

185 FERC ¶ 61,210
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Willie L. Phillips, Acting Chairman;
Allison Clements, and Mark C. Christie.

California Independent System Operator Corporation Docket No. ER23-2686-000

ORDER ACCEPTING IN PART, SUBJECT TO CONDITION, AND REJECTING IN
PART TARIFF REVISIONS

(Issued December 20, 2023)

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1. On August 22, 2023, pursuant to section 205 of the Federal Power Act (FPA)¹ and part 35 of the Commission’s regulations,² California Independent System Operator Corporation (CAISO) filed proposed revisions to its Open Access Transmission Tariff (Tariff) to implement its Day-Ahead Market Enhancements (DAME) and Extended Day-Ahead Market (EDAM) proposals. Under the DAME proposal, CAISO proposes to revise its Tariff to establish two new day-ahead market products—Imbalance Reserves and Reliability Capacity. The DAME proposal would update CAISO’s existing day-ahead market to implement and accommodate EDAM functions, as well as address supply and load forecast differences, or imbalances, between the day-ahead and real-time markets. Under the EDAM framework, CAISO proposes revisions to its Tariff to offer participation in the day-ahead market to external balancing authority areas (BAA) in the Western states. By joining EDAM, an external BAA voluntarily enters into participation agreements to take part in CAISO’s day-ahead market, similar to the existing Western Energy Imbalance Market (WEIM).

2. As discussed below, we accept CAISO’s proposed DAME Tariff revisions, subject to condition, effective as of the actual implementation date, as requested, subject to CAISO notifying the Commission of the actual implementation date within five business days after CAISO’s actual implementation date. Additionally, we accept in part and reject in part, subject to condition, CAISO’s proposed EDAM Tariff revisions, effective December 21, 2023, as requested for the proposed Tariff records pertaining to EDAM implementation; and we accept the rest of the EDAM Tariff revisions effective as of the actual implementation date, as requested, subject to CAISO notifying the Commission of the actual implementation date within five business days after CAISO’s actual

¹ 16 U.S.C. § 824d.

² 18 C.F.R. pt. 35 (2022).

implementation date. Finally, CAISO is directed to submit a compliance filing within 60 days of the date of this order.

I. Background

A. Western Energy Imbalance Market

3. In June 2014, the Commission conditionally accepted revisions to CAISO's Tariff to implement the WEIM,³ which allows other BAAs in the Western Interconnection to participate in the imbalance energy portion of CAISO's real-time market. In the WEIM, participating entities may purchase and sell energy in the 15- and five-minute real-time markets to meet their energy imbalance needs. Participation in the WEIM is voluntary, and participating balancing authorities retain their reliability responsibilities and manage their own day-ahead processes and ancillary services requirements. Currently, the WEIM has 22 participants that represent roughly 80% of load within the Western Electricity Coordinating Council.⁴

B. CAISO's Existing Day-ahead Market

4. CAISO's existing day-ahead market consists of four steps: (1) bid submission; (2) market power mitigation of the submitted bids to supply energy, ancillary services, and residual unit commitment (RUC) capacity; (3) the Integrated Forward Market (IFM); and (4) the RUC process. For bid submission, CAISO requires either an economic bid or a self-schedule⁵ for all supply and demand. Scheduling coordinators for generation resources offer separate bids to supply energy, ancillary services, and RUC capacity.⁶

³ *Cal. Indep. Sys. Operator Corp.*, 147 FERC ¶ 61,231 (WEIM Order), *order denying reh'g*, 149 FERC ¶ 61,058 (2014).

⁴ The WEIM only settles imbalance energy, which is a fraction of the energy needed to settle the 80% of load that participating entities represent. In contrast to CAISO's existing day-ahead and real-time market, the WEIM does not procure or settle ancillary services.

⁵ A self-schedule indicates that the resource does not have an economic offer and is therefore a "price-taker" that wants its output to flow regardless of market prices. CAISO August 22, 2023 Transmittal at 110 (Transmittal).

⁶ To participate in the CAISO market, an entity must either be a certified scheduling coordinator or secure the services of a certified scheduling coordinator to act on its behalf. Scheduling coordinators can directly bid or self-schedule resources they represent into the CAISO market and settle intermediate trades among the resources they represent. *See* CAISO, CAISO eTariff, §§ 4.5.1 Scheduling Coordinator Certification

Scheduling coordinators for load serving entities (LSE) submit bids for load in the day-ahead market. The bid submission process also includes bidding for exports, imports, and wheeling-through transactions.⁷ Next, CAISO conducts a market power mitigation screen that identifies and mitigates potentially uncompetitive supply bids to ensure the market prices that result from the IFM are competitive.⁸

5. The IFM is a financial market where bid-in supply clears against bid-in load and ancillary service requirements; it co-optimizes energy and ancillary service procurement for each operating hour of the following trading day and minimizes overall procurement costs while respecting transmission constraints and resource constraints, such as minimum run time and start-up time. After the market power mitigation run, CAISO issues schedules for energy and ancillary services in the IFM, which may include bids that were mitigated through the market power mitigation process. The market optimization software schedules and prices resources in two successive runs. First, the scheduling run produces resource schedules. Second, the pricing run follows the scheduling run and produces market-clearing prices for energy (locational marginal prices or LMPs) and ancillary services.⁹

6. In the final step of CAISO's day-ahead market, CAISO conducts the RUC, which procures capacity to fill any gaps between the physical supply that cleared the IFM and the physical supply needed to meet CAISO's demand forecast. CAISO explains that, without the RUC, the system could be short of power in the real-time or be forced to rely on less economic resources to meet real-time needs.¹⁰

II. CAISO Filing

A. CAISO's Stated Need for Reform

7. CAISO states that the proposed DAME Tariff revisions establish two new market products—Imbalance Reserves and Reliability Capacity—to address the challenges caused by increasing system variability and uncertainty and improve market efficiency

(18.0.0), 4.5.3 Responsibilities of a Scheduling Coordinator (12.0.0) (eTariff).

⁷ Transmittal at 27-28.

⁸ CAISO mitigates offers to the greater of the resource's default energy bid or the locational marginal price (LMP). *Id.* at 29.

⁹ *Id.*

¹⁰ *Id.* at 31-32.

and reliability.¹¹ CAISO explains that the DAME revisions are driven by the need to address increasing differences in the load forecast net of variable energy resource production (i.e., the net load forecast) between CAISO's day-ahead and real-time markets. CAISO explains that the net load forecast is a key value for the CAISO markets because it represents how much energy the market must procure from firm dispatchable resources to meet system needs in real-time.¹² CAISO states that the net load imbalances have grown in recent years following rapid growth in variable energy resource capacity, extreme weather-related uncertainty, and extreme weather events. CAISO states that these factors have increased the risk that it will have insufficient capacity and ramp capability available in real-time to meet demand. CAISO states that it currently uses the RUC process in the day-ahead market to adjust the load forecast and ensure additional capacity is procured to address uncertainty between the day-ahead and real-time markets. By comparison, CAISO states that the DAME market products will increase efficiency by incorporating expected variability and uncertainty into the day-ahead market, thereby minimizing net load imbalances between day-ahead and real-time.¹³

8. CAISO states that the decision to extend the day-ahead market by offering voluntary participation to other BAAs results from a multi-year stakeholder effort to build on the benefits of the WEIM. CAISO explains that WEIM participants requested that CAISO explore the feasibility of providing similar optimization services in the day-ahead time frame. CAISO states that it anticipates annual economic benefits of EDAM will range from \$100 million to more than \$1 billion in addition to the economic and other benefits the WEIM will continue to provide. According to CAISO, the EDAM design offers a voluntary regional day-ahead market by leveraging the existing features of CAISO's day-ahead market while also incorporating the enhancements to the day-ahead market proposed in the DAME Tariff revisions. CAISO further states that, together, the EDAM and DAME enhancements will support the optimal commitment of a geographically diverse set of resources across the footprint of all BAAs participating in EDAM, optimize the use of available transmission capability, build upon the WEIM, and provide broad economic, reliability, and environmental benefits.¹⁴

B. Overview of Filing

9. CAISO proposes two separate sets of Tariff revisions to implement the DAME and EDAM proposals. The DAME proposal includes changes to CAISO's existing day-

¹¹ *Id.* at 2.

¹² *Id.* at 6.

¹³ *Id.* at 2-3.

¹⁴ *Id.* at 12-13.

ahead market and would apply to both CAISO and EDAM Entities¹⁵ alike, but it is distinct from, though related to, CAISO's EDAM proposal. CAISO explains that the DAME proposal is designed to enhance CAISO's ability to assess whether EDAM Entities have met their resource sufficiency requirements and to ensure transfers in EDAM are economic. Specifically, the DAME proposal consists of two new day-ahead market bi-directional products that would be procured on a co-optimized basis with energy: (1) Imbalance Reserves and (2) Reliability Capacity.¹⁶ CAISO states that the Imbalance Reserves product is intended to address real-time ramping needs that are not covered by hourly day-ahead market schedules because of uncertainty in the net load forecast used in the day-ahead market. CAISO explains that a resource that receives an Imbalance Reserves award must submit economic bids in the real-time market for its awarded capacity range. CAISO states that the Reliability Capacity product will be procured to meet positive or negative differences between cleared physical supply in the IFM and the day-ahead net load forecast. Currently, the RUC process serves this function, in part, but only procures capacity in the upward direction. With the proposed bi-directional Reliability Capacity product, CAISO will be able to procure additional capacity (upward) or decommit capacity (downward) in the RUC process. Like the Imbalance Reserves, a resource receiving a Reliability Capacity award is obligated to make economic energy bids in the real-time market for the quantity it was awarded. Both products are co-optimized in the IFM.

10. CAISO explains that, under the proposed EDAM design, EDAM will settle all loads and resources in the day-ahead time frame and imbalances between day-ahead and the real-time market for all balancing authorities that join. CAISO notes that EDAM will optimize the transmission and resources offered into the market to identify the most efficient resource commitments and energy transfers to meet forecasted demand across the footprint. According to CAISO, EDAM will also optimize Imbalance Reserves and Reliability Capacity across the footprint, including mechanisms to harmonize greenhouse gas (GHG) accounting methods and address potential under-recovery of historical transmission revenues.¹⁷

¹⁵ Balancing authorities that elect to join EDAM are titled EDAM Entities. eTariff, app. A Definitions (0.0.0) (defining EDAM Entity).

¹⁶ CAISO states that the new products are: (1) Imbalance Reserves Up; (2) Imbalance Reserves Down; (3) Reliability Capacity Down; and (4) Reliability Capacity Up. Reliability Capacity Up is a new name for the existing RUC capacity product that CAISO currently procures.

¹⁷ Transmittal at 13.

11. CAISO's proposed framework will include readiness criteria in the EDAM implementation process paralleling the similar criteria in the WEIM to ensure CAISO and participants are prepared for day-ahead market operation in each BAA. CAISO also proposes transitional measures in EDAM similar to those in the WEIM to insulate participants from adverse reliability or market outcomes during the implementation and initial participation process.¹⁸ CAISO states it will monitor and issue public reports on the performance of the EDAM design and work with stakeholders to refine the design.¹⁹

12. CAISO explains that the EDAM framework builds upon the existing CAISO day-ahead and WEIM framework to provide substantial economic benefits for customers from resource diversity and savings from replacing existing manual processes with CAISO's automated process. CAISO filed its EDAM provisions as a new proposed section 33 to its Tariff, along with certain corresponding revisions to existing Tariff sections, including those addressing the WEIM. CAISO states that EDAM is not a new market; rather, it takes advantage of CAISO's existing day-ahead market by adding new procedures to accommodate the voluntary participation of other BAAs.²⁰ CAISO further explains that EDAM will allow each balancing authority that voluntarily joins to transfer supply, Imbalance Reserves, and Reliability Capacity based upon the economic optimization of resources across a broad geographic area.²¹

C. Market Operations

13. CAISO explains that EDAM market operations occur primarily across three time frames: (1) before the day-ahead market, or "pre-market," (2) within the day-ahead market, and (3) after the day-ahead market. First, in the pre-market time frame, the EDAM activities center on preparing for the optimization of the day-ahead market by addressing transmission availability, accounting for legacy transmission contracts and transmission ownership rights, and ensuring each BAA has sufficient resources to support its own obligations.²² In addition to accounting for available transmission, pre-market activities will include evaluating the resource sufficiency of each BAA in the EDAM area. CAISO states that, similar to the WEIM, BAAs participating in EDAM will need to

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.* at 104.

²¹ *Id.* at 14.

²² *Id.* at 13.

demonstrate they have sufficient supply to meet specific balancing and flexibility needs.²³

14. Second, in the day-ahead market time frame, all resources and load in an EDAM BAA will submit an economic bid or self-schedule in the day-ahead market based on their availability and operational circumstances. CAISO notes that this differs from the current load and resource participation model in the WEIM where a base schedule reflects the planned operation of loads and resources in the day-ahead time frame. EDAM will optimize the transmission and resources offered into the EDAM market to identify efficient resource commitments and energy transfers to meet scheduled and forecasted load across the footprint. CAISO explains that at the start of EDAM, it proposes to apply market power mitigation at the BAA level similar to the WEIM today.²⁴

15. Under the EDAM proposal, resources located outside of an EDAM BAA may fully participate in the day-ahead market if they are pseudo-tied or dynamically scheduled into an EDAM BAA or are a designated network resource to serve load in an EDAM BAA. CAISO proposes that other contracted supply located outside of the EDAM area can self-schedule at the interties of non-CAISO BAAs but cannot economically bid, which CAISO states is consistent with the WEIM today.²⁵

16. Under EDAM, CAISO also states that it intends to make virtual bidding an optional election for each EDAM balancing authority, allowing the participant to choose whether to enable convergence bidding within its BAA. According to CAISO, this allows participants to gain day-ahead market experience prior to introducing convergence bidding to those unfamiliar with it.²⁶

17. Finally, in the day-ahead time frame, CAISO proposes to extend and enhance the existing WEIM GHG accounting framework and resource-specific approach that uses bid adders to identify which resources serve demand in a state with carbon pricing policies, referred to in the proposal as a GHG regulation area. CAISO explains that its proposed enhancements will allow scheduling coordinators to recover the cost of compliance with a state's carbon pricing policy, but does not embed the cost of that state's policies in LMPs for demand outside of a GHG regulation area, and will provide a mechanism to

²³ *Id.* at 17.

²⁴ *Id.* at 18-19.

²⁵ *Id.* at 19.

