

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

<b>California Independent System Operator Corporation</b>	)	<b>Docket No. ER14-480-000</b>
<b>California Independent System Operator Corporation</b>	)	<b>Docket No. ER14-495-000</b>
	)	<b>(Not Consolidated)</b>

**ANSWER OF THE  
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
TO COMMENTS, PROTESTS, AND REQUEST FOR CLARIFICATION**

The California Independent System Operator Corporation (“ISO”)<sup>1</sup> files this answer to the comments, protests, and request for clarification submitted in the captioned proceedings<sup>2</sup> in response to: (1) the ISO’s November 26, 2013 tariff amendment under Section 205 of the Federal Power Act to implement real-time market design enhancements related to the Commission’s Order No. 764<sup>3</sup>

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<sup>1</sup> Capitalized terms not otherwise defined herein have the meanings set forth in appendix A to the ISO tariff, as revised by the proposed tariff changes contained in the filings the ISO submitted in the captioned proceedings. Except where otherwise specified, references to section numbers are references to sections of the ISO tariff as revised by the proposals in those filings.

<sup>2</sup> The following entities filed motions to intervene and/or comments in one or both of the proceedings: the California Department of Water Resources State Water Project; California Wind Energy Association; Calpine Corporation (“Calpine”); Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, “Six Cities”); City of Santa Clara, California, d/b/a Silicon Valley Power; Dynegy Moss Landing, LLC, Dynegy Oakland, LLC, and Dynegy Marketing and Trade, LLC; E.ON Climate & Renewables North America, LLC; Exelon Corporation; Imperial Irrigation District (“IID”); J.P. Morgan Ventures Energy Corporation; Modesto Irrigation District; Northern California Power Agency (“NCPA”); NRG Power Marketing LLC, GenOn Energy Management, LLC, Cabrillo Power I LLC, Cabrillo Power II LLC, El Segundo Power LLC, NRG Delta LLC, NRG Marsh Landing LLC, NRG California South LP, High Plains Ranch II, LLC, Long Beach Generation LLC, NRG Solar Alpine LLC, NRG Solar Borrego I LLC, NRG Solar Blythe LLC, NRG Solar Roadrunner LLC, and Avenal Solar Holdings LLC (collectively, “NRG”); Pacific Gas and Electric Company (“PG&E”); Powerex Corp. (“Powerex”); Sacramento Municipal Utility District; San Diego Gas & Electric Company (“SDG&E”); and Southern California Edison Company (“SCE”) . In addition, the California Public Utilities Commission (“CPUC”) filed a notice of intervention, IID filed a request for clarification, Powerex filed a partial protest, and the Western Power Trading Forum (“WPTF”) filed a limited protest.

<sup>3</sup> *Integration of Variable Energy Resources*, Order No. 764, FERC Stats. & Regs. ¶ 31,331 (“Order No. 764”), *order on reh’g and clarification*, Order No. 764-A, 141 FERC ¶ 61,232 (2012)

(“November 26 tariff filing”); and (2) the ISO’s related November 27, 2013 filing to comply with Order No. 764 (“November 27 compliance filing”).<sup>4</sup>

## I. Summary

The tariff revisions proposed in these two filings will allow the ISO to more effectively and efficiently integrate a large amount of variable energy resources into the resource fleet serving ISO customers, to align the ISO market design with certain reforms mandated in Order No. 764, and to address identified inefficiencies in the ISO’s real-time market that will also facilitate reinstatement of convergence bidding on the interties. Nearly all of the intervenors that submitted comments in these proceedings, including both of the intervenors that submitted protests, express general support for the ISO’s filings.<sup>5</sup> No comments or protests request rejection of the majority of the market design enhancements proposed in the November 26 tariff filing. Further, no comments or protests request changes to any of the additional tariff changes proposed in the November 27 compliance filing. Thus, this ISO answer addresses only a targeted set of comments and protests that concern a relatively small portion of the tariff revisions contained in

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(“Order No. 764-A”), *order on clarification and reh’g*, Order No. 764-B, 144 FERC ¶ 61,222 (2013).

<sup>4</sup> The ISO files this answer pursuant to Rules 212 and 213 of the Commission’s Rules of Practice and Procedure, 18 C.F.R. §§ 385.212, 385.213. The ISO requests waiver of Rule 213(a)(2), 18 C.F.R. § 385.213(a)(2), to permit it to make an answer to the protests filed by Powerex and WPTF. Good cause for this waiver exists here because the answer will aid the Commission in understanding the issues in the proceeding, provide additional information to assist the Commission in the decision-making process, and help to ensure a complete and accurate record in the case. *See, e.g., Equitrans, L.P.*, 134 FERC ¶ 61,250, at P 6 (2011); *California Independent System Operator Corp.*, 132 FERC ¶ 61,023, at P 16 (2010); *Xcel Energy Services, Inc.*, 124 FERC ¶ 61,011, at P 20 (2008).

<sup>5</sup> Calpine at 2-3; NCPA at 3; NRG at 1, 5; PG&E at 3-11, 21; Powerex at 3-4; SCE at 2, 4-5; SDG&E at 2; Six Cities at 1-3; WPTF at 4.

the November 26 tariff filing.<sup>6</sup> The Commission should reject requests that the Commission modify or reject substantive aspects of the ISO's proposal, including requests that the ISO adopt "worse of" pricing for intertie deviations; consider modifications to address differences among day-ahead, 15-minute real-time pre-dispatch, and 5-minute real-time dispatch prices; provide bid cost recovery payments for hourly block intertie transactions; eliminate transitional protective measures for variable energy resources; or modify the proposal to reinstate convergence bidding on the interties. The ISO does commit to make a number of non-substantive clarifications and clean-up edits in a compliance filing if directed by the Commission.

The Commission should accept the ISO's proposal for settling import and export deviations that occur on the interties between the fifteen-minute market and real-time dispatch. The ISO should not be directed to adopt "worse of" pricing between the fifteen-minute market and 5-minute real-time dispatch as proposed by some intervenors. The ISO's market design enhancements will reduce overall neutrality uplift due to real-time imbalance energy offset charges, and therefore is a just and reasonable enhancement to the ISO's current market design. The introduction of "worse of" pricing, on the other hand, would lead to increased neutrality amounts by creating differences between the settlement of deviations at internal nodes and on the interties. Even positive neutrality

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<sup>6</sup> The ISO again notes that any significant changes to the tariff revisions contained in the November 26 tariff filing and November 27 compliance filing could potentially delay the implementation of the ISO's new energy imbalance market in the west by a year or longer. See transmittal letter for November 26 tariff filing at 48-49; transmittal letter for November 27 compliance filing at 9-10. The potential for that result argues against making significant changes in response to the comments and protests.

amounts spread across the system can lead to market inefficiencies because they dampen price signals and do not lend themselves to granular cost allocation. The concerns raised by intervenors about the potential for “implicit” virtual bidding from schedule deviations are not specific to intertie resources and the ISO has already indicated its commitment to consider possible alternatives should market performance pose reliability concerns. At this time, there is no evidence to justify these alternatives. Moreover, a directive to adopt “worse of” pricing would require the ISO to delay the implementation of the fifteen-minute market, thereby delaying compliance with Order No. 764 and the implementation of a proposed energy imbalance market.

The Commission should also deny the request to apply the intertie schedules decline charge to all intertie transactions in order to prevent “implicit” virtual bidding between the fifteen-minute market and real-time dispatch in which a market participant submits a supply or demand bid in the fifteen-minute market to arbitrage the difference between the fifteen-minute market and real-time dispatch price by not e-tagging the fifteen-minute market schedule. The ISO’s proposal to apply the decline charge only to certain intertie transactions that are not exposed to the real-time dispatch price is based on the reasonable premise that the applicable market price appropriately determines the value of the undelivered energy.

Concerns about price differences among day-ahead, 15-minute real-time pre-dispatch, and 5-minute real-time dispatch prices do not support any delay to or modification of the ISO’s proposed market design enhancements. The ISO’s

proposal will mitigate these price differences by promoting price convergence between day-ahead and 15-minute prices. In addition, the ISO may address remaining concerns by fine-tuning the parameters governing the flexible ramping constraint as necessary. As explained below, the use of the flexible ramping constraint has been identified as a major driver of differences between 15-minute and 5-minute prices under today's market design.

There also is no need to require the ISO to mandate day-ahead e-tagging to address the potential for "implicit" virtual bidding on the interties between the day-ahead market and hour-ahead scheduling process, as proposed by one intervenor. The Commission has acknowledged the effectiveness of the ISO's hour-ahead scheduling process reversal settlement rule in preventing implicit virtual bidding between the day-ahead market and real-time pre-dispatch. Consistent with these prior findings, under the new market design, the ISO proposes to enhance this settlement rule by requiring that scheduling coordinators submit and maintain e-tags for intertie transactions through the new hour-ahead scheduling process.

