

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

**California Independent System
Operator Corporation**

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**Docket Nos. ER15-861-000
and EL15-53-000**

**REPLY COMMENTS OF THE
CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION
ON TECHNICAL CONFERENCE**

The California Independent System Operator Corporation (CAISO) submits this reply to the comments filed by parties addressing the initial comments the CAISO filed on April 23, 2015 regarding the technical conference held on April 9, 2015 in this proceeding.¹ The purpose of this conference was to discuss pricing anomalies that have occurred in the CAISO's Energy Imbalance Market (EIM). In its initial comments, the CAISO proposed to adopt an automated feature in the Energy Imbalance Market to ensure the CAISO market systems accurately and timely reflect available capacity and operator actions taken in the EIM balancing authority areas. This enhancement will eliminate pricing excursions resulting from misinformed market runs based on false scarcity conditions, when the EIM balancing authority area is not actually short of capacity. As explained below, none of the comments filed by other parties undermine the need for the CAISO's proposed Energy Imbalance Market enhancement, or the

¹ The CAISO files these reply comments pursuant to the "Notification of Modification of Comment Schedule" issued in this proceeding on April 14, 2015. The following parties filed comments addressing the CAISO's initial comments: the Bonneville Power Administration (BPA); Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (collectively, Six Cities); Deseret Generation & Transmission Co-operative, Inc. (Deseret); Iberdrola Renewables, LLC (Iberdrola); NV Energy; Pacific Gas and Electric Company (PG&E); PacifiCorp; Powerex Corp. (Powerex); Puget Sound Energy Inc. (Puget); Southern California Edison Company (SCE); Truckee Donner Public Utility District (Truckee); and Western Power Trading Forum (WPTF).

CAISO's rationale in proposing it as a just and reasonable solution to the pricing anomalies observed during the past several months. Therefore, the Commission should issue an order directing the CAISO to file tariff revisions to implement the CAISO's proposed Energy Imbalance Market enhancement in order to resolve the Commission's investigation in Docket No. EL15-53.

I. BACKGROUND AND SUMMARY OF REPLY COMMENTS

The Energy Imbalance Market provides other balancing authority areas the opportunity to participate in the real-time market for imbalance energy that the CAISO operates in its own balancing authority area.² Each balancing authority area that participates in the Energy Imbalance Market continues to operate separately from the CAISO balancing authority area, including with regard to how it satisfies its own reliability requirements.³ PacifiCorp's balancing authority areas (PacifiCorp East and PacifiCorp West) were the first two to join the Energy Imbalance Market.⁴

² See *Cal. Indep. Sys. Operator Corp.*, 147 FERC ¶ 61,231, *order on reh'g, clarification, and compliance*, 149 FERC ¶ 61,058 (2014) (conditionally accepting proposed CAISO tariff revisions to implement the Energy Imbalance Market).

³ See, e.g., 147 FERC ¶ 61,231, at P 9 ("CAISO notes that each balancing authority that chooses to participate in the EIM will remain responsible for maintaining the reliability of its BAA [balancing authority area], including meeting operating reserve and capacity requirements, scheduling, and curtailment of the transmission facilities under its operational control, and manually dispatching resources out-of-market to maintain reliability."). The design of the Energy Imbalance Market also includes measures to ensure that each EIM entity has sufficient resources to meet load reliably, including: (1) the requirement that EIM entities' schedules be balanced; (2) feasibility of EIM base schedules; and (3) flexible ramping capacity requirements. The Commission has found that these Energy Imbalance Market design features are just and reasonable because they allow "EIM participants to gain the benefits of increased resource diversity, while preventing them from inappropriately leaning on other BAAs," *i.e.*, preventing them from consuming capacity at no charge that is provided by the broader Energy Imbalance Market footprint. *Id.* at PP 110, 122.

⁴ See *PacifiCorp*, 147 FERC ¶ 61,227, *order on reh'g, clarification, and compliance*, 149 FERC ¶ 61,057 (2014), *reh'g denied*, 150 FERC ¶ 61,084 (2015) (conditionally accepting in part and rejecting in part revisions to PacifiCorp's open access transmission tariff (OATT) to enable participation in the Energy Imbalance Market).

After PacifiCorp began participating in the Energy Imbalance Market on November 1, 2014, certain transitional conditions arose that restricted the timing and amount of capacity available through the market clearing process. These conditions caused the transmission and system energy-balance constraints described in the CAISO tariff to bind more frequently than expected, producing atypically high prices in the fifteen-minute and five-minute markets in the PacifiCorp balancing authority areas. To prevent such transitional conditions from causing price spikes after the integration of a new EIM entity, the CAISO filed a tariff amendment in Docket No. ER15-861-000 on January 15, 2015 in which the CAISO proposed a 12-month transition period to allow the new EIM entity to transition into operating its balancing authority area in concert with its participation in the Energy Imbalance Market. During the transition period energy in the new EIM entity's balancing authority area would not be subject to the pricing parameters that normally apply under the tariff when the market optimization relaxes a transmission constraint or the system energy-balance constraint in clearing the real-time market. Instead, the pricing would be based on the last economic bid, as is the case under the currently effective tariff waiver.⁵

On March 16, 2015, the Commission issued an order that: (1) rejected the CAISO's proposed tariff revisions; (2) granted a limited extension of a previously granted waiver of tariff provisions otherwise applicable to constraints that are within PacifiCorp's balancing authority areas or that affect EIM transfers between those balancing authority areas; (3) directed the CAISO to submit a compliance filing that includes tariff revisions to implement readiness requirements applicable to new EIM

⁵ CAISO initial comments at 7-23.

entities prior to their commencement of Energy Imbalance Market operations; (4) accepted the CAISO's offer to continue to submit monthly informational reports on the performance of the Energy Imbalance Market; and (5) "institute[d] an investigation [and associated technical conference] under section 206 of the FPA in Docket No. EL15-53-000 to develop a record upon which the Commission may address issues related to the imbalance energy price spikes in PacifiCorp's BAAs [balancing authority areas]."⁶ The Commission explained that it expected that the technical conference directed in this proceeding would "help identify the underlying issues and thereby help ensure development of an appropriate solution."⁷ Thus, the Commission established the technical conference solely to develop a record for addressing issues related to the imbalance energy price spikes in the PacifiCorp balancing authority areas, with a view to the development of an appropriate, long-term solution to those issues.⁸

⁶ *Cal. Indep. Sys. Operator Corp.*, 150 FERC ¶ 61,191, at PP 29-34, 36-38 (2015) (March 16 Order). The Commission also stated that the CAISO could propose to revise its tariff in the future to include a transitional period similar to its proposal in the January 15 filing if it could demonstrate that the new proposal was commensurate with the need to address a new EIM entity's post-operation "learning curve." *Id.* at P 35. Pursuant to the "Notice of Institution of Section 206 Proceeding and Refund Effective Date" issued in this proceeding on March 17, 2015, and the notice of the FPA 206 proceeding issued in the Federal Register on March 24, 2015, the refund effective date for the FPA 206 proceeding is currently June 22, 2015. On April 15, 2015, the CAISO filed a motion for relief pending order in the FPA 206 proceeding or, in the alternative, a request for rehearing, to revise the refund effective date to August 24, 2015. Commission action on that CAISO filing is pending.

⁷ March 16 Order at P 32.

⁸ This narrow scope of the technical conference was also reflected in the agenda attached to the "Notice of Technical Conference" issued in this proceeding on March 24, 2015, in which Commission staff explained that "[t]he purpose of this technical conference is to develop a record regarding issues related to imbalance energy price spikes experienced in PacifiCorp's balancing authority areas (BAAs) subsequent to PacifiCorp's full activation in the . . . Energy Imbalance Market (EIM), and to facilitate the development of a long-term solution." Consistent with that purpose and as shown in the agenda, the itinerary of the technical conference consisted of discussion on two main topics: (1) information related to the categories of causes of price spikes described in a March 4, 2015 report issued by the CAISO Department of Market Monitoring and (2) how to addresses those categories of causes of price spikes.

