

February 16, 2024

The Honorable Debbie-Anne A. Reese
Acting Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20246

**Re: California Independent System Operator Corporation
Docket No. ER23-2686-_____**

Compliance Filing

Dear Secretary Reese:

The California Independent System Operator Corporation (CAISO) submits this filing in compliance with the Commission's Order Accepting in Part, Subject to Condition, and Rejecting in Part Tariff Revisions issued in this proceeding on December 20, 2023.¹ The CAISO respectfully requests that the Commission accept the proposed tariff revisions contained in this filing as compliant with the December 20 Order.

I. Background

On August 22, 2023, the CAISO submitted a tariff amendment in this proceeding to enhance and extend its day-ahead market in the West by implementing its Day-Ahead Market Enhancements (DAME) and Extended Day-Ahead Market (EDAM) initiatives (August 22 Filing). In the August 22 Filing and the answer to comments and limited protests the CAISO submitted in the proceeding on October 11, 2023 (October 11 CAISO Answer), the CAISO requested that the Commission accept specified tariff revisions pertaining to EDAM onboarding and implementation effective December 21, 2023, and requested that the Commission accept the balance of the tariff revisions effective as of a date to be provided in a later notification filing in the proceeding.²

¹ *Cal. Indep. Sys. Operator Corp.*, 185 FERC ¶ 61,210 (December 20 Order). Capitalized terms not otherwise defined in this compliance filing have the meanings set forth in appendix A to the CAISO tariff, as revised pursuant to the December 20 Order, and references herein to tariff sections and appendices are references to sections and appendices of the CAISO tariff, as revised pursuant to the December 20 Order, unless otherwise indicated.

² Transmittal letter for August 22 Filing at 1-2, 199-200; October 11 CAISO Answer at 169-71. With one exception, the tariff revisions with a requested effective date of December 21, 2023

In the December 20 Order, the Commission accepted in part, subject to condition, and rejected in part the tariff revisions contained in the August 22 Filing. The Commission granted the CAISO's requested effective dates.³ The Commission also directed the CAISO to submit a compliance filing within 60 days of the December 20 Order that satisfies the requirements described below.

II. Compliance with the December 20 Order⁴

A. Market Parameters

As discussed in the December 20 Order, the CAISO proposed in the August 22 Filing to procure Imbalance Reserves on a nodal basis using deployment scenarios similar to those the CAISO currently uses to procure the Flexible Ramping Product in its real-time market and the Western Energy Imbalance Market (WEIM). The CAISO did not propose to enforce all Transmission Constraints in the deployment scenarios. Instead, the CAISO proposed only to enforce in the deployment scenarios the transmission constraints identified in the relevant Business Practice Manual (BPM).⁵ In addition, the CAISO proposed to implement a tunable market parameter, the Deployment Factor, to control the proportion of Imbalance Reserves awards that must be deliverable in the deployment scenarios. The deployment factor, which the CAISO likewise proposed to include in the relevant BPM, will determine how much of the Imbalance Reserves procured would have been feasible in the scenario.⁶

were contained in attachment B-1 to the August 22 Filing, and the balance of the tariff revisions were contained in attachment B-2 to the August 22 Filing. The exception was that the CAISO accidentally included new tariff section 33.11.5 in attachment B-2, instead of in attachment B-1 with a requested effective date of December 21, 2023 as the CAISO intended. See October 11 CAISO Answer at 170-71.

³ See December 20 Order at PP 2, 41-44, and Ordering Paragraphs (A)-(C). In particular, the Commission accepted the following effective December 21, 2023: new tariff sections 33.1, 33.2, 33.4, and 33.11.5, and new tariff appendices B.27, B.28, B.29, B.30, B.31, B.32, and B.33. The Commission accepted the balance of the tariff revisions contained in the August 22 Filing that were approved in the December 20 Order, subject to the compliance requirements described below in section II of this transmittal letter, effective as of their actual implementation date, subject to the CAISO notifying the Commission of the effective date within five business days after the actual implementation date. December 20 Order at P 41 & n.53, P 520, and Ordering Paragraphs (B)-(C).

⁴ The subheadings in this section are the same as the subheadings in the December 20 Order that contain the cited paragraphs directing the CAISO to make tariff revisions on compliance.

⁵ See December 20 Order at P 63 (citing transmittal letter for August 22 Filing at 71-72 and relevant tariff provisions).

⁶ See *id.* at P 64 (citing transmittal letter for August 22 Filing at 73 and relevant tariff provisions).

In the stakeholder process leading to the August 22 Filing, the CAISO explained the flexibility created through the Deployment Factor and through the selective enforcement of constraints in the deployment scenarios was important to allow the CAISO to help ensure the costs and benefits of the product stayed aligned. The CAISO discussed the principles it planned to apply in setting the Deployment Factor and determining the activation and deactivation of Transmission Constraints with respect to the deployment of Imbalance Reserves. In response to stakeholder requests for information on these matters prior to their inclusion in the BPMs, this stakeholder engagement included publication of a detailed matrix documenting the principles discussed in the stakeholder process.⁷ The August 22 Filing cited the matrix as identifying how the CAISO intended to tune these market parameters.⁸ However, the tariff revisions proposed in the August 22 Filing simply stated the parameters would be tuned based on considerations identified in the BPM without adding details of what those considerations would be.⁹

In the December 20 Order, the Commission did not take issue with the substance of how the CAISO intended to tune these parameters. The Commission, however, expressed concern that none of the factors covered in the matrix and elsewhere were reflected in the tariff.¹⁰ The December 20 Order accordingly directed the CAISO to submit a compliance filing that includes tariff revisions listing considerations the CAISO will use to tune these parameters.¹¹ In issuing this directive, the Commission noted that the CAISO identified the matrix described above as containing the considerations the CAISO intends to use to derive the Deployment Factor and to determine the activation/deactivation of Transmission Constraints.¹²

To comply with the Commission's directive, the CAISO proposes to amend tariff section 31.3.1.6.3.1 to state that in developing the BPM provisions applicable to setting the deployment factor and categories of transmission constraints enforced in the deployment scenarios, the CAISO will consider the trade-off between the: (a) operational benefit of clearing reliably deliverable Imbalance Reserves; and (b) economic implications from imposing deliverability

⁷ The matrix is available at: <https://www.caiso.com/InitiativeDocuments/FlexibleParameterMatrix-Day-AheadMarketEnhancements.pdf>.

⁸ Transmittal letter for August 22 Filing, at 101 & n.171.

⁹ See new tariff section 31.3.1.6.3.1 and tariff appendix A, new definition of Deployment Factor as proposed in the August 22 Filing.

¹⁰ December 20 Order at P 182.

¹¹ *Id.* at PP 182, 185, 519.

¹² *Id.* at P 182 n.244, P 185 n.251.

requirements on Imbalance Reserves procurement. Thus, the tariff revisions will balance the impact to the costs of Imbalance Reserves weighed against the operational benefit of having greater certainty about the energy from deployed Imbalance Reserves being deliverable.¹³

In making this trade-off, the CAISO will evaluate considerations such as: (1) deliverability of Energy procured from awarded Imbalance Reserves; (2) Marginal Cost of Congestion for Energy; (3) Locational Imbalance Reserves Up (IRU) Prices and Locational Imbalance Reserves Down (IRD) Prices; (4) performance of the Integrated Forward Market (IFM) optimization, including solution time and solution quality; (5) the need to manually intervene in Residual Unit Commitment (RUC) or engage in other out-of-market action; (6) other unforeseen factors impacting the basic trade-off.

Importantly, both the initial establishment of these parameters and subsequent revisions will be made through the CAISO's established BPM revision process, which allows for stakeholder feedback and even permits stakeholders to propose BPM revisions. Beyond the BPM revision process, the CAISO also anticipates engaging in significant discussion on these issues during the market simulation and implementation activities held in advance of deploying the new market functionalities. As a conforming change, the CAISO also proposes to amend the definition of Deployment Factor in tariff appendix A to reflect that the BPM's statement of the deployment factor value will be guided by the considerations added to section 31.3.1.6.3.1 on compliance.

These provisions added on compliance synthesize the considerations included in the posted matrix and other guidance the CAISO provided in the stakeholder process regarding how it would propose to tune the parameters through the BPM revision process. The provisions reflect the purpose of the tunable parameters, which is to help avoid incurring costs to procure Imbalance Reserves that exceed their operational benefit.¹⁴ The six specific factors listed in the tariff provisions and discussed further below are all considerations that, taken as a whole, would reflect to the CAISO and its stakeholders how well the balance between the cost of the product and its operational benefit has been struck.