The ISO's proposal that bid cost recovery payments should be available only for intertie transactions scheduled in 15-minute intervals or through the use of a dynamic transfer is widely supported. The Commission should reject the one proposal to allow market participants submitting hourly block bids for intertie transactions to receive bid cost recovery. This would undermine the objective of promoting the submission of flexible 15-minute schedules, would create uplift

charges, and could create gaming opportunities, as recognized by the ISO's Market Surveillance Committee.

One intervenor requests clarification of the effect the market design enhancements will have on transmission ownership rights and the potential of the enhancements to create seams issues. The ISO confirms that the market design enhancements are not expected to change existing provisions governing transmission ownership rights. In addition, the ISO's proposal includes hourly scheduling options which are crafted to avoid seams issues with neighboring balancing authority areas.

Some intervenors request rejection or modification of the proposed transitional protective measures that will allow eligible variable energy resources to retain monthly netting of energy imbalances for a period of up to three years. The Commission should accept the measures as proposed by the ISO. These measures will give variable energy resources that currently may have a limited ability to curtail output in response to an ISO dispatch instruction, due either to physical or contractual limitations, time to adapt to the new real-time market structure. Further, the ISO proposes to retain the already Commission-approved cost allocation methodology for participating intermittent resource program costs that will apply to costs associated with these protective measures.

One intervenor suggests that the ISO should prepare special reports on the performance of the new participating intermittent resource program. There is no need to require the ISO to prepare such reports. The ISO's robust market monitoring and periodic reporting regime will continue when the market design

enhancements are implemented, a forum already exists to discuss the periodic reports, and market participants will have the data available to perform their own analyses.

The Commission should accept the ISO's proposal to phase in convergence bidding on the interties starting 12 months after the real-time market enhancements have been implemented to allow for a period to assess these significant market changes. The ISO's reinstatement proposal is consistent with the Commission's orders approving the suspension of convergence bidding on the interties. The proposed reinstatement schedule appropriately addresses significant concerns raised by a number of stakeholders and the Department of Market Monitoring about the potential for unintended consequences if convergence bidding on the interties is implemented at the same time the market is gaining experience with other significant design changes. These changes include the planned implementation in 2014 of a new energy imbalance market in neighboring balancing authority areas.

For the reasons explained below, the Commission should accept the ISO's November 26 tariff filing and November 27 compliance filing subject only to the minor clarifications the ISO commits to make in this answer.

## II. Answer

### A. The Commission Should Accept the ISO's Proposed Approach for Settling Deviations Rather Than an Alternative "Worse of" Pricing Approach

The ISO proposes to settle import or export deviations that occur on the interties between the fifteen-minute market and real-time dispatch at the real-time dispatch price, consistent with how deviations will be settled at internal nodes.<sup>7</sup> Some intervenors argue that the ISO should instead settle such deviations using a "worse of" pricing approach (*i.e.*, pay positive deviations the lower of the 15-minute price or the real-time dispatch price and charge negative deviations the higher of the 15-minute price or the real-time dispatch price), in order to deter implicit virtual bidding on the interties between the fifteen-minute market and real-time dispatch.<sup>8</sup>

There is no reason for the Commission to mandate such a change in this proceeding. For the reasons explained in the November 26 tariff filing, the ISO's settlement proposal is wholly appropriate.<sup>9</sup> One of the primary benefits of the ISO's market design enhancements is that they will reduce overall neutrality uplift due to real-time imbalance energy offset charges. The introduction of "worse of"

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<sup>7</sup> See November 26 filing, attachment J (declaration of Donald Tretheway, Lead Market Design and Regulatory Policy Specialist for the ISO) at 36-37.

<sup>8</sup> Powerex at 25-27; SCE at 8-9; Six Cities at 5. Implicit virtual bidding is the scheduling of a physical bid (*e.g.*, in the day-ahead market) with no intention of physically delivering on the schedule, for the purpose of liquidating the schedule later (*e.g.*, in the current hour-ahead scheduling process). See *California Independent System Operator Corp.*, 133 FERC ¶ 61,039, at P 130 (2010).

<sup>9</sup> See transmittal letter for November 26 tariff filing at 20, 27-28; November 26 tariff filing, attachment J (Tretheway declaration) at 43-46; November 26 tariff filing, attachment K (declaration of Gregory Cook, Director of Market Design and Regulatory Policy for the ISO) at 11-12.



pricing could lead to neutrality amounts by creating differences between the settlement of deviations at internal nodes and on the interties. Such neutrality amounts can lead to less efficient market outcomes because they dampen price signals and do not lend themselves to granular cost allocation.

For example, if an import did not deliver its schedule for the fifteen-minute market, assuming the load forecast is unchanged, additional resources would be dispatched in the real-time dispatch. Because the same bids are used in the fifteen-minute market and real-time dispatch, the real-time dispatch price should be higher since resources not economically scheduled in the fifteen-minute market are economically scheduled in the real-time dispatch. If the load forecast in the real-time dispatch is lower than the load forecast in the fifteen-minute market, the real-time dispatch price could be lower than the fifteen-minute market price, but this correctly reflects the need for lower dispatch levels in the fifteen-minute market. If a “worse of” settlement approach were used, this would create neutrality amounts since the import pays the fifteen-minute market price for its undelivered energy and load is paid the real-time dispatch price for the reduced load forecast. In this example, the positive neutrality amounts would be spread to load.

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. This is an important principle to retain because it is appropriate

to settle such deviations at the applicable market price which determines the value or cost of the undelivered energy.<sup>10</sup>

The risk of implicit virtual bidding between the fifteen-minute market and real-time dispatch on the interties under the new market design is expected to be small. The e-tagging deadline for 15-minute energy schedules is 20 minutes prior to flow. Because the pricing results of the first binding real-time dispatch interval are not published until 2.5 minutes prior to flow, would-be implicit virtual bidders do not have visibility to actual real-time dispatch pricing to make a strategic decision not to e-tag their energy schedules from the fifteen-minute market.<sup>11</sup> In addition, as discussed below, the intertie schedules declines charge proposed in the November 26 tariff filing will address deviations that do not have financial settlement impacts.

As discussed further below, to address issues identified in collaboration with the ISO's Department of Market Monitoring, the ISO is prepared to fine-tune other aspects of its market to ensure there are no structural differences that unnecessarily cause prices between the fifteen-minute and 5-minute real-time dispatch markets to diverge in a predictable manner.

If the Commission were to require the ISO to implement a "worse of" settlement approach for intertie deviations on day one of the new real-time market design, the ISO would have to modify elements of the core software

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<sup>10</sup> See November 26 tariff filing, attachment D (April 24, 2013 addendum to draft final proposal) at 19; November 26 tariff filing, attachment E (May 8, 2013 ISO Governing Board memorandum) at 10; November 26 tariff filing, attachment J (Tretheway declaration) at 38-39.

<sup>11</sup> See November 26 tariff filing, attachment D (April 24, 2013 addendum to draft final proposal) at 17, 19; November 26 tariff filing, attachment K (Cook declaration) at 16-17.

engine under development to implement the enhanced real-time market design. As a result, the ISO would have to delay implementation of the fifteen-minute market. Intervenors fail to present any evidence to justify denying market participants the benefits of market design enhancements generally supported by all intervenors, even those that request “worse of” pricing in the proposed real-time market. Such a Commission directive would also delay the schedule for implementing the proposed energy imbalance market under development with neighboring balancing authority areas.

Even if the intervenors could support their alternative proposal, the proper legal standard is whether the *ISO’s* proposal is just and reasonable under Section 205 of the Federal Power Act.<sup>12</sup> Specifically, as the Commission has explained, “the courts and this Commission have recognized that there is not a single just and reasonable rate. Instead, we evaluate [proposals under Section 205] to determine whether they fall into a zone of reasonableness. So long as the end result is just and reasonable, the [proposal] will satisfy the statutory standard.”<sup>13</sup> Because the ISO’s settlement proposal for intertie deviations is just and reasonable, there is no reason to consider the merits of the alternative proposed by the intervenors.

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<sup>12</sup> 16 U.S.C. § 824d. Under section 15 of the ISO tariff, the ISO is the entity authorized to submit filings for Commission approval pursuant to Section 205 of the Federal Power Act.

<sup>13</sup> *Calpine Corp. v. California Independent System Operator Corp.*, 128 FERC ¶ 61,271, at P 41 (2009) (citations omitted). See also *California Independent System Operator Corp.*, 141 FERC ¶ 61,135, at P 44 (2012) (“Upon finding that CAISO’s Proposal is just and reasonable, we need not 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 just and reasonable), citing *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984).

Nevertheless, the ISO has committed to monitor for deviations when the real-time market design enhancements go into effect.<sup>14</sup> If actual operating experience indicates that deviations are a significant reliability issue under the market design enhancements, the ISO and market participants should be afforded the opportunity to address the issue through a new stakeholder process. Such a stakeholder process would be the proper forum to consider possible solutions to deter the deviations, *e.g.*, by implementing uninstructed deviation penalties, adopting “worse of” settlement rules with mitigation measures to address potential negative consequences, or restructuring the cost allocation for uninstructed imbalance energy. The ISO would develop a solution to this now-hypothetical issue on a global basis, *i.e.*, for both internal nodes and the interties.<sup>15</sup> For all these reasons, the ISO should not be required to adopt the intervenors’ alternative “worse of” settlement approach in this proceeding.