The Energy Imbalance Market enhancement proposed in the CAISO's initial comments addresses the scope of issues the Commission set to investigate in this proceeding. As the CAISO explained at the technical conference, and in its initial comments, many of the Energy Imbalance market pricing anomalies were caused by imperfect information available to the market software, which led the Energy Imbalance Market to perceive a lack of available supply, thereby clearing at the \$1,000 per megawatt-hour price associated with relaxing the power balance and transmission constraints. These pricing anomalies were problematic because during those intervals the EIM entity (PacifiCorp) was balancing its system and maintaining reliability by manually dispatching available resources.⁹ As reflected in the CAISO's monthly reports and explained at the April 9 technical conference, transitional issues were the main drivers of these pricing anomalies.¹⁰ The CAISO and PacifiCorp determined, however, that in some cases the infeasibilities could not have been avoided even with greater learning and better integration. In these intervals, operational circumstances meant there was insufficient time to manually reflect the actions the EIM balancing authority took in deploying its load following and regulation capacity accurately to the market systems. In order to address these situations, the CAISO proposed to adopt an automated feature that will better ensure the CAISO market systems accurately and timely reflect available capacity and the actions that will be taken by the EIM balancing authority. Under the CAISO's proposed enhancement, the market optimization process

⁹ Transcript of Technical Conference at 13-14, Docket Nos. ER15-861-000, *et al.* (Apr. 9, 2015) ("Transcript"); *id.* at 25 (noting that at all times during the operation of Energy Imbalance Market, PacifiCorp has been resource sufficient).

¹⁰ See, e.g., Energy Imbalance Market – Price Waiver Report, Docket No. ER15-402 (April 24, 2015) (concluding that all intervals of Energy Imbalance Market infeasibilities in March 2015 were due to various transitional issues and did not reflect a physical shortage);

will automatically recognize and account for available capacity in the EIM balancing authority area, which could be in the form of regulation and load-following capacity, or additional capacity the balancing authority has determined is necessary for reliable operations of its system (referred to generally as “available capacity”). Once recognized and incorporated in the CAISO market, this available capacity will be available to the Energy Imbalance Market to be used if a potential power balance constraint violation occurs in the EIM entity’s balancing authority area.

Most of the parties submitting comments generally support, or do not oppose, the CAISO’s proposed Energy Imbalance Market enhancement. Only two parties, Powerex and WPTF, express outright opposition to the CAISO’s proposed Energy Imbalance Market enhancement. However, this opposition goes beyond the CAISO’s enhancement proposal and, instead, focused primarily on the underlying design of the Energy Imbalance Market, which the Commission has already approved, and is not at issue in this proceeding. These parties attempt to compel the CAISO to adopt an alternative Energy Imbalance Market design in place of the Energy Imbalance Market design already approved by the Commission. Such comments are outside the scope of the Section 206 proceeding and constitute a collateral attack on the March 16 Order and orders in which the Commission approved the elements of the Energy Imbalance Market.¹¹ Moreover, not only are these requests procedurally improper, granting them would halt the operation of the existing Energy Imbalance Market, thus eliminating the

¹¹ No party filed a request for rehearing of the Commission directives in the March 16 Order that established the technical conference, or otherwise submitted a filing asserting that the scope of the technical conference should be widened in any respect. Any requests for expansion of scope at this time are a collateral attack of the Commission’s March 16 order, which the Commission should reject.

benefits participants have received since the Energy Imbalance Market's implementation.

Some of the other commenting parties request that the CAISO provide clarification regarding certain aspects of its proposal, or argue that the CAISO should adopt further enhancements or take additional actions. The CAISO addresses these comments below, demonstrating that none of the concerns raised by these parties undermines the need for, or the justness and reasonableness of, the CAISO's proposed Energy Imbalance Market enhancement. A number of these requests involve Energy Imbalance Market design issues that are outside the immediate scope of this proceeding, such as those that relate to readiness requirements or the development of transition procedures. On May 6, 2015, the CAISO submitted its filing to comply with the directives in the March 16 Order regarding readiness requirements for new EIM entities. The CAISO also plans to file a new tariff amendment to implement a transition period. In that proceeding, the Commission, along with existing EIM entities and new EIM entities, can evaluate and address the implications of participating in the Energy Imbalance Market, such as the new EIM entity's post-operation learning curve, without negatively affecting ratepayers.¹² Issues relating to these matters are more properly

¹² The CAISO plans to develop this amendment consistent with the directive in the March 16 Order that the CAISO could propose a future tariff amendment to include a transitional period similar to its proposal in the January 15 filing if it could demonstrate that the new proposal was commensurate with the need to address a new EIM entity's post-operation learning curve. See March 16 Order at P 35. The CAISO's filings, including its requests for tariff waiver, the January 15 tariff amendment to relax the pricing parameters for a transitional period, the initial comments containing the CAISO's proposed solution, and the future tariff amendment to include a transition period in the tariff, have been and are intended to proactively identify and correct any issues with the Energy Imbalance Market using all available tools. The CAISO has submitted and will submit these filings not because the Energy Imbalance Market is inherently problematic, but rather because the CAISO seeks to address learning-curve issues with the Energy Imbalance Market and ensure that the benefits of the Energy Imbalance Market are realized to the greatest extent possible.

raised in these separate proceedings, and the Commission should decline to address them here.

II. REPLY COMMENTS

As an initial matter, it is important to recognize that the issue in this proceeding is not, as implied by WPTF,¹³ an open-ended investigation into whether the Energy Imbalance Market is just and reasonable. The Commission has already accepted the Energy Imbalance Market as just and reasonable. The *only* issues in this proceeding are those related to the justness and reasonableness of the Energy Imbalance Market pricing parameters for the relaxation of transmission and power balance constraints.¹⁴ Issues concerning such matters as the flexible capacity requirements¹⁵ or the transparency of PacifiCorp's use of manual dispatches,¹⁶ barriers to bidding into the Energy Imbalance Market,¹⁷ how PacifiCorp's handling of its reliability responsibilities fits with the CAISO's handling of its own reliability responsibilities,¹⁸ and PacifiCorp's use of out-of-market purchases,¹⁹ are simply beyond the scope of this proceeding.

The design of the Energy Imbalance Market is an ongoing matter for CAISO and stakeholder attention. The CAISO has completed and will soon file a tariff amendment to incorporate phase one of its year one enhancements, and is working on phase two. Broader issues regarding the design of the Energy Imbalance Market are properly

¹³ WPTF at 4-5.

¹⁴ March 16 Order at PP 31-32.

¹⁵ WPTF at 4-5, Powerex at 15-16, 35.

¹⁶ WPTF at 6, Powerex at 27.

¹⁷ WPRT at 8.

¹⁸ WPTF at 5-6/

¹⁹ Powerex at 26-30.

addressed through the regular order of the stakeholder process and the associated filings, not by attempts to sidetrack the Commission’s investigation into the causes and resolution of infrequent price excursions related to transmission and power balance constraint relaxation.

A. Comments Regarding PacifiCorp’s Resource Sufficiency and Scarcity Pricing Reflect a Misunderstanding of the Energy Imbalance Market.

Powerex contends that the occasional infeasibilities and resulting high prices have been caused by a lack of sufficient bids through the Energy Imbalance Market to meet imbalance energy needs in the PacifiCorp balancing authority areas, and that this is “not how the CAISO EIM was intended or expected to function.”²⁰ In this regard, Powerex asserts that that the CAISO’s proposal seeks to suppress the application of penalty prices by treating reserves held outside of the Energy Imbalance Market as “simply additional supply bids.”²¹ WPTF similarly argues that by recognizing PacifiCorp’s available capacity, “there will be no scarcity price signal known to the market place.”²²

Powerex and WPTF either fundamentally do not understand the nature and design of the Energy Imbalance Market, or they wish to circumvent the CAISO stakeholder process in order to obtain a result that undoes the benefits the Energy Imbalance Market has provided CAISO and PacifiCorp ratepayers. Regardless, these arguments constitute a collateral attack on the Commission’s prior orders accepting the Energy Imbalance Market as designed. Fundamentally, as designed and approved by

²⁰ Powerex at 13-16.

²¹ *Id.* at 19.