¹³ Setting the Deployment Factor at 100 percent and enforcing all Transmission Constraints in the deployment scenarios would maximize the likelihood of having the energy from deployed Imbalance Reserves be deliverable, but might impose costs that exceed the operational benefit of the product. On the other hand, relaxing the parameters would reduce the costs of Imbalance Reserve procurement, but doing so could detrimentally impact the operational benefits of the product.

¹⁴ See, e.g., transmittal letter for August 22 Filing at 98 (explaining that tunability "would permit the CAISO and EDAM balancing areas to strike tradeoffs between deliverability and price impacts").

The *first factor* addresses whether imbalance reserves are providing operational benefits. If imbalance reserves capacity is always deliverable when deployed for energy, then that would suggest the product is meeting its operational purpose. If the energy rarely were deliverable, on the other hand, then that would suggest there is a need either to raise the deployment factor or enforce more constraints in the deployment scenarios.

The *second factor* speaks to the indirect costs of imbalance reserves procurement. The CAISO expects there will be some level of interaction between imbalance reserves procurement and increased congestion costs for energy in the day-ahead market. This is because the deployment scenarios will hold back some transmission in the event energy from imbalance reserves will need to be deployed. If the day-ahead market congestion prices for energy increase too much, that would suggest the parameters should be tuned to be less restrictive. If there are no changes to the energy congestion prices, then that would suggest parameters could be tuned to be more restrictive.

The *third factor* speaks to the direct costs of imbalance reserves procurement. Relatively high locational prices for imbalance reserves might suggest that either the deployment factor should be relaxed or the CAISO might enforce fewer constraints. Whereas low imbalance reserves prices might suggest the factors should be tuned to be more restrictive to increase the likelihood of the energy from the imbalance reserves being deliverable if needed. In considering this factor, the CAISO does not intend to establish specific thresholds that would define prices as being too high or too low. Because imbalance reserves are a new product, even the basic question of whether a given locational price for imbalance reserves is high or low will evolve with experience. Rather, this factor merely seeks to establish that relatively high or low imbalance reserves prices could be a relevant indicator of whether the CAISO has struck the appropriate balance between cost and benefit.

The *fourth factor* considers whether imbalance reserves procurement will pose more general market impacts. Adding imbalance reserves procurement to the IFM creates a more complex problem for the market optimization to solve. The CAISO does not anticipate that increased complexity will compromise IFM performance in terms of providing a market solution in the required timeframe or reaching a market solution within the quality parameters. In the event those impacts are observed, however, there would be a need to consider either lowering the deployment factor or enforcing fewer transmission constraints in the deployment scenarios.

The *fifth factor* considers if imbalance reserves are meeting their intended purpose. As the CAISO explained in the August 22 Filing, imbalance reserves are intended to “obviate the need for CAISO system operators to adjust the RUC

procurement targets manually on a routine basis.”¹⁵ If manual interventions remain necessary on a routine basis to address net-load uncertainty, that would suggest imbalance reserves are not providing the intended operational benefits. If that outcome occurs with a low deployment factor or relatively few transmission constraints enforced in the deployment scenarios, then that result would suggest the parameters should be tuned to be more restrictive.

The *sixth factor* ensures the CAISO and its stakeholders maintain sufficient flexibility to consider other relevant factors in the BPM revision process. The CAISO stated in the August 22 Filing that the purpose of having the tunable parameters was “[t]o maintain the capability to address unforeseen issues quickly.”¹⁶ This final factor is necessary to ensure there is sufficient flexibility in the tariff to consider other factors impacting the cost/benefit trade-off the CAISO and stakeholders cannot foresee at this point. Without this item included in the tariff, the purpose of having the tunable parameters could be frustrated.

The revisions to tariff section 31.3.1.3.6.1 proposed on compliance also state that the CAISO may consider the observed or *anticipated* impact of these factors. Having the ability to account for the anticipated impact is important for two reasons. First, imbalance reserves are a new product. When the tariff provisions become effective, the CAISO will not yet have actual market results to observe in tuning the parameters. All of the parameters initially will have to be based on the anticipated impact derived from market simulation and other pre-implementation activities. Second, even after the CAISO has developed experience with imbalance reserves, there may be upcoming network topology changes or other similar changes, such as addition of a new EDAM entity, that the CAISO reasonably could expect would impact how imbalance reserves function. It would not be prudent for the CAISO to wait for the parameters to fall out of tune before taking action.

As to the enforced transmission constraints, on compliance the CAISO also clarifies that the BPM will not identify specific transmission constraints by name. Instead, the BPM will apply the factors specified in tariff section 31.3.1.6.3.1, as revised on compliance, to determine the categories of constraints that will be enforced. This is the type of approach the CAISO already uses for identifying transmission constraints enforced in the energy market.¹⁷ It was always the CAISO’s intent to take a comparable approach for imbalance reserves and this is how the CAISO meant to identify the constraints enforced in the deployment scenarios. Listing the actual constraint names in the BPM would be infeasible due to the number of individual constraints in the CAISO’s network

¹⁵ Transmittal letter for August 22 Filing at 53-54.

¹⁶ *Id.* at 101.

¹⁷ See, e.g., existing tariff section 27.5.6; BPM for Managing Full Network Model, section 2.1.1.

model and because it likely will be the case the CAISO enforces far more constraints in the deployment scenarios than it does not enforce. In this case it would be more practical simply to list the constraints that *will not* be enforced in the deployment scenarios. From its outreach to stakeholders, the CAISO understands there is interest in transparency regarding the specific enforced constraints and not just information about the categories of constraints. During its further implementation activities, the CAISO will explore the best way to provide such additional information outside of the BPM, such as on the CAISO's open access same-time information system (OASIS) or some other portion of the CAISO website.

B. \$55/MWh Offer Cap, Demand Curve, and Mitigation

The December 20 Order directed the CAISO to submit on compliance a correction to tariff section 31.3.1.6.2 to reflect the upper bound of the Imbalance Reserves procurement curve as \$55 per MWh (rather than \$55 per MW as shown in that tariff section in the August 22 Filing).¹⁸ The CAISO has revised tariff section 31.3.1.6.2 to make this change on compliance.

C. Transmission Revenue Recovery and EDAM Access Charge

The December 20 Order rejected the CAISO's proposed EDAM Access Charge without prejudice to the submittal of a future filing in which the CAISO provides additional support for its proposal.¹⁹ The Commission directed the CAISO to submit a compliance filing to reflect the removal of the EDAM Access Charge provisions from the tariff.²⁰

This compliance filing deletes the proposed EDAM Access Charge provisions from tariff sections 33.26 (including all subsections thereto), 33.2.5(F), and 33.11.7, and deletes the definition of the EDAM Access Charge from tariff appendix A. Meanwhile, a determination of a proposal the CAISO may submit remains under consideration and would be presented in a future filing per the Commission's directive.

D. Market Power Mitigation

The December 20 Order accepted the CAISO's proposal to extend its existing Local Market Power Mitigation used in the Western Imbalance Energy Market (WEIM) to the EDAM, subject to the CAISO's revising its tariff on compliance to accurately augment its description of the market power mitigation

¹⁸ December 20 Order at PP 192, 519.

¹⁹ *Id.* at PP 460-65.

²⁰ *Id.* at PP 465, 519.

process under tariff sections 29.39²¹ and 33.31,²² as proposed in the October 11 CAISO Answer. Specifically, the Commission directed the CAISO to submit a compliance filing to better describe the market power mitigation process and clarify the application of market power mitigation at the balancing area level for all EDAM Entities.²³ As discussed below, the CAISO proposes clarifying provisions in tariff sections 29.39, 33.31.2.1, and 33.31.2.3 to comply with this directive.

Upon EDAM implementation, the CAISO will perform market power mitigation in the day-ahead market for the CAISO and each EDAM balancing area. The CAISO will also perform market power mitigation in the real-time market for the CAISO balancing area, each EDAM balancing area, and each WEIM balancing area. For the CAISO balancing area, tariff sections 39.7, 31.2, and 34.1.5, as amended by the tariff revisions in the August 22 Filing, will apply.

The CAISO will extend its balancing area-level market power mitigation currently used in the WEIM to EDAM balancing areas. Under this model, the day-ahead market power mitigation process will use a competitive path assessment for binding transmission constraints to determine whether a path is competitive or non-competitive. If a path is non-competitive, market power mitigation procedures will apply within an EDAM balancing area to determine any non-competitive contribution of those binding transmission constraints to locational marginal prices for energy and reliability capacity up prices. Bids from resources within that EDAM balancing area will be subject to applicable mitigation procedures if the net contribution from non-competitive binding transmission constraints for these prices is positive. In this compliance filing, the CAISO has included additional language in tariff sections 33.31.2.1 and 33.31.2.3 to explain the market power mitigation process for EDAM balancing areas in the day-ahead market.