**B. The ISO Should Not Be Required to Apply the Intertie Schedules Decline Charge to All Intertie Transactions**

SCE argues that, if the ISO is not required to implement a “worse of” settlement approach for deviations from intertie transactions, the ISO should be directed to apply the intertie schedules decline charge to all intertie transactions

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<sup>14</sup> See transmittal letter for November 26 tariff filing at 25.

<sup>15</sup> Six Cities states that the Commission should not accept the ISO’s “vague” proposal to potentially develop uninstructed deviation penalties at some point in the future. Six Cities at 5. There is nothing to reject because the ISO has made no such proposal. The ISO has merely indicated that this is one potential market feature that could be considered if future market outcomes warrant stakeholder consideration of such a feature.

in order to address the potential for implicit virtual bidding.<sup>16</sup> The Commission should reject this request. As part of the new market design, the ISO proposes to apply the intertie schedules decline charge only to incremental imports and exports in the hour-ahead scheduling process that, by not delivering, do not have exposure to either the 15-minute price or the real-time dispatch price. Specifically, the decline charge will apply to hourly block schedules, hourly block schedules with schedule changes, and intertie schedules of variable energy resources using their own forecasts. This application of the decline charge will penalize energy schedules that are not delivered or variable energy resource forecasts that are overstated where the transactions do not otherwise incur a financial obligation in the market for the undelivered energy. The ISO has based its proposal on the premise that the applicable market appropriately determines the value of the undelivered energy.<sup>17</sup>

As with the “worse of” pricing proposal discussed above, to the extent that deviations or implicit virtual bidding become a problem after the new market design is implemented, the ISO or a market participant may propose a stakeholder process to address such issues on a global basis (applying to both intertie transactions and internal nodes). Such a stakeholder process would be the proper forum to consider possible solutions to deter the deviations, *e.g.*, by implementing uninstructed deviation penalties, adopting “worse of” settlement

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<sup>16</sup> SCE at 9-10. The intertie schedules decline charge is set forth in tariff section 11.31 as revised in the November 26 tariff filing.

<sup>17</sup> See November 26 tariff filing, attachment D (April 24, 2013 addendum to draft final proposal) at 13, 19-21; November 26 tariff filing, attachment J (Tretheway declaration) at 20-21, 39-41.

rules with mitigation measures to address potential negative consequences, or restructuring the cost allocation for uninstructed imbalance energy. At this point, however, the ISO has provided sufficient justification to support a finding that its proposal is just and reasonable, and there is no record that demonstrates anything to the contrary or that the change requested by SCE is appropriate.

**C. The ISO Is Already Addressing Issues Related to Price Differences Among Different Market Time Frames**

Both PG&E and SCE submitted comments related to pricing differences identified by the ISO's Department of Market Monitoring among day-ahead prices, the current advisory prices created in the real-time unit commitment process (*i.e.*, the 15-minute real-time pre-dispatch process), and 5-minute (or real-time dispatch) prices under the current market design.<sup>18</sup> SCE suggests that the Commission should order the ISO to explain the causes of the bias observed in the report of the Department of Market Monitoring before the Commission acts on the ISO's proposal.<sup>19</sup> PG&E further states that the ISO should evaluate whether refinements to the proposed fifteen-minute market may be necessary to address these price differences.<sup>20</sup>

Because the drivers of the price differences are entirely unrelated to the market structure changes the ISO proposes in the November 26 tariff filing and November 27 compliance filing, no changes to the proposed fifteen-minute market structure are required. Nevertheless, the ISO provides the following

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<sup>18</sup> SCE at 2-3; PG&E at 4, 19-21.

<sup>19</sup> SCE at 3.

<sup>20</sup> PG&E at 4.

explanation of the primary drivers of these price differences under today's market design.

As recognized by the Department of Market Monitoring and discussed below, in 2013, advisory prices produced real-time unit commitment process prices that are on average higher than day-ahead or 5-minute real-time dispatch prices. The real-time unit commitment process is the process where the ISO addresses constraints that were not accounted for in the day-ahead market. In this real-time unit commitment process, the ISO makes unit commitment decisions, procures incremental ancillary services as needed, and resolves the flexible ramping constraint. This is distinct from the day-ahead market in which the ISO does not enforce the flexible ramping constraint, and is further distinct from the 5-minute real-time dispatch in which the ISO does not procure ancillary services or enforce the flexible ramping constraint in the financially binding interval (*i.e.*, the first interval). The need to address all of these constraints is unique to the real-time unit commitment, which is then reflected in the 15-minute advisory prices. The structural differences in the various market processes, including changes in system conditions that occur, drive the price differentials across these three markets.

During its stakeholder process, the ISO considered the price trends between the real-time unit commitment advisory prices and the 5-minute real-time dispatch. The ISO and stakeholders did not identify any predictable price patterns between the two under the current market design. Since then, the Department of Market Monitoring has reported that in 2013, average system

energy advisory prices in the real-time unit commitment process were 19 percent higher than day-ahead prices and 26 percent higher than 5-minute real-time dispatch prices. The Department of Market Monitoring reported that this appears to be related, in part, to the flexible ramping constraint. It also suggested that when the new fifteen-minute market is implemented in spring 2014, such price divergence could result in significant market inefficiencies, and therefore it recommended that the ISO place a high priority on addressing this issue prior to implementation of the new fifteen-minute market design.<sup>21</sup>

The ISO agrees that a cause of price divergence between 15-minute real-time unit commitment advisory prices and 5-minute real-time dispatch prices is the flexible ramping constraint. As discussed above, the flexible ramping constraint is uniquely enforced in the real-time unit comment process, and the real-time unit commitment is the only market process in which the market solution must consider commitment of resources for energy and procurement of ancillary services, and must solve the flexible ramping constraint. This can exert upward pressure on the 15-minute advisory prices produced in the real-time unit commitment process. The need to address all of these constraints and system needs has led to 15-minute real-time unit commitment advisory energy prices that are higher than day-ahead energy prices. Because constraints are largely resolved by the real-time unit commitment process and ramping is then available

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<sup>21</sup> See Department of Market Monitoring, *Q3 2013 Report on Market Issues and Performance* at 2, 23 (Nov. 14, 2013) (“Q3 2013 market report”). The Q3 2013 market report is available on the ISO website at [http://www.caiso.com/Documents/2013ThirdQuarterReport-MarketIssues\\_Performance-Nov2013.pdf](http://www.caiso.com/Documents/2013ThirdQuarterReport-MarketIssues_Performance-Nov2013.pdf).



for 5-minute dispatch, 5-minute real-time dispatch energy prices are generally lower than the 15-minute prices.

More recently, the ISO has prepared an analysis which shows that the flexible ramping constraint is a major contributor to the price divergence noted by the Department of Market Monitoring. Table 1 shows the average real-time unit commitment 15-minute advisory prices (RTPD LMP EN) and the average real-time dispatch 5-minute prices (RTD LMP EN) for the period from September 1, 2012 to August 31, 2013, as well as the average flexible ramping constraint price (FRC) during the same period:

**Table 1**

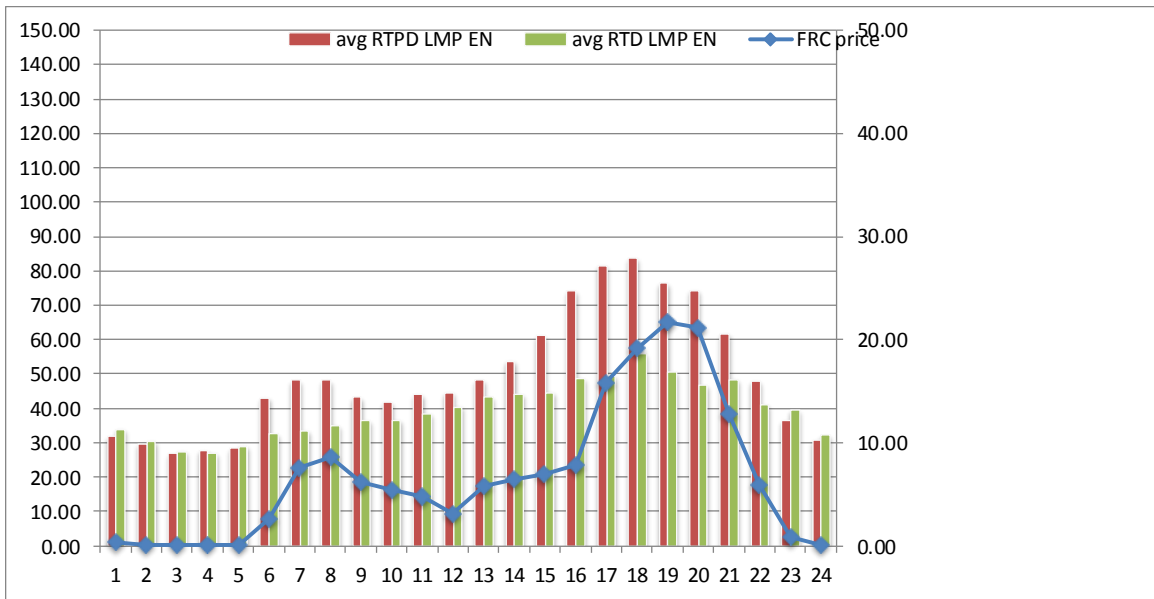


Table 1 shows that, during intervals when the flexible ramping constraint is not binding, there is convergence between real-time unit commitment 15-minute advisory prices and real-time dispatch 5-minute prices. Greater divergence occurs during intervals when the flexible ramping constraint is binding.