²² WPTF at 8.

the Commission, the Energy Imbalance Market serves as a means by which balancing authority areas other than the CAISO can choose *voluntarily* to serve as much, or as little, of their imbalance needs as they wish, and for resources to compete to serve the balancing authority needs of all balancing authority areas in the EIM area.²³ The Energy Imbalance Market does not co-optimize ancillary services and energy, as the CAISO does in its own balancing authority area. Moreover, the CAISO does not, through the Energy Imbalance Market, assume the responsibility for ensuring that each EIM entity is adequately resourced to meet all imbalance energy balancing needs in its balancing authority area. Rather, the design of the Energy Imbalance Market assumes that the CAISO and EIM entities will retain their respective resource adequacy programs after implementation of the Energy Imbalance Market. Consistent with this principle of the Energy Imbalance Market, the sufficiency tests do not test for resource adequacy. They are designed evaluate whether each EIM Entity will meet specific capacity tests and flexibility tests to ensure that it does not “lean” on the capacity of any other EIM Entity. The Commission accepted this design of the Energy Imbalance Market, recognizing that “CAISO and the EIM Entities continue to operate under their separate respective tariffs, amended in part for EIM arrangements only. Hence, when the EIM entity fails these tests, the only consequence is that transfers between the balancing authorities are frozen to the levels prior to failing the test. The consequence of failure is

²³ Thus, WPTF’s concerns about how the proposal fits into the transition to full participation in the CAISO are misplaced. The CAISO and its stakeholders did not design and the Commission did not approve the Energy Imbalance Market to be a steppingstone towards full participation in the CAISO balancing authority area. While the CAISO does not object to exploring such transitions, the Energy Imbalance Market stands on its own.

not complete isolation of the entity from the Energy Imbalance Market generally. The CAISO's proposed enhancement does not change these rules at all.

The CAISO tariff applies two sufficiency tests as part of the operation of the Energy Imbalance Market: (1) the EIM entity must present a balanced EIM resource plan; and (2) the EIM resource plan must meet flexible capacity requirements. The CAISO conducts these tests up to 40 minutes ahead of each operating hour for the purpose of ensuring the EIM entity has available resources and bid range to meet its load and the expected imbalances it decides to satisfy from EIM market, respectively. The EIM entity can fail the tests, and later, because of changed conditions, no infeasibilities actually occur. Likewise, the EIM entity can pass the tests but infeasibilities may still result during the actual market runs because of changed conditions. These tests are a reasonable measure to ensure that each EIM entity generally has sufficient resources to meet the *expected imbalances that it chooses to meet through the Energy Imbalance Market*, before participating in the more efficient Energy Imbalance Market-wide dispatch of resources, so as to avoid "leaning" on the capacity of other balancing authority areas.

It cannot be overemphasized that the purpose of these two tests are to ensure the EIM Entity has sufficient capacity to cover energy imbalances *it decides to cover from Energy Imbalance Market*. The Energy Imbalance Market is an energy-only market. In those rare cases where, due to unexpected circumstances outside of an EIM entity's control, the EIM entity must get help from the rest of the market, the Energy Imbalance Market provides the benefits of joint operation. The EIM Entity, however, retains the authority to decide, for example, how much of unexpected system changes

such load forecast errors and variable energy resource deviations they want to serve through the Energy Imbalance Market. Once the EIM entity decides this, it is up to the CAISO as the market operator to ensure, using the sufficiency tests, that EIM Entity has enough flexibility and capacity to meet those imbalances. It is then the responsibility of the EIM Entity to inform CAISO about other actions it uses to mitigate imbalances larger than what it elects to be covered by the Energy Imbalance market. The CAISO proposal merely streamlines the processing of these actions and ensures that the market is timely informed of those system changes

Powerex and WPTF's arguments regarding resource sufficiency are therefore beyond the scope of these proceedings, which are concerned solely with the CAISO's pricing of energy in the context of transmission and power constraints. To the extent Powerex seeks to substitute these with its own preferred sufficiency test, it is collaterally attacking the Commission's approval of the existing sufficiency tests and, indeed, the overall Energy Imbalance Market design.

Moreover, the data that the CAISO presented in its initial comments show failure to meet these two sufficiency tests is not even an issue for PacifiCorp. In the majority of the cases in which the Energy Imbalance Market perceived an infeasibility, PacifiCorp had met those tests.²⁴ Instead, the data show that the infeasible market solutions are primarily the result of various transitional issues between the CAISO and PacifiCorp, and the fact that the Energy Imbalance Market systems do not have full and timely information on the capacity available to PacifiCorp, and this artificial scarcity produces artificial infeasibility. Because the EIM entity is fully entitled to choose how much of its

²⁴ CAISO Initial Comments at 27-29.

energy imbalance needs are met through the Energy Imbalance Market, and because the Energy Imbalance Market does not co-optimize energy and ancillary services, the EIM entity retains the responsibility to manage its balancing authority area reliably. The EIM entity is not, however, required to bid into the market all of the capacity it has retained to meet its load reliably. This available capacity allows the EIM entity to serve load reliably in its balancing authority area to meet actual system requirements not met through the imbalance market dispatch.²⁵

The data presented by the CAISO and PacifiCorp in this proceeding shows that while in some of the intervals the EIM entity may have such capacity at its disposal, the inability to convey that this capacity will be used creates an infeasibility in the fifteen-minute or five-minute market run and results in a pricing anomaly. But in reality the EIM entity will instruct those resources to provide energy to meet its load without incident. The CAISO's proposal will allow the market to take that capacity into account and recognize that the scarcity does not exist. And because the scarcity does not exist, there is no need for a penalty price that signals scarcity conditions. In other words, the CAISO is not, as Powerex alleges, "expanding" the set of bids that in the Energy Imbalance Market to impede the market from identifying a meaningful price signal.²⁶ Rather, the proposal prevents the application of a penalty price that is intended to signal actual scarcity of capacity when in fact there is no such scarcity.

²⁵ The CAISO itself does not have this challenge because the markets co-optimize available resources to meet the CAISO energy imbalance needs and manage its use of ancillary services to meet its reliability requirements. The CAISO need not concern itself with retaining access to additional resources to meet increased ancillary services requirements because the market will determine the optimal energy dispatch that also considers the most optimal and economic procurement of ancillary services.

²⁶ See Powerex at 19-20.

B. Powerex Misunderstands the Analogy Between the Energy Imbalance Market and the NYISO and MISO Experiences.

In its initial comments, the CAISO discussed the power balance constraint issues faced by the Midcontinent Independent System Operator (MISO) and the New York Independent System Operator (NYISO) and the fact that both use capacity that would otherwise provide regulation or spinning reserves to address these constraints.²⁷ Powerex argues that the CAISO's "reliance" on these experiences is misplaced.²⁸ This argument misrepresents the CAISO's comments. The CAISO did not indicate any "reliance" on MISO's or NYISO's experiences, or suggest that those experiences are identical to those facing the Energy Imbalance Market. Rather, the CAISO presented these examples as instructive because both NYISO's and MISO's market designs account for the additional resources available to balancing authorities to balance load and generation when ramping constraints are binding, and neither employs a single high penalty tied to constraint relaxation such as the CAISO's \$1,000/MWh price when it is necessary to utilize such resources.

Powerex's specific arguments on this issue fare no better. Powerex claims that the MISO and NYISO situations are not analogous to the Energy Imbalance Market because the percentage of intervals in which the Energy Imbalance Market has encountered infeasibilities (approximately 4 to 5 percent) is higher than those experienced by MISO and NYISO (approximately .5 to 1 percent).²⁹ Powerex provides no explanation, however, as to why a purely quantitative difference in the range of 3-4

²⁷ See CAISO initial comments at 23-27.

²⁸ Powerex at 21.

²⁹ *Id.* at 21-22.

percent of infeasible intervals between the Energy Imbalance Market and the MISO and NYISO markets invalidates outright any comparison between them. A difference in frequency of a few percentage points, devoid of any context, does not undermine the applicability to the Energy Imbalance Market of lessons learned from market operators such as MISO and NYISO. This is particularly true here because both the NYISO and MISO data reflect the full operation of their systems as integrated balancing authority areas in which they co-optimize energy and ancillary services. As discussed above, the Energy Imbalance Market is different in that the EIM entity continues to operate as a separate balancing authority area, including with respect to meeting its reserve obligations.