Upon EDAM implementation, each EDAM balancing area and WEIM balancing area will have its own power balance constraint. For purposes of market power mitigation, the marginal energy price in the CAISO balancing area will reflect a competitive component of LMP. The market power mitigation process will apply the competitive path assessment when an EDAM or WEIM balancing area's marginal energy cost is greater than the CAISO's marginal energy cost. If the assessment identifies non-competitive conditions, the EDAM

²¹ Paragraph 519 of the December 20 Order references tariff section 29.29 rather than tariff section 29.39, which is the correct section reference for market power mitigation in the WEIM.

²² Paragraphs 473 and 519 of the December 20 Order reference tariff section 33.39, rather than tariff section 33.31. The latter is the section that concerns market power mitigation with EDAM balancing areas in the day-ahead market. The October 11 CAISO Answer (at 131-32) erroneously referenced section 33.39.

²³ December 20 Order at PP 473, 519.

and WEIM market power mitigation process will treat the marginal energy cost differential similar to the non-competitive component of the marginal cost of congestion in the CAISO's local market power mitigation process to determine which resources have market power. If the assessment identifies non-competitive conditions within an EDAM or WEIM balancing area, all bids in that balancing area will be subject to mitigation procedures.²⁴ The CAISO has included additional language in tariff sections 33.31.2.1 and 33.31.2.3 to explain this process. The CAISO has added parallel language in section 29.29 concerning application of this process in the real-time market for EDAM balancing areas and WEIM balancing areas.

Finally, the CAISO also has included clarifying changes to section 29.29 to reflect that the balancing area level market power mitigation procedures in the real-time market will also apply to EDAM balancing areas and bids of EDAM resources.

E. Miscellaneous Tariff Matters

In the December 20 Order, the Commission agreed with the proposed corrections provided in the October 11 CAISO Answer of certain errors that a commenter identified in the proposed tariff revisions. The Commission directed the CAISO to submit a compliance filing to revise tariff sections 33.4.1, 4.9.5, 33.11.3.2, 33.18.5, 33.31.1.2.1.2, and 33.31.1.6, and tariff appendix B.29, as proposed in the October 11 CAISO Answer.²⁵

To comply with the Commission's directives, the CAISO proposes to make the following corrections in this compliance filing:

- Substitute the word "enable" for "disable" in the fourth line of tariff section 33.4.1;
- Add the phrase "Imbalance Reserves, Reliability Capacity" to the third line of tariff section 4.9.5;
- Change a cross-reference in the second line of tariff section 33.11.3.2 from section 11.2.1.1.2 to section 11.2.1.1;
- Change the cross-reference in the third line of tariff section 33.18.5 from section 33.27.3 to section 33.27.4;

²⁴ Currently, market power mitigation procedures exclude bids provided by certain resources from bid mitigation. Existing tariff sections 31.2 and 34.1.5.1. The same will be true when EDAM is implemented.

²⁵ December 20 Order at P 518.

- Change the cross-reference in the second line of tariff section 33.31.1.2.1.2 from section 33.31.3 to section 31.3.1.6;
- Change the phrase “will be” to “will not be” in the tenth line of tariff section 33.31.1.6; and
- Add to section 4 of tariff appendix B.29 a phrase clarifying that the EDAM Addendum to EIM Participating Resource Agreement will terminate if the relevant EDAM Entity ceases its participation in EDAM.²⁶

III. Materials Provided in this Compliance Filing

In addition to this transmittal letter, this compliance filing includes:

Attachment A	Clean CAISO tariff sheets reflecting the tariff revisions described above
Attachment B	Red-line CAISO tariff sheets reflecting the tariff revisions described above

IV. Effective Dates

The CAISO respectfully requests that the Commission accept the tariff revisions submitted on compliance in this filing effective as of the same dates as the underlying tariff revisions accepted in the December 20 Order – *i.e.*, that the Commission accept the revisions to tariff sections 33.2.5 and 33.4.1 and tariff appendix B.29 contained in this compliance filing effective December 21, 2023,²⁷ and accept the balance of the tariff revisions contained in this filing effective as of the date specified in a later informational filing which the CAISO will submit within five days of that actual effective date.²⁸ In other proceedings, the Commission has accepted compliance filings effective as of the underlying Commission-accepted tariff revisions.²⁹ The Commission should do the same here.

²⁶ See October 11 CAISO Answer at 155-57.

²⁷ The original versions of these tariff revisions were contained in attachment B-1 to the August 22 Filing, *i.e.*, the attachment containing the tariff revisions for which the CAISO requested an effective date of December 21, 2023.

²⁸ See December 20 Order at P 41 & n.53, P 520, and Ordering Paragraphs (A)-(B).

²⁹ See, *e.g.*, *Old Dominion Elec. Coop.*, 162 FERC ¶ 61,262, at P 97 (2018); *PJM Interconnection, L.L.C.*, 154 FERC ¶ 61,136, at P 5 (2016).

V. Conclusion

The CAISO respectfully requests that the Commission accept this filing as fully complying with the December 20 Order effective as of the dates set forth herein.

Respectfully submitted,

/s/ John C. Anders

Roger E. Collanton
General Counsel
John C. Anders
Deputy General Counsel
Anthony Ivancovich
Deputy General Counsel
William H. Weaver
Assistant General Counsel
Andrew Ulmer
Assistant General Counsel
David Zlotlow
Lead Counsel
John Spomer
Lead Counsel
Heather Curlee
Senior Counsel
Sarah E. Kozal
Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630

Counsel for the California Independent
System Operator Corporation

CERTIFICATE OF SERVICE

I certify that I have served the foregoing document upon the parties listed on the official service list in the captioned proceeding, 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 16th day of February, 2024.

/s/ Daniel Klein

Daniel Klein
Davis Wright Tremaine LLP
1301 K Street, NW
Suite 500 East
Washington, DC 20005

Attachment A – Clean Tariff Language

Compliance Filing Day-Ahead Market Enhancements and Extended Day-Ahead Market

California Independent System Operator Corporation

February 16, 2024

Section 4

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4.9.5 Scheduling by or on Behalf of a MSS Operator

All Bids, including but not limited to Self-Schedules, submitted on behalf of an MSS Operator for the delivery of Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services to Loads connected to the MSS and for the delivery of Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services from Generating Units forming part of the MSS or System Units shall be submitted by a Scheduling Coordinator that complies with all applicable provisions of the CAISO Tariff, which Scheduling Coordinator may be the MSS Operator, provided that the MSS Operator complies with all applicable requirements for Scheduling Coordinators. A Scheduling Coordinator shall separately identify Bids that it submits on behalf of an MSS Operator.

4.9.5.1 Without limiting the foregoing, the Scheduling Coordinator for the MSS must submit gross generation information for the System Unit, Generating Unit, and information regarding imports, exports and Gross Loads to the CAISO in the format and in accordance with the timelines applicable to other Scheduling Coordinators.

4.9.5.2 The Scheduling Coordinator for the MSS will designate, in discrete quantities and with prices for Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services: (1) Bids in the Day-Ahead Market and Real-Time Market (including Bids for internal Generation and internal Demand within the MSS), (2) Submissions to Self-Provide Ancillary Services or Bids for Regulation, Spinning Reserve, and Non-Spinning Reserve, capacity and associated Bid for Energy, or (3) any feasible combination thereof.

4.9.5.3 MSS Demand Forecast

The Scheduling Coordinator for the MSS shall provide CAISO with Demand forecasts of the MSS. To the extent that the Scheduling Coordinator does not provide requisite Demand Forecast for the MSS it represents, the CAISO shall produce a Demand Forecast for each MSS Load Take-Out Point.

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Section 29

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29.39 EIM Market Power Mitigation.