To address these issues, the ISO is exploring ways to fine-tune the use of the flexible ramping constraint in its real-time pre-dispatch market optimization. Under the current market design, the 15-minute energy prices are advisory and do not have a financial settlement impact. Under the proposed real-time market design, the ISO will continue to enforce the flexible ramping constraint only in the fifteen-minute market. The constraint is a reliability-based tool with certain limitations, which is why the ISO has already initiated the development of the flexible ramping product to be implemented after the start of the new market design. However, the ISO is cognizant that under the proposed real-time market structure in which it will have a fully binding fifteen-minute market, the cost of enforcing the constraint in that market will be reflected in 15-minute prices. The ISO is evaluating whether to further calibrate the penalty price for the flexible ramping constraint and will provide for a stakeholder review of any such changes. These changes could enhance convergence between the real-time 15-minute and 5-minute prices. To the extent the prices differ and provided that the flexible ramping constraint parameter is appropriately balanced, the differentials between the two prices should reflect the cost of serving load reliably through enforcement of the constraint. Both these actions will ensure the ISO is better able to resolve reliability issues in the 5-minute market when resources are not as readily available.

As shown in the Q3 2013 report issued by the Department of Market Monitoring, convergence between integrated forward market prices and real-time

dispatch prices has been relatively good.<sup>22</sup> During the third quarter of 2013, the ISO has seen a net virtual supply position.<sup>23</sup> A net virtual supply position results in lower unit commitment in the integrated forward market than it would have been absent the virtual bids.<sup>24</sup> Virtual bids are then allocated a portion of the residual unit commitment costs and real-time bid cost recovery if physical resources are needed and committed to replace virtual supply.

The new market design will help convergence between day-ahead and real-time prices. While the flexible ramping constraint will only be enforced in the fifteen-minute market, virtual bids will be settled in real-time at the 15-minute price, not the 5-minute real-time dispatch price. This will improve convergence between the prices in the day-ahead market and the fifteen-minute market, which is where the ISO will commit resources in real-time and settle the majority of imbalance energy from day-ahead schedules.<sup>25</sup> In other words, the market design enhancements proposed by the ISO will mitigate these price differences by promoting convergence between day-ahead prices and 15-minute real-time prices.

As explained earlier, fifteen-minute market prices fully reflect unit commitment decisions, but since resources committed to resolve the flexible ramping constraint are fully available for real-time dispatch, the 5-minute real-

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<sup>22</sup> See Q3 2013 market report at 9-12.

<sup>23</sup> See *id.* at 2, 5-6, 37, 39.

<sup>24</sup> See *id.* at 37-38.

<sup>25</sup> Under the new market design, price divergence between the fifteen-minute market and the real-time dispatch is not expected to be an issue in part because both will use the same bid set.

time dispatch prices can be lower because the ISO has a greater supply of capacity to dispatch since additional generation has already been committed and real-time dispatch cannot change commitment decisions made in the fifteen-minute market. By settling virtual bids in the fifteen-minute market, the ISO will improve consistency between the unit commitment decisions in the fifteen-minute market and integrated forward market. If the fifteen-minute market is regularly committing additional units, the expectation is that the net virtual position will shift from virtual supply to virtual demand, which will lead to more resources being committed in the integrated forward market and being available for fifteen-minute market schedules without the need for additional unit commitment. This will tend to lower the fifteen-minute market price because the additional resources online will make the flexible ramping constraint non-binding and subsequently make the resources available for real-time dispatch.

It is important to keep in mind that, because the real-time market design will be significantly altered, the price trends observed today are not definitive indicators of pricing under the new market design. Moreover, the proposed market design already allows for changes to address factors that might contribute to price divergence and the ISO is already working to fine-tune the various market elements.

Insofar as commenters are concerned about uplift costs attributable to price divergence, they should recognize that different factors contribute to neutrality uplift costs in the current market design. Specifically, the fact that the ISO receives hourly meter data from most load-serving entities, rather than the 5-

minute meter data it receives from generation resources, is a persistent contributor to neutrality costs. While the ISO recognizes that most load-serving entities have indicated that they cannot move to 5-minute metering, the lack of more granular load data is a significant source of the neutrality amounts discussed by PG&E and SCE.

PG&E states that relying on virtual bidding to arbitrage away price differences without addressing the underlying cause(s) of the divergence could lead to inefficient market outcomes.<sup>26</sup> The ISO is not relying solely on virtual bidding under the new market design to address price differences identified by the Department of Market Monitoring. As noted above, the ISO has also considered other sources of price divergence that the ISO can take steps to address.<sup>27</sup> The ISO, nonetheless, believes that the proposed settlement of virtual bids in the fifteen-minute market will provide market incentives to address some factors leading to price divergence. The new market design will improve day-ahead unit commitment because it will promote price convergence between the day-ahead market and the fifteen-minute market. While this may result in some day-ahead price increases, these prices will send signals in the day-ahead market of the need for more flexible resources on the system, reducing instances

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<sup>26</sup> PG&E at 19-20. PG&E also suggests that the ISO should ensure that the new markets are functioning properly prior to go-live. *Id.* at 21. As with any other significant market design enhancement, the ISO will carefully review the results of its market testing and simulations for any significant concerns before the new fifteen-minute market is implemented in April 2014.

<sup>27</sup> See generally section II.C above, and in particular see Table 1 and the discussion regarding it

when the flexible ramping constraint will be binding in the real-time unit commitment process.

SCE argues that the ISO's proposal to allocate uplift using the hourly weighted average of the 15-minute and 5-minute locational marginal prices will disguise uplift costs and improperly charge them only to load-serving entities that have deviated.<sup>28</sup> Instead, SCE argues that the uplift created by discrepancies between the 15-minute and 5-minute markets should be charged to all entities whose variability and uncertainty caused the ISO to commit resources. SCE's argument conflates two separate issues. Supply resources that cannot meet their fifteen-minute market schedules buy back at the real-time dispatch prices. Thus, they pay the appropriate market price for their deviations. Moreover, the example provided by SCE illustrates that the settlement impact of hourly metering by load-serving entities is one of the main drivers of the uplift costs discussed by SCE. As such, there is no justification for allocating these uplift costs to other entities.

#### **D. The Commission Should Not Require Day-Ahead e-Tagging**

Powerex acknowledges that the ISO generally allows day-ahead physical schedules to be e-tagged, but Powerex argues that the ISO should go a step further and require day-ahead e-tagging, in order to discourage implicit virtual bidding on the interties between the day-ahead market and the hour-ahead scheduling process. Powerex contends that the electric industry practice in the West (specifically, in the Western Systems Power Pool ("WSPP") and the

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<sup>28</sup> SCE at 13-14.

Western Electricity Coordinating Council (“WECC”)) is to require submission of an e-tag for all day-ahead schedules.<sup>29</sup>

There is no basis to require the ISO to implement a day-ahead e-tagging requirement. The ISO tariff already includes a mechanism to deter the implicit virtual bidding practices referenced by Powerex – the hour-ahead scheduling process reversal settlement rule, which also applies uplift costs to imports that clear in the day-ahead market that a scheduling coordinator then reduces in the hour-ahead scheduling process.<sup>30</sup> The ISO implemented this settlement rule as part of its tariff revisions to implement virtual bidding at internal nodes and on the interties. The Commission found the settlement rule to be a just and reasonable means of addressing implicit virtual bidding between the day-ahead market and real-time pre-dispatch.<sup>31</sup> Later, in its order conditionally accepting the ISO’s proposal to discontinue intertie convergence bidding, the Commission reiterated that “the HASP [hour-ahead scheduling process] reversal settlement rule continues to be an important deterrent against implicit convergence bidding.”<sup>32</sup> The Commission “encourage[d] CAISO to evaluate the role of this settlement rule within its stakeholder proceedings” on Order No. 764 compliance and Order No. 764-related issues.<sup>33</sup>

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<sup>29</sup> Powerex at 20-21.

<sup>30</sup> This settlement rule is set forth in tariff section 11.32.

<sup>31</sup> 133 FERC ¶ 61,039, at P 134.

<sup>32</sup> *California Independent System Operator Corp.*, 143 FERC ¶ 61,087, at P 70 (2013).