Powerex also argues that the NYISO and MISO experiences are distinct from the Energy Imbalance Market because both NYISO and MISO apply a series of penalty prices when they utilize reserves to resolve power balance constraints.³⁰ Although technically correct, Powerex's contention that this distinction represents a flaw in the CAISO's proposal is without merit. Both NYISO and MISO co-optimize ancillary services and energy within their markets, and therefore, the need to deploy reserves to avoid infeasibilities in their real-time energy markets can more fairly be characterized as representing at least some level of supply scarcity. The CAISO's proposal, on the other hand, is merely intended to reflect the presence and value of capacity already available to an EIM entity. By recognizing and accounting for this capacity in the pricing run, the CAISO's proposed automated feature relieves any scarcity identified in the scheduling run. As such, there is no reason to trigger a penalty price reflecting scarcity conditions

³⁰ *Id.* at 22-23.

when the Energy Imbalance Market deploys such capacity. The key feature of the CAISO's proposal is that the EIM entity continues to have the flexibility, in its role as balancing authority, to use its contracted capacity as it sees fit, while ensuring that the Energy Imbalance Market recognizes the deployment of such capacity so as not to incorrectly assume scarcity conditions when none exist, and set prices accordingly. In this respect, the CAISO's proposal simply incorporates into the market the actions that the EIM entity can already take to manage its imbalance energy requirements and reserves.

Powerex also contends that the CAISO's proposal violates "traditional pricing principles" because energy prices should increase above variable costs when the transmission provider is required to reduce reserves to meet real-time energy needs.³¹ However, the CAISO's proposal in no way requires an EIM entity to reduce its reserves. Under the CAISO's proposal, the EIM entity is left to manage its regulation and other available capacity and is not required to deplete its reserves in order to make capacity available to the energy imbalance market. As such, utilizing the CAISO's proposed automated mechanism does not suggest that an EIM entity is depleting its reserves, or signal the need for scarcity pricing.

C. Powerex's Arguments Regarding PacifiCorp's Emergency E-Tags Are Without Merit.

Powerex alleges that the lack of bids has forced PacifiCorp to rely on out-of-market procurement to balance its system in certain intervals. Powerex acknowledges that it does not take issue with PacifiCorp's ability to purchase energy from third parties,

³¹ *Id.* at 23-25.

but contends that, following implementation of the Energy Imbalance Market, PacifiCorp dramatically increased intra-hour purchases using emergency e-tags after finalization of PacifiCorp's base schedules and resource plan (*i.e.*, after T-40).³² Powerex argues that the CAISO must address this practice because it is being used to mask supply infeasibility in the Energy Imbalance Market and distort prices. It contends that such purchases should trigger penalty pricing and that the Commission should require PacifiCorp to report them.³³

As noted above, this issue is beyond the scope of this proceeding. Like many of Powerex's other contentions, it also reflects a misunderstanding of the role of the Energy Imbalance Market. The Energy Imbalance Market is not a power pool operated as a single balancing authority area; the CAISO does not control how PacifiCorp manages its resources. It is entirely within PacifiCorp's discretion to use emergency e-tags to make out-of-market purchases in order to manage its system reliably. The Energy Imbalance Market specifically recognizes such manual dispatches and allows the market to take those into consideration in clearing the market. Indeed, one of the major benefits of the Energy Imbalance Market is that it provides advisory information to the EIM entity, both within the operating hour and preceding the operating hour, which allows the EIM entity to better decide which actions to take through the bilateral market or through manual dispatch. It is fully expected under the Energy Imbalance Market that an EIM entity will utilize these tools as necessary to meet its balancing authority area obligations.

³² *Id.* at 26.

³³ *Id.*

Moreover, as a factual matter, Powerex's argument lacks merit. Although Powerex contends that neither the CAISO nor PacifiCorp has been willing to provide data to permit examination of the issue,³⁴ PacifiCorp in fact explained the use of the emergency e-tags at the technical conference. In brief, PacifiCorp noted that the intra-hour e-tags are a tool familiar to its operators, the use of which is explained in PacifiCorp's business practices. During the early stages of the Energy Imbalance Markets, when operators were unclear how to address infeasibilities, they would turn to the familiar tool. This caused an increase in the use of emergency e-tags. Recently, however, the use of these e-tags has returned to the levels that occurred prior to the implementation of the Energy Imbalance Market.³⁵

In addition, Powerex's example of emergency e-tags distorting prices is flawed.

Powerex states the following:

[C]onsider an operating interval in which demand is expected to be 1,000 MW but effective EIM bids total only 800 MW. If the market is run with an accurate load forecast of 1,000 MW, all EIM supply bids will be exhausted and the EIM price will be based on penalty prices, which would currently be \$1,000/MWh. The EIM [balancing authority] would then be required to procure the remaining 200 MW through other means, including out-of-market purchases. If, however, the EIM [balancing authority] proactively engaged in an out-of-market purchase of 300 MW and communicated this information to CAISO, the EIM would only need to meet 700 MW of real-time imbalance needs – not 1,000 MW. The out-of-market purchase effectively reduces the load that must be met in the EIM, and distorts prices in two fundamental ways: (1) it permits PacifiCorp to sidestep the application of the constraint relaxation prices contained in the CAISO tariff; and (2) it gives PacifiCorp unfettered discretion in all intervals to pick and choose how much real-time imbalance energy it purchases outside of the

³⁴ *Id.*

³⁵ Transcript at 76-77.

EIM on a “pay as bid” basis and how much is procured through the EIM, at a clearing price that is suppressed by PacifiCorp’s out-of-market actions.³⁶

Powerex contends that the CAISO’s proposal would support such problematic outcomes. In fact, however, the emergency e-tag would be irrelevant to the market outcome under the CAISO’s proposal. As Powerex notes, PacifiCorp the discretion to decide how much real-time imbalance energy it wishes to serve through the Energy Imbalance Market. This is a fundamental design characteristic of the Energy Imbalance Market, and is in no way unique to the CAISO’s proposal.³⁷ The CAISO’s proposed enhancement merely makes visible to the Energy Imbalance Market capacity that the EIM entity has designated as necessary to operate its system reliably.

There is simply no evidence that the ability of PacifiCorp to use emergency e-tags to make out-of-market purchases would interfere with the operation of the Energy Imbalance Market under the CAISO’s proposal. There is no reason for the Commission to go beyond the scope of the proceeding to revise the market as recommended by Powerex.

D. Powerex’s Concerns About Load Biasing Are Misplaced.

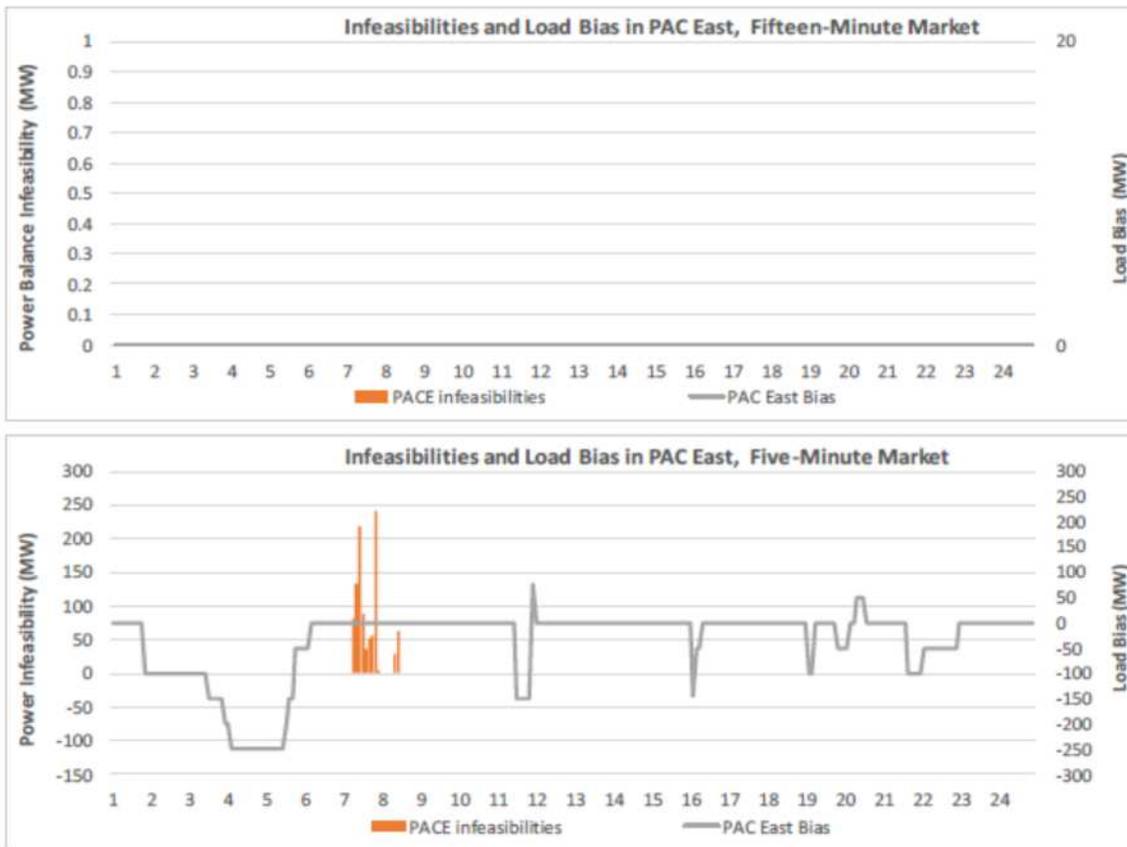
During the technical conference, the CAISO explained that it allows EIM entities to adjust load forecasts, known as load biasing, to address changes in operating conditions. The CAISO does the same in its operations.³⁸ As the balancing authority, the EIM entity is best equipped to determine the need for a load adjustment.

