive imposed by the Commission in the September 2006 MRTU Order and should be rejected.

34. Moreover, CAISO asserts that the requirement to resubmit a bid into the real-time market for day-ahead market awards exists for both internal and external resources. CAISO argues that there is no reason to grant Western a special benefit in this regard, and doing so would be unduly preferential.<sup>53</sup> Finally, CAISO explains that section 22 of the *pro forma* OATT applies to point-to-point transmission service, which is not contemplated by CAISO's ancillary services tariff provisions. CAISO argues that its tariff does not provide point-to-point transmission service, and Western does not explain why CAISO should be required to provide such service. Thus, CAISO contends that this issue is beyond the scope of the instant proceeding.<sup>54</sup>

**d. Commission Determination**

35. We find that CAISO has satisfied its commitment to explore further resource substitution and has demonstrated that its current tariff, which does not provide for ancillary services substitution for situations other than outages, is just and reasonable without further modification. We agree with CAISO that allowing for ancillary services resource substitution may result in negative consequences without providing any cost reduction for the market and ratepayers. While the Commission generally encourages efficiency enhancements, we find that CAISO has shown other factors are likely to result in costs that outweigh any efficiency gains from ancillary services substitution for reasons other than an outage. For example, if resource substitution results in CAISO having more resources online operating at minimum load in order to meet its ancillary service requirements, this could exacerbate any over-supply issues, ultimately leading to the possibility of higher costs to ratepayers. Therefore, we find that CAISO's current tariff, which only allows for ancillary service substitution in the event of an outage, does not require further modification to comply with the September 2006 MRTU Order.

36. We also agree with CAISO that section 22 of the *pro forma* OATT does not require CAISO to provide for ancillary services substitution under its tariff, contrary to

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<sup>52</sup> CAISO Answer at 7.

<sup>53</sup> *Id.* at 8.

<sup>54</sup> *Id.*

Western's assertion. As CAISO states, these provisions apply to point-to-point transmission service, which CAISO does not provide under its tariff and is fundamentally different than the ancillary services CAISO provides under section 8 of its tariff. Thus, we find that CAISO has satisfied the directive in the September 2006 MRTU Order's to explore additional ancillary services substitution.

**5. Software Functionality to Support Exports for Ancillary Services**

**a. CAISO Filing**

37. In response to CAISO's MRTU proposal addressing ancillary services, protesters argued that CAISO's proposed tariff revisions gave CAISO access to ancillary service supplies outside the CAISO BAA, but did not accommodate exports of ancillary services. According to protesters, this lack of parity created a bias and unjustly limited the business transactions of ancillary service providers. Protesters also objected to language in CAISO's proposed tariff stating that there "is no provision for exports with regard to Ancillary Services Bids," which protesters interpreted as prohibiting the export of ancillary services. In response, CAISO explained that its proposal did not prohibit the export of ancillary services, but that *bids* to export ancillary services were not allowed under the then-existing tariff or under the MRTU proposal. CAISO further explained that the MRTU proposal would allow entities to arrange for exports of ancillary services prior to the Hour-Ahead Scheduling Process (HASP)<sup>55</sup> by arranging for on-demand obligations to other BAAs.<sup>56</sup>

38. In the September 2006 MRTU Order, the Commission found that CAISO had sufficiently addressed the concerns raised with regard to the export of ancillary services and had explained that such provisions were unchanged from the then-effective CAISO tariff. The Commission also noted that scheduling coordinators may arrange for exports of ancillary services prior to the HASP by arranging for on-demand obligations to other control areas. After making these findings, the Commission directed CAISO to develop software to support exports of ancillary services in the future through stakeholder

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<sup>55</sup> Ancillary service substitution occurs in the HASP and is the substitution of a resource that was awarded ancillary services in the day-ahead market for another resource that will provide those awarded ancillary services. CAISO Filing at 19.