- (a) **EIM Market Power Mitigation Procedure.** The CAISO shall apply the Real-Time Local Market Power Mitigation procedure in Section 39.7 to the Energy Imbalance Market, including EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie, except as provided in Section 29.39. In relation to power balance constraints within the EDAM Area and EIM Area, the Marginal Energy Cost in the CAISO Balancing Authority Area will reflect a competitive marginal energy price. For this purpose, when an EDAM Balancing Authority Area's or EIM Balancing Authority Area's Marginal Energy Cost is greater than CAISO Balancing Authority Area's Marginal Energy Cost, then Real-Time Local Market Power Mitigation process will apply the competitive path assessment. If non-competitive conditions exist, the Real-Time Local Market Power Mitigation process will treat the differential between the Marginal Energy Cost in the CAISO Balancing Authority Area and the Marginal Energy Cost in the EDAM Balancing Authority Area or EIM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to mitigation procedures.
- (b) **Competitive Path Assessment.** The CAISO shall conduct the competitive path assessment to determine for each EDAM Balancing Authority Area and EIM Entity Balancing Authority Area whether a path is competitive or non-competitive, consistent with Section 39.7.2, except that –
- (1) EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators shall submit information required by the CAISO to perform the competitive path assessment;

- (2) the competitive path assessment shall not exclude EDAM Resources or EIM Participating Resources from the test used to determine the competitiveness of Transmission Constraints on the basis that they may be net buyers of Energy in the Real-Time Market; and
 - (3) the CAISO may establish different Reference Buses for each Balancing Authority Area, which need not be within the Balancing Authority Area, for calculating the LMP decomposition which is used to trigger Bid mitigation, based on the topology of each Balancing Authority Area and consideration of the bus at which the Marginal Cost of Congestion component of Locational Marginal Prices is least influenced by market power.
- (c) **Locational Marginal Price Decomposition.** The CAISO shall perform the Locational Marginal Price decomposition within each EDAM Entity Balancing Authority Area and EIM Entity Balancing Authority Area using the results of the competitive path assessment and the Congestion pricing results of the premarket run to determine which resources may have local market power due to Congestion on a non-competitive Transmission Constraint, consistent with Section 34.2.3 and 39.7.
- (d) **Default Energy Bids.** The CAISO shall use the methods and standards set forth in Section 39.7 to determine Default Energy Bids for EDAM Resources and EIM Participating Resources, except that the CAISO will use the Market Services Charge and system operations charges described in Section 33.11.6 reflected in the EDAM Administrative Charge or Section 11.22.2 reflected in the EIM Administrative Charge, as applicable.

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Section 31

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31.3.1.6.2 Procurement Curve

In each run of the IFM, the CAISO procures IRU and IRD for each Balancing Authority Area participating in the Day-Ahead Market to meet their Upward Imbalance Reserves Requirement and Downward Imbalance Reserves Requirement, respectively, subject to a procurement curve. The procurement curves for IRU and IRD are calculated based on separate statistical analysis of the Upward Imbalance Reserve Requirement and Downward Imbalance Reserve Requirement for each EDAM Entity Balancing Authority Area to ensure the total cost of Imbalance Reserves Awards for IRU or IRD does not exceed the expected cost of violating Operating Reserve requirements. Provided, however, the upper bound of the procurement curve for both IRU and IRD is \$55/MWh.

31.3.1.6.3 Imbalance Reserves Deliverability and Nodal Procurement

31.3.1.6.3.1 Nodal Procurement of Imbalance Reserves Awards

The CAISO optimizes procurement of Imbalance Reserves Awards such that, in the event modeled uncertainty arises fully for either the upward or downward directions, the Energy that would be dispatched from resource capacity corresponding to the Imbalance Reserves Awards, as adjusted by the applicable Deployment Factor, would not result in flows exceeding Transmission Constraints and scheduling limits, including EDAM Transfer limits, on categories of transmission facilities identified in the Business Practice Manual. In revising the Business Practice Manual to establish or update either the Deployment Factor or the categories of transmission facilities, the CAISO will consider the trade-off between the: (a) operational benefit of clearing reliably deliverable Imbalance Reserves; and (b) economic implications from imposing deliverability requirements on Imbalance Reserves procurement. In considering this trade-off, the CAISO will evaluate considerations such as the anticipated or observed impact of the Deployment Factor or identified transmission facilities on the: (1) deliverability of Energy procured from awarded Imbalance Reserves; (2) Marginal Cost of Congestion for Energy; (3) Locational IRU Prices and Locational IRD Prices; (4) performance of the IFM optimization, including solution time and solution quality; (5) need to manually intervene in RUC or engage in other out-of-market action; and (6) effect of other factors whose magnitude of impact on the basic trade-off is unforeseen on the effective date of this Section 31.3.1.6.3.1.

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Section 33

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33.2.5 Implementation Activities.

The CAISO and the prospective EDAM Entity will complete the following implementation activities:

- (A) **Execution of Necessary Agreements.** The prospective EDAM Entity has complied with Section 33.2.1, executed any necessary agreements for operating as an EDAM Entity, and helped the CAISO secure necessary agreements with third party prospective EDAM Market Participants.
- (B) **Operations Training.** Prior to the start of parallel operations as set forth in Section 33.2.3, all operations staff (including contractors or vendors) identified by the prospective EDAM Entity who will have responsibility for EDAM operations, market transactions and settlements, will have completed identified CAISO training modules.
- (C) **Forecasting Capability.** The CAISO and, to the extent the prospective EDAM Entity will use its own forecasts or is otherwise required to provide forecasting information to the CAISO, the prospective EDAM Entity has demonstrated its respective forecasting capability through –
 - (i) the definition of day-ahead demand forecast boundaries based on the conforming and non-conforming load characteristics, as applicable;
 - (ii) the documentation of EDAM Entity's choice of day-ahead demand forecast provider and how the demand forecast will be completed;
 - (iii) the accuracy of the CAISO forecast of demand based on historical actual load data for the defined demand forecast boundaries;

- (iv) the identification of weather stations locations used in forecasting, as applicable;
 - (v) the identification of the source of day-ahead Variable Energy Resource forecasts;
 - (vi) the accuracy of the day-ahead forecast of Variable Energy Resources;
 - (vii) the identification of all Hybrid Resources; and
 - (viii) the provision of CAISO historical data on day-ahead demand and renewable forecast information to fill the needed historical data period to produce the Imbalance Reserve requirements at the net load level.
- (D) **Resource Sufficiency Evaluation.** The prospective EDAM Entity Scheduling Coordinator demonstrates its ability to pass the Resource Sufficiency Evaluation for the prospective EDAM Entity's Balancing Authority Area.
- (E) **Transmission Availability.** The prospective EDAM Entity confirms initial registration of the transmission rights of the EDAM Transmission Service Providers in its Balancing Authority Area available for EDAM Transfers or that otherwise may be scheduled in the Day-Ahead Market.
- (F) **Operating Procedures.** Prior to the start of parallel operations pursuant to Section 33.2.3, the CAISO and the prospective EDAM Entity have defined, completed, and tested operating procedures for the prospective EDAM Entity and its Scheduling Coordinator's participation in the Energy Imbalance Market.
- (G) **System Readiness and Integration.**
- (i) **System and Functional Testing.** The prospective EDAM Entity and the CAISO have tested the functional and system elements in accordance with functional and system testing documentation posted on the CAISO Website.
 - (ii) **Prospective EDAM Entity Identification.** The CAISO has established and the prospective EDAM Entity has tested all necessary SCIDs and Resource IDs established for the prospective EDAM Entity's Balancing

Authority Area.

- (iii) **Certificates and Access.** The prospective EDAM Entity has issued all necessary certificates to its employees, contractors and vendors that require system access to perform EDAM-related job functions.
- (H) **Market Simulation and Structured Scenarios simulation.** The prospective EDAM Entity operations staff identified by the prospective EDAM Entity who will have responsibility for EDAM operations, transactions and settlements, have executed and passed all structured scenarios provided by CAISO with all significant issues resolved.
- (I) **Settlements.** The CAISO and the prospective EDAM Entity have demonstrated that –
 - (i) CAISO settlement statements and invoices match the operational data published to stakeholders or fed into settlement system and the resulting calculations correspond to the formulas defined in CAISO's tariff and Business Practice Manuals.
 - (ii) CAISO settlement statements and invoices allocates charges and credits to its customers accurately reflecting system and market data during parallel operations.
- (J) **Parallel Operations Plan.** The period of parallel operations specified in Section 33.2.3 runs consistently and in accordance with the prospective EDAM Entity specific parallel operations plan.

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33.4.1 EDAM Entity

An EDAM Entity must be a Balancing Authority registered and certified as such under the applicable authorities and execute an EDAM Addendum to EIM Entity Agreement no later than ninety (90) days before the EDAM Entity Implementation Date. Upon receipt of such notice, the CAISO will undertake all necessary preparations to enable operation of the Day-Ahead Market

within the EDAM Entity Balancing Authority Area, as outlined in the Business Practice Manual for the Extended Day-Ahead Market, including issuance of a Market Notice within five Business Days after receipt of such notice.