³⁶ Powerex at 28.

³⁷ See 147 FERC ¶ 61,231, at P 224.

³⁸ See Tr. at 80.

The CAISO forecasts PacifiCorp demand for imbalance energy through the Energy Imbalance Market. The CAISO has achieved an accuracy of 0.7 to 1.12 mean absolute percent error at approximately T-40, which equates to about 50-100 MW of forecast error. Also, PacifiCorp has approximately 400 MW of non-conforming load over which the CAISO has no visibility, and some of that load acts as demand response pursuant to PacifiCorp's instructions. Thus, while the CAISO's forecasts have been accurate to a significant degree, there are times when PacifiCorp, as the balancing authority, may need to make adjustments to account for actual conditions that could not otherwise have been forecasted by the CAISO. These are usually in the range of plus or minus 200 MW. The following is an illustrative example of a load biasing profile in the PacifiCorp East balancing authority area.



As this load biasing profile shows, the EIM entity normally biases load in the five-minute market and not the fifteen-minute market.

Powerex also raises the issue of the CAISO's application of the "load-bias limiter" functionality to the Energy Imbalance Market. The load-bias limiter is a feature in the CAISO markets meant to ensure that any operator adjustments to the load forecast are consistent with actual system conditions. The feature operates to prevent load adjustments from creating an infeasibility when such adjustments are inconsistent with the capabilities of the system at the time. This limitation is necessary because operator adjustments to load forecasts tend to be coarse adjustments, in increments of 10 to 50 MW, because the operator cannot precisely predict real-time system conditions.³⁹ Such adjustments may exceed the ability of the market to respond.⁴⁰ For example, an adjustment of 50-100 MW could exhaust five-minute ramping capability. Therefore, such coarse adjustments, if more than necessary to address actual system conditions, can result in infeasible market solutions. To prevent such over-adjustments and any infeasibilities they may potentially cause, the CAISO employs a load bias limiter in the CAISO balancing authority area, which automatically limits the course operator adjustment to actual capability as long as the quantify of the infeasibility is less than the operator adjustment and is in the same direction as the operator adjustment.⁴¹ This limiter as applied in the CAISO balancing authority area has worked well to prevent such artificial constraints and infeasibilities.

³⁹ Tr. at 86.

⁴⁰ *Id.* at 84.

⁴¹ *Id.* at 82.

The CAISO intends to expand the use of the load bias limiter to include the balancing authority areas of EIM entities when the waiver period expires.⁴² At the start of the Energy Imbalance Market, this feature was not in place for purposes of that market. Having recognized that the feature would benefit the Energy Imbalance Market as well, the CAISO made it available to the EIM area starting on March 20, 2015. During the term of the waiver, because the waiver pricing does not permit the infeasibility to set the price, the application of the load bias limiter feature is not necessary.⁴³

Powerex expresses concern that the CAISO is using the load bias limiter to prevent load adjustments from triggering constraint relaxation and that EIM entities could use load adjustments to mask scarcity or control prices.⁴⁴ The CAISO, however, has explained that it only limits load adjustments to reflect system capability; the adjustment may avoid a constraint relaxation, but the avoided constraint relaxation is one that would have been triggered by the coarse biasing of load and not because there is true scarcity.⁴⁵ The feature ensures that the bias is not limited if the quantity of the infeasibility is greater than the load bias and if the bias is in the opposite direction of the infeasibility. These measures limit the possibility that if there was a true infeasibility that needs to be addressed and the operator's bias was refined enough to target that

⁴² The CAISO has not expanded this functionality during the term of the waiver because a load forecast adjustment-related infeasibility could not set the price when the waiver is in place, because under the waiver the marginal bid always sets the price. *Id.*

⁴³ The CAISO has not expanded this functionality during the term of the waiver because a load forecast adjustment-related infeasibility could not set the price when the waiver is in place, because under the waiver the marginal bid always sets the price. *Id.* The adjustment to the bias is only made after the CAISO has determined in the scheduling run that the bias exceeds the available ramping capability and ensures that in the pricing run the infeasibility does not constrain the system.

⁴⁴ Powerex at 32.

⁴⁵ Tr. at 188-89.

infeasibility, the prices will reflect that need. While Powerex questions the appropriateness of allowing the operator to bias the forecast, it casts judgment of the CAISO's use of the tool to ensure the bias does not cause meaningless price spikes. Powerex's arguments are contradictory and Powerex present no evidence that PacifiCorp is using load adjustments to control prices.

Powerex contends that any load biasing should only be done where necessary to ensure a more accurate forecast and only by CAISO in its role as market operator for the Energy Imbalance Market.⁴⁶ These comments once again reflect Powerex's basic misunderstanding of the design of the Energy Imbalance Market. The CAISO has not assumed the balancing authority functions for the EIM entity. As the entity responsible for balancing supply and demand within its balancing authority area, the EIM entity is far better equipped than the CAISO to identify the need for load adjustments. Therefore, the EIM entity rightfully holds the final power to adjust the load forecast for its balancing authority area as it deems appropriate.

Powerex also asks that instances in which load biasing is used for the purpose of running the Energy Imbalance Market be publicly posted. While the CAISO believes in the value of transparency in the Energy Imbalance Market, that value must be balanced with the need to avoid overly burdensome reporting requirements.

The Department of Market Monitoring is recommending that the CAISO begin to report on the portion of intervals in which power balance relaxations would be mitigated

⁴⁶ Powerex at 34.

by the load bias limiter feature after expiration of the price discovery measures currently in place.⁴⁷

E. Contrary to WPTF’s Assertion, the CAISO’s Proposed EIM Enhancement Will Not “Automate Exceptional Dispatches” in PacifiCorp’s Balancing Authority Area.

WPTF contends that the CAISO’s proposal would simply “automate exceptional dispatches in the EIM area.”⁴⁸ This statement reflects a misunderstanding of the differences between exceptional dispatch, a CAISO-specific practice, and general manual dispatches performed by PacifiCorp. The CAISO market optimizes ancillary services and energy and aims, to the greatest extent possible, to rely on the market processes for all energy and ancillary service needs. In addition, the CAISO has specific provisions regarding the deployment of operating reserves as energy via the market processes through a real-time contingency dispatch process.⁴⁹ Exceptional dispatches are permissible for only twelve specific functions that the market cannot perform, including responses to system emergencies. These are set forth in Sections 34.11.1 and 34.11.2 of the CAISO tariff. Because exceptional dispatches are outside the market and paid as bid, their bids are subject to mitigation.⁵⁰ Further, in fairness to generators subject to certain exceptional dispatches, the exceptional dispatch may also result in supplemental revenues or a “capacity procurement designation.”⁵¹ Because of

⁴⁷ Department of Market Monitoring Report on Performance of Energy Imbalance Market at 34, Docket No. ER15-402-000 (Apr. 2, 2015).

⁴⁸ WPTF at 9.

⁴⁹ CAISO Tariff, Section 34.5.2.1.

⁵⁰ *Id.* at Section 11.5.6.1.