²⁶ *Id.*

identify which scheduling coordinators are electricity importers into a GHG regulation area.²⁷

18. CAISO states that EDAM will produce resource commitments and EDAM energy transfers that CAISO (as market operator) will settle and allocate to the appropriate scheduling coordinator for the BAA. CAISO states that the proposed Tariff framework addresses the structure for such charges and the creation of any revenue, noting that individual balancing authorities will distribute charges and revenue to the appropriate entities within their BAA according to the terms and conditions of their individual Open Access Transmission Tariffs (OATT).²⁸ CAISO proposes to use its existing post-market settlements timelines and procedures for EDAM, except when unique features of EDAM settlement necessitate an additional provision, which CAISO states primarily arise in the context of transfer and congestion revenues, GHG bid adders, and the resource sufficiency evaluation (RSE) failure surcharge.²⁹

19. Finally, CAISO notes EDAM does not include every single element of CAISO's day-ahead market processes that apply to the CAISO BAA, such as existing functionality for inter-scheduling coordinator trades, ancillary services procurement, and congestion revenue rights. CAISO explains these elements are either discretionary or are addressed through other mechanisms under OATTs in effect in non-CAISO BAAs that participate in EDAM.³⁰

D. Participation and Roles within EDAM

20. CAISO states that, similar to the WEIM, EDAM participation is voluntary and on a balancing authority level. According to CAISO, the primary prerequisite for balancing authorities to join EDAM is current participation in, or concurrently joining, the WEIM. CAISO explains that each participating balancing authority remains responsible for maintaining the reliability of its BAA, and functional separation of participants in EDAM will remain like in the WEIM.³¹ Unlike in the WEIM, which allowed for non-

²⁷ *Id.* at 20.

²⁸ *Id.* at 179-80.

²⁹ *Id.* at 21.

³⁰ *Id.* at 194.

³¹ *Id.* at 104 (citing eTariff, § 33.4 Roles and Responsibilities (6.0.0)).

participating resources, all resources within an associated BAA will participate in the market (both day-ahead and real-time) by submitting economic bids and self-schedules.³²

21. CAISO describes four main participant roles in each BAA participating in EDAM, with each role represented by a scheduling coordinator: EDAM Entity, EDAM Resource, EDAM Transmission Service Provider, and EDAM LSE.³³ CAISO proposes to include in Appendix B of its Tariff various *pro forma* agreements that enable participation in the day-ahead market. CAISO's proposed Tariff language contains both defined roles and responsibilities for each participant category, as well as the *pro forma* participation agreements applicable to each of them. CAISO's proposal also contains roles for three types of scheduling coordinators that would represent the various EDAM participant categories: EDAM Entity Scheduling Coordinator, EDAM Resource Scheduling Coordinator, and EDAM LSE Scheduling Coordinator. Finally, CAISO includes similarly defined roles and requirements for each scheduling coordinator type, including any requirements for functional separation of roles for entities who wish to become more than one type of scheduling coordinator, subject to eligibility and standards of conduct requirements.³⁴

22. CAISO states that the proposed EDAM Entity Implementation Agreement requires the prospective EDAM Entity to compensate CAISO for the start-up costs necessary to incorporate the EDAM Entity into the day-ahead market, establishes the implementation date for participation in the day-ahead market, and requires CAISO to perform changes to its systems to enable the prospective EDAM Entity to participate in the day-ahead market. In addition to the proposed EDAM Entity Implementation Agreement, CAISO proposes EDAM agreements and addenda applicable to each participant role within each EDAM Entity.³⁵

23. CAISO explains that it will recover costs to facilitate a new balancing authority joining EDAM through an implementation fee based on CAISO's cost of service to do

³² eTariff, § 33.4.4.2 EDAM Resource and Energy Imbalance Market (0.0.0); *id.* app. B.27 EDAM Addendum to EIM Entity Agreement (0.0.0). Existing WEIM non-participating resources currently represented by a WEIM Entity scheduling coordinator can either establish a direct scheduling coordinator relationship with CAISO under EDAM or be represented by the EDAM Entity Scheduling Coordinator.

³³ Transmittal at 109.

³⁴ The various scheduling coordinator agreements are addenda to existing, corresponding WEIM scheduling coordinator agreements. *E.g.*, eTariff, app. B.28 EDAM Addendum to EIM Entity Scheduling Coordinator Agreement (0.0.0) § 2.

³⁵ Transmittal at 113-18.

so; while the actual onboarding costs per balancing authority will vary depending on size and complexity of the efforts, CAISO will collect a \$300,000 deposit from a balancing authority to cover the start-up costs and will collect additional sums in increments of \$300,000 if the actual cost of performing the onboarding service exceeds the initial deposit. CAISO notes the ongoing administrative costs of EDAM services will consist of CAISO's existing market services charge and a new system operations charge. CAISO clarifies that once a balancing authority begins participating in EDAM, it will no longer pay WEIM administrative fees, as the EDAM administrative fees cover both day-ahead and real-time services.³⁶

E. Communications and Telemetry

24. CAISO explains that existing Tariff section 10 sets forth its metering provisions, which will apply to the EDAM area, with which scheduling coordinators in new EDAM BAAs must ensure compliance. CAISO states that all EDAM resources must be CAISO metered entities or scheduling coordinator metered entities and must comply with existing Tariff section 10.³⁷ To ensure compliance across new tie points, CAISO proposes to require each EDAM Entity ensure the separate metering of any load aggregation point in its BAA not represented by the EDAM Entity scheduling coordinator so that associated demand can be settled.

25. CAISO also proposes to accommodate any legacy generating units in the EDAM area that have not updated to modern metering systems by allowing an exception to its metering granularity requirement. Under this proposal, scheduling coordinators for EDAM resources that cannot meter an EDAM resource facility's energy every 15 minutes or faster may not submit economic bids to provide ancillary services and must submit self-schedules in the day-ahead and real-time markets. According to CAISO, this will allow legacy units to participate in the day-ahead market without requiring expensive upgrades and will protect against inaccurate price signals and settlement data.³⁸

26. Finally, CAISO proposes to apply the same telemetry requirements in CAISO and the WEIM to EDAM. EDAM resources must satisfy communications, telemetry, and control requirements in a manner that ensures CAISO and EDAM Entities are able to

³⁶ *Id.* at 106-107; eTariff, §§ 33.11.5 Implementation Fee (0.0.0); 33.11.6 Administrative Charge (0.0.0); app. F, Rate Schedules, Schedule 1- Grid Management Charge (26.0.0).

³⁷ Transmittal at 119 (citing eTariff, § 33.10 EDAM Metering and Telemetry (0.0.0)).

³⁸ *Id.*; eTariff § 33.10.2 EDAM Resource Metering (0.0.0). CAISO notes that it expects very few resources will need to use this provision.

monitor the operations of the EDAM resource as necessary to maintain reliability. As in CAISO, an EDAM resource facility will be exempt from telemetry requirements if it has a rated capacity of less than 10 MW, unless it seeks to provide ancillary services.³⁹

F. Miscellaneous Provisions

27. CAISO states that scheduling coordinators participating in EDAM must comply with the creditworthiness requirements in existing Tariff section 12; failure to satisfy these requirements would result in CAISO implementing enforcement action. CAISO notes that the creditworthiness requirements also apply to scheduling coordinators participating in the WEIM.⁴⁰

28. Under the proposed Tariff revisions, EDAM participants must follow the dispute resolution process described in existing Tariff section 13, which requires parties to engage in informal good-faith negotiations and mediation before resorting to arbitration. CAISO states that disputes initiated by EDAM participants in the day-ahead market will be subject to existing Tariff section 11.29.8 and managed through CAISO's customer inquiry, dispute, and information system.⁴¹

29. Finally, CAISO states the provisions in existing Tariff section 14 regarding force majeure events, indemnity, liability, and penalties, as well as the confidentiality provisions in existing Tariff section 20, will apply to EDAM participation. CAISO notes that existing WEIM participants are obligated to follow these same provisions.⁴²

G. Severability, Effective Dates, and Request for Waivers

30. CAISO indicates that certain aspects of its DAME and EDAM proposals are severable from the remainder of the Tariff provisions. CAISO explicitly states that the Commission may not approve EDAM without also approving the DAME Tariff

³⁹ Transmittal at 120; eTariff, § 33.10.4 Telemetry (0.0.0).

⁴⁰ Transmittal at 192 (citing eTariff, §§ 33.12 Creditworthiness (0.0.0), 29.12 Creditworthiness (1.0.0)).

⁴¹ *Id.* (citing eTariff, § 33.13 Dispute Resolution (0.0.0)).

⁴² *Id.* at 193 (citing eTariff, §§ 33.14 Force Majeure, Indemnity, Liabilities, and Penalties (0.0.0), 33.20 Confidentiality (0.0.0), 29.14 Uncontrollable Forces, Indemnity, Liability, and Penalties (0.0.0), 29.20 Confidentiality (0.0.0)).

provisions,⁴³ but that the Commission may approve its DAME proposal without approving the EDAM proposal. CAISO also states that there are particular sub-proposals within both DAME⁴⁴ and EDAM⁴⁵ that are severable from each other and from other proposals. Where relevant, we discuss severability below.

31. However, CAISO asserts that as it represented in the filing, and as acknowledged by a large number of commenters, ideally DAME and EDAM should be implemented together.⁴⁶ CAISO states that it extensively considered what is required to implement DAME and EDAM from a system and software perspective as part of its internal preparations. CAISO explains that it concluded that without DAME as the foundation, the additional effort and expense to implement EDAM and subsequently implement DAME is unreasonable and would lack the additional benefits of the Imbalance Reserves product.⁴⁷

32. CAISO requests an effective date of December 21, 2023, for initial EDAM onboarding and implementation provisions, and a 2026 date to be established at a later date for the balance of the DAME and EDAM Tariff provisions.⁴⁸

⁴³ *Id.* at 24 (citing *NRG Power Marketing, LLC v. FERC*, 862 F.3d 108 (D.C. Cir. 2017) (*NRG*)).

⁴⁴ As to the DAME proposal, CAISO states that the following aspects are severable: local market power mitigation for Imbalance Reserves Up; flexible implementation of Imbalance Reserves procurement; transition period for negotiated availability bids; DAME transitional measures; charge for congestion revenue displaced from deployment scenarios; and registration of resource information in CAISO master file. *Id.* at 26.

⁴⁵ As to the EDAM proposal, CAISO states that the following are severable: transmission revenue recovery mechanism; cost recovery from transmission customers who receive a day-ahead schedule exceeding the transmission rights held; option to enable virtual bidding within an EDAM BAA; and GHG net export constraint. *Id.*

⁴⁶ CAISO October 11, 2023 Answer at 54 (CAISO Answer).

⁴⁷ *Id.*

⁴⁸ CAISO requested an effective date of May 1, 2025, in its transmittal but in its initial answer adjusted the anticipated implementation timeline to 2026 with the commitment to keep the Commission informed of its progress. Transmittal at 2 n.5, 199; CAISO Answer at 169-71. CAISO requests waiver of the 120-day notice requirement for the DAME tariff revisions and the remaining EDAM tariff revisions. Transmittal at 2 n.5.

III. Notice and Responsive Pleadings

33. Notice of the filing was published in the *Federal Register*, 88 Fed. Reg. 59,899 (Aug. 30, 2023), with interventions and protests due on or before September 21, 2023. AES Clean Energy Development, LLC; American Council on Renewable Energy; Brookfield Renewable Trading and Marketing LP; California Energy Storage Alliance; Calpine Corporation; City of Roseville, California; City of Santa Clara, California; Enerwise Global Technologies, LLC dba CPower; Imperial Irrigation District; Leeward Renewable Energy, LLC; Middle River Power LLC; National Hydropower Association; NRG Business Marketing LLC; Pacific Northwest Generating Cooperative; Public Citizen, Inc; Public Generating Pool; Public Power Council; Public Service Company of New Mexico; Seattle City Light; Snohomish County Public Utility District No. 1; Southwest Power Pool, Inc. (SPP); TransAlta Energy Marketing (U.S.) Inc.; Truckee Donner Public Utility District; Turlock Irrigation District; Utah Division of Public Utilities; Utah Municipal Power Agency; and Voltus, Inc. filed timely motions to intervene. California Public Utilities Commission and Public Utilities Commission of Nevada filed notices of intervention.

34. Boston Energy Trading and Marketing LLC filed a motion to intervene out-of-time.

35. Advanced Energy United (AEU); American Clean Power Association (ACP); Arizona Utilities;⁴⁹ Balancing Authority of Northern California (BANC); Bonneville Power Administration (Bonneville); CAISO's Department of Market Monitoring (DMM); California Department of Water Resources State Water Project (CDWR); California Community Choice Association (CalCCA); California Municipal Utilities Association (CMUA); City of Redding, California (Redding); Clean Energy Buyers Association (CEBA); DC Energy, LLC (DC Energy); Deseret Generation and Transmission Co-operative, Inc. (Deseret); Electric Power Supply Association (EPSA); Google LLC (Google); Idaho Power Company (Idaho Power); Interwest Energy Alliance (Interwest); Modesto Irrigation District (Modesto); Northern California Power Agency; Northwest Power Pool d/b/a Western Power Pool (WPP); NV Energy;⁵⁰ Pacific Gas and Electric Company (PG&E); PacifiCorp; Portland General Electric Company (Portland General); Powerex Corp. (Powerex); Public Interest Organizations (PIO);⁵¹ Sacramento

⁴⁹ Arizona Utilities are Arizona Public Service Company; Salt River Project Agricultural Improvement and Power District; Tucson Electric Power Company; UNS Electric, Inc.; and Arizona Electric Power Cooperative, Inc.

⁵⁰ NV Energy includes Nevada Power Company and Sierra Pacific Power Company.

⁵¹ PIOs are Center for Energy Efficiency and Renewable Technologies,

Municipal Utility District (SMUD); San Diego Gas & Electric Company (SDG&E); Cities of Anaheim, Azusa, Banning, Colton, Pasadena, and Riverside, California (Six Cities); Solar Energy Industries Association (SEIA); Southern California Edison Company (SoCal Edison); Tri-State Generation and Transmission Association, Inc. (Tri-State); and Western Area Power Administration (WAPA) filed timely motions to intervene and comments.

36. CALifornians for Renewable Energy Inc. (CARE); Vistra Corp. and Dynegy Marketing and Trade, LLC (Vistra); Shell Energy North America (US), L.P. (Shell); and Western Power Trading Forum (WPTF) filed timely motions to intervene and protests.

37. On October 11, 2023, CAISO filed a motion for leave to answer and answer. On October 19, 2023, PacifiCorp filed a motion for leave to answer and answer. On October 26, 2023, WPTF filed a motion for leave to answer and answer. On November 2, 2023, CAISO filed a motion for leave to answer and answer. On November 15, 2023, Vistra filed a motion for leave to answer and answer.

IV. Discussion

A. Procedural Matters

38. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2022), the notices of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.⁵²

39. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d), we grant Boston Energy Trading and Marketing LLC's late-filed motion to intervene given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

40. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2022), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept PacifiCorp's, WPTF's, Vistra's, and

Earthjustice, Interwest Energy Alliance, Natural Resources Defense Council, Northwest Energy Coalition, Renewable Northwest, Sustainable FERC Project, Western Grid Group, and Western Resource Advocates. We note that PIOs filed motions to intervene individually, and that Earthjustice, Sustainable FERC Project, and Western Grid Group did not file motions to intervene.

⁵² Because Earthjustice, Sustainable FERC Project, and Western Grid Group did not file motions to intervene, they are not parties to this proceeding. *See* 18 C.F.R. §§ 385.102(c)(3), 385.214(a)(3) (2022).