An EDAM Entity must:

- (a) perform the obligations of an EDAM Entity in accordance with the EDAM Addendum to EIM Entity Agreement, Section 33, and other provisions of the CAISO Tariff that apply to EDAM Entities, subject to the limitations specified in Section 33.1;
- (b) determine and inform the CAISO about all Load Serving Entities within the EDAM Entity's Balancing Authority Area necessary to enable operation of the Day-Ahead Market in its Balancing Authority Area;
- (c) qualify as, or secure representation by, an EDAM Entity Scheduling Coordinator, provided that an EDAM Entity may not be represented by more than one EDAM Entity Scheduling Coordinator;
- (d) provide the CAISO and its EDAM Entity Scheduling Coordinator with information regarding all Transmission Constraints of which it is aware;
- (e) work with the CAISO to identify all resources within its Balancing Authority Area that do not currently participate in the Energy Imbalance Market pursuant to Section 29 so they can be represented in the Extended Day-Ahead Market as EDAM Resources and execute an EDAM Addendum to EIM Participating Resource Agreement pursuant to Section 33, which may be accomplished through execution of a separate EDAM Addendum to EIM Participating Resource Agreement or by including all or some of the resources under its EDAM Addendum to EIM Participating Resource Agreement;
- (f) define Load Aggregation Points in its Balancing Authority Area and be responsible for serving the associated Demand, including for an EDAM Load Serving Entity in its Balancing Authority Area that will be separately responsible for serving the associated Demand;
- (g) identify and inform the CAISO which resource types supported by the CAISO Markets are eligible to participate in the Day-Ahead Market as EDAM Resource Facilities;

- (h) determine and inform the CAISO of EDAM Transmission Service Providers within the EDAM Entity Balancing Authority Area;
- (i) serve as the entity that interacts with EDAM Transmission Service Providers within the EDAM Entity Balancing Authority Area; and
- (j) inform the CAISO whether or not the EDAM Entity intends to utilize the CAISO's Demand Forecast consistent with Section 33.31.1.

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33.11 Settlements And Billing for EDAM Market Participants

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33.11.3 Day-Ahead Market Settlement

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33.11.3.2 Settling Imbalance Reserves

The CAISO settles Imbalance Reserves Awards issued to EDAM Resources as specified in Sections 11.2.1.1, 11.2.1.8, and 11.25.2.1.1 as though the EDAM Resource were a Participating Generator.

The CAISO allocates the costs of procuring Imbalance Reserves in the EDAM as specified in Section 11.2.1.9 individually for each EDAM Entity with the exception that any reference to the CAISO Balancing Authority Area is a reference to the Balancing Authority Area of the relevant EDAM Entity.

In allocating the costs of Imbalance Reserves, the CAISO assesses both the importing and exporting Balancing Authority Areas for EDAM Transfers of Imbalance Reserves. In the case of EDAM Entities, the CAISO assesses the Scheduling Coordinator representing the importing Balancing Authority Area a settlement equal to the product of the quantity of the import and the

Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location. In the case of EDAM Entities, the CAISO assesses the Scheduling Coordinator representing the exporting Balancing Authority Area a settlement equal to the product of the quantity of the export and the Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location. If the CAISO is one of the importing or exporting Balancing Authority Areas, then the CAISO allocates the product of the export or import, as appropriate, and the Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location to CAISO Scheduling Coordinators as specified in Section 11 for allocating EDAM Transfers of Imbalance Reserves.

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33.11.7 [Not Used]

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33.18.5 EDAM Transfer Priority

EDAM Transfers will have a priority equal to Demand in the EDAM Area and may be curtailed only as provided in Section 33.7.5. The Day-Ahead Market will include a constraint as provided in Section 33.27.4 to ensure each Balancing Authority in the EDAM Area meets its Balancing Authority Area requirements before supporting EDAM Transfers.

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33.26 [Not Used]

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33.31.1.2.1.2 Imbalance Reserves Requirement

The Imbalance Reserve requirement used in the 6:00 a.m. and 9:00 a.m. advisory run by the CAISO will be calculated in accordance with Section 31.3.1.6. The Imbalance Reserve requirement used in the final binding EDAM RSE will be the same requirement the CAISO used in the 9:00 a.m. advisory run unless the timelines in the Business Practice Manual for the Extended Day-Ahead Market otherwise allow for adjustment.

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33.31.1.6 Timely Submission of Tags Necessary to Remain in EDAM Upward and Downward Pools

A Balancing Authority Area in the EDAM Area must comply with the tagging protocols set forth in Section 33.30.8.3 and the Business Practice Manuals to ensure imports and exports are timely tagged. A Balancing Authority Area in the EDAM Area that fails to timely E-tag imports or exports and does not otherwise re-supply from a firm schedule or physical source to cover for the untagged imports or exports for the operating hour following the process in the Business Practice Manual will be removed from the EDAM Upward Pool or the EDAM Downward Pool, respectively, for that Trading Hour. A Balancing Authority Area in the EDAM Area that is removed from the EDAM Upward Pool or the EDAM Downward Pool in accordance with this Section 33.31.1.6 will be evaluated as an individual Balancing Authority Area and will not be allowed to share in the Diversity Benefits of the pool that it would have otherwise been a part of and as provided in Section 33.31.1.4.3.

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33.31.2 Operation of the Day-Ahead Market in the EDAM Area

33.31.2.1 IFM MPM in the EDAM Area

For purposes of the IFM MPM process in the EDAM Area, the CAISO applies a competitive path assessment to binding Transmission Constraints to determine whether a path is competitive or

non-competitive, consistent with the requirements of Section 29.39. If a path is non-competitive, MPM procedures will apply to determine any non-competitive contribution to LMPs. Resources' Bids will be subject to applicable mitigation procedures if the net contribution from non-competitive binding Transmission Constraints to these resources' LMPs is positive.

In relation to power balance constraints within the EDAM Area, the Marginal Energy Cost in the CAISO Balancing Authority Area will reflect a competitive marginal energy price. For this purpose, when an EDAM Balancing Authority Area's Marginal Energy Cost is greater than CAISO Balancing Authority Area's Marginal Energy Cost, then the IFM MPM process will apply the competitive path assessment. If non-competitive conditions exist, the IFM MPM process will treat the differential between the Marginal Energy Cost in the CAISO Balancing Authority Area and the Marginal Energy Cost in the EDAM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to mitigation procedures.

33.31.2.2 IFM in the EDAM Area

The IFM procures Energy and Imbalance Reserves for EDAM Entity Balancing Authority Areas but does not procure Ancillary Services. EDAM Entities must self-provide their full Ancillary Services requirements to the IFM and cannot submit Economic Bids for Ancillary Services to the IFM.

The CAISO procures Energy across the EDAM Area as specified in Section 31.3.1. The CAISO procures Imbalance Reserves across the EDAM Area as specified in Sections 31.3.1.5 and 31.3.1.6. An EDAM Resource must meet the requirements applicable to Participating Generators to be eligible for Imbalance Reserves Awards and must meet all of the RTM Bidding Obligations specified in Section 31.3.4.

33.31.2.3 RUC MPM in the EDAM Area

For purposes of the RUC MPM process in the EDAM Area, the CAISO applies a competitive path assessment to binding Transmission Constraints to determine whether a path is competitive or

non-competitive, consistent with the requirements of Section 29.39. If a path is non-competitive, MPM procedures will apply to determine any non-competitive contribution to RUC prices. Resources' Bids will be subject to applicable mitigation procedures if the net contribution from non-competitive binding Transmission Constraints to these resources' prices for Reliability Capacity Up is positive.

In relation to power balance constraints within the EDAM Area, the marginal Reliability Capacity cost in the CAISO Balancing Authority Area will reflect a competitive RUC price. For this purpose, when an EDAM Balancing Authority Area's marginal Reliability Capacity cost is greater than CAISO Balancing Authority Area's marginal Reliability Capacity cost, then the RUC MPM process will apply the competitive path assessment. If non-competitive conditions exist, the RUC MPM process will treat the differential between the marginal Reliability Capacity cost in the CAISO Balancing Authority Area and the marginal Reliability Capacity cost in the EDAM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to applicable mitigation procedures.

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Appendix A

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- Deployment Factor

As specified in Section 31.3.1.6.3.1 and further specified in the Business Practice Manual, the percentage of Imbalance Reserves Awards the CAISO models as being deployed for Energy for the purpose of modeling the deployment of Imbalance Reserves against Transmission Constraints. The CAISO establishes distinct Deployment Factors for Imbalance Reserves Up and Imbalance Reserves Down.

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- [Not Used]

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APPENDIX B.29

EDAM ADDENDUM TO EIM PARTICIPATING RESOURCE AGREEMENT

Effective [Date], [Full Legal Name] (“[Short Legal Name]”) and the California Independent System Operator Corporation (“CAISO”) (collectively the “Parties”) make and enter into this EDAM Addendum to the Parties’ [Date] EIM Participating Resource Agreement (the “Agreement”).