⁵¹ *Id.* at Section 43.2.5.

the exceptional nature and consequences of exceptional dispatch, the Commission requires that the CAISO report them on a 60-day basis.⁵²

In contrast, PacifiCorp retains full control and responsibility over operating its balancing area, including managing its ancillary services and contingency reserves. Participating in EIM does not require an EIM entity to procure its ancillary services and all of its energy through market processes. Manual dispatches are therefore part of PacifiCorp's normal course of managing its system. They do not necessarily involve exceptional actions or consequences, and therefore, there is no reason to require PacifiCorp to engage in reporting akin to the requirements relating to exceptional dispatch. Moreover, the purpose of the CAISO's proposed EIM enhancement is not to automate the process of PacifiCorp *performing* manual dispatches, but rather, to improve and streamline the process by which PacifiCorp *communicates* such actions to the market operator in order to ensure the EIM dispatches and prices reflects actual system conditions.

F. The Commission Should Reject Powerex's Proposed "Next Steps".

Although this proceeding is limited to issues raised by the CAISO's pricing of energy when it relaxes transmission and power balance constraints, Powerex asks the Commission to "direct the CAISO to craft a proposed solution that includes measures that ensure that PacifiCorp is required to commit sufficient resources to the EIM in advance at a level that meets imbalance needs under a full range of operational conditions."⁵³ The existing resource sufficiency test, which the Commission has found

⁵² See *Cal. Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,150, at P 263 (2009).

⁵³ Powerex at 35.

to be just and reasonable, ensures that the EIM entity has sufficient capacity to meet forecasted demand. As discussed above, however, the Energy Imbalance Market was not designed and approved by the Commission as a vehicle to require EIM entities to commit sufficient resources at a level that meets all of their imbalance needs under all operational conditions. To the contrary, the design of the Energy Imbalance Market leaves the EIM entity latitude to continue to operate as a separate control area but make use of the Energy Imbalance Market to the extent it determines it can, while continuing to maintain system reliability when conditions fall outside of the expected range of conditions the Energy Imbalance Market was intended to address. Powerex's request is thus outside the scope of this proceeding, and to the extent that it challenges the existing EIM resource sufficiency provisions, that request constitutes a collateral attack on the Commission's orders approving the Energy Imbalance Market.⁵⁴

The Commission should also disregard Powerex's request for additional data concerning ramping capability and the flexible ramping constraint. As noted, these matters are beyond the scope of this proceeding, and such data are not necessary for the Commission to evaluate the CAISO proposed solution. Even if the CAISO were to procure more flexible ramping capability, it would not address the issues in this proceeding because the EIM entity still needs capacity available to meet its balancing authority functions, not to enable EIM transfers. The purpose of the flexible "ramping" requirement is to position the generation fleet to meet potential variability and

⁵⁴ See 147 FERC ¶ 61,231, at P 122 (accepting the CAISO's proposed Energy Imbalance Market resource sufficiency test, finding that it "allows EIM participants to gain the benefits of increased resource diversity, while preventing them from inappropriately leaning on other BAAs."); 149 FERC ¶ 61,058, at P 54 (denying Powerex's request for rehearing of the Commission's acceptance of the resource sufficiency test),

uncertainty within the EIM area. It is not a mechanism to manage load following and regulation. As previously explained, the Energy Imbalance Market is not responsible for managing ancillary services or meeting reliability standards; these are EIM entity responsibilities.

G. Deseret’s Comments Regarding Third-Party Participation Issues Are Beyond the Scope of this Proceeding.

In its comments, Deseret acknowledges that the CAISO’s proposal is a “step in the right direction.”⁵⁵ Nevertheless, Deseret requests that the Commission direct the CAISO to “immediately remove the barriers which prevent third party resources from offering energy into the EIM and restore the portfolio of resources available for managing energy imbalance within the PacifiCorp BAAs to pre-EIM levels.”⁵⁶ Deseret also urges that the CAISO expedite the consideration of implementing intertie bidding.⁵⁷ The CAISO generally supports including additional economic bidding and exploring other mechanisms that facilitate the ability of third-party resources to participate in the Energy Imbalance Market. However, under the current design, the participation rules remain subject to the discretion of the EIM entities. Changes to the fundamental Energy Imbalance Market rules of participation are beyond the scope of this proceeding. Any proposed changes to these rules should be deferred to an appropriate stakeholder

⁵⁵ Deseret at 3.

⁵⁶ *Id.* at 5.

⁵⁷ *Id.* at 9-11.

process so that the alternatives and various party positions can be fully vetted and considered.⁵⁸

Deseret also asks the Commission to direct the CAISO to provide a “comprehensive list of all the impediments to third party generation’s full participation in the EIM, and a timetable for eliminating a portion of those impediments prior to the summer peak periods, and thereafter all remaining impediments.”⁵⁹ Again, although the CAISO supports reducing barriers to Energy Imbalance Market participation, the focus of this proceeding is limited to addressing the specific pricing anomalies observed in the Energy Imbalance Market. Broader issues regarding third-party participation should be considered in an appropriate stakeholder process. Moreover, this specific request is not feasible from the CAISO’s perspective, as only an EIM entity has full knowledge of which resources in its balancing authority area are or are not participating.

Finally, Deseret requests that the Commission direct the CAISO and/or PacifiCorp to address whether including non-participating resources in the CAISO’s proposed solution would create a duplicate revenue stream in terms of cost-based PacifiCorp ancillary services charges and Energy Imbalance Market-imposed charges. If so, Deseret submits that the revenue stream deriving from PacifiCorp’s non-participating resources being deployed to solve an infeasibility should result in either (i) a revenue credit to the transmission customers taking ancillary services under the PacifiCorp OATT, or (ii) a reduction in the ancillary service rates themselves. To clarify,

⁵⁸ The CAISO plans to address with stakeholders the topic of whether inertia virtual bidding should remain discretionary as part of the upcoming Phase 2 portion of the Energy Imbalance Market year 1 enhancement stakeholder process.

⁵⁹ Deseret at 11.

the CAISO's proposal will not create any duplicate revenue streams. The CAISO's proposal will merely enhance the ability of the Energy Imbalance Market to account for capacity available to PacifiCorp, and establish prices accordingly. It does not change the underlying distinction between participating and non-participating resources or the manner in which imbalance energy of those resources are settled.

H. Issues Relating to Readiness Criteria and the Transition Process for New EIM Participants Are Outside the Scope of the Technical Conference, and the CAISO Is Addressing Such Issues in Separate Filings.

Some parties argue that the CAISO's proposed automated solution does not go far enough to address the issues that prompted the CAISO to request a tariff waiver and subsequently to submit the January 15 tariff amendment to establish a transition period for relaxing the pricing parameters set forth in the tariff.⁶⁰ For example, BPA recommends creating a rigorous standard for new EIM entities to demonstrate their readiness to join the Energy Imbalance Market, and NV Energy contends that adoption of the CAISO's proposal does not eliminate the need for a transition period. Truckee also proposes a number of what it terms "additional steps," including ensuring there is sufficient time for parties to implement and test the CAISO's proposed Energy Imbalance Market enhancement before allowing price waivers to lapse, and requiring that future EIM entities demonstrate that their processes work with the CAISO's proposed enhancement.⁶¹

⁶⁰ BPA at 2-3; Deseret at 11-12; NV Energy at 7-9; Truckee at 3-7.

⁶¹ Although the CAISO believes that these issues are better addressed in a separate proceeding specific to transition issues, the CAISO agrees with the substance of Truckee's comments that robust testing of the enhancement should precede any expiration of the existing pricing waiver.

Such issues are beyond the scope of the technical conference and the CAISO's initial comments, which solely concern the causes of and solution to the imbalance energy price spikes experienced in the PacifiCorp balancing authority areas. The CAISO and current and prospective EIM entities recognize that new EIM entities require a transition period during which they can evaluate and address the implications of participating in the Energy Imbalance Market without negatively affecting ratepayers after Energy Imbalance Market participation begins. The CAISO plans to commence a stakeholder process in the near future aimed at developing a new tariff amendment to address transitional issues that new EIM entities may experience following the start of their participation in the Energy Imbalance Market, consistent with the directive in the March 16 Order that the CAISO could propose a future tariff amendment to include a transitional period similar to its proposal in the January 15 filing if it could demonstrate that the new proposal was commensurate with the need to address a new EIM entity's post-operation learning curve.⁶² Also, on May 6, 2015, the CAISO submitted its filing to comply with the directives in the March 16 Order regarding readiness requirements for new EIM entities. Therefore, comments regarding transitional and readiness issues for new EIM entities are appropriately addressed in the context of these filings, rather than the present proceeding.