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

The ISO and stakeholders reviewed the settlement rule in the stakeholder process leading to the November 26 tariff filing and November 27 compliance filing. Based on this review, the ISO proposes to revise the settlement rule so that it will also apply to a scheduling coordinator that withdraws an e-tag prior to 45 minutes before the trading hour. As a result, an e-tag must be maintained through the hour-ahead scheduling process, and implicit virtual bids submitted in the day-ahead market can never be closed out at a profit in the fifteen-minute market. This enhancement will make the existing hour-ahead scheduling process reversal settlement rule even more effective in deterring implicit convergence bidding.<sup>34</sup> Powerex provides no evidence that the settlement rule, as enhanced by the November 26 tariff filing, will fail to effectively deter implicit virtual bidding. Consequently, Powerex's request for mandatory day-ahead e-tags should be denied.

It is also incorrect to suggest that day-ahead e-tagging is mandatory in the West. The provision in the WSPP Schedule C power contract cited by Powerex states that "[u]nless otherwise agreed between the Purchaser and the Seller, all transactions shall be prescheduled, subject to any conditions agreed to by schedulers."<sup>35</sup> And the WECC regional business practice cited by Powerex includes the following guidance:

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<sup>34</sup> See tariff section 11.32 as revised in the November 26 tariff filing; November 26 tariff filing, attachment K (Cook declaration) at 17-18.

<sup>35</sup> WSPP, First Revised Rate Schedule FERC No. 6, Service Schedule C, Section C-3.2 (emphasis added). This agreement is available on the WSPP website at <http://www.wspp.org/documents.php>.



The intent of [the business practice] is to facilitate the submittal of preschedule transactions based upon the WECC prescheduling calendar. It is not the intent to mandate that all transactions be submitted prior to 1500 Pacific Prevailing Time (PPT). The [business practice] does not prohibit the submission of transactions after 1500 PPT or transactions submitted the day of implementation.

Balancing Authorities and Transmission Service Providers should continue to process and perform reliability assessments of requests that are received after 1500 PPT as prescribed under the NERC-INT-006 WECC Timelines. An e-Tag that is received after 1500 PPT, and is at least four hours prior to ramp start has a reliability assessment time of two hours and may remain in a pending state until preschedule checkouts are performed. Within WECC, instances have occurred where Balancing Authorities have “denied” e-Tags received later than 1500 PPT on the prescheduling day, as identified by the Prescheduling Calendar. A Balancing Authority should not deny an e-Tag based only on the reason to exclude it from the preschedule checkout process. The Balancing Authority may choose to not include an e-Tag that is received after 1500 PPT in its preschedule checkout totals by delaying the assessment of the e-Tag until closer to the reliability assessment deadline, as allowed under NERC-INT-006.<sup>36</sup>

Thus, the WSPP and WECC both allow parties the flexibility to not have to e-tag their day-ahead schedules.

Powerex’s request for mandatory day-ahead e-tagging also appears to be inconsistent with the Commission’s findings in the Order No. 764 rulemaking. In response to a request for rehearing filed by Powerex regarding Order No. 764, the Commission found in relevant part that:

[b]ecause the Commission’s focus here is on the reserves necessary to support transmission service, we decline to require generic revisions to e-Tags here to address the unrelated issue of

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<sup>36</sup> WECC, Interchange Prescheduling, INT-003-WECC-RBP-2.1, at page 3 (Dec. 6, 2012).(first emphasis in original) (second emphasis added). This regional business practice is available on the WECC website at <http://www.wecc.biz/library/Documentation%20Categorization%20Files/Regional%20Business%20Practices/INT-003-WECC-RBP-2.1.pdf>.

whether changes to e-Tags are necessary to reflect the potential that energy scheduled by an e-Tag as firm may ultimately not flow.<sup>37</sup>

Indeed, requiring day-ahead e-tagging would undermine one of the objectives of Order No. 764 by limiting the added scheduling flexibility that comes with fifteen-minute scheduling.<sup>38</sup>

To the extent that Powerex has concerns about day-ahead resource sufficiency in the West, the WECC is the appropriate entity to address the matter. In any event, the Commission should deny Powerex's request that the Commission mandate day-ahead e-tagging in these proceedings.

**E. Bid Cost Recovery for Intertie Transactions Should Be Available Only to Market Participants That Submit 15-Minute Interval Bids or That Use Dynamic Transfers**

The ISO proposes to provide bid cost recovery for market participants that exercise the option to submit economic bids that the ISO can schedule in 15-minute intervals and for market participants that exercise the dynamic transfer option. Under the ISO's proposal, market participants using hourly intertie scheduling options will not be eligible for bid cost recovery. An important goal of the revised market design is to encourage import suppliers and export buyers to submit flexible 15-minute bids. In the November 26 tariff filing, the ISO explained

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<sup>37</sup> Order No. 764-A at P 97.

<sup>38</sup> See, e.g., Order No. 764 at P 48 (explaining that "the proposed reforms will further benefit customers and the market as a whole by providing increased flexibility"); *id.* at P 92 ("In this Final Rule, we take an additional step 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 to predict output, and other changes in load profiles and system conditions.").

that this goal would be undermined if bid cost recovery were to be paid on hourly transactions to import suppliers.<sup>39</sup>

This aspect of the ISO's proposal is supported by a number of intervenors.<sup>40</sup> Only one intervenor – WPTF – opposes the ISO's proposal.<sup>41</sup> WPTF contends that the ISO's proposal may present risks to some market participants because neighboring balancing authority areas (especially those that are not public utilities) may not offer 15-minute scheduling.<sup>42</sup> Market participants, however, already have a number of options to address such risks. First, they can reflect the impact of their ineligibility for bid cost recovery in their hourly intertie bids. In addition, market participants can avoid this risk by participating in the day-ahead market, as noted by other intervenors.<sup>43</sup>

WPTF proposes a transition under which market participants submitting hourly intertie transactions would receive a percentage of full bid cost recovery available to 15-minute and dynamic transfer intertie transactions during the first three years of the new fifteen-minute markets.<sup>44</sup> Such a transition was considered in the stakeholder process but the ISO concluded that it would

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<sup>39</sup> See transmittal letter for November 26 tariff filing at 30-31; November 26 tariff filing, attachment J (Tretheway declaration) at 23-24.

<sup>40</sup> PG&E at 7-11; Powerex at 4; SCE at 4-5.

<sup>41</sup> WPTF at 5-8. The ISO notes that paying bid cost recovery to import suppliers for hourly transactions would favor one category of market participants without a compelling policy justification in much the same way that the proposed application of "worse of" pricing for intertie deviations would favor a different category of market participants without justification.

<sup>42</sup> *Id.* at 5.

<sup>43</sup> PG&E at 9.

<sup>44</sup> WPTF at 7.

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.

WPTF claims that its transition proposal will address the concerns of the ISO's Market Surveillance Committee about liquidity at the interties.<sup>45</sup> This claim, however, is difficult to reconcile with the fact that the Market Surveillance Committee fully supports the ISO's proposal not to provide bid cost recovery for hourly intertie transactions:

[W]e agree with the California ISO's decision to not provide bid cost recovery for hourly transactions that turn out to be uneconomic at [real-time pre-dispatch] prices. The goal of the California ISO design is to move to a market design in which import suppliers and export buyers submit flexible 15 minute schedules. This goal risks being defeated if BCR [bid cost recovery] is paid on hourly transactions to imports suppliers, so that the expected payment for hourly import transactions is higher than for 15 minute schedules even if the average hourly and 15 minute prices are the same. Moreover, if the California ISO were to provide bid cost recovery for hourly transactions on interfaces that allow 15 minute schedules, there would be a potential for market participants to submit offsetting hourly and 15 minute schedules that would generate net revenues when [real-time pre-dispatch] prices differ from [hour-ahead scheduling process] prices.

Finally, the California ISO's design in which there is no BCR for price based hourly transactions is consistent with the approach the New York ISO took in implementing 15 minute scheduling.<sup>46</sup>

In short, WPTF provides no valid justification for its request that the Commission require the ISO to provide bid cost recovery for hourly intertie transactions under the new market design.

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

<sup>46</sup> November 26 tariff filing, attachment I (Market Surveillance Committee opinion) at 7 (citations omitted).

WPTF also asks the Commission to direct the ISO to prepare and file quarterly reports with metrics about the liquidity of imports and exports at the interties and a comparison of exceptional dispatches before and after implementation of Order No. 764 market changes.<sup>47</sup> The ISO already publishes regular reports and data on the frequency and volume of exceptional dispatches in accordance with the Commission's September 2, 2009 and May 4, 2010 orders in Docket Nos. ER08-1178 and EL08-88.<sup>48</sup> Thus, market participants already have the data necessary to undertake the comparisons proposed by WPTF. There is no need for the ISO to provide further analyses of exceptional dispatches as proposed by WPTF because there is no basis for the claim that exceptional dispatches will increase if hourly intertie transactions do not receive bid cost recovery payments. WPTF also has not explained how it would define the liquidity of imports and exports, much less justified its request for quarterly reports. The Commission should reject this request.

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<sup>47</sup> WPTF at 8.