<sup>56</sup> CAISO explains that market participants may export ancillary services prior to the HASP by entering into commitments with other BAAs, a process known as on-demand obligations. CAISO Filing at 23; *see also* September 2006 MRTU Order, 116 FERC ¶ 61,274 at PP 348-352.

processes and to propose necessary tariff changes to implement this feature no later than MRTU Release 2.<sup>57</sup>

39. In its April 2013 Motion, CAISO addressed the requirement to develop software functionality to support ancillary services exports. CAISO requested that the Commission find that it satisfied the directive in the September 2006 MRTU Order to develop software to support the export of ancillary services.<sup>58</sup> CAISO asserted that it has implemented market rules and functionality that permit resources to export ancillary services to external balancing authority areas, and thereby has achieved the objectives of the September 2006 MRTU Order.<sup>59</sup>

40. In the instant filing, as it did in its April 2013 Motion, CAISO asserts that it has satisfied the Commission's directive to develop software to support ancillary services exports. Specifically, CAISO states that tariff revisions accepted by the Commission in 2009 at the start of MRTU Release 1 allow for on-demand obligations.<sup>60</sup> Furthermore, because of tariff amendments accepted by the Commission in 2011, CAISO explains that its market now supports dynamic schedules of energy exports to other BAAs. CAISO states that this functionality permits market participants to deliver firm energy outside CAISO within the period required to support ancillary service obligations.<sup>61</sup> According to CAISO, resources that have a contractual obligation to export ancillary services or market-based rate authority to sell ancillary services can do so using CAISO's dynamic transfer protocol. Under this approach, CAISO treats the ancillary service as a firm energy schedule and CAISO can dispatch it on a five-minute basis to honor ancillary service export obligations.<sup>62</sup>

41. To the extent the Commission contemplated a bid-based auction market for ancillary service exports, CAISO asks the Commission to find that it need not adopt such

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<sup>57</sup> *Id.* P 355.

<sup>58</sup> April 2013 Motion at 2.

<sup>59</sup> *Id.* at 2-3.

<sup>60</sup> CAISO Filing at 23; *see* CAISO Tariff, § 8.3.7.

<sup>61</sup> CAISO Filing at 23 (citing *Cal. Indep. Sys. Operator Corp.*, 136 FERC ¶ 61,239 (2011)); *see* CAISO Tariff, Appendix N.

<sup>62</sup> CAISO Filing at 23.

functionality because CAISO's markets are just and reasonable without it.<sup>63</sup> According to CAISO, any benefits associated with allowing export bids for ancillary services are difficult to quantify and could lead to out-of-market actions that may increase uplift and market inefficiencies. CAISO also notes that other organized markets do not allow their market participants to submit export bids for ancillary services.<sup>64</sup>

**b. Comment**

42. Western asserts that CAISO's current ancillary services market is not reciprocal. Specifically, Western argues that CAISO's market allows neighboring BAAs to sell ancillary services to CAISO through an efficient market bidding mechanism, but does not allow neighboring BAAs to purchase ancillary services from CAISO through a similar market bidding mechanism. Western contends that without a similar bidding mechanism, CAISO's market impacts the availability of ancillary services in other BAAs. According to Western, there is little incentive for an entity that desires to export ancillary services from CAISO to negotiate separately a bilateral ancillary services contract when CAISO already has a fluid market. According to Western, having a CAISO market to provide ancillary services would be convenient because it is a last resort and provides price transparency.<sup>65</sup>

**c. CAISO Answer**

43. CAISO contends that Western's proposal goes far beyond the Commission's directive. CAISO asserts that the Commission did not direct it to implement a separate market or any other specific type of market bidding mechanism to support exports of ancillary services, but rather issued a more generic directive that CAISO develop software to support exports of ancillary services.<sup>66</sup> CAISO explains that its market is the mechanism it uses to procure the ancillary services it needs to meet its BAA obligations under North American Electric Reliability Corporation and Western Electricity Coordinating Council reliability standards. CAISO notes that other balancing authorities procure ancillary services through other means, such as competitive solicitations. According to CAISO, Western's request is essentially the equivalent of requiring a transmission provider that is conducting a competitive solicitation to procure ancillary

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

<sup>64</sup> *Id.* at 24.

<sup>65</sup> Western Protest at 5.