CAISO's answers because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

41. As discussed below, we find, with one exception, that the overall design of CAISO's proposed DAME and EDAM Tariff revisions and *pro forma* implementation agreements are just and reasonable and not unduly discriminatory or preferential. We accept the initial EDAM onboarding and implementation provisions,⁵³ effective December 21, 2023, as requested. We accept in part and reject in part the remaining DAME and EDAM provisions, subject to condition, effective as of the actual implementation date, as requested, subject to CAISO notifying the Commission of the effective date within five business days after the actual implementation date.⁵⁴

42. As demonstrated in CAISO's filing and as discussed in this order, we find that DAME and EDAM have the potential to yield significant benefits to the voluntary WEIM and EDAM participants. CAISO has demonstrated that its proposal presents a just and reasonable regional solution to expand the benefits of day-ahead market participation to existing WEIM participants and new entrants to both WEIM and EDAM. Moreover, we find that EDAM has the potential to optimize the use of existing transmission and resources across a larger footprint in the West, which will provide economic and reliability benefits to participants. Additionally, by leveraging a larger and more diverse set of resources across the Western Interconnection, we expect that DAME and EDAM will help CAISO and other EDAM participants to manage the impacts of increasing variable energy resources and extreme weather events in the region.

43. We recognize that CAISO's EDAM filing differs from regional transmission organization (RTO) or independent system operator (ISO) filings that propose a consolidated OATT for one market footprint. The EDAM proposal instead proposes to establish a day-ahead market that includes entities within an ISO-controlled grid (CAISO) and entities outside of an RTO/ISO controlled grid, with each EDAM

⁵³ eTariff, §§ 33.1 General Provisions (3.0.0), 33.2 Access to EDAM (5.0.0), 33.4 Roles and Responsibilities (6.0.0), 33.11.5 Implementation Fee (0.0.0); *id.* apps. B.27 EDAM Addendum to EIM Entity Agreement (0.0.0), B.28 EDAM Addendum to EIM Entity Scheduling Coordinator Agreement (0.0.0), B.29 EDAM Addendum to EIM Participating Resource Agreement (0.0.0), B.30 EDAM Addendum to EIM Participating Resource SC Agmt (0.0.0), B.31 EDAM Entity Implementation Agreement (0.0.0), B.32 EDAM Load Serving Entity Agreement (0.0.0), B.33 EDAM Transmission Service Provider Agreement (0.0.0).

⁵⁴ CAISO must submit its subsequent filing to confirm the actual effective date for the Tariff revisions using Type of Filing Code 150 – Report.

participant operating pursuant to its respective OATT. Accommodating multiple market structures requires certain adaptations within the context of EDAM, such as transmission adaptations and resource sufficiency demonstrations. However, we note that most commenters express general support for the EDAM⁵⁵ and DAME⁵⁶ proposals and the expected benefits that each will provide.

44. We thus find that the overall design of DAME and EDAM, with the one exception discussed below, is just and reasonable and limit our discussion and findings below to address aspects of CAISO's proposal that have been contested by various commenters. We find that the aspects of CAISO's proposal that are not contested and not specifically discussed herein are just and reasonable.

1. General Issues

a. Comments/Protests

45. CARE requests that the Commission reject the proposal in its entirety. CARE alleges that the proposal violates the Public Utility Regulatory Policies Act of 1978 and state and federal antitrust laws and claims that the exclusion of behind-the-meter generation is systemic. CARE also argues that CAISO failed to follow the Commission's rules and regulations for interstate wholesale sales of electricity and undermined the federal policy of promoting the viability and integration of small energy generating companies, failing to protect them from monopolistic practices.⁵⁷

⁵⁵ ACP Comments at 4; United Comments at 11; Modesto Comments at 2; Six Cities Comments at 2; CEBA Comments at 1; WAPA Comments at 4; PIOs Comments at 1-2; CMUA Comments at 2; Shell Protest at 5-7; Arizona Utilities Comments at 2; Portland General Comments at 3-4; PacifiCorp Comments at 1-3; SMUD Comments at 2; Northern California Power Agency Comments at 1; Google Comments at 1; DC Energy Comments at 5; Redding Comments at 3; SEIA Comments at 1, 5; Vistra Protest at 32-33; SDG&E Comments at 3; Deseret Comments at 6; Interwest Comments at 1-2; DMM Comments at 2; EPSA Comments at 4; PG&E Comments at 2-3; CDWR Comments at 1; SoCal Edison Comments at 3; Idaho Power Comments at 1; WPTF Protest at 2-3; Redding Comments at 1.

⁵⁶ Modesto Comments at 2; PIOs Comments at 1-2; CMUA Comments at 2; SMUD Comments at 2; Northern California Power Agency Comments at 1; Google Comments at 1; DC Energy Comments at 5; SEIA Comments at 1, 5; SDG&E Comments at 3; Deseret Comments at 6; DMM Comments at 2; EPSA Comments at 3-5; PG&E Comments at 2-3; CDWR Comments at 1; SoCal Edison Comments at 3; Redding Comments at 1; Arizona Utilities Comments at 1.

⁵⁷ CARE Protest at 1.

46. A number of commenters offer general support and recommendations to monitor or improve the DAME proposal. PacifiCorp states that CAISO's DAME proposal will facilitate the core value proposition of EDAM, which is the ability to use a diverse pool of resources across a wide footprint. PacifiCorp argues that DAME enhances this value proposition by procuring these resources to cover differences in net load between the day-ahead and real-time markets. PacifiCorp asserts that, as more variable energy resources interconnect, net load imbalances will increase, making it more difficult (and expensive) for market operators to maintain system reliability. PacifiCorp states that the DAME products will encourage generation investment to solve the net load imbalance problem in the long term. PacifiCorp recognizes that managing net load uncertainties is a complex endeavor and addressing this challenge will require both implementation flexibility and further refinements as CAISO and stakeholders gain experience.⁵⁸

47. EPSA states that the level of complexity in the DAME proposal could create uncertainty and inefficiencies and runs counter to the first principles that render market rules just and reasonable. EPSA contends that some aspects of DAME could potentially lead to anti-competitive results by incenting resources to self-schedule or fail to offer needed services due to low offer caps. EPSA explains that these flaws could undermine the market by creating poor price formation results, thus resulting in decreased reliability. EPSA states that EDAM and DAME are steps in the right direction but recommends that the Commission either (1) accept the filing for both proposals and set them for hearing, or (2) reject the filing and direct CAISO to refile these two proposals separately so that each may move unencumbered by the other. Noting its concerns with aspects of DAME, EPSA asserts that EDAM can move forward without DAME, if necessary, with appropriate reporting for those EDAM elements that fall short.⁵⁹

48. Tri-State similarly argues that significant issues were not sufficiently addressed by CAISO in its filing and asks the Commission to institute further proceedings, such as a technical conference, hearing and settlement judge procedures, or a paper hearing.⁶⁰

49. Shell, WPTF, and Vistra protest certain components of the DAME proposal, recommend that the Commission find DAME to be unjust and unreasonable, and request the Commission sever the DAME proposal from the EDAM proposal.⁶¹ Vistra asserts that the proposal could undermine reliability and create market distortions due to existing

⁵⁸ PacifiCorp Comments at 26-30.

⁵⁹ EPSA Comments at 2-3, 6-7.

⁶⁰ Tri-State Comments at 3.

⁶¹ WPTF Protest at 3; Shell Protest at 5-7; Vistra Protest at 4-5.

flaws in CAISO's market design and that those issues would be spread regionally.⁶² Further, Vistra argues that while a market-based approach for procuring upward capacity to address growing uncertainty is a good objective, Vistra finds the DAME proposal to be flawed to the point where it will not achieve CAISO's intended results.⁶³

50. Bonneville states that it supports DAME's goals but requests that CAISO further explore the need for downward products and reduce the level of operator discretion, which Bonneville claims will lead the market operator to bias market outcomes.⁶⁴

51. NV Energy argues that the EDAM benefits study Energy Strategies conducted and CAISO commissioned assumed the entire Western Interconnection would participate in EDAM. NV Energy states that this benefits study did not collect actual data on standalone BAAs to measure how the Imbalance Reserves product would increase or decrease reserve requirements. NV Energy argues that CAISO has not, therefore, supported its assertion that Imbalance Reserves will more efficiently select resources to provide reserves and reduce the overall reserves needed to address net load forecasts.⁶⁵

b. CAISO Answer

52. CAISO disagrees with criticisms that the Imbalance Reserves product might not benefit EDAM Entities and that the EDAM benefits study made inaccurate assumptions. CAISO reiterates that co-optimized procurement of Imbalance Reserves will improve unit commitment, enhance market efficiency and CAISO's ability to meet real-time operational needs, and increase feasibility of IFM exports. CAISO argues that the EDAM benefits study ably demonstrated that Imbalance Reserves would provide net benefits to an EDAM area in the aggregate. CAISO argues that even though there is no basis to believe that NV Energy would be excluded from those benefits, CAISO states that EDAM is a voluntary construct and potential EDAM participants must be given the opportunity to decide for themselves whether Imbalance Reserves procurement in EDAM provides value.⁶⁶

53. CAISO argues that, contrary to Tri-State's request, a technical conference or hearing is not necessary because the record is sufficient for the Commission to find the

⁶² Vistra Protest at 3.

⁶³ *Id.*

⁶⁴ Bonneville Comments at 18.

⁶⁵ NV Energy Comments at 28.

⁶⁶ CAISO Answer at 8-10.

DAME and EDAM proposals are just and reasonable.⁶⁷ CAISO states that it does not consent to having the DAME proposal severed from the EDAM proposal and explains that the EDAM design was premised on the DAME initiative, particularly the introduction of the Imbalance Reserves product.⁶⁸ CAISO argues that the expense and effort needed to implement EDAM without the Imbalance Reserves product would be unreasonable. CAISO also states that EPSA has no legal basis for the actions it requests the Commission to take nor does the Commission have the authority in an FPA section 205 proceeding to supplant CAISO's filing.⁶⁹ CAISO also rejects Vistra's argument that the existing CAISO market design is flawed.⁷⁰

54. Regarding Bonneville's criticisms that CAISO did not sufficiently explore the need for the downward Imbalance Reserves product in the stakeholder process, CAISO disagrees and argues that any Commission action directing CAISO to further explore the need for downward products is unnecessary. CAISO argues that it justified the downward products both during the working group process and in the filing and that the Commission has a full record to determine the reasonableness of the proposal.⁷¹

c. Determination

55. We find CARE's protest to be beyond the scope of this proceeding, in which we consider only whether CAISO's proposed Tariff revisions are just and reasonable under FPA section 205. CARE does not raise any concerns regarding the details or design of the DAME and EDAM proposals, and instead appears to object to the treatment of behind-the-meter resources in CAISO's existing Tariff. We find that CARE's broad allegations of systemic issues for behind-the-meter generation are not at issue here.

56. Further, we are not persuaded by arguments that DAME will not be beneficial. We find that CAISO has demonstrated the DAME proposal to be just and reasonable and has explained how the Imbalance Reserves and Reliability Capacity products will address existing issues in the day-ahead market. We agree with CAISO that entities can determine for themselves if the DAME provisions provide benefit enough to voluntarily join EDAM. Additionally, while the Commission considers evidence of costs and

⁶⁷ *Id.* at 158.

⁶⁸ *Id.* at 54.

⁶⁹ *Id.* at 56 (citing *NRG*, 862 F.3d at 114-15 (discussing the Commission's authority to propose modification to a utility's FPA section 205 rate proposal)).

⁷⁰ *Id.* at 54.

⁷¹ *Id.* at 10.

benefits, it does not require a cost-benefit analysis to justify proposed market rule changes.⁷²

57. Finally, because we accept the DAME and EDAM proposals, with one exception and subject to condition, as discussed below, we deny requests to establish hearing and settlement judge procedures, or to sever and reject the DAME proposal.

2. Proposed Day-Ahead Market Enhancements

a. Imbalance Reserves

i. Filing

58. CAISO proposes to add a new product, Imbalance Reserves, to its IFM (the financially binding portion of CAISO's day-ahead market). CAISO describes Imbalance Reserves as a flexible reserve product designed to reduce uncertainty in the net load⁷³ forecast between the day-ahead market and the real-time market, and to address real-time ramping needs not covered by hourly day-ahead market schedules. CAISO explains that Imbalance Reserves will ensure the IFM schedules sufficient dispatch capability to meet net load imbalances between the day-ahead and real-time markets. CAISO states that a resource receiving an Imbalance Reserves award must submit economic energy bids to the real-time market for its awarded capacity range.⁷⁴

59. CAISO expects co-optimized procurement of Imbalance Reserves will improve unit commitment, enhance market efficiency, improve CAISO's ability to effectively

⁷² *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at P 49 (2015) (“[T]he Commission does not generally require the mathematical specificity of a cost-benefit analysis to support a market rule change.”), *order on reh’g*, 155 FERC ¶ 61,157, at P 30 (2016) (“[W]hile the Commission is required to consider all relevant factors and make a ‘common-sense assessment’ that the costs that will be incurred are consistent with the ratepayers’ overall needs and interests, the Commission’s finding need not be accompanied by a quantitative cost-benefit analysis.”), *aff’d sub nom. Advanced Energy Mgmt. All. v. FERC*, 860 F.3d 656, 660-61 (D.C. Cir. 2017); *see also Sw. Power Pool, Inc.*, 141 FERC ¶ 61,048, at P 57 (2012) (“[W]e note that our approval of the Integrated Marketplace proposal is not based on any specific cost-benefit amount. A cost-benefit analysis is largely a tool for stakeholders to evaluate different market designs and to determine their interest in moving forward with a market proposal.”).

⁷³ Net load is gross load minus variable energy resource generation.

⁷⁴ Transmittal at 47-48.

meet real-time operational needs, and increase the feasibility of IFM exports.⁷⁵ CAISO states it expects that the largest benefits will accrue from the Imbalance Reserves product, including improved unit commitment, enhanced market efficiency, the ability to meet real-time operational needs more effectively, and increased feasibility of IFM exports. CAISO also states that Imbalance Reserves will obviate the need for CAISO system operators to routinely adjust the RUC procurement targets manually. CAISO contends that Imbalance Reserves procurement will result in more optimal allocation of system ramping capability and that marginal prices will now consider the opportunity costs of not providing the other products. CAISO explains that any resource type capable of adjusting their energy output on a 15-minute basis is eligible to offer Imbalance Reserves, which CAISO states will enable the awarded capacity to meet real-time ramping needs more effectively. Resources must be scheduled to be online or have a start-up time of 15 minutes or less to receive an Imbalance Reserves award.⁷⁶ CAISO expects Imbalance Reserves will significantly reduce the use of RUC adjustments, meaning it is less likely RUC will curtail export schedules cleared in the IFM.⁷⁷

60. CAISO proposes to set the procurement targets for Imbalance Reserves Up and Imbalance Reserves Down based on an uncertainty range above and below day-ahead cleared physical supply. CAISO states that the net load imbalance forecast uncertainty range will be based on the historical uncertainty in the day-ahead load, solar, and wind forecasts; CAISO proposes to initially set the uncertainty range at the 97.5th percentile and 2.5th percentile levels of forecast error, respectively, which will cover 95% of the historical range of uncertainty).⁷⁸

61. CAISO explains that the day-ahead market will procure a quantity of Imbalance Reserves for any interval based on a demand curve that decreases procurement as costs increase by assessing the trade-off between the incremental cost and operational value of the reserves. CAISO states that the demand curve for Imbalance Reserves will have a maximum willingness to pay of \$55/MWh.⁷⁹ That is, if insufficient Imbalance Reserves offers at or below \$55/MWh are available to meet the minimum procurement requirement, CAISO will relax the procurement constraint.