<sup>48</sup> See *California Independent System Operator Corp.*, 128 FERC ¶ 61,218, at PP 12-45 (2009); *California Independent System Operator Corp.*, 131 FERC ¶ 61,100, at PP 12-16 (2010). These reports can be found on the ISO website at <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>

**F. The Proposed Tariff Revisions Will Not Affect the Existing Treatment of Transmission Ownership Rights or Create Seams Issues with Neighboring Balancing Authorities**

One intervenor requests that the ISO clarify and explain the financial and operational impacts of the proposed tariff revisions on holders of transmission ownership rights.<sup>49</sup> The ISO clarifies that the November 26 tariff filing and November 27 compliance filing do 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. More specifically, holders of transmission ownership rights will continue to have the ability to use hourly scheduling and afforded the right to be treated as a balanced schedule. Holders of transmission ownership rights will also still have the ability to make schedule changes and to self-supply. These market participants will still benefit from the “perfect hedge” mechanism against congestion charges. Holders of transmission ownership rights also will not be exposed to new categories of ISO charges. Because these features of the ISO’s markets are not changing, there was no need to discuss transmission ownership rights in the ISO’s filings. If IID has any further questions or concerns concerning the treatment of transmission ownership rights in the new real-time market, the ISO encourages it to contact its ISO customer service representative to address these questions.

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<sup>49</sup> IID at 4-5. In particular, IID requests that the ISO explain the impacts of the tariff revisions on: (1) the ability of a holder of transmission ownership rights to continue to use hourly scheduling; (2) the treatment of a schedule of a holder of transmission ownership rights as a balanced schedule; (3) the ability of a holder of transmission ownership rights to make schedule changes; (4) the ability of a holder of transmission ownership rights to self-supply; (5) the “perfect hedge” against congestion charges for transmission ownership rights as described in the market redesign and technology upgrade proceeding; and (6) the exposure of a holder of transmission ownership rights to any other ISO charges. *Id.* at 5.

IID states that it would welcome further coordination with the ISO on any seams issues and more information on any expected impact on export prices to neighboring balancing authority areas.<sup>50</sup> As discussed in the stakeholder process and the November 26 tariff filing, the ISO's proposal was crafted to retain hourly scheduling options on the interties to prevent seams issues with other parts of the west.<sup>51</sup> The ISO does not anticipate that the market design enhancements will cause seams issues, and the ISO commits to confer with IID to discuss how the enhanced market design will avoid the creation of seams issues.

IID also states that it is unclear when a neighboring balancing authority would know if a scheduling coordinator is "overriding" an automated ISO update of the energy schedule portion of an e-tag.<sup>52</sup> In response, the ISO clarifies that the "override" is simply a reference to a change to the e-tag made by a scheduling coordinator after the ISO automated update. Each affected balancing authority will receive all e-tag changes and therefore will see the scheduling coordinator's change to the e-tag.

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<sup>50</sup> *Id.* at 5-6.

<sup>51</sup> See transmittal letter for November 26 tariff filing at 2, 3, 22; November 26 tariff filing, attachment J (Tretheway declaration) at 15-16, 19-20. The ISO notes that no other intervenor raised seams concerns in this proceeding.

<sup>52</sup> IID at 6.

**G. The Proposed Protective Measures Provide a Balanced Approach to Facilitate the Transition of Variable Energy Resources to the New Real-Time Market Design**

Several intervenors criticize the transitional protective measures proposed in the November 26 tariff filing that will allow certain variable energy resources to continue to net real-time energy imbalances over the month for a defined period. PG&E argues that the protective measures are unnecessary and detrimental to the markets and existing contractual arrangements. If the Commission does not reject the protective measures, PG&E asks the Commission to modify the approach approved by the ISO Governing Board and remove the protective measures after only one year instead of the three-year period the ISO proposes.<sup>53</sup> SCE argues that only variable energy resources with power purchase agreements should be eligible for the protective measures and opposes the application of existing cost allocation rules to the protective measures.<sup>54</sup> For similar reasons, SDG&E opposes the protective measure cost allocation methodology.<sup>55</sup>

Because the ISO's protective measure proposal is just and reasonable, there is no reason for the Commission to mandate changes to the approach the ISO has developed.<sup>56</sup> It is appropriate to provide the protective measures to

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<sup>53</sup> PG&E at 15-18.

<sup>54</sup> SCE at 10-13.

<sup>55</sup> SDG&E at 5-6.

<sup>56</sup> See, e.g., *Calpine Corp. v. California Independent System Operator Corp.*, 128 FERC ¶ 61,271, at P 41 (2009) (“[T]he courts and this Commission have recognized that there is not a single just and reasonable rate. Instead, we evaluate [proposals under Section 205] to determine whether they fall into a zone of reasonableness. So long as the end result is just and reasonable, the [proposal] will satisfy the statutory standard.”) (citations omitted); *California Independent*



those variable energy resources that currently may have a limited ability to curtail output in response to an ISO dispatch instruction, due either to physical or contractual limitations, as a transitional mechanism that gives such resources time to adapt to the new structure. The ISO agrees that indefinite provisions allowing variable energy resources to continue monthly netting of real-time energy imbalances would create market inefficiencies and be detrimental to the objectives of the ISO's real-time market design enhancements. The eligibility requirements, three-year transition period, and other components of the protective measures were developed in the stakeholder process to strike an appropriate balance between allowing such resources to resolve their contractual issues and enhance their systems to enable them to participate in the ISO markets more effectively, and ensuring that all variable energy resources will be subject to the new market design after a suitable period.

The ISO's proposal to apply the participating intermittent resource program cost allocation rules to the costs of netting under the protective measures is just and reasonable. This same cost allocation methodology was approved by the Commission under the participating intermittent resource program.<sup>57</sup> It is appropriate to extend the existing cost allocation methodology to the protective measures because they effectively are a temporary extension of

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*System Operator Corp.*, 141 FERC ¶ 61,135, at P 44 n.43 (2012) ("Pursuant to section 205 of the FPA [Federal Power Act], the Commission limits its evaluation of a utility's proposed tariff revisions to an inquiry into whether the rates proposed by a utility are reasonable – and not to extend to determining whether a proposed rate schedule is more or less reasonable to alternative rate designs." (citation omitted).

<sup>57</sup> See *California Independent System Operator Corp.*, 98 FERC ¶ 61,327, at 62,376-77 (2002); existing tariff sections 11.5.2, 11.12.1, 11.12.4, 34.19.2.5; tariff appendix Q section 5.2.

that program. SCE and SDG&E fail to demonstrate that intervening events have somehow caused the previously approved cost allocation methodology to become unjust and unreasonable.

SCE is incorrect in arguing that the tariff revisions do not 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.<sup>58</sup> The tariff revisions include such a process.<sup>59</sup>

**H. There Is No Need for the ISO to Prepare Special Reports on the Performance of the New Participating Intermittent Resource Program**

NRG requests that the Commission consider directing the ISO to provide monthly reports on the performance of the new participating intermittent resource program under the market design enhancements in mitigating imbalance energy risk.<sup>60</sup> The Commission should not require the ISO to prepare such special reports. The ISO continually monitors the performance of its markets and issues various market reports on a regular basis. These include reports on settlement charges under the participating intermittent resource program.<sup>61</sup> Moreover, the ISO's Department of Market Monitoring issues quarterly and annual reports on a

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<sup>58</sup> SCE at 11-12.

<sup>59</sup> See proposed tariff section 4.8.3.1.2.2 (stating that if “the parties together request the CAISO to reverse any previously applied PIRP [participating intermittent resource program] Protective Measures, the CAISO will . . . undo any prior Settlement of the PIRP Protective Measures”).

<sup>60</sup> NRG at 6-7.

<sup>61</sup> These reports are available on the ISO website at <http://www.caiso.com/market/Pages/ReportsBulletins/Default.aspx>.

wide range of matters regarding market issues and performance.<sup>62</sup> The ISO also conducts regular meetings of the Market Performance and Planning Forum, which provide stakeholders with an opportunity to discuss all of these reports.<sup>63</sup>

This market monitoring and reporting regime will continue after the ISO implements the market design enhancements. The continuing market reports will already provide the type of analyses that NRG seeks. Further, and most importantly, 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 specifically. Therefore, preparing special reports as requested by NRG is unnecessary and would not be an appropriate use of the ISO's resources.

**I. The Commission Should Accept the ISO's Proposal to Reinstate Convergence Bidding on the Interties**

The ISO proposes to phase in convergence bidding on the interties starting 12 months after the real-time market enhancements have been implemented to allow for a "shakeout" period after these significant market changes are in place. One intervenor contends that the ISO erred in not proposing to reinstate convergence bidding on the interties coincident with the

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<sup>62</sup> These reports are available on the ISO website at <http://www.caiso.com/market/Pages/MarketMonitoring/MarketIssuesPerformanceReports/Default.aspx>.