I. BPA's Pricing Arguments Do not Undermine the Merits of the CAISO's Proposal.

BPA raises a number of arguments regarding "pricing principles." First, BPA contends that the CAISO's proposal conflicts with the Commission's Order No. 784.

⁶² See March 16 Order at P 35.

BPA reasons that during intervals the Energy Imbalance Market is infeasible, the EIM entity “as the only supplier, now has captive customers,” and therefore should not be able to recover rates that exceed its costs because the lack of market power presumed under Order No. 784 no longer exists.⁶³ BPA’s argument is misplaced. First, BPA’s characterization of the EIM entity as “the only supplier” is incorrect. The EIM entity is not a “supplier” at all, but a balancing authority that opts to participate in the Energy Imbalance Market. The EIM entity, through its EIM entity scheduling coordinator, is responsible for *scheduling* all load and resources in its balancing authority area that do not participate in the real-time market and for settling related charges and payments, but the EIM entity does not “supply” anything.⁶⁴ BPA also appears to misunderstand the CAISO’s proposal. The CAISO’s proposal does not change the underlying pricing and settlement mechanisms of the Energy Imbalance Market, except insofar as it insures that capacity available to the EIM entity is accounted for to prevent triggering the \$1,000 per megawatt-hour administrative price when there is not actually a lack of capacity available to resolve a potential infeasibility. Moreover, the CAISO’s local market power mitigation provisions, which are applicable to the Energy Imbalance Market, ensure that participants are not able to use market power to set the price for imbalance energy. Regardless, to the extent that BPA’s argument goes to the pre-existing operation of the Energy Imbalance Market, or to the justness and reasonableness of the Commission’s

⁶³ BPA at 4.

⁶⁴ CAISO Tariff, Appendix A, definition of “EIM Entity.” See *also* transmittal letter for CAISO tariff amendment to implement Energy Imbalance Market, Docket No. ER14-1386-000, at 14-15 (Feb. 28, 2014).

grant of market-based rate authority to particular suppliers or the EIM entity itself, such issues are beyond the scope of this proceeding.

BPA next contends that there is a “cost-shift flaw” in the CAISO’s approach to infeasibility in that the CAISO’s solution is to isolate the EIM entity and require customers in that EIM balancing authority area to bear the costs of solving the market infeasibility. BPA alleges that this results in a market that gives preference to its own balancing authority area.⁶⁵ It is not entirely clear if BPA intends this argument as a critique of the CAISO’s proposal or of the underlying Energy Imbalance Market design. Regardless, BPA is mistaken. The Energy Imbalance Market uses resources within the CAISO balancing authority area to balance load and generation to the extent there are available EIM transfers. However, the Energy Imbalance Market does not “isolate” EIM entities when infeasibilities occur. EIM transfers are frozen only when an EIM entity fails the resource sufficiency test. The CAISO’s proposed enhancement impacts this only in terms of preventing available capacity being used to support additional transfers beyond the level of the potential infeasibility.

BPA also criticizes the Energy Imbalance Market design for discouraging steps to minimize the amount of imbalance service required, based on the timing of the Energy Imbalance Market relative to the EIM entity scheduling windows under the tariff and the pricing differential between scheduled imports and load. BPA contends that these factors remove the ability of a transmission customer to truly hedge against congestion when minimizing the amount of its imbalance.⁶⁶ BPA recommends that the CAISO

⁶⁵ BPA at 4-5.

⁶⁶ *Id.* at 5.

incorporate mechanisms to “encourage parties to decrease the amount of imbalance that the EIM must resolve,” which BPA contends would decrease the likelihood of the Energy Imbalance Market encountering infeasibilities. To this end, BPA suggests that the CAISO should harmonize the load aggregation point price and the locational marginal price for transmission customers that import generation to the Energy Imbalance Market to serve load.

These suggestions go well beyond the scope of the current proceeding into the realm of the fundamental design of the Energy Imbalance Market, and in particular the suggestions cut against the notion of voluntary participation in the Energy Imbalance Market by EIM entities. BPA also fails to appreciate the changing nature of the energy marketplace. The increased deployment of variable resources has increased and will continue to increase imbalance energy needs, which in turn increases the appeal of imbalance energy markets with a broader footprint, such as the Energy Imbalance Market. With respect to BPA’s suggestion to “harmonize” the load aggregation point price and the locational marginal price, this is in effect a request to do away with the effects of imbalance energy settlements. In its order authorizing NV Energy to join the Energy Imbalance Market, the Commission made clear that it is appropriate to settle imports and exports at the locational marginal price of the applicable intertie scheduling point.⁶⁷

With respect to the CAISO’s proposal to calculate default energy bids for non-participating resources, BPA maintains that whether the CAISO uses existing or new default energy bid provisions for this purpose, the Commission should ensure that this

⁶⁷ *Nevada Power Co.*, 151 FERC ¶ 61,131, at P162 (2015)

default pricing does not create a windfall for EIM entities.⁶⁸ To clarify, the CAISO's proposal is to use its existing rules for formulating default energy bids. Those rules, which the Commission has reviewed and found just and reasonable, are sufficiently robust to ensure that their application will not result in a windfall.⁶⁹ It is also important to understand that the purpose of constructing such default energy bids is to ensure that the Energy Imbalance Market accounts for resources available to the EIM entity, so that the Energy Imbalance Market price is appropriately set by the marginal resource. Regardless, the CAISO's proposed Energy Imbalance Market enhancement does not in any way change the manner in which imbalance energy is settled.

BPA also requests two clarifications regarding the CAISO's proposal. First, BPA requests that the CAISO clarify that the pricing and utilization of non-participating resources under its proposal applies only to resources that the EIM entity owns or operates, not to any non-participating resource within the EIM balancing authority area.⁷⁰ The CAISO confirms that this interpretation is correct, with two caveats: (1) the "EIM entity" refers to PacifiCorp in its role as the balancing authority, not its merchant functions, and thus the "EIM entity" does not own any resources; and (2) the CAISO's proposal is not limited to resources "owned" by PacifiCorp, but includes any resources with whom PacifiCorp has contractual arrangements. Second, BPA asks the CAISO to clarify that its proposal for use of non-participating resources does not apply to an EIM entity's contingency reserves needed to satisfy that entity's contingency reserve

⁶⁸ BPA at 7.

⁶⁹ Resources that are on automatic regulation already receive an imbalance settlement through the Energy Imbalance Market even when there is no infeasibility.

⁷⁰ BPA at 8-9.

obligation. BPA states that it assumes that the CAISO is not proposing to use contingency reserves.⁷¹ The CAISO cannot provide this clarification, because the manner in which an EIM entity utilizes its contingency reserves to meet its reliability requirements is within the discretion of the EIM entity. The CAISO has no oversight or input into this process.

J. The CAISO Provides Clarifications in Response to Concerns Expressed by PG&E and SCE Regarding Bid Cost Recovery Allocation.

Both PG&E and SCE generally support the CAISO's proposal, but ask that the CAISO ensure that any bid cost recovery uplifts associated with resolving potential infeasibilities be borne by the relevant balancing authority.⁷² SCE in particular expresses concern about the possibility that costs are shared among balancing authorities when energy from ancillary service providers can only be used locally, and cannot support additional EIM transfers.⁷³

First, bid cost recovery payments to non-participating resources resulting from the CAISO's proposal should be extremely rare because all participating resource bids will be utilized before releasing available capacity. The participating resource bids will serve as a floor for the marginal price. If a non-participating resource is dispatched from available capacity, the derived cost can establish the marginal price. However, there are no start-up or minimum load costs for non-participating resources; therefore, only energy revenue shortfalls could give rise to bid cost recovery. Because non-participating resources can set the price only if their costs exceed the last participating

⁷¹ *Id.* at 9-10.

⁷² PG&E at 3; SCE at 2-3.

⁷³ SCE at 3.

resource bid, the market will set a marginal price at least equal to the non-participating resource's costs. Therefore, only in the event of price corrections outside of the market could the potential for bid cost recovery payments exist.