WHEREAS:

A. Pursuant to the Agreement, [Short Legal Name] has participated or will participate as an EIM Participating Resource in the CAISO’s Real-Time Market and is located in an EDAM Entity Balancing Authority Area;

B. The CAISO also operates the Day-Ahead Market pursuant to the CAISO Tariff; and

C. [Short Legal Name] extends its participation to the CAISO’s Day-Ahead Market in accordance with the EDAM Entity’s open access transmission tariff or the tariff of another transmission service provider within the EDAM Entity Balancing Authority Area.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Parties agree that the Agreement is hereby supplemented as follows:

- 1. Agreement to be Bound by CAISO Tariff.** Section 33 of the CAISO Tariff is incorporated herein and made a part hereof.
- 2. Interpretation.** All references in the Agreement to the “EIM” or the “Energy Imbalance Market” will also be read as references to the “EDAM” or the “Extended Day Ahead Market.” All references in the Agreement to an “EIM Entity” will also be read as references to an “EDAM Entity.” All references in the Agreement to “EIM Participating Resource(s)” will also be read as references to the “EDAM Resource(s).” All references in the Agreement to “EIM Resources” will also be read as references to “EDAM Resource Facilities.” All references in the Agreement to an “EIM Participating Resource Scheduling Coordinator” will also be read as references to an “EDAM Resource Scheduling Coordinator.” All references in the Agreement to Section 29 of the CAISO Tariff will also be read as references to Section 33 of the CAISO Tariff.
- 3. EDAM Resource Facilities.** Schedule 1 of the Agreement will be updated to include all EDAM Resource Facilities not already included in Schedule 1 as an EIM Resource.
- 4. Effective Date and Termination.** This EDAM Addendum will be effective as of the later of the date it is executed by the Parties and shall remain in full force and effect until terminated pursuant to the same process as is set forth in Section 3.2 of the Agreement, or until the EDAM Entity for the Balancing Authority Area in which the EDAM Resource is located ceases its participation in EDAM. If [Short Legal Name] terminates its participation as an EDAM Resource, it may continue to participate as an EIM Participating Resource under the terms of the Agreement.

5. Miscellaneous. Except as expressly modified by this EDAM Addendum, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect.

[Full Legal Name]

**California Independent
System Operator Corporation**

By: _____

By: _____

Printed Name: _____

Printed Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

Attachment B – Marked Tariff Language

Compliance Filing Day-Ahead Market Enhancements and Extended Day-Ahead Market

California Independent System Operator Corporation

February 16, 2024

Section 4

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4.9.5 Scheduling by or on Behalf of a MSS Operator

All Bids, including but not limited to Self-Schedules, submitted on behalf of an MSS Operator for the delivery of Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services to Loads connected to the MSS and for the delivery of Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services from Generating Units forming part of the MSS or System Units shall be submitted by a Scheduling Coordinator that complies with all applicable provisions of the CAISO Tariff, which Scheduling Coordinator may be the MSS Operator, provided that the MSS Operator complies with all applicable requirements for Scheduling Coordinators. A Scheduling Coordinator shall separately identify Bids that it submits on behalf of an MSS Operator.

4.9.5.1 Without limiting the foregoing, the Scheduling Coordinator for the MSS must submit gross generation information for the System Unit, Generating Unit, and information regarding imports, exports and Gross Loads to the CAISO in the format and in accordance with the timelines applicable to other Scheduling Coordinators.

4.9.5.2 The Scheduling Coordinator for the MSS will designate, in discrete quantities and with prices for Energy, Imbalance Reserves, Reliability Capacity, and Ancillary Services: (1) Bids in the Day-Ahead Market and Real-Time Market (including Bids for internal Generation and internal Demand within the MSS), (2) Submissions to Self-Provide Ancillary Services or Bids for Regulation, Spinning Reserve, and Non-Spinning Reserve, capacity and associated Bid for Energy, or (3) any feasible combination thereof.

4.9.5.3 MSS Demand Forecast

The Scheduling Coordinator for the MSS shall provide CAISO with Demand forecasts of the MSS. To the extent that the Scheduling Coordinator does not provide requisite Demand Forecast for the MSS it represents, the CAISO shall produce a Demand Forecast for each MSS Load Take-Out Point.

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Section 29

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29.39 EIM Market Power Mitigation.

- (a) **EIM Market Power Mitigation Procedure.** The CAISO shall apply the Real-Time Local Market Power Mitigation procedure in Section 39.7 to the Energy Imbalance Market, including EIM Transfer constraints into an EIM Entity Balancing Authority Area on an EIM Internal Intertie, except as provided in Section 29.39. In relation to power balance constraints within the EDAM Area and EIM Area, the Marginal Energy Cost in the CAISO Balancing Authority Area will reflect a competitive marginal energy price. For this purpose, when an EDAM Balancing Authority Area's or EIM Balancing Authority Area's Marginal Energy Cost is greater than CAISO Balancing Authority Area's Marginal Energy Cost, then Real-Time Local Market Power Mitigation process will apply the competitive path assessment. If non-competitive conditions exist, the Real-Time Local Market Power Mitigation process will treat the differential between the Marginal Energy Cost in the CAISO Balancing Authority Area and the Marginal Energy Cost in the EDAM Balancing Authority Area or EIM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to mitigation procedures.
- (b) **Competitive Path Assessment.** The CAISO shall conduct the competitive path assessment to determine for each EDAM Balancing Authority Area and EIM Entity Balancing Authority Area whether a path is competitive or non-competitive, consistent with Section 39.7.2, except that –
- (1) EDAM Resource Scheduling Coordinators and EIM Participating Resource Scheduling Coordinators shall submit information required by the CAISO to perform the competitive path assessment;

- (2) the competitive path assessment shall not exclude [EDAM Resources or](#) EIM Participating Resources from the test used to determine the competitiveness of Transmission Constraints on the basis that they may be net buyers of Energy in the Real-Time Market; and
- (3) the CAISO may establish different Reference Buses for each Balancing Authority Area, which need not be within the Balancing Authority Area, for calculating the LMP decomposition which is used to trigger Bid mitigation, based on the topology of each Balancing Authority Area and consideration of the bus at which the Marginal Cost of Congestion component of Locational Marginal Prices is least influenced by market power.

(c) Locational Marginal Price Decomposition. The CAISO shall perform the Locational Marginal Price decomposition within each [EDAM Entity Balancing Authority Area and](#) EIM Entity Balancing Authority Area using the results of the competitive path assessment and the Congestion pricing results of the premarket run to determine which resources may have local market power due to Congestion on a non-competitive Transmission Constraint, consistent with Section 34.2.3 and 39.7.

(d) Default Energy Bids. The CAISO shall use the methods and standards set forth in Section 39.7 to determine Default Energy Bids for [EDAM Resources and](#) EIM Participating Resources, except that the CAISO will use the Market Services Charge and system operations charges described in [Section 33.11.6 reflected in the EDAM Administrative Charge or](#) Section 11.22.2 reflected in the EIM Administrative Charge, [as applicable.](#)

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Section 31

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31.3.1.6.2 Procurement Curve

In each run of the IFM, the CAISO procures IRU and IRD for each Balancing Authority Area participating in the Day-Ahead Market to meet their Upward Imbalance Reserves Requirement and Downward Imbalance Reserves Requirement, respectively, subject to a procurement curve. The procurement curves for IRU and IRD are calculated based on separate statistical analysis of the Upward Imbalance Reserve Requirement and Downward Imbalance Reserve Requirement for each EDAM Entity Balancing Authority Area to ensure the total cost of Imbalance Reserves Awards for IRU or IRD does not exceed the expected cost of violating Operating Reserve requirements. Provided, however, the upper bound of the procurement curve for both IRU and IRD is \$55/MWh.

31.3.1.6.3 Imbalance Reserves Deliverability and Nodal Procurement

31.3.1.6.3.1 Nodal Procurement of Imbalance Reserves Awards

The CAISO optimizes procurement of Imbalance Reserves Awards such that, in the event modeled uncertainty arises fully for either the upward or downward directions, the Energy that would be dispatched from resource capacity corresponding to the Imbalance Reserves Awards, as adjusted by the applicable Deployment Factor, would not result in flows exceeding Transmission Constraints and scheduling limits, including EDAM Transfer limits, on categories of transmission facilities identified in the Business Practice Manual. In revising the Business Practice Manual to establish or update either the Deployment Factor or the categories of transmission facilities, the CAISO will consider the trade-off between the: (a) operational benefit of clearing reliably deliverable Imbalance Reserves; and (b) economic implications from imposing deliverability requirements on Imbalance Reserves procurement. In considering this trade-off, the CAISO will evaluate considerations such as the anticipated or observed impact of the Deployment Factor or identified transmission facilities on the: (1) deliverability of Energy procured from awarded Imbalance Reserves; (2) Marginal Cost of Congestion for Energy; (3) Locational IRU Prices and Locational IRD Prices; (4) performance of the IFM optimization, including solution time and solution quality; (5) need to manually intervene in RUC or engage in other out-of-market action; and (6) effect of other factors whose magnitude of impact on the basic trade-off is unforeseen on the effective date of this Section 31.3.1.6.3.1.

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Section 33

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33.2.5 Implementation Activities.