<sup>63</sup> Information on the meetings of the Market Performance and Planning Forum is available on the ISO website at <http://www.caiso.com/informed/Pages/MeetingsEvents/UserGroupsRecurringMeetings/Default.aspx>.

real-time market design changes.<sup>64</sup> A number of other intervenors argue that the ISO should not reinstate convergence bidding on the interties until a range of issues unrelated to the rationale for suspending convergence bidding on the interties have been addressed.<sup>65</sup> For the reasons explained below, the Commission should reject these comments.

The ISO's reinstatement proposal is fully consistent with the Commission's orders approving the suspension of convergence bidding on the interties. The ISO's reinstatement proposal also takes into account the significant concerns raised by a number of stakeholders and the Department of Market Monitoring about the potential for unintended consequences if convergence bidding on the interties is implemented at the same time the market is gaining experience with other significant design changes, including the planned implementation of a new energy imbalance market in neighboring balancing authority areas. The proposed 12-month shakeout period will allow the market an appropriate period of time to gain experience with these market design enhancements before addressing the impact of convergence bidding on the interties.

### **1. The ISO's Proposal Is Consistent with Commission Precedent**

Convergence bidding was first implemented in the ISO markets in February 2011. The ISO filed to suspend convergence bidding on the interties effective November 2011 because of two issues. First, convergence bidders

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<sup>64</sup> WPTF at 9-12.

<sup>65</sup> See Powerex at 7-22; SCE at 5-7; Six Cities at 4-5; SDG&E at 3-4.

were able to take advantage of the real-time bifurcated settlement structure – *i.e.*, the use of different locational marginal prices in the hour-ahead scheduling process for intertie pricing points and the real-time market for internal pricing points for purposes of financial settlement. This resulted in adverse impacts on the market through an increase in market uplifts and the distortion of market prices. In particular, the ISO explained in its November 2011 filing that offsetting virtual import and demand bids did not promote price convergence or serve any other operational purpose. Since, these bids were offsetting they did not lead to a change in day-ahead unit commitment or improved system-wide market efficiency but instead only contributed to increased uplift charges. Second, the use of two software constraints (a physical and also a physical and virtual constraint) in the day-ahead market periodically caused market clearing prices on the interties to be inconsistent with the bid prices offered by a physical exporter or importer. When the ISO filed its suspension proposal, it stated that intertie convergence bidding would be reinstated once these two issues could be addressed through market design enhancements.

The Commission agreed to suspend convergence bidding on the interties in part based on the ISO's representation that it would address these market design issues:

We note that CAISO has expressed its commitment to reintroduce intertie convergence bidding once it has resolved the issues related to the dual real-time market. The Commission supports the reinstatement of intertie convergence bidding where it will not contribute to market inefficiencies and where anticipated benefits can be realized. We agree that the current dual real-time market design is hindering the potential benefits of convergence bidding from being realized and expect that, without the dual real-time market issues,

convergence bidding should bring about the expected benefits, such as increased competition, reduced market power, and increased day-ahead to real-time price convergence.<sup>66</sup>

Indeed, the Commission expressly required the ISO to either file tariff changes by May 2014 to reinstate intertie convergence bidding and address the underlying issues with the bifurcated real-time market structure, or to submit an informational filing explaining why the ISO had not yet addressed the dual real-time market structure issues and could not reinstate intertie convergence bidding at that time.<sup>67</sup>

The ISO's November 26 tariff filing follows this directive. As explained in the declaration of Gregory Cook, Director of Market Design and Regulatory Policy for the ISO, the real-time market design enhancements proposed by the ISO address the issues with the dual real-time market structure that required suspension of intertie convergence bidding.<sup>68</sup> Intervenors opposing the reinstatement of intertie convergence bidding either ignore this Commission directive or suggest that the ISO must address other issues that are unrelated to the reasons why intertie convergence bidding was suspended in the first place.<sup>69</sup>

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<sup>66</sup> *California Independent System Operator Corp.*, 143 FERC ¶ 61,087, at P 75 (2013) ("May 2 order").

<sup>67</sup> *Id.* at P 76.

<sup>68</sup> See November 26 tariff filing, attachment K (Cook declaration) at 11-13.

<sup>69</sup> Some intervenors claim that there is no need for an order on reinstating convergence bidding at this time, disregarding the fact that the Commission has established a clear expectation that this issue will be addressed by an ISO filing to be submitted as soon as possible – by May 2014 at the latest. Powerex at 5-6, 11; Six Cities at 4-5.

## **2. Other Issues Raised by Intervenors Are Beyond the Scope of This Proceeding**

The Commission has made it clear that it “expect[s] that, without the dual real-time market issues, convergence bidding should bring about the expected benefits, such as increased competition, reduced market power, and increased day-ahead to real-time price convergence.”<sup>70</sup> Notwithstanding this finding, some intervenors suggest that there are other causes of price divergence and revenue imbalance that should be addressed before the reinstatement of inertia convergence bidding. In particular, intervenors raise two related issues that are both beyond the scope of this proceeding: operator actions that affect market outcomes and proposed changes to existing uplift cost allocation methodologies for real-time congestion offset.

Powerex claims that ISO operator actions are “intervening” in market outcomes and that such interventions should be minimized before convergence bidding on the inerties is reinstated.<sup>71</sup> These actions contribute to uplifts in the form of real-time congestion offset. As an initial matter, it is important to note that ISO operators take no actions for the purpose of intervening in markets. All ISO operator instructions issued outside the standard market function are undertaken to maintain system reliability. Any costs associated with such operator actions are therefore necessary costs for maintaining reliability in the region.

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<sup>70</sup> May 2 order, 143 FERC ¶ 61,087, at P 75.

<sup>71</sup> Powerex at 13-15, 18-19.

In addition, the ISO has already devoted substantial effort to reducing the need for such out-of-market actions. In particular, the ISO has made great efforts to improve system modeling in both the day-ahead and real-time. These efforts have led to a substantial reduction in real-time congestion costs. Real-time congestion offset costs decreased by 38 percent from January to October 2013 when compared with such costs for 2012.<sup>72</sup> Notwithstanding these improvements, the ISO agrees that further benefits can be attained through greater visibility and modeling of external networks in the day-ahead time frame. In order to address the complexities of such loop flow modeling, the ISO has initiated a stakeholder process to enhance the ISO's modeling of electrical flows throughout the Western Interconnection by expanding the full network model to reflect both the ISO and its neighboring balancing authority areas. The external visibility provided by the expansion will improve market efficiency and reliability when the ISO uses its market processes to dispatch and schedule resources on the ISO-controlled grid.<sup>73</sup>

The root causes of the operator actions and resulting congestion offset uplifts identified by some intervenors constitute the remaining modeling issues being addressed through this stakeholder process. Intervenors provide no evidence that convergence bidding on the interties will exacerbate existing

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<sup>72</sup> See slide 28 of the November 19, 2013, ISO Market Performance and Planning Forum agenda and presentation, available on the ISO website at <http://www.caiso.com/informed/Pages/MeetingsEvents/UserGroupsRecurringMeetings/Default.aspx>.

<sup>73</sup> Materials concerning the full network model expansion stakeholder process are available on the ISO website at: <http://www.caiso.com/informed/Pages/StakeholderProcesses/FullNetworkModelExpansion.aspx>



modeling challenges. As such, the existence of operator actions needed to maintain reliability and the resulting legitimate uplift costs provide no basis to reject the proposal to reinstate convergence bidding. These issues are unrelated to the bifurcated real-time market issues that led to the suspension of intertie convergence bidding in the first place.

Several load-serving entities suggest that the approved ISO tariff provisions governing the allocation of real-time congestion offset costs should be modified so that a portion of such costs are allocated to virtual bidders, generation, or intertie transactions, rather than allocated to load.<sup>74</sup> PG&E and SCE provide no evidence that their requested changes are related to the reinstatement of intertie convergence bidding or anything in the November 26 tariff filing. Indeed, the only evidence cited by PG&E relates to real-time congestion offset costs in 2012 and 2013, at a time when convergence bidding on the interties was suspended.<sup>75</sup> To the extent the real-time congestion offset issue relates to convergence bidding at all, it applies to both internal and intertie convergence bidding, and therefore is beyond the scope of the ISO's proposed tariff changes. These intervenors certainly have not met the heavy burden of demonstrating that the existing cost allocation rules of the ISO tariff are unjust and unreasonable, much less demonstrating that virtual bidders or other market participants should be allocated a portion of real-time congestion offset costs.

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<sup>74</sup> PG&E at 3, 13-15; SCE at 13-14.

<sup>75</sup> PG&E at 14-15.

Changes to address any real-time congestion offset issues can and should be addressed through existing ISO stakeholder processes.

For similar reasons, there is no basis for mandating a stakeholder process on a range of further issues, including the congestion revenue right “clawback” rule or expansion of the ISO’s residual unit commitment process before approving reinstatement of intertie convergence bidding.<sup>76</sup> These issues are not among the bifurcated real-time market issues to be addressed as a prerequisite to reinstating convergence bidding on the interties. Nor is there any evidence that these issues render any aspect of the ISO’s filings unjust and unreasonable.<sup>77</sup>

PG&E suggests that the ISO should conduct market testing to ensure that the market is functioning properly before convergence bidding is reinstated or position limits are raised.<sup>78</sup> The ISO will, of course, be analyzing the performance of the new real-time market structure and other market design changes scheduled for 2014. If the ISO identifies any issues that could warrant a delay in the reinstatement of intertie convergence bidding, the ISO will make the appropriate filings with the Commission.