Also, uplift costs are allocated to other EIM balancing authority areas only when there is an EIM transfer out during a five-minute settlement interval. All uplift costs associated with an EIM transfer out are allocated to the balancing authority area receiving the EIM transfer in, so the potential impact of uplift costs would only occur during intervals where an EIM balancing authority area is short on supply to meet demand. However, if the EIM balancing authority area is short in meeting its internal demand, there will not be EIM transfers out of that balancing authority. In fact, the EIM transfer constraint will be binding because EIM transfers from other EIM balancing authority areas are insufficient to resolve the power balance infeasibility. When there are no EIM transfers out of the EIM balancing authority area, all uplift costs incurred in that balancing authority area remain in that balancing authority area. There can be a scenario where the fifteen-minute market supports an EIM transfer out, but an infeasibility occurs in the five-minute real-time dispatch, which cannot completely change the direction of the EIM transfer. This occurs today with PacifiCorp under the five-minute rate of change constraint required by BPA. This could result in uplift costs that are transferred to another EIM balancing authority area if available capacity is used to address the infeasibility. However, this cost allocation is appropriate because it recognizes the cost of maintaining the beneficial fifteen-minute market transfers even though the balancing authority is short of five-minute energy. The CAISO's proposal will reduce the real-time imbalance energy offset because the locational marginal prices at

which uninstructed imbalance energy will be settled will be based on the marginal resource price and not the \$1,000 per megawatt-hour relaxation parameter.

PG&E recommends that the CAISO consider system losses when calculating the constraint for the amount of available capacity to release, to ensure the quantity is adequate to avoid a power balance violation when system losses change from the re-dispatch of resources internal to the EIM area.⁷⁴ The CAISO clarifies that it will consider system losses when performing this calculation.

K. The CAISO and Stakeholders Can Examine the Issue of Possibly Reducing the Price Cap in an Upcoming Stakeholder Initiative.

Iberdrola and NV Energy request that the CAISO further examine the \$1,000 per megawatt-hour price cap set forth in its tariff to determine whether it should reduce the price cap.⁷⁵ The CAISO and stakeholders can examine this issue as part of the planned Stepped Transmission Constraint initiative, which is currently expected to take place in the second half of 2015.⁷⁶ That stakeholder initiative will consider whether the performance of the transmission constraint parameter could be improved if the CAISO were to calibrate it at different levels depending on either the level of constraint relaxation, the voltage level of the constraint, or the system impact of the constraint.⁷⁷ As part of that discussion, the CAISO and stakeholders can also consider the potential advantages and disadvantages of reducing the price cap.

⁷⁴ PG&E at 2.

⁷⁵ Iberdrola at 3-4; NV Energy at 9-10.

⁷⁶ See Briefing on 2015 Policy Development Roadmap at slide 4. This briefing is available on the CAISO website at <http://www.caiso.com/informed/Pages/StakeholderProcesses/StakeholderInitiativesCatalogProcess.aspx>.

⁷⁷ See Final 2015 Stakeholder Initiatives Catalog, § 3.9 (Jan. 23, 2015), available on the CAISO website cited in the footnote immediately above.

L. The CAISO Agrees to Report on the Performance of the Proposed Automated Enhancement.

PG&E recommends that the CAISO report on the performance of its proposed solution quarterly for the first year after it goes into effect.⁷⁸ The CAISO agrees that it is appropriate to report on the performance of the proposed automated solution for the first four quarters after it is implemented.

Further, once the proposed solution goes into effect, it will no longer be necessary for the CAISO to continue to submit the monthly informational reports as directed in the March 16 Order.⁷⁹ The quarterly reports will provide sufficient information about the performance of the proposed solution in resolving the price excursions that have affected the performance of the Energy Imbalance Market. Therefore, the Commission should allow the CAISO to cease providing the monthly informational reports once the proposed solution is implemented.

M. The CAISO Addresses Puget's Requests for Additional Information.

Puget supports the CAISO's proposal, but requests that the CAISO provide "numerical examples and more detailed information" on its proposal to assist market participants in evaluating the pricing impacts thereof.⁸⁰ The CAISO notes that its initial comments contained a number of graphical figures illustrating how its proposal would operate. If additional illustrative examples are needed, the CAISO can provide these in its tariff amendment filing to implement the proposal.

⁷⁸ PG&E at 1.

⁷⁹ See March 16 Order at P 38.

⁸⁰ Puget at 4.

Puget also requests that the CAISO clarify several aspects of its proposal. First, Puget asks the CAISO to clarify that the pricing resulting from its proposal does not require escalation from the last economic bid up to the \$1,000 per megawatt-hour bid cap during conditions when “available capacity” resources have been fully deployed, and contingency reserves not visible to the Energy Imbalance Market must be used.⁸¹ This is not correct. If the capacity available to the EIM entity is fully committed and an infeasibility still exists, then the power balance constraint will bind and the \$1,000 per megawatt-hour penalty price will apply.⁸² Moreover, if the marginal economic bid is \$1000, then that bid will set the price.

In addition, Puget requests that the CAISO clarify that non-participating resources that receive dispatch operating targets into the “available capacity” region of the bid curve will follow the EIM entity balancing authority area’s dispatch instructions, not the CAISO’s dispatch instructions.⁸³ The CAISO clarifies that its proposal does not change the underlying operation of the Energy Imbalance Market in terms of dispatch instructions: the CAISO will continue to provide automatic dispatch instructions to EIM scheduling coordinators, which will be passed through to specific resources by the relevant EIM entity balancing authority.

Finally, Puget requests that the CAISO make clear how its proposed tariff changes would treat the EIM entity balancing authority area’s access to shared

⁸¹ *Id.* at 5.

⁸² In the case of an infeasibility involving over-generation, the minimum energy bid price of negative \$150 price will apply. See CAISO Tariff, Section 39.6.1.4. Also, in the case of a potential infeasibility involving over-generation where there are self-schedules from EIM participating resources, such self-schedules will be cut and the negative \$150 price will apply.

⁸³ Puget at 6.

contingency reserves that could only be deployed in certain qualifying events.⁸⁴ To reiterate, the CAISO's proposal is merely a mechanism to ensure that the Energy Imbalance Market is informed of capacity available for use by the balancing authority to address potential infeasibilities. The CAISO's proposed enhancement will not automate the communication of reserve deployment by the EIM entity. Also, the CAISO does not propose to adopt or usurp any of the balancing authority's responsibilities, and thus it is up to the balancing authority as to what, if any, contingency reserves it chooses to deploy manually.

N. The CAISO Does Not Anticipate that Its Proposed Enhancements Will Create New Impacts for Market Participants Within the CAISO Balancing Authority Area.

Six Cities states that the CAISO's initial comments do not include any analysis of the effects of the proposed Energy Imbalance Market enhancement on market participants located within the CAISO balancing authority area. Six Cities suggests that the proposed enhancement "will result in different optimization methods being used for the EIM in the CAISO BAA versus EIM entity BAAs." Six Cities also requests that the CAISO evaluate potential impacts of the proposed modification on the CAISO balancing authority area and share that analysis with stakeholders.⁸⁵

The CAISO does not anticipate that its proposed enhancement will create any new impacts specific to market participants within the CAISO's balancing authority area. As described above, the CAISO's proposal merely ensures that information regarding capacity available to an EIM entity is accounted for in the Energy Imbalance Market and

⁸⁴ *Id.* at 6-7.

⁸⁵ Six Cities at 2.

priced appropriately. It does not fundamentally change the underlying operation of the Energy Imbalance Market or impose an optimization method that varies based on EIM balancing authority areas.

O. The CAISO Will Need to File Specific Tariff Modifications to Implement Its Proposed Energy Imbalance Market Enhancement.

The CAISO concurs with parties that point out that the CAISO will need to file, on compliance, specific tariff modifications in order to implement its proposed Energy Imbalance Market enhancement.⁸⁶ The CAISO also agrees that this filing will include all necessary implementation details, and as with all Section 205 filings, interested parties will have an opportunity to provide comments.

III. CONCLUSION

For the foregoing reasons, the CAISO requests that the Commission accept these reply comments and issue an order directing the CAISO to file tariff revisions to implement the Energy Imbalance Market enhancements described in the CAISO's initial comments, in order to resolve the Commission's investigation in Docket No. EL15-53.

Respectfully submitted,

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Dated: May 21, 2015

CERTIFICATE OF SERVICE

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

Dated at Washington, D.C this 21st day of May, 2015.

/s/ Michael Kunselman

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