<sup>66</sup> CAISO Answer at 9.

services to meet its own reliability needs to allow another transmission provider to procure its ancillary services through the same competitive solicitation.<sup>67</sup>

44. CAISO states that, notwithstanding Western's claims, other BAAs may procure capacity from resources internal to CAISO, and CAISO has developed mechanisms to facilitate these transactions. CAISO explains that the market rules it has adopted to support dynamic transfer functionality can facilitate the export of ancillary services and effectively fulfill that Commission's directive that it implement functionality to export ancillary services as part of new software releases.<sup>68</sup>

**d. Commission Determination**

45. We find that CAISO has satisfied the directive to develop software to support ancillary services exports because the changes to CAISO's market rules implemented since the September 2006 MRTU Order support dynamic transfer functionality that can facilitate the export of ancillary services. The Commission's directive in the September 2006 MRTU Order only required CAISO to "develop software to support exports of ancillary services in the future. . . ." It did not specify that CAISO develop a bid-based auction market mechanism as requested by Western. We find that an auction mechanism is not necessary to facilitate the export of ancillary services. Because we find that CAISO has satisfied this directive, we also dismiss CAISO's request on this issue in its April 2013 Motion as moot.

**6. Stakeholder Process to Consider Rebating the Over-Collection of Transmission Losses to Renewable Resources**

**a. CAISO Filing**

46. CAISO explains that, during the stakeholder process leading up to the 2006 MRTU filing, the California Energy Commission (CEC) proposed that CAISO rebate over-collected transmission losses to renewable resources. The Commission acknowledged CAISO's commitment to consider CEC's proposal as part of MRTU Release 2 in both the September 2006 MRTU Order<sup>69</sup> and April 2007 Rehearing Order.<sup>70</sup> In its September 2013 Motion filed with the Commission on September 27, 2013 in

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<sup>67</sup> *Id.* at 10.

<sup>68</sup> *Id.* at 11.

<sup>69</sup> September 2006 MRTU Order, 116 FERC ¶ 61,274 at P 1373, n 570.

<sup>70</sup> April 2007 Rehearing Order, 119 FERC ¶ 61,076 at P 662, n 668.

Docket Nos. ER06-615-000, *et al.*, CAISO reported that it determined not to initiate a stakeholder process to assess whether it should allocate transmission loss over-collections to renewable resources.<sup>71</sup>

47. In the instant filing, CAISO states that, since the September 2006 MRTU Order, it has developed and implemented numerous enhancements to promote renewable resource development, in addition to California's renewable portfolio standards, which have reduced the burden on developing intermittent resources located near their fuel source but distant from load.<sup>72</sup> In light of these changes, CAISO argues that providing a rebate for transmission losses to renewable resources would unduly discriminate against both conventional generators and renewable resources that participate in CAISO's market but interconnect closer to load. CAISO also asserts that providing a rebate for transmission losses to renewable resources would contradict the nodal pricing design the Commission approved in the September 2006 MRTU Order. For example, CAISO states that this rebate would base locational marginal prices on average losses rather than marginal losses, which would defeat the purpose of increasing transparency through pricing and undermine the market's ability to provide incentives for generation.<sup>73</sup>

48. Finally, CAISO asserts that stakeholders expressed no desire to prioritize this issue as part of its 2011 and 2012 stakeholder processes and the CEC, which originally argued for this change, informed CAISO that it is no longer interested in pursuing this initiative.<sup>74</sup> Therefore, CAISO argues that the Commission should find that it has satisfied the September 2006 MRTU Order's directive to conduct a stakeholder process on rebating over-collected transmission losses to renewable resources.

#### **b. Commission Determination**

49. We find that CAISO has fulfilled its commitment to consider rebating over-collected transmission losses to renewable resources. As CAISO explains, incentives for renewable resource participation in CAISO's markets have changed significantly since the September 2006 MRTU Order due to changes within CAISO's market design and as well as CAISO's implementation of state policies. With these changes, we agree with CAISO that the appropriate incentives for the development and participation of renewable resources in its markets exist now. Finally, because we find that CAISO has

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<sup>71</sup> September 2013 Motion at 1.

<sup>72</sup> CAISO Filing at 25-26.

<sup>73</sup> *Id.* at 26.

<sup>74</sup> *Id.* at 26-27.

fulfilled its commitment, we also dismiss CAISO's request on this issue in its September 2013 Motion as moot.

The Commission orders:

(A) CAISO's compliance filing is hereby accepted, as discussed in the body of this order.

(B) CAISO's April 2013 Motion in Docket No. ER06-615-000 is hereby dismissed as moot, as discussed in the body of this order.

(C) CAISO's September 2013 Motion in Docket Nos. ER06-615-000, *et al.*, is hereby dismissed as moot, as discussed in the body of this order.

By the Commission.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.