The CAISO and the prospective EDAM Entity will complete the following implementation activities:

- (A) **Execution of Necessary Agreements.** The prospective EDAM Entity has complied with Section 33.2.1, executed any necessary agreements for operating as an EDAM Entity, and helped the CAISO secure necessary agreements with third party prospective EDAM Market Participants.
- (B) **Operations Training.** Prior to the start of parallel operations as set forth in Section 33.2.3, all operations staff (including contractors or vendors) identified by the prospective EDAM Entity who will have responsibility for EDAM operations, market transactions and settlements, will have completed identified CAISO training modules.
- (C) **Forecasting Capability.** The CAISO and, to the extent the prospective EDAM Entity will use its own forecasts or is otherwise required to provide forecasting information to the CAISO, the prospective EDAM Entity has demonstrated its respective forecasting capability through –
 - (i) the definition of day-ahead demand forecast boundaries based on the conforming and non-conforming load characteristics, as applicable;
 - (ii) the documentation of EDAM Entity's choice of day-ahead demand forecast provider and how the demand forecast will be completed;
 - (iii) the accuracy of the CAISO forecast of demand based on historical actual load data for the defined demand forecast boundaries;

- (iv) the identification of weather stations locations used in forecasting, as applicable;
- (v) the identification of the source of day-ahead Variable Energy Resource forecasts;
- (vi) the accuracy of the day-ahead forecast of Variable Energy Resources;
- (vii) the identification of all Hybrid Resources; and
- (viii) the provision of CAISO historical data on day-ahead demand and renewable forecast information to fill the needed historical data period to produce the Imbalance Reserve requirements at the net load level.

(D) **Resource Sufficiency Evaluation.** The prospective EDAM Entity Scheduling Coordinator demonstrates its ability to pass the Resource Sufficiency Evaluation for the prospective EDAM Entity's Balancing Authority Area.

(E) **Transmission Availability.** The prospective EDAM Entity confirms initial registration of the transmission rights of the EDAM Transmission Service Providers in its Balancing Authority Area available for EDAM Transfers or that otherwise may be scheduled in the Day-Ahead Market.

~~(F) **Historical Transmission Revenue Recovery.** The EDAM Entity provides the information and documentation necessary to account for the EDAM recoverable revenue pursuant to Section 33.26 associated with the EDAM Transmission Service Providers in its Balancing Authority Area.~~

~~(FG) **Operating Procedures.** Prior to the start of parallel operations pursuant to Section 33.2.3, the CAISO and the prospective EDAM Entity have defined, completed, and tested operating procedures for the prospective EDAM Entity and its Scheduling Coordinator's participation in the Energy Imbalance Market.~~

~~(GH) **System Readiness and Integration.**~~

- (i) **System and Functional Testing.** The prospective EDAM Entity and the CAISO have tested the functional and system elements in accordance with functional and system testing documentation posted on the CAISO

Website.

- (ii) **Prospective EDAM Entity Identification.** The CAISO has established and the prospective EDAM Entity has tested all necessary SCIDs and Resource IDs established for the prospective EDAM Entity's Balancing Authority Area.
- (iii) **Certificates and Access.** The prospective EDAM Entity has issued all necessary certificates to its employees, contractors and vendors that require system access to perform EDAM-related job functions.

(H) **Market Simulation and Structured Scenarios simulation.** The prospective EDAM Entity operations staff identified by the prospective EDAM Entity who will have responsibility for EDAM operations, transactions and settlements, have executed and passed all structured scenarios provided by CAISO with all significant issues resolved.

(I) **Settlements.** The CAISO and the prospective EDAM Entity have demonstrated that –

- (i) CAISO settlement statements and invoices match the operational data published to stakeholders or fed into settlement system and the resulting calculations correspond to the formulas defined in CAISO's tariff and Business Practice Manuals.
- (ii) CAISO settlement statements and invoices allocates charges and credits to its customers accurately reflecting system and market data during parallel operations.

(JK) **Parallel Operations Plan.** The period of parallel operations specified in Section 33.2.3 runs consistently and in accordance with the prospective EDAM Entity specific parallel operations plan.

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33.4.1 EDAM Entity

An EDAM Entity must be a Balancing Authority registered and certified as such under the applicable authorities and execute an EDAM Addendum to EIM Entity Agreement no later than ninety (90) days before the EDAM Entity Implementation Date. Upon receipt of such notice, the CAISO will undertake all necessary preparations to enable operation of the Day-Ahead Market within the EDAM Entity Balancing Authority Area, as outlined in the Business Practice Manual for the Extended Day-Ahead Market, including issuance of a Market Notice within five Business Days after receipt of such notice.

An EDAM Entity must:

- (a) perform the obligations of an EDAM Entity in accordance with the EDAM Addendum to EIM Entity Agreement, Section 33, and other provisions of the CAISO Tariff that apply to EDAM Entities, subject to the limitations specified in Section 33.1;
- (b) determine and inform the CAISO about all Load Serving Entities within the EDAM Entity's Balancing Authority Area necessary to enable operation of the Day-Ahead Market in its Balancing Authority Area;
- (c) qualify as, or secure representation by, an EDAM Entity Scheduling Coordinator, provided that an EDAM Entity may not be represented by more than one EDAM Entity Scheduling Coordinator;
- (d) provide the CAISO and its EDAM Entity Scheduling Coordinator with information regarding all Transmission Constraints of which it is aware;
- (e) work with the CAISO to identify all resources within its Balancing Authority Area that do not currently participate in the Energy Imbalance Market pursuant to Section 29 so they can be represented in the Extended Day-Ahead Market as EDAM Resources and execute an EDAM Addendum to EIM Participating Resource Agreement pursuant to Section 33, which may be accomplished through execution of a separate EDAM Addendum to EIM Participating Resource Agreement or by including all or some of the resources under its EDAM Addendum to EIM Participating Resource Agreement;

(f) define Load Aggregation Points in its Balancing Authority Area and be responsible for serving the associated Demand, including for an EDAM Load Serving Entity in its Balancing Authority Area that will be separately responsible for serving the associated Demand;

(g) identify and inform the CAISO which resource types supported by the CAISO Markets are eligible to participate in the Day-Ahead Market as EDAM Resource Facilities;

(h) determine and inform the CAISO of EDAM Transmission Service Providers within the EDAM Entity Balancing Authority Area;

(i) serve as the entity that interacts with EDAM Transmission Service Providers within the EDAM Entity Balancing Authority Area; and

(j) inform the CAISO whether or not the EDAM Entity intends to utilize the CAISO's Demand Forecast consistent with Section 33.31.1.

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33.11 Settlements And Billing for EDAM Market Participants

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33.11.3 Day-Ahead Market Settlement

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33.11.3.2 Settling Imbalance Reserves

The CAISO settles Imbalance Reserves Awards issued to EDAM Resources as specified in Sections 11.2.1.1~~2~~, 11.2.1.8, and 11.25.2.1.1 as though the EDAM Resource were a Participating Generator.

The CAISO allocates the costs of procuring Imbalance Reserves in the EDAM as specified in Section 11.2.1.9 individually for each EDAM Entity with the exception that any reference to the CAISO Balancing Authority Area is a reference to the Balancing Authority Area of the relevant EDAM Entity.

In allocating the costs of Imbalance Reserves, the CAISO assesses both the importing and exporting Balancing Authority Areas for EDAM Transfers of Imbalance Reserves. In the case of EDAM Entities, the CAISO assesses the Scheduling Coordinator representing the importing Balancing Authority Area a settlement equal to the product of the quantity of the import and the Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location. In the case of EDAM Entities, the CAISO assesses the Scheduling Coordinator representing the exporting Balancing Authority Area a settlement equal to the product of the quantity of the export and the Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location. If the CAISO is one of the importing or exporting Balancing Authority Areas, then the CAISO allocates the product of the export or import, as appropriate, and the Locational IRU Price or Locational IRD Price, as applicable, at the relevant Scheduling Point pricing location to CAISO Scheduling Coordinators as specified in Section 11 for allocating EDAM Transfers of Imbalance Reserves.

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33.11.7 [Not Used] ~~Transmission Revenue Recovery.~~

~~The CAISO will allocate to each EDAM Entity and EDAM Load Serving Entity an EDAM Access Charge for recovery of EDAM recoverable revenue according to Section 33.26. The CAISO will charge Market Participants for transmission service on the CAISO Controlled Grid according to Section 26.~~

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33.18.5 EDAM Transfer Priority

EDAM Transfers will have a priority equal to Demand in the EDAM Area and may be curtailed only as provided in Section 33.7.5. The Day-Ahead Market will include a constraint as provided in Section 33.27.43 to ensure each Balancing Authority in the EDAM Area meets its Balancing Authority Area requirements before supporting EDAM Transfers.