⁷⁵ *Id.* at 47.

⁷⁶ eTariff, § 31.3.1 Market Clearing Price Determination (15.0.0), § 31.3.1.5.2.

⁷⁷ Transmittal at 53-57.

⁷⁸ *Id.* at 69.

⁷⁹ eTariff, § 31.3.1 Market Clearing Price Determination (15.0.0), § 31.3.1.6.2.

62. CAISO proposes to apply market power mitigation to Imbalance Reserves Up bids and if a resource fails the market power mitigation screen, its bid will be mitigated to the higher of the competitive locational Imbalance Reserves Up price or the resource's Imbalance Reserves Up default availability bid. CAISO states that estimating the variable costs of each resource to provide reserves is subject to significant uncertainty and as result, CAISO proposes a static systemwide default availability bid for Imbalance Reserves of \$55/MWh which will also serve as an offer cap.⁸⁰ CAISO states the \$55/MWh value is slightly above the 80th percentile of historical spinning reserves offers between January 2022–June 2022 and adds that spinning reserve bids are a reasonable approximation of a resource's cost to provide Imbalance Reserves because the obligations of the products are similar.⁸¹ CAISO also states that the \$55/MWh value represents the costs CAISO likely would incur absent the Imbalance Reserves product.⁸² CAISO proposes to reevaluate the default availability bid in the future when more data is available.⁸³

63. CAISO will procure Imbalance Reserves on a nodal basis based on deployment scenarios similar to those CAISO currently uses to procure the Flexible Ramping Product (FRP) in the WEIM.⁸⁴ However, CAISO does not propose to enforce all transmission constraints in the deployment scenarios. Instead, it proposes a flexible activation/deactivation of individual transmission constraints in deployment scenarios in response to optimization performance, market performance, or operational experience. CAISO proposes to define the specific constraints it will enforce in the deployment scenarios in the relevant business practice manual (BPM).⁸⁵

64. In addition to the deployment scenarios, CAISO proposes to implement a tunable parameter, the deployment factor, to control the proportion of Imbalance Reserves

⁸⁰ Transmittal at 67.

⁸¹ *Id.*

⁸² *Id.* at 8, 47, 57, 69-70.

⁸³ *Id.* at 65-68 (citing eTariff, § 39.7.2 Competitive Path Designation (18.0.0), § 39.7.2.2(B)).

⁸⁴ FRP is a real-time capacity product that is set aside to serve ramping needs (up or down) in future intervals. The need for FRP is based on forecasted ramping needs and historical errors in forecasting. FRP is co-optimized in the real-time market along with energy and ancillary services.

⁸⁵ *Id.* at 71-72 (citing eTariff, § 31.3.1 Market Clearing Price Determination (15.0.0), § 31.3.1.6.3.1).

awards that must be deliverable in the deployment scenarios. CAISO explains that the deployment factor will determine how much of the Imbalance Reserves procured would have to be feasible in the scenario; that is, the optimization will still aim to procure the minimum required quantity of Imbalance Reserves, but the deployment factor will allow the optimization to procure a certain proportion that is not deliverable.⁸⁶ CAISO proposes to initially set the deployment factor for both the up and down deployment scenarios at 100%, meaning the optimization would ensure all Imbalance Reserves are deliverable in the deployment scenarios. CAISO argues that this initial value will maximize the robustness of EDAM transfers, impose a rigorous deliverability test, and maximize the feasibility of EDAM transfers. CAISO proposes to include the deployment factor in the relevant BPM because using a configurable parameter, rather than hardcoding the Tariff to require 100% deliverability, addresses stakeholder concerns about potential excessive congestion costs resulting from the deployment scenarios and virtual arbitrage, and market simulation or operational experience may indicate a lower value is advisable.⁸⁷

65. CAISO proposes to settle the cost of Imbalance Reserves through a cost allocation rather than through direct settlement with load and variable energy resources using the LMPs of Imbalance Reserves. CAISO states that, because this will be paid outside the settlement process, load will not pay congestion costs associated with this energy. CAISO explains that, even though energy would flow across a constrained path, no congestion revenue would be generated. According to CAISO, if unaddressed, this could generate a congestion revenue shortfall as the Imbalance Reserves would displace energy that would normally generate congestion revenue.⁸⁸ To address this possibility, CAISO proposes to sum up the displaced congestion revenue from flowing Imbalance Reserves in the upward and downward directions. CAISO states that it would collect this revenue through existing congestion revenue cost allocation processes and would return the revenues to the non-CAISO BAA for distribution to its participants according to their OATTs. CAISO states that within the CAISO BAA, it would redefine the value of congestion revenue rights (CRR) to account for the differences between source and sink for Imbalance Reserves deployment scenarios.⁸⁹

⁸⁶ See eTariff, § 31.3.1 Market Clearing Price Determination (15.0.0), § 31.3.1.6.3.1; *id.* app. A Definitions (0.0.0) (defining Deployment Factor).

⁸⁷ Transmittal at 73.

⁸⁸ *Id.* at 91-92.

⁸⁹ *Id.* at 93 (citing eTariff, §§ 11.2.1 IFM Settlements (6.0.0), 11.2.4 CRR Settlements (20.0.0)).

66. CAISO also proposes that resources will be subject to unavailability charges if a resource is unavailable to provide their day-ahead Imbalance Reserves award. CAISO will consider a resource as having unavailable Imbalance Reserves Up capacity if the sum of its energy scheduled in the IFM, upward ancillary services, and Imbalance Reserves Up award minus the five-minute portion of the Imbalance Reserves award exceeds the resource's upper economic limit as adjusted for outages. Similarly, CAISO will consider a resource as having unavailable Imbalance Reserves Down capacity if the resource's lower economic limit exceeds the energy scheduled in the IFM minus downward ancillary services minus the Imbalance Reserves Down award plus the five-minute portion of the Imbalance Reserves award.⁹⁰ For either product, should a resource be deemed unavailable, CAISO will charge the resource an amount equal to the product of the unavailable Imbalance Reserves capacity and the higher of the relevant locational price for Imbalance Reserves or the 15-minute market FRP price in the relevant direction.⁹¹ CAISO argues that charging the higher of the two rates will great a stronger performance incentive than merely clawing back the Imbalance Reserves revenue.⁹²

67. To avoid double-paying resources receiving both an Imbalance Reserves award in the day-ahead market and an FRP award in the real-time market, CAISO proposes a real-time market ramp deviation settlement. First CAISO proposes how to differentiate between capacity provided to meet a day-ahead market Imbalance Reserves award and a real-time FRP award. For resources with an award for Imbalance Reserves Up and an upward award of FRP, CAISO proposes to only settle any incremental award of FRP Up at the FRP Up price and compensate the non-incremental quantity of upward flexibility only as Imbalance Reserves Up.⁹³ Second, CAISO also proposes to pay or charge a resource for any deviations from its awards in a manner that aligns with the deviation settlement between the 15-minute market forecasted movement and the real-time dispatch forecasted movement.⁹⁴ WEIM-only participants will be charged in a similar way, based on their submitted base schedules. Finally, CAISO proposes to implement a forecasted

⁹⁰ eTariff, § 11.2.1 IFM Settlements (6.0.0), § 11.2.1.8.

⁹¹ *Id.*

⁹² Transmittal at 80.

⁹³ *Id.* at 87; eTariff, § 11.25.2 Settlement of Uncertainty Requirement (5.0.0), § 11.25.2.2. This also requires CAISO to define a new term, "Five-Minute Imbalance Reserve Quantity." *Id.* app. A Definitions (0.0.0) (Defining Five-Minute Imbalance Reserve Quantity).

⁹⁴ Transmittal at 87; eTariff § 11.25.1 Settlement of Forecasted Movement (4.0.0), § 11.25.1.2.

movement deviation settlement at the 15-minute market FRP prices for virtual supply and demand similar to what it has proposed for the WEIM. CAISO proposes that the forecasted movement will be based on the difference in virtual awards between consecutive hours, and then the CAISO would settle it in the same way it settles deviations for the physical market.

ii. Comments/Protests

(a) General

68. NV Energy questions whether the day-ahead market is the correct time frame to procure the needed uncertainty to meet the variability that occurs from the increased use of variable energy resources within the region. NV Energy argues that by procuring 95% of the uncertainty in the day-ahead market that may or may not occur from the day-ahead to real-time, the Imbalance Reserves product may significantly decrease this market benefit to participants, particularly retail customers or load. NV Energy asserts that over-procurement may create unintended consequences such as a potential impact to market prices and the time frame in which day-ahead market results could be posted. NV Energy questions whether Imbalance Reserves could increase the LMPs in the day-ahead market and result in lower real-time market LMPs. NV Energy argues that CAISO should further consider an hourly or multi-hour mid-term product that procures uncertainty based on the real-time forecasted need.⁹⁵

69. PacifiCorp states that as the amount of variable energy resource capacity on the grid increases, CAISO is not alone in trying to mitigate net load imbalances between day-ahead and real-time. PacifiCorp supports addressing these issues through a market-based solution that minimizes the frequency and magnitude of out-of-market interventions by CAISO.⁹⁶

70. SMUD states that it hopes CAISO will continuously evaluate data from market simulations and from actual operations to determine appropriate improvements to the Imbalance Reserves product.⁹⁷ PG&E requests that the Commission order CAISO to submit a report that would include detailed information concerning resource availability and pricing for Imbalance Reserves within one year of DAME becoming effective.⁹⁸

⁹⁵ NV Energy Comments at 28-29.

⁹⁶ PacifiCorp Comments at 26.

⁹⁷ SMUD Comments at 5.

⁹⁸ PG&E Comments at 16.

71. PG&E is concerned the proposed unavailability process does not fully recover the capacity payments made to unavailable resources, which will result in unreasonable costs frequently being allocated to the market. PG&E explains that, by exempting the five-minute segment of a resource's Imbalance Reserves capacity award from the unavailability charges, CAISO is moving away from its existing "No Pay" principles. PG&E argues that the historical intent of unavailability charges, also known as No Pay or Recission charges, is to prevent a unit from profiting from a day-ahead product award when it is not able to or chooses not to comply with the corresponding real-time bidding or availability rules. PG&E contends that this process currently applies a single logic to any awarded capacity that is unavailable: the complete recission of any unavailable capacity MW quantity at the corresponding day-ahead market price.⁹⁹ PG&E argues that this ensures that the awarded resource does not directly profit from a product award it cannot deliver and prevents inappropriate costs for unavailable capacity from being allocated to the market in turn. PG&E argues that, conversely, CAISO's proposed process allows unavailable resources to retain payments for Imbalance Reserves capacity that is not made available to the market as required. PG&E explains that because the proposed unavailability process does not fully recover the capacity payments made to unavailable resources, PG&E is concerned that this process will result in unreasonable costs frequently being allocated to the market (i.e., load will be required to pay for a capacity product that was not delivered).¹⁰⁰

72. DMM explains that an overvalued Imbalance Reserves demand curve could increase day-ahead energy costs while providing limited benefit relative to procuring the necessary Reserve Capacity in the RUC market. DMM states that virtual supply will tend to converge IFM prices towards expected real-time prices and outcomes and displace the more expensive physical supply; thus, the market would still need to procure capacity using RUC, without realizing the purported benefit of co-optimizing energy and capacity awards. DMM further states that average IFM prices would remain inflated above average real-time prices because virtual supply bidders will include a risk premium above their estimate of expected real-time market costs and allow virtual supply to systematically profit at the expense of load over the long run.¹⁰¹

73. DMM believes it is important for EDAM design to include appropriate incentive mechanisms for capacity receiving Imbalance Reserves and Reliability Capacity awards to be available and capable of performing in real-time; DMM therefore supports the

⁹⁹ See eTariff, § 31.5.7 Recission of Payments for RUC Capacity (7.0.0).

¹⁰⁰ PG&E Comments at 20-22.

¹⁰¹ DMM Comments at 5-6.

proposal to require Imbalance Reserves that are unavailable in real-time to buy back the Imbalance Reserves award at a potentially high real-time FRP price.¹⁰²

74. Regarding CAISO's ramping capability requirement, DMM states that CAISO's eligibility proposal for Imbalance Reserves (30 minutes) might be overly restrictive. DMM recommends that CAISO consider a future enhancement to allow capacity that is dispatchable within 60 minutes or longer, including hourly block intertie resources, to meet demand for reserves needed to address uncertainty between day-ahead and real-time markets.¹⁰³ PG&E is concerned that the 30-minute ramping capability requirement could unnecessarily limit resources that are available to provide Imbalance Reserves in situations where the ramping requirement might be longer than 30 minutes. Accordingly, PG&E requests that the Commission order CAISO to file a report within one year of DAME becoming effective to provide detailed information for market participants and the Commission on how the 30-minute ramping requirement impacted resource availability and prices.¹⁰⁴

75. DMM also questions the appropriateness of resettling Imbalance Reserves against the 15-minute market FRP price when the Imbalance Reserves are available in real-time but do not receive FRP awards because, in the current proposal, Imbalance Reserves will likely be procured in much greater quantities than FRP. DMM states that CAISO should consider a 60-minute (or longer) uncertainty product procured in the RUC process—a 60-minute uncertainty product that maintains real-time availability should not resettle against the 15-minute market FRP price.¹⁰⁵

76. Regarding market power mitigation, DMM supports applying market power mitigation to both Imbalance Reserves and Reliability Capacity Up products. DMM states that supply of proposed Imbalance Reserves and Reliability Capacity Up products will be constrained by transmission elements; consequently, local market power could clearly exist for these products and Imbalance Reserves bids could be used to exercise market power for reserves as well as for energy. Thus, DMM believes local market power tests and mitigation for both Imbalance Reserves and Reliability Capacity Up are important considerations of the proposal.¹⁰⁶

¹⁰² *Id.* at 9.

¹⁰³ *Id.* at 7.

¹⁰⁴ PG&E Comments at 16.

¹⁰⁵ DMM Comments at 9-10.

¹⁰⁶ *Id.* at 10.

77. However, DMM, states that CAISO should only implement the functionality for Reliability Capacity Up initially. DMM states that if CAISO decides to increase the Imbalance Reserves demand curve cap (or lower default availability bid floor) in future, it will need the ability to implement market power mitigation for Imbalance Reserves; therefore, it is prudent to develop the functionality now.¹⁰⁷ In contrast, Vistra asserts that subjecting Imbalance Reserves to new mitigation measures may inappropriately limit the value of Imbalance Reserves.¹⁰⁸

78. DMM suggests it might be preferable to procure the Imbalance Reserves product as part of the RUC process instead of the IFM. DMM argues that if the IFM demand curve accurately values Imbalance Reserves, the IFM may not always assign real-time must-offer obligations to the additional physical supply that would be needed if net load uncertainty materializes; in this scenario, the RUC would still need to address uncertainty between day-ahead and real-time markets. DMM suggests that procuring Imbalance Reserves in the RUC (instead of the IFM) has the potential advantage of allowing the day-ahead market to co-optimize energy and reserve awards, especially if there is frequent occurrence of scenarios in which an overvalued demand curve for Imbalance Reserves causes virtual supply to displace needed physical capacity, or a more reasonably valued demand curve does not procure sufficient Imbalance Reserves to cover uncertainty.¹⁰⁹

79. DMM recommends CAISO develop mechanisms to allow the real-time market to efficiently determine whether to preserve Imbalance Reserves procured in the day-ahead market because failing to preserve that reserve capability could reduce the value of procuring them in the day-ahead market.¹¹⁰

80. PG&E raises concerns regarding CAISO's proposed real-time ramp deviation settlement process, which PG&E believes would routinely result in a part of the Imbalance Reserves capacity bid into the real-time market being subjected to an unavoidable buyback process. Specifically, PG&E is concerned that the buyback process creates an unreasonable risk that market participants will be awarded Imbalance Reserves capacity in the day-ahead market only to then have no way to protect themselves economically from the possibility of having that capacity clawed back at the real-time

¹⁰⁷ *Id.* at 11.