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<sup>76</sup> Powerex at 17-18.

<sup>77</sup> Again, the ISO believes these issues can and should be addressed through the normal stakeholder processes.

<sup>78</sup> PG&E at 11.

### **3. The Commission Should Accept the ISO's Dual Constraint Solution**

Two intervenors filed comments concerning the ISO's proposed resolution of issues related to the use of two software constraints in the day-ahead market. Powerex argues that, to the extent the ISO grants a physical award for an intertie transaction but denies an e-tag under the proposed dual constraint solution, the recipient of that award may be in default of its commercial agreement with its supplier.<sup>79</sup> Powerex further argues that, if market participants are unable to procure energy from an alternative supplier, they will also be exposed to uninstructed deviations charges. SCE raises a similar issue, claiming that the ISO's approach could threaten intertie liquidity by limiting the acceptance of e-tags for physical transactions.<sup>80</sup>

These comments create a false implication that, but for the reintroduction of intertie convergence bidding, market participants can be assured that their intertie transactions will receive e-tags. Even under the ISO's current market design, however, there is no assurance that a physical intertie bid will clear the integrated forward market and consequently be allowed to e-tag. In other words, market participants entering into supplier contracts and bidding for intertie transactions already are accepting some risk that those transactions will not clear.<sup>81</sup> Moreover, the conditions under which a physical intertie bid clears the

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<sup>79</sup> Powerex at 23-25.

<sup>80</sup> SCE at 6-7.

<sup>81</sup> E-Tags may be cut for physical market awards under the current market rules. For example, e-tags for physical imports may be cut if e-tags are not submitted for physical exports providing counterflow on an intertie with import congestion.

integrated forward market but would not be allowed to tag are the same conditions under which a physical intertie constraint was binding but the physical plus virtual intertie constraint was not binding during the period prior to suspension of convergence bidding on the interties. Experience shows that this did not occur frequently.<sup>82</sup> Based on this experience, the ISO anticipates that circumstances in which tags would potentially not be accepted for day-ahead physical intertie awards will be infrequent. There is no reason to believe the ISO's proposal will have an adverse impact on intertie liquidity.

#### **4. Intertie-Specific Position Limits Are Consistent with Commission Precedent**

Powerex does not oppose the use of position limits when convergence bidding on the interties is reinstated but claims that intertie-specific position limits are unjust and unreasonable and may harm market efficiency by making the interties less liquid.<sup>83</sup> Powerex favors scheduling coordinator aggregate position limits across all interties. This comment does not acknowledge that intertie-specific position limits have already been found by the Commission to be just and reasonable when convergence bidding was first implemented in the ISO's markets.<sup>84</sup> Without an explanation of how the Commission erred in its prior convergence bidding orders or the identification of a change of circumstances that warrants different treatment of the ISO's proposal to again implement

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<sup>82</sup> See November 26 tariff filing, attachment D (April 24, 2013 addendum to draft final proposal) at 27.

<sup>83</sup> Powerex at 22.

<sup>84</sup> See *California Independent System Operator Corp.*, 133 FERC ¶ 61,039, at PP 95-97, 125 (2010), *reh'g denied*, 134 FERC ¶ 61,070 (2011).

intertie-specific position limits, there is no reason for the Commission to mandate this change.

**5. The Proposal to Reinstate Intertie Convergence Bidding After 12 Months Is an Appropriate Measure to Address Department of Market Monitoring Concerns and Widespread Stakeholder Reservations**

Another intervenor claims that the ISO had no “substantive basis” for adopting the proposed 12-month shakeout period.<sup>85</sup> WPTF claims that the significant concerns expressed by a wide range of stakeholders, including the CPUC and entities serving the large majority of load in California, should not be considered substantive. Moreover, WPTF ignores the fact that the 12-month shakeout period was endorsed by the ISO’s Department of Market Monitoring as “a prudent approach given the significant nature of the market design changes being proposed and the past experience with virtual bidding in the ISO market.”<sup>86</sup>

The 12-month shakeout period will make it easier to isolate any impacts of convergence bidding on the interties after the other market design changes scheduled for 2014 have been implemented. This will allow the ISO and market participants to identify unintended market outcomes before reinstatement of convergence bidding on the interties and to more readily show that intertie convergence bidding does not have adverse consequences under the new real-time market design. The proposed shakeout period is a reasonable approach to provide the market with information and experience that will demonstrate the

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<sup>85</sup> WPTF at 10-11.

<sup>86</sup> November 26 tariff filing, Attachment H, DMM memorandum at 4.

long-term viability of convergence bidding on the interties. Given the significant concerns expressed by stakeholders and the ISO's market monitor, the ISO's 12-month implementation proposal should be accepted.

**J. Miscellaneous Issues**

**1. The ISO Agrees with NCPA's Proposed Clarifications Regarding Tariff Section 11.5.4.2**

NCPA requests clarification that neutrality charges resulting from settlement of load at the hourly weighted average of 15-minute and 5-minute prices will be accounted for and allocated pursuant to tariff section 11.5.4.2 as revised in the November 26 tariff filing.<sup>87</sup> The ISO confirms that NCPA is correct.

NCPA also asserts that tariff section 11.5.4.2 should be revised so that all references in the section to instructed imbalance energy, which is a defined term the ISO proposes to delete in the November 26 tariff filing, are replaced with two more granular defined terms the ISO proposed in that filing – namely, the terms “Fifteen Minute Market Instructed Imbalance Energy” and “Real-Time Dispatch Instructed Imbalance Energy.”<sup>88</sup> The ISO agrees that NCPA's suggested wording changes should be made to section 11.5.4.2. The ISO proposes to make those changes in a filing to comply with the Commission's order on the November 26 tariff filing.

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<sup>87</sup> NCPA at 3-4.

<sup>88</sup> *Id.* at 4.

## 2. Interested Parties Received a Full Opportunity to Review the ISO's Tariff Revisions

SCE states that the ISO should be required to provide a version of its tariff that includes the revisions proposed in the November 26 tariff filing and the November 27 compliance filing together with the revisions contained in the ISO's filing in Docket No. ER13-2452 (which was pending before the Commission when SCE filed its comments) to implement phase 1 of the ISO's renewable integration and market review enhancements. SCE suggests that market participants have not had an opportunity to review all of the tariff revisions comprehensively.<sup>89</sup>

The ISO has filed the revisions in accordance with the Commission's procedures and they are all available for public review. In addition, the ISO has already provided the information requested by SCE. The ISO explained in the November 26 tariff filing that some of the tariff revisions set forth in that filing build upon the tariff revisions then pending in Docket No. ER13-2452.<sup>90</sup> Thus, in cases where there is overlap between the tariff language contained in the November 26 tariff filing and the tariff changes proposed in Docket No. ER13-2452, the November 26 tariff filing includes tariff provisions reflecting both sets of changes. As a result, all market participants, including SCE, have had an opportunity to review the tariff revisions in both proceedings in a comprehensive manner.

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<sup>89</sup> SCE at 16.

<sup>90</sup> Transmittal letter for November 26 tariff filing at 18 n.52. On December 19, 2013, the Commission conditionally accepted the Docket No. ER13-2452 tariff revisions in *California Independent System Operator Corporation*, 145 FERC ¶ 61,254 (2013).

The ISO recognizes, however, that additional conforming changes between the two filings are necessary. For example, some tariff language that was accepted in Docket No. ER13-2452 but not amended through the November 26 tariff filing may require revision to ensure that it contains terminology consistent with the market design proposed in the November 26 tariff filing. The ISO also anticipates that a small number of non-substantive clean-up changes to the ISO tariff to reflect revisions included in the November 26 tariff filing would be appropriate.<sup>91</sup> The ISO is prepared, if so ordered by the Commission, to provide the necessary conforming and non-substantive clean-up changes in a filing to comply with the Commission's order on the November 26 tariff filing.

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<sup>91</sup> For example, the ISO has determined that the definition of uninstructed imbalance energy should be modified to refer to "RTD Instructed Imbalance Energy" rather than "Instructed Imbalance Energy."



### **III. Conclusion**

For the foregoing reasons, the Commission should accept the ISO's November 26 tariff filing and November 27 compliance filing as submitted in the captioned proceedings, subject only to the minor clarifications on compliance proposed in this answer.

Respectfully submitted,

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Dated: January 2, 2014

## CERTIFICATE OF SERVICE

I hereby certify that I have served the foregoing document upon all of the parties listed on the official service lists for the above-referenced proceedings, in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure (18 C.F.R. § 385.2010).

Dated at Washington, DC this 2<sup>nd</sup> day of January, 2014.

/s/ Bradley R. Miliauskas  
Bradley R. Miliauskas