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33.26 ~~[Not Used] Transmission Revenue Recovery And Charges~~

~~Access Charges for Day-Ahead Market transactions serving Load within the CAISO Balancing Authority Area that use the CAISO Controlled Grid are governed by Section 26. Transmission service charges for Day-Ahead Market transactions serving Load within an EDAM Entity Balancing Authority Area are governed by the applicable EDAM Transmission Service Provider tariff. Transmission service charges for Day-Ahead Market transactions supported by EDAM Transfers are addressed in this Section 33.26. Transmission service charges for Real-Time Market transactions are governed by Section 11, Section 26, or Section 29.26, as applicable.~~

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33.31.1.2.1.2 Imbalance Reserves Requirement

The Imbalance Reserve requirement used in the 6:00 a.m. and 9:00 a.m. advisory run by the CAISO will be calculated in accordance with Section ~~31.3.1.633-31.3~~. The Imbalance Reserve requirement used in the final binding EDAM RSE will be the same requirement the CAISO used in the 9:00 a.m. advisory run unless the timelines in the Business Practice Manual for the Extended Day-Ahead Market otherwise allow for adjustment.

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33.31.1.6 Timely Submission of Tags Necessary to Remain in EDAM Upward and Downward Pools

A Balancing Authority Area in the EDAM Area must comply with the tagging protocols set forth in Section 33.30.8.3 and the Business Practice Manuals to ensure imports and exports are timely tagged. A Balancing Authority Area in the EDAM Area that fails to timely E-tag imports or exports and does not otherwise re-supply from a firm schedule or physical source to cover for the untagged imports or exports for the operating hour following the process in the Business Practice Manual will be removed from the EDAM Upward Pool or the EDAM Downward Pool, respectively, for that Trading Hour. A Balancing Authority Area in the EDAM Area that is removed from the EDAM Upward Pool or the EDAM Downward Pool in accordance with this Section 33.31.1.6 will be evaluated as an individual Balancing Authority Area and will not be allowed to share in the Diversity Benefits of the pool that it would have otherwise been a part of and as provided in Section 33.31.1.4.3.

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33.31.2 Operation of the Day-Ahead Market in the EDAM Area

33.31.2.1 IFM MPM in the EDAM Area

The CAISO applies the IFM MPM specified in Section 31.2 to the EDAM Area. For purposes of the IFM MPM process in the EDAM Area, the CAISO applies a competitive path assessment to binding Transmission Constraints to determine whether a path is competitive or non-competitive, consistent with the requirements of Section 29.39. If a path is non-competitive, MPM procedures will apply to determine any non-competitive contribution to LMPs. Resources' Bids will be subject to applicable mitigation procedures if the net contribution from non-competitive binding Transmission Constraints to these resources' LMPs is positive.

In relation to power balance constraints within the EDAM Area, the Marginal Energy Cost in the CAISO Balancing Authority Area will reflect a competitive marginal energy price. For this

purpose, when an EDAM Balancing Authority Area's Marginal Energy Cost is greater than CAISO Balancing Authority Area's Marginal Energy Cost, then the IFM MPM process will apply the competitive path assessment. If non-competitive conditions exist, the IFM MPM process will treat the differential between the Marginal Energy Cost in the CAISO Balancing Authority Area and the Marginal Energy Cost in the EDAM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to mitigation procedures.

33.31.2.2 IFM in the EDAM Area

The IFM procures Energy and Imbalance Reserves for EDAM Entity Balancing Authority Areas but does not procure Ancillary Services. EDAM Entities must self-provide their full Ancillary Services requirements to the IFM and cannot submit Economic Bids for Ancillary Services to the IFM.

The CAISO procures Energy across the EDAM Area as specified in Section 31.3.1. The CAISO procures Imbalance Reserves across the EDAM Area as specified in Sections 31.3.1.5 and 31.3.1.6. An EDAM Resource must meet the requirements applicable to Participating Generators to be eligible for Imbalance Reserves Awards and must meet all of the RTM Bidding Obligations specified in Section 31.3.4.

33.31.2.3 RUC MPM in the EDAM Area

~~The CAISO applies the RUC MPM specified in Section 31.9 to the EDAM Area, except that a reference to the CAISO Forecast of BAA Demand for the CAISO refers to the total CAISO Forecast of BAA Demand for all Balancing Authority Areas across the EDAM Area.~~

For purposes of the RUC MPM process in the EDAM Area, the CAISO applies a competitive path assessment to binding Transmission Constraints to determine whether a path is competitive or non-competitive, consistent with the requirements of Section 29.39. If a path is non-competitive, MPM procedures will apply to determine any non-competitive contribution to RUC prices. Resources' Bids will be subject to applicable mitigation procedures if the net contribution from non-competitive binding Transmission Constraints to these resources' prices for Reliability Capacity Up is positive.

In relation to power balance constraints within the EDAM Area, the marginal Reliability Capacity cost in the CAISO Balancing Authority Area will reflect a competitive RUC price. For this purpose, when an EDAM Balancing Authority Area's marginal Reliability Capacity cost is greater than CAISO Balancing Authority Area's marginal Reliability Capacity cost, then the RUC MPM process will apply the competitive path assessment. If non-competitive conditions exist, the RUC MPM process will treat the differential between the marginal Reliability Capacity cost in the CAISO Balancing Authority Area and the marginal Reliability Capacity cost in the EDAM Balancing Authority Area similar to the non-competitive component of the Marginal Cost of Congestion in CAISO's Local Market Power Mitigation process and will subject resources' Bids to applicable mitigation procedures.

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Appendix A

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- Deployment Factor

As specified in Section 31.3.1.6.3.1 and further specified in the Business Practice Manual, the percentage of Imbalance Reserves Awards the CAISO models as being deployed for Energy for the purpose of modeling the deployment of Imbalance Reserves against Transmission Constraints. The CAISO establishes distinct Deployment Factors for Imbalance Reserves Up and Imbalance Reserves Down.

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- ~~[Not Used]EDAM Access Charge~~

~~The Access Charge that provides for historical transmission revenue recovery through the Extended Day-Ahead Market pursuant to Section 33.26.~~

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APPENDIX B.29

EDAM ADDENDUM TO EIM PARTICIPATING RESOURCE AGREEMENT

Effective [Date], [Full Legal Name] (“[Short Legal Name]”) and the California Independent System Operator Corporation (“CAISO”) (collectively the “Parties”) make and enter into this EDAM Addendum to the Parties’ [Date] EIM Participating Resource Agreement (the “Agreement”).

WHEREAS:

A. Pursuant to the Agreement, [Short Legal Name] has participated or will participate as an EIM Participating Resource in the CAISO’s Real-Time Market and is located in an EDAM Entity Balancing Authority Area;

B. The CAISO also operates the Day-Ahead Market pursuant to the CAISO Tariff; and

C. [Short Legal Name] extends its participation to the CAISO’s Day-Ahead Market in accordance with the EDAM Entity’s open access transmission tariff or the tariff of another transmission service provider within the EDAM Entity Balancing Authority Area.

NOW, THEREFORE, for good and sufficient consideration, the receipt of which is hereby acknowledged, the Parties agree that the Agreement is hereby supplemented as follows:

- 1. Agreement to be Bound by CAISO Tariff.** Section 33 of the CAISO Tariff is incorporated herein and made a part hereof.
- 2. Interpretation.** All references in the Agreement to the “EIM” or the “Energy Imbalance Market” will also be read as references to the “EDAM” or the “Extended Day Ahead Market.” All references in the Agreement to an “EIM Entity” will also be read as references to an “EDAM Entity.” All references in the Agreement to “EIM Participating Resource(s)” will also be read as references to the “EDAM Resource(s).” All references in the Agreement to “EIM Resources” will also be read as references to “EDAM Resource Facilities.” All references in the Agreement to an “EIM Participating Resource Scheduling Coordinator” will also be read as references to an “EDAM Resource Scheduling Coordinator.” All references in the Agreement to Section 29 of the CAISO Tariff will also be read as references to Section 33 of the CAISO Tariff.
- 3. EDAM Resource Facilities.** Schedule 1 of the Agreement will be updated to include all EDAM Resource Facilities not already included in Schedule 1 as an EIM Resource.
- 4. Effective Date and Termination.** This EDAM Addendum will be effective as of the later of the date it is executed by the Parties and shall remain in full force and effect until terminated pursuant to the same process as is set forth in Section 3.2 of the Agreement, or until the EDAM Entity for the Balancing Authority Area in which the EDAM Resource is located ceases its participation in EDAM. If [Short Legal Name] terminates its participation as an EDAM Resource, it may continue to participate as an EIM Participating Resource under the terms of the Agreement.
- 5. Miscellaneous.** Except as expressly modified by this EDAM Addendum, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect.

[Full Legal Name]

By: _____

Printed Name: _____

Title: _____

Date: _____

**California Independent
System Operator Corporation**

By: _____

Printed Name: _____

Title: _____

Date: _____