¹⁰⁸ Vistra Protest at 9.

¹⁰⁹ DMM Comments at 11.

¹¹⁰ *Id.* at 13.

FRP price. To address this concern, PG&E requests that the Commission direct CAISO to modify language in section 11.25.2.1.1 of the proposed Tariff.¹¹¹

81. PG&E also argues that a difference between the procurement target calculations for day-ahead Imbalance Reserves and real-time FRP will result in more Imbalance Reserves capacity being procured than will be needed in the corresponding real-time market intervals because the procurement target for real-time FRP only incorporates the real-time forecast values. PG&E notes that Imbalance Reserves are procured through an explicit product bid while FRP “bids” are inferred solely from a resource’s real-time hourly energy bid curve. PG&E further states that the forced buyback process in proposed Tariff section 11.25.2.1.1 is inconsistent with existing economic principles for capacity products, such as RUC and ancillary service capacity. PG&E contends that, based on the reasons above, any Imbalance Reserves capacity that has been bid into the real-time market as required should be left whole and not be subject to any buyback process.¹¹²

82. PG&E asserts that because the proposed unavailability process will not fully recover payments for Imbalance Reserves capacity that are made to unavailable resources, the process may result in load having to pay for capacity that is not delivered. To address this, PG&E requests the Commission to direct CAISO to remove the words “minus the Five-Minute Imbalance Reserve Quantity” from proposed Tariff section 11.2.1.8.1 and the words “plus the Five-Minute Imbalance Reserve Quantity” from proposed Tariff section 11.2.1.8.2.¹¹³

83. Some commenters argue that the Imbalance Reserves product does not meet the goals it aims to achieve. Vistra supports the objective of meeting the need for upward flexible capacity through market products and accurate and transparent prices to compensate resources for their flexibility. Vistra states that it is critically important for the day-ahead and real-time markets to provide price signals that will support the retention and development of flexible resources that can meet reliability challenges and avoid the need for operator interventions and out-of-market dispatches. Vistra argues that the DAME proposal does not achieve those objectives and instead will undervalue ramping capability and depress incentives to deploy and develop flexible resources.¹¹⁴

¹¹¹ PG&E Comments at 17-18.

¹¹² *Id.* at 19.

¹¹³ *Id.* at 22.

¹¹⁴ Vistra Protest at 7.

84. WPTF states that CAISO appropriately recognized that the Imbalance Reserves deployment scenarios will have an adverse impact on CRR funding, and supports CAISO's proposal to charge congestion revenue displaced from the deployment scenarios as part of the Imbalance Reserves cost allocation process and allocate those displaced revenues to parties holding CRRs with modeled flow over the transmission lines.¹¹⁵

(b) Nodal vs. Zonal Procurement

85. Some commenters are opposed to CAISO's proposed nodal procurement design for Imbalance Reserves. PacifiCorp, for example, argues that using deployment scenarios for purposes of awarding Imbalance Reserves nodally will help ensure that Imbalance Reserves capacity will not be stranded behind transmission constraints.¹¹⁶ SDG&E suggests that a zonal approach may be more appropriate for Imbalance Reserves procurement, stating that a zonal approach could broaden the number of paths used and in turn avoid congestion, similar to the implementation of ancillary services.¹¹⁷

86. Vistra requests that the proposed nodal procurement framework for Imbalance Reserves be rejected. Vistra argues that DAME's nodal design has the potential to cause market distortions, and CAISO's only proposal to resolve this issue is to adjust the deployment factor without any obligation to seek Commission review.¹¹⁸ Vistra asserts that the proposed nodal design for procuring Imbalance Reserves is flawed and will create market distortions and undermine price signals.¹¹⁹ Vistra explains that the nodal framework for FRP has allowed uncertainty requirements, particularly in the CAISO BAA, to be met by resources that are incapable of being deployed to address that uncertainty in real-time and that the Imbalance Reserves requirements may face the same risk.¹²⁰ Vistra states that, like FRP, without assurance that flexible capability procured by the Imbalance Reserves product can actually address uncertainty, out of market actions may still be needed to ensure system needs are met. Further, Vistra asserts that if Imbalance Reserves demand is met with stranded capacity, then the value of that capacity

¹¹⁵ WPTF Protest at 21-22.

¹¹⁶ PacifiCorp Comments at 27.

¹¹⁷ SDG&E Comments at 7-8.

¹¹⁸ Vistra Protest at 7-8.

¹¹⁹ *Id.* at 17.

¹²⁰ *Id.* at 21-22.

will not be reflected in prices.¹²¹ Vistra asserts there is no evidence that nodal procurement is required to avoid stranded capacity, and that nodal Imbalance Reserves procurement will not necessarily address underlying reliability needs.¹²²

87. Vistra argues that the deployment scenarios CAISO proposed for Imbalance Reserves will result in “phantom congestion” that is unlikely to materialize in reality but will still affect LMPs.¹²³ Vistra asserts that the nodal framework will cause unrealized congestion and contains too much operator discretion to produce transparent locational marginal pricing. Further, Vistra claims that without LMPs driven by actual system conditions, market participants will lack accurate information about the value of energy and congestion.¹²⁴

88. WPTF contends that CAISO’s argument that nodal procurement is essential due to the experiences with system-wide and zonal procurement of FRP is incorrect, noting several differences between Imbalance Reserves and FRP. WPTF notes that FRP is not biddable and its cost is based solely on opportunity costs. WPTF claims that, therefore, the market was awarding FRP to resources with low costs due to high energy offers. WPTF states that the same cannot be said for Imbalance Reserves, a biddable product. WPTF also notes that, when procured system-wide, CAISO’s FRP requirement was often 0 MW, so the market would procure FRP from other EIM Entities and still meet the system-wide WEIM requirement. WPTF states that while the market awards real-time commitments of FRP considering real-time congestion, which do not change radically from interval to interval, Imbalance Reserves will be procured nodally based on day-ahead market congestion, which can be significantly different from what arises in real-time.¹²⁵

(c) Market Parameters

89. Regarding CAISO’s tunable market parameters (i.e., the deployment factor and the flexible activation/deactivation of individual transmission constraints), PacifiCorp asserts that, as a general matter, it supports CAISO retaining flexibility in its BPMs to

¹²¹ *Id.* at 23.

¹²² *Id.* at 26-27.

¹²³ *Id.* at 24.

¹²⁴ *Id.* at 26.

¹²⁵ WPTF Protest at 20-21.

continue refining Imbalance Reserves and Reliability Capacity parameters to avoid unintended and adverse consequences.¹²⁶

90. NV Energy argues that even if critical DAME provisions regarding the quantity, qualifications, and procurement zones for the Imbalance Reserves product are determined to be “implementation details” not subject to the Commission’s rule of reason, CAISO should bring the revised parameters to the WEIM Governing Body and the CAISO Board of Governors for approval prior to implementation, absent exigent circumstances.¹²⁷

91. Vistra argues that including the deployment factor in the BPM does not meet the rule of reason requirement because it will directly affect congestion costs which in turn affects jurisdictional rates.¹²⁸ Vistra likens the deployment factor to penalty pricing parameters, which CAISO was required to file, and asserts that market participants should be provided the opportunity for due process by including the deployment factor in the Tariff.¹²⁹

92. Shell argues that the proposal to include tunable parameters in the BPM rather than the Tariff violates the rule of reason because they affect rates terms and conditions in the proposed EDAM market and in existing markets. Shell claims that CAISO’s ability to adjust the deployment factor percentage via the BPM will result in unpredictable and unmanageable congestion costs, thus negatively impacting the CRR markets.¹³⁰

93. DC Energy argues that the BPM should include a requirement that CAISO provide advance notice to market participants of any changes to the flexible enforcement of transmission constraints and the deployment factor. DC Energy states that these notices

¹²⁶ PacifiCorp Comments at 26-28.

¹²⁷ NV Energy Comments at 30-31. NV Energy argues that the EIM Governing Body and CAISO Board of Governors did not authorize CAISO to sever the deployment factor and flexible enforcement of transmission constraints from the other elements of DAME. *Id.* at 31-32.

¹²⁸ Vistra Protest at 27-29.

¹²⁹ *Id.* at 30 (citing *Cal. Indep. Sys. Operator Corp.*, 175 FERC ¶ 61,245, at P 166 (2021)).

¹³⁰ Shell Protest at 10-11.

should be submitted in advance of CRR auctions, so market participants can engage in transactions to improve market efficiencies.¹³¹

94. DMM states that CAISO's proposed constraints on the state of charge of energy storage resources in the IFM and RUC processes are important to help ensure that day-ahead awards for ancillary services and capacity products could be feasible over the 24-hour horizon and that CAISO's proposed approach appears to be reasonable. DMM recommends that CAISO monitor implementation of these constraints and modify the implementation as needed.¹³²

95. Vistra claims the proposed state of charge constraint will be determined by an undefined methodology in the BPM.¹³³ Vistra states that this approach lacks transparency and will not allow energy storage resources to understand how they will be selected and dispatched through the Tariff alone. Vistra further states that CAISO has had difficulties developing energy storage resource-specific constraints and that allowing CAISO to apply a new constraint without requiring that it be described or explaining its application may be inconsistent with the FPA.¹³⁴

96. WPTF states that CAISO's proposal is unjust and unreasonable because it violates the Commission's rule of reason because it proposes to exclude from the filed rate two key parameters that will impact Imbalance Reserves price formation: the deployment factor and the level of constraint enforcement.¹³⁵ WPTF also notes that these values will be published in a BPM and that the Tariff will not explain the methodology CAISO will use to set either parameter.¹³⁶ To support its argument, WPTF points to a Commission order rejecting a similar proposal where selection of which interties would have a lowered shift factor threshold applied, based on a subsequent "more formal analysis of the historical impact on market results." WPTF states that, in that order, the Commission

¹³¹ DC Energy Comments at 4.

¹³² DMM Comments at 15.

¹³³ Vistra Protest at 30-31.

¹³⁴ *Id.* at 32 (citing CAISO, Energy Storage Enhancements State of Charge Formula Presentation at 7 (Aug. 2023), <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Energy-storage-enhancements>). Although the presentation materials are dated August 3, 2022, they were presented with other stakeholder materials at an August 3, 2023, stakeholder meeting.

¹³⁵ WPTF Protest at 9.

¹³⁶ *Id.* at 9-10.

found that “absent a description of the proposed methodology,” the Commission was left without sufficient information to “determine whether the proposal is just and reasonable.”¹³⁷ WPTF states that not only does the instant filing fail to identify the value for the deployment factor or constraints that will be enforced, it lacks any description of the methodology CAISO will use to set those parameters. WPTF states that, contrary to CAISO’s assertion, both parameters will affect the Imbalance Reserves clearing price, energy market clearing price, and which resources CAISO selects to provide this service, and both parameters will establish specific assumptions that directly impact congestion in the market, which in turn will be reflected in the congestion components of both energy LMPs and the nodal price of Imbalance Reserves products.¹³⁸

97. WPTF adds to its argument that granting CAISO the authority to change these two parameters at any time in its BPM without providing the Commission and stakeholders advance notice will also change the basis and expectations of CRR values long after market participants have taken financial positions in the CRR market. WPTF states that many market participants value CRRs based on historical and expected congestion patterns, considering the parameters CAISO uses to administer any markets that impact congestion, and that allowing CAISO to have two major Imbalance Reserves parameters as “tunable” at will introduces substantial uncertainty that would discourage market participants from obtaining CRRs or having confidence in their true value.¹³⁹

98. WPTF concludes that CAISO is welcome to change the deployment factor or constraints to enforce (or at least the methodology used to set these factors) based on the experienced gained after administering the new Imbalance Reserves product through a Commission-accepted section 205 filing.¹⁴⁰

(d) \$55/MWh Offer Cap, Demand Curve, and Mitigation

99. Regarding the Imbalance Reserves offer cap, SoCal Edison states that it supports CAISO’s consideration of historical spinning reserves in designing an appropriate penalty price for the Imbalance Reserves Product, and explains that it is similar to the current practice in the Midcontinent Independent System Operator, Inc.¹⁴¹ SoCal Edison further

¹³⁷ *Id.* at 10 (citing *Cal. Indep. Sys. Operator Corp.*, 184 FERC ¶ 61,119, at PP 16, 27 (2023)).

¹³⁸ *Id.* at 10-11.

¹³⁹ *Id.* at 12-13.

¹⁴⁰ *Id.* at 12.

¹⁴¹ SoCal Edison Comments at 6 (citing Transmittal at 70; *Midcontinent Indep.*

states that it supports a relatively low penalty price and upper limit on the Imbalance Reserves demand curve as an appropriate safety measure to protect the new market from potential catastrophic failures should any unforeseen issues or unintended consequences arise.¹⁴²

100. DMM agrees that determining an accurate value for the Imbalance Reserves product demand curve will be extremely difficult because capacity that does not receive an Imbalance Reserves or other day-ahead market award is still likely to bid into the real-time market. DMM believes the Imbalance Reserves demand curve cap of \$55/MWh is a substantial improvement over prior proposals that allowed the value to exceed the \$1,000/MWh bid cap and constitutes a reasonable initial safeguard against the costs of an overvalued demand curve during the initial EDAM implementation phase. That said, DMM asserts that the demand curve cap may still exceed the actual value of procuring Imbalance Reserves capacity in the IFM in many scenarios.¹⁴³

101. DMM recommends that CAISO continue to work on developing more accurate methods for determining demand curve values and potentially reduce the \$55/MWh cap in the future. DMM also suggests, given the complexity, that CAISO and stakeholders consider removing Imbalance Reserves from the IFM and instead procure the necessary day-ahead reserve capacity as part of the RUC market as a future enhancement.¹⁴⁴ DMM believes that CAISO's proposal for a uniform default availability bid floor of \$55/MWh is a reasonable initial approach and that it should effectively mitigate local market power exercise by Imbalance Reserves Up bids.¹⁴⁵ Additionally, DMM cautions against considering raising the \$55/MWh demand curve cap as a potential solution to the IFM not procuring Imbalance Reserves Up capacity to address all uncertainty between day-ahead and real-time markets; similarly, DMM cautions against considering raising the demand curve cap as a potential solution to limiting the extent to which EDAM transfers out of a BAA could reduce the reserve capacity needed to address uncertainty.¹⁴⁶

Sys. Operator, Inc., 181 FERC ¶ 61,160 (2022) (approving multi-step procurement curve capped at \$31/MWh for MISO's ramp capability product)).

¹⁴² SoCal Edison Comments at 6.

¹⁴³ DMM Comments at 4-5.

¹⁴⁴ *Id.* at 6.

¹⁴⁵ *Id.* at 10.

¹⁴⁶ *Id.* at 12 (noting that the net export constraint under the EDAM proposal is the necessary and appropriate tool for a BAA to ensure that capacity needed to address

102. PacifiCorp supports the use of a demand curve with a cap of \$55/MWh to procure Imbalance Reserves as a new market product, but notes that the cap may need to be adjusted in the future to account for changed circumstances and additional operational experience.¹⁴⁷

103. PG&E requests that the Commission order CAISO to file a report within one year of DAME becoming effective that would provide detailed information concerning the existence of market power and the number of times during the year that the market mitigation (i.e., the cap) was applied. PG&E is concerned that the \$55/MWh cap may not be sufficient to mitigate market power for both Imbalance Reserves and Reliability Capacity. PG&E notes that CAISO proposes to mitigate to the higher of the Competitive Locational Imbalance Reserves Up Price or Imbalance Reserves Up default availability bid (instead of the higher of the default energy bid or competitive LMP).¹⁴⁸

104. WPTF protests CAISO's Imbalance Reserves bid cap of \$55/MWh. WPTF notes that CAISO justifies the \$55/MWh bid cap as being "roughly comparable to the 80th percentile of historical operating reserves bids submitted to CAISO" using data from January 2022 to June 2022.¹⁴⁹ WPTF and Shell state that this alone shows that the proposal is arbitrary and capricious because CAISO has not provided any logic or analysis that concludes taking the 80th percentile of a limited and aged data sample serves as a strong barometer for an Imbalance Reserves bid cap.¹⁵⁰

105. WPTF and Shell state that CAISO has provided no evidence for how the cost of providing spinning reserves is a sufficient proxy for the cost of providing Imbalance Reserves.¹⁵¹ WPTF states that Imbalance Reserves and spinning reserves are substantially different products because energy from Imbalance Reserves will likely be frequently dispatched in real-time without restriction, whereas energy from spinning reserves is largely accessible only during grid contingencies.¹⁵² WPTF concludes from this that spinning reserves and Imbalance Reserves reflect different risk profiles for being

uncertainty does not support EDAM transfers out).

¹⁴⁷ PacifiCorp Comments at 28.

¹⁴⁸ PG&E Comments at 17.

¹⁴⁹ WPTF Protest at 5 (citing Transmittal at 8).

¹⁵⁰ *Id.*; Shell Protest at 13-14.

¹⁵¹ WPTF Protest at 5; Shell Protest at 13-14.

¹⁵² WPTF Protest at 5-6.

dispatched in real-time.¹⁵³ WPTF further argues that a reverse-looking approach is also not just and reasonable because CAISO incorrectly assumes that it can tie the reasonableness of a future Imbalance Reserves bid cap to past spinning reserves bid levels.¹⁵⁴ Shell similarly concludes that Imbalance Reserves and spinning reserves are not fungible products and each has a unique purpose.¹⁵⁵

106. WPTF also states that using only the 80th percentile of spinning reserves costs as the Imbalance Reserves bid cap fails to capture the cost of procuring spinning reserves during the most stressed conditions in the CAISO market.¹⁵⁶ WPTF and Shell further argue that CAISO's choice of data does not capture CAISO's own peak load months, thereby further failing to capture the actual costs of Imbalance Reserves because the data would fail to capture the high opportunity costs that accompany providing spinning reserves during the most stressed system conditions.¹⁵⁷

107. Finally, WPTF states that CAISO's Imbalance Reserves bid cap violates Commission policy because the \$55/MWh bid cap will not accommodate resources with high opportunity costs to provide Imbalance Reserves, rather than energy. WPTF argues that because Resource Adequacy resources would have a must-offer obligation and there are foreseeable drivers of opportunity costs above \$55/MWh for Imbalance Reserves, such as natural gas commodity cost changes between day-ahead and real-time and operational flow order penalties, the bid cap would not account for all costs faced by resources that are required to bid into the market.¹⁵⁸

108. WPTF recommends that if the Commission accepts the \$55/MWh bid cap, it should prohibit CAISO from adding what WPTF characterizes as superfluous mitigation of Imbalance Reserves. WPTF states that the Imbalance Reserves bid cap and the

¹⁵³ *Id.* at 6.

¹⁵⁴ *Id.* at 5.

¹⁵⁵ Shell Protest at 14.

¹⁵⁶ WPTF Protest at 5.

¹⁵⁷ *Id.* at 5-6; Shell Protest at 13-14.

¹⁵⁸ WPTF Protest at 7 (citing Federal Energy Regulatory Commission Staff, White Paper on Energy and Ancillary Services Market Reforms to Address Changing System Needs, Docket No. AD21-10-000, at 5 (Sept. 9, 2021); *Wholesale Competition in Regions with Organized Elec. Mkts.*, Order No. 719, 125 FERC ¶ 61,071, at P 192 (2008), *order on reh'g*, Order No. 719-A, 128 FERC ¶ 61,059, *order on reh'g*, Order No. 719-B, 129 FERC ¶ 61,252 (2009)).

demand curve for Imbalance Reserves already mitigate potential exercise of market power and that CAISO has acknowledged mitigating energy bids also mitigates Imbalance Reserves opportunity costs and mitigates Imbalance Reserves bids in most cases.¹⁵⁹

109. Shell agrees with WPTF's arguments that the proposed \$55/MWh bid cap for Imbalance Reserves is unjust, unreasonable, and unduly discriminatory. Shell states that each of the three layers of mitigation for Imbalance Reserves renders DAME unjust and unreasonable. These layers include: (1) a \$55/MWh bid cap for Imbalance Reserves product; (2) demand curve relaxation above \$55/MWh for procurement of Imbalance Reserves; and (3) a default availability bid for mitigating Imbalance Reserves to \$55/MWh or a negotiated default bid, whichever is higher.¹⁶⁰

110. Shell states that the proposed demand curve relaxation above \$55/MWh is unjust and unreasonable because the constraint relaxation point continues to rely on the flawed comparison of Imbalance Reserves to spinning reserves. Shell states that the demand curve relaxation will result in Imbalance Reserves being priced in a manner that does not reflect tight system conditions.¹⁶¹

111. Shell states that setting the default availability bid to \$55/MWh ignores the actual cost of providing imbalance service. Shell argues that the default availability bid undermines accurate price formation and may discourage resources from participating in the imbalance market.¹⁶²

112. SDG&E argues that the caps on FRP and Imbalance Reserves, \$247/MWh and \$55/MWh respectively, may incentivize entities to bid in the real-time market instead of the day-ahead market because FRP is a real-time product that may settle at a higher price. SDG&E states that it is subject to a must offer obligation for resource adequacy and therefore is obligated to bid in the day-ahead market for Imbalance Reserves, whereas other entities can lean on the day-ahead market and settle in real-time and not be exposed to the same price differentials as those with a Resource Adequacy obligation. SDG&E

¹⁵⁹ *Id.* at 18-19.

¹⁶⁰ Shell Protest at 13.

¹⁶¹ *Id.* at 14.

¹⁶² *Id.* at 15.

alleges that this is not a reasonable way to settle Imbalance Reserves because the must-offer obligation exposes entities to the risk of price differentials.¹⁶³

113. EPISA states that the proposed \$55/MWh price cap on Imbalance Reserves is too restrictive and thus will disincentivize potential suppliers of the service. Additionally, EPISA states that CAISO's analysis to support the price cap is deficient, as it relies on a correlation between spinning reserves and Imbalance Reserves, which are not comparable products.¹⁶⁴

114. Vistra asserts that the market mitigation measures, offer cap, and penalty price that are paired with the DAME products will artificially suppress market clearing prices and disincentivize resources to offer Imbalance Reserves when they are most needed.¹⁶⁵

115. Vistra notes CAISO's claim that, in the event of uncertainty, CAISO would purchase additional spinning reserves; however, Vistra notes that CAISO has not offered any evidence of reliance on spinning reserves to address uncertainty. Vistra asserts that if uncertainty and the need for flexible capacity could be met with spinning reserves, there is no need for a new product when CAISO has typically used load biasing and operator intervention to address uncertainty.¹⁶⁶ Vistra asserts that CAISO has not sufficiently explained why the proposed Imbalance Reserves product and spinning reserves are similar and contends that, even if they were fungible, the costs of providing each product would not inherently be the same.¹⁶⁷

116. Vistra argues that the overall effect of the DAME proposal will be artificial suppression of the Imbalance Reserves price and the incentive to not provide Imbalance Reserves particularly at the times when they would be most needed. Vistra claims that resources that are not subject to a must offer obligation will have little or no incentive to offer to supply Imbalance Reserves and instead will only opt to supply energy. Vistra describes the incentive to not participate in the market for Imbalance Reserves as being highest during peak periods where the value of other opportunities is the greatest, which coincides with the time when flexible ramping capability is most needed. Vistra argues that, for Flexible Resource Adequacy resources that CAISO proposes will have a must offer obligation for Imbalance Reserves, these resources will be forced to provide

¹⁶³ SDG&E Comments at 8.

¹⁶⁴ EPISA Comments at 7.

¹⁶⁵ Vistra Protest at 7.

¹⁶⁶ *Id.* at 10.

¹⁶⁷ *Id.* at 12.

Imbalance Reserves at a loss and, in the long run, may reconsider their willingness to provide flexible capacity.¹⁶⁸

117. Vistra argues that the proposed offer cap and penalty price in DAME will result in capacity being systemically undervalued and that basing the cap on the average bids for spinning reserves is arbitrary and fails to account for the full range of costs suppliers must consider when deciding whether to provide Imbalance Reserves. Vistra claims that this will result in a disincentive for resources to supply Imbalance Reserves and will require those with must offer requirements to supply at a price that does not reflect their costs. Vistra claims that CAISO has not provided any evidence to justify why calculating the offer cap and penalty price for Imbalance Reserves based upon the average bid price for spinning reserves is just and reasonable.¹⁶⁹ Vistra asserts that the Commission has found that limitations on offers and prices that prevent sellers from incorporating their costs into a bid are unjust and unreasonable and that offer caps that apply an artificial limit are distortionary to the market.¹⁷⁰

iii. Answers

(a) General

118. CAISO argues that commenters' concerns about purported harms that Imbalance Reserves might pose to the market processes are groundless. CAISO argues that NV Energy provides no support for its claims that EDAM Entities could face higher reserve requirements with DAME and EDAM than they do today, and in any event, the nature of whatever reserve products NV Energy procures today are fundamentally different from the nature of the Imbalance Reserves product CAISO will procure in EDAM. CAISO therefore contends that simply pointing to a MWh difference in procured quantities, to the extent there may be an increase, does not reflect that an EDAM Entity would be harmed. CAISO contends that focusing solely on MWh quantities also ignores the price component and moreover that there is every reason to believe the cost of comparable

¹⁶⁸ *Id.* at 14-15.

¹⁶⁹ *Id.* at 9-10.

¹⁷⁰ *Id.* at 9 (citing *Offer Caps in Markets Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators*, Order No. 831, 157 FERC ¶ 61,115, at PP 15, 34 (2016); *Wis. Pub. Power, Inc. v. FERC*, 493 F.3d 239, 262 (D.C. Cir. 2007) (quoting *FPC v. Hope Nat. Gas Co.*, 320 U.S. 591, 603 (1994)) (stating that mitigation must “reflect an appropriate trade-off between the interests of buyers and sellers” and “of course, setting a just a reasonable rate necessarily ‘involves a balancing of the investor and the consumer interests’”)).

reserves would decrease in the deeper EDAM market, especially with the diversity benefit embedded in the procurement approach.¹⁷¹

119. In response to criticisms regarding unavailability charges for the Imbalance Reserves and Reliability Capacity products, CAISO argues that the proposal appropriately charges resources commensurate with the harm they cause to the system when unavailable to provide their awarded imbalance services. CAISO explains that its formulation requires the supplier to buy back its Imbalance Reserves schedule consistent with the replacement cost, and CAISO therefore argues that the formulation is just and reasonable because it satisfies the principle of cost causation under Commission and court precedent. CAISO argues that the existing no-pay rules apply to products that are not re-optimized in real-time, and therefore it is unable to base them on the replacement cost CAISO incurs for non-performance. CAISO states that it tailored the no-pay rules for Imbalance Reserves with that consideration in mind, arguing that the unavailability charge is appropriate here, whereas it is not for existing products.¹⁷²

120. Regarding NV Energy's argument that implementing Imbalance Reserves may create unintended consequences, such as potentially affecting energy LMPs or delaying day-ahead market results, CAISO states that it is impossible to know for certain that Imbalance Reserves will pose no unintended consequences, which is why CAISO has committed to monitor the new market structure closely and consider further refinements as warranted. CAISO explains that the market will co-optimize procurement of Imbalance Reserves with energy and ancillary services to enhance the efficiency of unit commitment by considering the trade-offs between providing energy, ancillary services, and Imbalance Reserves. CAISO explains that the DAME market optimization will affect energy prices and, contrary to the claims of NV Energy, CAISO provided substantial analysis on this issue during the stakeholder process.¹⁷³

121. In response to NV Energy's comments on an hourly or multi-hour mid-term product that procures uncertainty based on the real-time forecasted need, CAISO notes that it is open to considering with stakeholders incremental changes to the Imbalance Reserves product as needed, but contends that the filing explained why the proposed design of the product is just and reasonable. CAISO argues that NV Energy's potential

¹⁷¹ CAISO Answer at 11.

¹⁷² *Id.* at 49-50.

¹⁷³ *Id.* at 11-13.

alternative does not undermine CAISO's explanation and that the Commission need not consider alternative proposals.¹⁷⁴

122. Regarding comments on the 30-minute ramping capability requirement for Imbalance Reserves, CAISO argues that the Commission should accept the proposal without a reporting requirement. CAISO explains that while it agrees with PG&E's comment that basing award eligibility on a longer ramping period might lower the costs of procuring Imbalance Reserves by increasing the available pool of capacity, easing the ramping requirement would reduce the direct procurement costs at the expense of devaluing the product. CAISO argues that procuring a sufficient quantity would not necessarily address the issues DAME is meant to resolve if the resources do not meet operational needs. CAISO similarly disagrees with DMM's suggestion to create a 30-minute ramping capability requirement and a looser 60-minute ramping capability requirement for both directions. CAISO argues that by adding two bi-directional forms of Imbalance Reserves, CAISO also would need to consider the cost of the additional complexity to the overall market design and optimization processes.¹⁷⁵

123. Regarding monitoring and reporting on market performance, CAISO notes that it has committed to include DAME and EDAM in its ongoing monitoring and reporting; as such, CAISO argues that there is no need for the Commission to require specific reporting in this proceeding. CAISO states that it will consider proposals to address significant issues that may arise and develop enhancements for future consideration by the Commission. CAISO notes that such future design changes and potential enhancements are beyond the scope of this proceeding.¹⁷⁶

124. Regarding criticisms that it did not justify setting the up and down uncertainty requirements at the 97.5th percentile and the 2.5th percentile levels of error, respectively, CAISO contends that its proposal is within the zone of reasonableness and satisfies the requirements of FPA section 205. CAISO notes that NV Energy does not oppose the proposal to have these parameters subject to ongoing evaluation based on operational experience and subject to appropriate adjustments through the BPM revision request process.¹⁷⁷

125. CAISO argues that attempts to frame the percentiles as reflecting a level of certainty necessary to procure Imbalance Reserves misapprehends the nature of the

¹⁷⁴ *Id.* at 13-14.

¹⁷⁵ *Id.* at 15-16.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* at 28-29.

product. CAISO explains that Imbalance Reserves effectively represent the market buying insurance against not having sufficient up or down flexibility in real-time and that there is no single “necessary” or “correct” amount of insurance. CAISO states that CAISO and stakeholders determined that targeting a 95% uncertainty range provided an appropriate level of protection given the various considerations involved. CAISO asserts that the express purpose of the product is to procure sufficient Imbalance Reserves to meet an extreme level of uncertainty, and that in perfect hindsight on most days the market will have bought more “insurance” than it needed.¹⁷⁸

126. CAISO explains that framing the matter in terms of a single necessary level of reserves also misunderstands the proposed procurement approach, noting that the market will procure the product based on a demand curve that strikes an appropriate balance between cost and reliability. CAISO explains that the market will forego procurement to the full 95% uncertainty range if the costs do not justify that level of procurement in an individual market interval, writing that the given percentile levels do not directly dictate the quantity of Imbalance Reserves the market will procure.¹⁷⁹

127. CAISO argues that the Commission should find that the proposed ramp deviation settlement for Imbalance Reserves as filed is just and reasonable and reiterates that imbalance settlement is a basic feature of energy markets. CAISO contends that requiring a resource that receives a day-ahead market award for energy to buy back the day-ahead award at the real-time market price is appropriate if the resource does not receive a real-time market award. CAISO argues that, similarly, an imbalance settlement prevents a resource from being paid twice for the same product. CAISO explains that the ramp deviation settlement merely applies these existing principles to Imbalance Reserves and FRP.¹⁸⁰

128. CAISO disagrees with PG&E that the differences in Imbalance Reserves and FRP reflect a flaw in the ramp deviation settlement rules. CAISO argues that, while there are differences between the products, their similarities justify an imbalance settlement designed to apply only to the ways in which they are similar. CAISO explains that failure to get an FRP award in real-time means the attributes from the resource awarded Imbalance Reserves in the day-ahead market are no longer needed. CAISO contends that

¹⁷⁸ *Id.* at 29-30.

¹⁷⁹ *Id.* at 30.

¹⁸⁰ *Id.* at 50-51.

this is no different than the case when a resource with a day-ahead market energy award does not receive a real-time market energy award.¹⁸¹

129. CAISO argues that a resource with a day-ahead award for Imbalance Reserves generally would only fail to receive a real-time market award for FRP when the real-time market foresees a more limited need for flexible reserves or because the market has a deep pool of available resources to provide FRP. CAISO argues that in either circumstance, the FRP price is likely to be quite low or at zero, notwithstanding its \$247/MWh penalty price, and that in times of limited need, the supplier would buy back its Imbalance Reserves award at a small value or even at \$0. CAISO contends that, as to PG&E's concern about inconsistency between the deviation settlement for Imbalance Reserves as compared with the current approach for ancillary services, the existing lack of deviation settlement for ancillary services is driven by the lack of re-optimization in the real-time market for the current products. CAISO notes that it is exploring the possibility of making changes to address the matter and, if it makes such changes, it will likely apply the same treatment for ancillary services as it proposes for Imbalance Reserves.¹⁸²

130. WPTF agrees with CAISO that a properly designed Imbalance Reserves product would correct energy price distortions created by RUC interventions; however, WPTF asserts that CAISO's proposal will distort energy prices by pricing in congestion from falsely predicted uncertainty. WPTF asserts that CAISO incorrectly assumes that 95% of predicted uncertainty will materialize and uses an overly simplistic approach to predict uncertainty. WPTF explains that CAISO has not considered regional differences in predicting uncertainty and states, for example, a solar resource in the desert versus the coast should not be assumed to have the same uncertainty. WPTF asserts that this approach to uncertainty will distort Imbalance Reserves in the upward direction as well as energy prices because the impacts of regional uncertainty are erroneously reflected in the congestion component of LMP.¹⁸³

131. CAISO asserts that WPTF's argument that full deliverability would harm reliability remains flawed. CAISO explains that, throughout its protest, WPTF alleges the deliverability tests for Imbalance Reserves will be ineffective. However, CAISO states that WPTF's position that Imbalance Reserves will harm reliability is based on the

¹⁸¹ *Id.* at 51-52.

¹⁸² *Id.* at 52.

¹⁸³ WPTF Answer at 7.

concern that the deliverability tests will make Imbalance Reserves too deliverable relative to ancillary services.¹⁸⁴

132. CAISO explains that it has certain discretionary authority over the CRR process, and in exercising that authority, CAISO takes care not to make last-minute changes that unreasonably upset expectations that were the basis of CRR participation. CAISO states that it will continue to exercise its discretion judiciously in that regard.¹⁸⁵

(b) Nodal vs. Zonal Procurement

133. CAISO argues that the Commission should not be persuaded by protests against nodal procurement of Imbalance Reserves. Regarding assertions of “phantom congestion” and proposals to use a zonal approach over a nodal approach, CAISO notes that the Commission need not consider the merits of alternative proposals if it finds a utility’s proposals to be just and reasonable.¹⁸⁶ CAISO argues that the proposed nodal congestion pricing reflects the true costs of delivering energy or reserves under constraints which makes the pricing and resulting dispatch more efficient rather than distorting them. CAISO asserts that no commenters offered evidence that zonal procurement would promote deliverability over the proposed nodal procurement.¹⁸⁷

134. CAISO argues that designing Imbalance Reserves on the assumption that real-time congestion does not exist or can be assumed away devalues the product and that, by devaluing the product, zonal procurement would reduce direct costs of procuring Imbalance Reserves. CAISO explains that reducing direct congestion costs is not the same as reducing the costs imposed by congestion, including the losses of procuring undeliverable products, however. CAISO contends that a zonal approach would not provide sufficient confidence the product would be deliverable in real-time and thus would perpetuate the existing inefficiencies of relying on manual RUC adjustments to ensure sufficient flexible capacity from the day-ahead market.¹⁸⁸

135. CAISO notes that it has never purported to guarantee that nodal procurement would guarantee deliverability in real-time, but it has made reasonable choices in light of

¹⁸⁴ CAISO November 2, 2023 Answer at 5 (CAISO Second Answer).

¹⁸⁵ CAISO Answer at 41.

¹⁸⁶ *Id.* at 32.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.* at 33.

available data to maximize the likelihood of the reserves being deliverable in real-time and nodal procurement maximizes that likelihood.¹⁸⁹

136. CAISO rejects Vistra’s suggestion that nodal procurement would create “phantom congestion” that occurs in the deployment scenarios but is unlikely to occur in reality, and which will be reflected in LMPs and impose costs on the market. CAISO explains that the deployment scenarios will impact energy LMPs, but this is a natural result of co-optimizing procurement, and it is misleading to refer to such congestion as “phantom.”¹⁹⁰

137. CAISO argues that Vistra inappropriately conflates congestion relating to energy and reserve products, and that congestion arising from the deployment scenarios not materializing in the real-time market is reasonable as Imbalance Reserves are a reserve product only used if uncertainty were to arise. CAISO explains that the separate marginal cost of Imbalance Reserves congestion simply reflects the optimization ensuring the ability to deliver the award if the reserves are converted to energy.¹⁹¹

138. CAISO argues that Vistra’s objections about costs present a one-sided analysis that looks solely at one type of cost increase without considering the benefits of more efficient procurement and the problems with the status quo. CAISO explains that, for storage resources in particular, nodal Imbalance Reserves prices provide direct incentives for where the flexible attributes of a storage resource will be valued most.¹⁹²

139. CAISO explains that another drawback of zonal procurement is that it would be more difficult to adjust the CRR process to account for the congestion revenue displaced from the deployment scenarios. CAISO states that zonal procurement does not ensure deliverability as it does not consider the intra-zone network topology and limitations in awarding Imbalance Reserves. CAISO explains that the CRR process is predicated on using the expected network topology and known transmission network equipment limitations and that this allows market participants to nominate or purchase CRRs based on their expectation of day-ahead market results on a fixed model. CAISO argues that CRR market participants will be disadvantaged, and the efficiency of the CRR market

¹⁸⁹ *Id.*

¹⁹⁰ *Id.* at 34.

¹⁹¹ *Id.*

¹⁹² *Id.*

will be undermined, if day-ahead market results and the resultant congestion are not based upon physical limitations of the transmission system.¹⁹³

140. CAISO disagrees with assertions that nodal procurement of FRP does not support nodal procurement of Imbalance Reserves because FRP is not biddable by noting that such assertions overlook significant similarities between the two products. CAISO states that FRP deliverability is based on real-time market congestion and therefore involves more accurate deliverability predictions than day-ahead market awards of Imbalance Reserves, but CAISO also notes that Imbalance Reserves are a day-ahead market product and need to operate on the best information available.¹⁹⁴

141. Finally, CAISO notes that the ramp deviation settlement would become infeasible if Imbalance Reserves were procured on a zonal basis because, with FRP procured nodally and Imbalance Reserves procured zonally, the nature of procuring the products would become too dissimilar to impose a deviation/imbalance settlement. CAISO argues that the result would be that resources could be paid twice for providing virtually the same product, which further supports a nodal procurement approach.¹⁹⁵

(c) Market Parameters

142. In response to NV Energy's specific request, CAISO asserts that it has committed to brief the CAISO Board of Governors and WEIM Governing Body on all aspects of DAME and EDAM, including implementation, market simulation, market performance, and the role of the tunable parameters. CAISO explains that its BPM proposed revision request process ensures stakeholders have visibility into how each parameter is set and allows for an appeal process should stakeholders disagree with the setting of the parameters. CAISO contends that comments suggesting CAISO will not provide transparency regarding changes to the deployment factor and enforced transmission constraints are based on fundamental misunderstandings of CAISO's existing BPM proposed revision request process. CAISO explains that any changes to these parameters will be made only as part of an open and transparent process, no different than the multitude of other market parameters and processes established through CAISO's various BPMs.¹⁹⁶

¹⁹³ *Id.* at 34-35.

¹⁹⁴ *Id.* at 35-36.

¹⁹⁵ *Id.* at 36.

¹⁹⁶ *Id.* at 37-39.

143. CAISO contends that it does not change market parameters at will and explains that its market parameters, including the parameters at issue here, “are largely meant to be static and adjusted only for clear and compelling reasons.”¹⁹⁷

144. CAISO explains that specific to the proposed use of the BPM to define the deployment factor and the methodology to determine enforced transmission constraints, CAISO has posted on its website a detailed matrix that identifies how it intends to tune those configurable parameters during testing, implementation, and after go-live. CAISO explains that consistent with its commitment to stakeholders, its Board of Governors, and the WEIM Governing Body, CAISO will also launch a new stakeholder working group effort to evaluate and validate the settings of these configurable parameters. CAISO states that it will deploy a robust and extensive effort to ensure the configurable parameters are validated and tested in an open and transparent process. CAISO notes that it has also committed to work with DMM and the Market Surveillance Committee to report on the performance of alternative parameters and settings before and after implementation of DAME. CAISO contends these measures will enhance the transparency of using the BPM to tune the parameters.¹⁹⁸

145. CAISO acknowledges concerns about deferring the definition of the deployment factor to the BPM. CAISO explains that the deployment factor is a unique element of the Imbalance Reserves procurement design and was established to strike the proper balance between procuring reliable amounts of Imbalance Reserves and the economic implications of imposing deliverability requirements. CAISO explains that because it has not yet been able to perform testing and validation for Imbalance Reserves, it could not at this point specify the values that best balance the competing considerations. CAISO explains that once analysis of the factor settings occurs, the criticality of defining the value in the BPM would be reduced. Accordingly, CAISO states it would not object, if so ordered on compliance, to defining the deployment factor value in the Tariff after it has completed the requisite testing and validation.¹⁹⁹

146. With respect to the request that the enforced constraints also be specified in the Tariff, CAISO states that the current approach to defining enforced constraints supports a finding that the BPM is the appropriate venue for defining methodologies used to govern constraint enforcement within the market. CAISO explains that today it holds similar authority in defining the constraints enforced for the FRP and has responsibly exercised that authority by gradually introducing more constraints based on market analysis. CAISO notes that, similarly, neither the Tariff nor BPMs identify the specific constraints

¹⁹⁷ *Id.* at 39-40.

¹⁹⁸ *Id.* at 38-39.

¹⁹⁹ *Id.* at 40.

enforced for the energy market; rather, the BPMs define the rules that govern constraint activation. CAISO notes that the absence of that detail in the Tariff has not raised concerns about market certainty; likewise, retaining that same authority for enforced constraints for Imbalance Reserves should not raise any such concerns.²⁰⁰

147. CAISO argues that including these tunable parameters in the BPM and not in the Tariff will not increase operator discretion, noting that it has not proposed new authorities for CAISO staff to manually intervene in market operations. CAISO argues that, to the contrary, DAME is intended to reduce operator interventions, and there is no reason to believe DAME will increase manual RUC adjustments. CAISO contends that the premise of commenters' arguments seems to be that the price caps and demand curve caps will be so low that not enough resources will bid Imbalance Reserves and CAISO will be unable to meet its full requirements, thus requiring operator intervention. CAISO argues that this premise is implausible given that flexible resource adequacy capacity resources would have a must-offer obligation for Imbalance Reserves Up.²⁰¹ But even assuming that the premise was true, CAISO argues that it would highlight a concern that DAME will not fully eliminate operator interventions in the RUC. CAISO notes that it has never suggested DAME will eliminate the need for such interventions, only that DAME will reduce the need for them. CAISO notes that commenters fail to make any showing that CAISO's expectation is unrealistic.²⁰²

148. CAISO disagrees with suggestions that its proposal violates the rule of reason. CAISO argues that the Tariff provisions on Imbalance Reserves procurement provide appropriate detail and that the specific values of the tunable parameters do not significantly affect terms of service. CAISO contends that this approach follows precedent about the level of detail in the Tariff, including the Commission's recent order accepting the Energy Storage Enhancement Phase 1 Tariff revisions. CAISO notes that Vistra's arguments about the non-generator resource parameters being in the BPM are virtually identical to the arguments the Commission rejected in that proceeding.²⁰³

149. CAISO notes that in an even more recent order, the Commission found that a proposal to define in the BPM those interties that would have a lower shift factor threshold did not meet the rule of reason because CAISO did not include a description of

²⁰⁰ *Id.* at 41.

²⁰¹ eTariff, § 40.10.6 Flexible RA Capacity Must-Offer Obligation (6.0.0), § 40.10.6.1(a).

²⁰² CAISO Answer at 41-42.

²⁰³ *Id.* at 42-43 (citing *Cal. Indep. Sys. Operator Corp.*, 183 FERC ¶ 61,161, at PP 27, 36, 44 (2023)).

the proposed methodology for identifying interties with significant total transfer capability in the Tariff. CAISO argues that those same concerns do not apply here. CAISO states that it will reflect in the BPM, or in the Tariff if so ordered on compliance, that the deployment factor and the methodology used to determine the constraints enforced in the deployment scenarios will meet a risk/cost trade-off that strikes a balance between congestion costs and the operational benefit of clearing deliverable reserves.²⁰⁴ CAISO argues that including the tunable parameters in the BPM and not in the Tariff is appropriate to “provide additional implementation details and transparency about the CAISO’s operations to market participants” and thus satisfies the rule of reason.²⁰⁵

150. In response to criticisms of its use of a deployment factor, CAISO notes that the filing identified as severable from the balance of the DAME proposal the proposed flexible implementation of Imbalance Reserves procurement, which allows CAISO flexibility to enforce transmission constraints and apply a deployment factor, respectively, in the Imbalance Reserves deployment scenarios.²⁰⁶ CAISO observes that an approach modeling 100% deliverability for Imbalance Reserves, as asserted by WPTF, is dramatically different from how CAISO approaches ancillary service procurement and would harm reliability because nodally procured Imbalance Reserves would be more deliverable if called upon than zonally procured ancillary services.²⁰⁷

151. CAISO argues that WPTF’s argument about different treatment from ancillary services is unpersuasive for two reasons: (1) Imbalance Reserves are not an ancillary service, so CAISO has no obligation to treat the two the same way; and (2) WPTF inaccurately assumes the same concerns it cites are not present with ancillary services. CAISO explains that it has existing deliverability concerns with ancillary services that require monitoring and potential manual responses and that CAISO uses the period

²⁰⁴ *Id.* at 43-44.

²⁰⁵ *Id.* at 44 (quoting *Cal. Indep. Sys. Operator Corp.*, 122 FERC ¶ 61,271, at P 84 (2008)).

²⁰⁶ CAISO notes that the filing only identified language in section 31.3.1.6.3.1 (Nodal Procurement of Imbalance Reserves Awards) as severable, but concedes the following references should have been identified as severable: (1) proposed Tariff section 27.4.3.5 (Effectiveness Threshold) contains a statement describing how the shift factor thresholds in the market are adjusted for the deployment scenarios; (2) proposed Tariff section 31.3.1.6.4 (Congestion Revenue from Procuring Imbalance Reserves) contains two references to the deployment factor as part of how CAISO calculates displaced congestion revenue from the deployment scenarios; and (3) Appendix A to the Tariff contains a definition of the new term “Deployment Factor.” CAISO Answer at 47.

²⁰⁷ *Id.* at 44-45.

following the publication of the day-ahead market and the start of the operating day to review ancillary service awards for deliverability and takes appropriate action in the real-time market if it deems the day-ahead awards insufficient to meet its reliability needs. CAISO explains that if it were creating its ancillary service rules from a blank slate, as it is proposing to do in this docket for Imbalance Reserves, it would likely consider imposing deliverability tests on ancillary services. CAISO notes that it intends to explore enhancing its ancillary services rules to do just that in the future.²⁰⁸

(d) \$55/MWh Offer Cap, Demand Curve, and Mitigation

152. Regarding criticisms of mitigating Imbalance Reserves with a default availability bid, CAISO disagrees with comments that suggest that energy market mitigation will be sufficient to mitigate market power concerns for Imbalance Reserves. CAISO reiterates that the interaction between day-ahead energy prices and Imbalance Reserves prices necessitate mitigation specifically for Imbalance Reserves and that it is insufficient to rely solely on energy mitigation.²⁰⁹

153. Regarding the value of the proposed Imbalance Reserves default availability bid, CAISO states that while it recognizes PG&E's concern that operational experience should inform the suitability of the default availability bid, CAISO has committed to robust monitoring and reporting on the new market features and there is no need for the Commission to compel reporting on specific issues in this proceeding.²¹⁰

154. Regarding criticisms of the \$55/MWh demand curve penalty price for Imbalance Reserves (i.e., maximum willingness to pay), CAISO argues that its answers regarding the criticisms of the \$55/MWh bid cap answer the demand curve criticisms as well. CAISO contends the penalty price determined through the stakeholder process represents a reasonable determination that the Imbalance Reserves product is not worth procuring at a price above \$55/MWh. CAISO explains that this determination is based on a trade-off between cost and risk, writing that continuing to procure the product at higher prices would marginally reduce the risk of having inadequate reserves to meet load imbalances but, at those higher prices, the cost does not justify the additional benefit. CAISO contends that if the absence of Imbalance Reserves caused a contingency that led to converting spinning reserves to energy and in turn required the market to backfill and

²⁰⁸ *Id.* at 46.

²⁰⁹ *Id.* at 47-48.

²¹⁰ *Id.* at 48.

procure additional spinning reserves to stay within reliability standards, that procurement will likely be achievable at prices below \$55/MWh.²¹¹

155. CAISO argues that the connection between spinning reserves and Imbalance Reserves supports initially setting the bid cap at a high percentile of spinning reserves offers. CAISO asserts that the relevant issue is the costs to a supplier of meeting the requirements of the product and whether the bid cap would allow adequate opportunities to recover the costs. CAISO contends that the bid cap and demand curve cap for Imbalance Reserves, set at the extreme high end of reserve offers, will capture likely bid costs serve as mitigation for the product initially. CAISO offers that as market participants enter the implementation phase of this effort, and even after implementation, CAISO will provide opportunities to evaluate these caps and consider changes based on updated market data. CAISO contends that it needs to set a value for the Imbalance Reserves bid cap, demand curve, and default availability bid, and that the data available at this time and the comparability between the spinning reserves and Imbalance Reserves products provides a sufficient basis for the Commission to find the proposed bid cap is within the zone of reasonableness and thus satisfies the requirements of FPA section 205.²¹²

156. CAISO clarifies that the proposal as filed is not based on the assumption that CAISO could, in the operating time frame, trade off procurement of some quantity of Imbalance Reserves for spinning reserves, or vice versa. CAISO clarifies that the two products are not regularly substitutable, but that the connection between Imbalance Reserves and spinning reserves is based on a counterfactual analysis of what would happen if CAISO were to not introduce Imbalance Reserves to the day-ahead market and stop relying on persistent manual adjustments in the RUC process. CAISO explains that insufficient ramping capability in real-time can create operating contingencies requiring CAISO to convert spinning reserves to energy, which CAISO states is a genuine challenge that cannot be ignored or assumed away. CAISO reiterates that, absent an Imbalance Reserves product and with continued RUC adjustments, CAISO would likely procure more spinning reserves in real-time to maintain existing reliability standards.²¹³

157. CAISO contends that the differential between the Imbalance Reserves cap and the FRP penalty price is justified because running short of FRP in the real-time market imposes greater risks to CAISO as compared to the risks if CAISO ran short of Imbalance Reserves in the day-ahead market. CAISO explains that, in real-time, CAISO has fewer alternative options to meet its operational needs compared to day-ahead, and

²¹¹ *Id.* at 30-31.

²¹² *Id.* at 17-18.

²¹³ *Id.* at 19.

that the costs of foregoing FRP are higher than the costs of Imbalance Reserves. As such, CAISO argues it is just and reasonable to have a higher penalty price for FRP than for the Imbalance Reserves product.²¹⁴

158. Regarding the spinning reserve data considered, CAISO argues that it appropriately based its analysis on data from the first six months of 2022 to determine the appropriate price for the Imbalance Reserves bid cap, demand curve cap, and default availability bid. CAISO explains that the composition of its generation fleet has continued to evolve at increasing rates and that the continued influx of variable energy resources and storage resources has fundamentally changed the resource mix, which has shifted the need and pricing for spinning reserves. CAISO argues that limiting the review period to the first half of 2022 was a reasonable choice to more closely base the analysis on the conditions that will be in place upon DAME implementation. The six-month period that was the basis of CAISO's analysis was the most recently available data when the stakeholder initiative was considering the bid cap, and thus CAISO moved forward with developing its proposal based on that data.²¹⁵

159. CAISO disagrees with Shell's argument that CAISO failed to account for spinning reserves offers outside the CAISO market, stating that there are no other spinning reserve bids to evaluate. CAISO explains there will not be spinning reserves bids to evaluate after EDAM go-live because ancillary services will not be part of EDAM.²¹⁶

160. CAISO notes that it has repeatedly committed to evaluate these values once it has actual market experience with DAME and EDAM and commits to reevaluating and potentially amending the Tariff if better evidence emerges. CAISO contends that it is thus incorrect for WPTF to suggest the values are immutable.²¹⁷

161. CAISO asserts that the commenters make no showing that the bid cap proposal contravenes Order No. 831. CAISO notes that neither Vistra nor any other commenter has provided evidence of the direct costs of providing Imbalance Reserves, and CAISO asserts that those costs cannot be known for certain until after DAME goes live. CAISO notes that DMM, the Market Surveillance Committee, and the WEIM Governing Body independent market monitoring expert (WEIM Market Expert) all agree the \$55/MWh

²¹⁴ *Id.* at 19-20.

²¹⁵ *Id.* at 20-21.

²¹⁶ *Id.* at 21.

²¹⁷ *Id.*

bid cap is reasonable as an initial starting point until actual market experience provides more information to ascertain the costs to provide Imbalance Reserves.²¹⁸

162. CAISO asserts that the most Vistra states about the costs of providing the Imbalance Reserves product is that \$55/MWh may not reflect the opportunity costs of providing the product. CAISO argues that to provide any support for its argument, Vistra would need to identify what more profitable opportunity it would forego for providing Imbalance Reserves and why the proposed rules would forbid Vistra from taking advantage of that hypothetically more profitable opportunity.²¹⁹ According to CAISO, its co-optimization would lead to CAISO relaxing Imbalance Reserves procurement in favor of energy in market intervals where energy is much more valuable. CAISO explains that its co-optimization will embed within it the tradeoffs, and thus the opportunity costs, to a resource of being awarded one product over the other, and that suppliers need not consider opportunity costs of the nature described by Vistra.²²⁰

163. CAISO argues that Vistra's citations to Commission precedent are unavailing and inapposite because the two orders Vistra cites both addressed Commission acceptance of tariff amendments that included *proposals by the filing utilities* to allow recovery of opportunity costs. CAISO explains that neither of the opportunity cost orders cited by Vistra indicates the filing utilities were *required* to allow opportunity cost recovery and that other Commission orders present recovery of opportunity costs as an option (where appropriate) rather than a requirement the utility must ensure.²²¹

164. CAISO argues further that there is no merit to the concern raised by WPTF and EPSA that the bid cap will distort price signals. CAISO explains that, based on the proposed co-optimization, Imbalance Reserves will affect energy market prices and would represent a distortion only to the extent the new prices give a false account of the value of the respective products. CAISO explains that the proposal as filed creates clear prices on the cost of addressing the need for flexible reserves and corrects existing distortions created by the need for manual interventions in the RUC. CAISO argues that this represents the market appropriately pricing in the need to be ready to meet uncertainty when it materializes and that the entire point of Imbalance Reserves is to price uncertainty and make it transparent instead of having it show up through RUC

²¹⁸ *Id.* at 22-23.

²¹⁹ *Id.* at 23-24.

²²⁰ *Id.* at 24.

²²¹ *Id.* at 26.

adjustments. CAISO explains that the demand curve sends an unmistakably clear price signal—Imbalance Reserves are not worth more than \$55/MWh.²²²

165. CAISO argues that there is no merit in claims by WPTF and EPSA that a bid cap will harm reliability, explaining that both the bid cap and the demand curve cap will cause CAISO to intentionally forego Imbalance Reserves procurement when the product is more expensive than the operational value the Imbalance Reserves would provide. CAISO argues that it has made a reasoned determination that above a certain price, it is more advisable to rely on other tools and products, such as its FRP, to address ramping needs. CAISO explains that this is an approach taken by other ISOs/RTOs in procuring reserve products and is a prudent and reasonable approach, and CAISO contends that no commenter explains how this would degrade reliability compared to the status quo.²²³

166. In response to assertions that the Imbalance Reserves bid cap violates Order No. 719, CAISO notes that the portion of Order No. 719 cited “adopt[ed] the proposed rule on price formation during times of operating reserve shortage” and that Imbalance Reserves are not operating reserves or any other type of ancillary service.²²⁴ CAISO argues that even if pricing guidance in Order No. 719 did apply, the proposal would be consistent with it because the proposed bid cap and pricing approach are based on the highest opportunity cost incurred by a resource to provide Imbalance Reserves rather than energy. CAISO explains that co-optimization will be structured such that if the opportunity cost of providing Imbalance Reserves over energy is greater than \$55/MWh, the market will not procure Imbalance Reserves and the resource would not get an Imbalance Reserves award. CAISO explains that, with no Imbalance Reserves award, the resource faces no opportunity cost because the market did not hold the resource back from energy to provide a reserve product and, in this way, the awarded prices for Imbalance Reserves will reflect the marginal opportunity cost of the awarded suppliers.²²⁵

167. WPTF asserts that CAISO acknowledged in its reply that the \$55/MWh bid cap will distort prices by limiting the bid and price caps which will inaccurately account for the value of Imbalance Reserves.²²⁶ WPTF argues that CAISO’s assertion that Imbalance Reserves are not worth more than \$55/MWh conflicts with what CAISO proposed during

²²² *Id.*

²²³ *Id.*

²²⁴ *Id.* at 27 (quoting Order No. 719, 125 FERC ¶ 61,071 at P 192).

²²⁵ *Id.* at 27-28.

²²⁶ WPTF Answer at 2-3 (citing CAISO Answer at 26).

the stakeholder process that the avoidance cost of Imbalance Reserves would be set at \$247/MWh. WPTF states that, by definition, price distortions occur if the bid and price caps do not allow offers to account for the cost of avoidance, and capping bids and prices at \$55/MWh will never allow the avoidance cost of \$247/MWh to be reflected.²²⁷

168. WPTF argues that, as CAISO acknowledges in its answer, the resource mix and prices for spinning reserves will continue to change before the proposal is implemented and therefore setting the price cap at the 80th percentile of spinning reserve bids from January to June 2022 will be a poor approximation for future scenarios. WPTF asserts that if spinning reserves are to be used as a proxy for the value of Imbalance Reserves (which WPTF does not agree with), using data from four years ago and only half the year is unjust and unreasonable and CAISO could have simply used the cap it had previously proposed, which better aligns with bids caps for other ancillary services.²²⁸ WPTF argues that because the bid and demand curve caps will always be applied to Imbalance Reserves, they function as a form of full-time mitigation. WPTF asserts that the \$55/MWh level will prohibit competitive market structure and outcomes as well as not allowing prices reflect grid and scarcity conditions.²²⁹

169. In response to WPTF, CAISO states that it did not admit its proposal will distort prices. Rather, its October 11 answer explained that by pricing Imbalance Reserves as proposed, CAISO will correct existing distortions that arise from manual interventions in the RUC. CAISO also argues that the avoidance cost and price cap are distinct concepts. CAISO claims that the avoidance cost represents an evaluation of the costs the market likely would incur if uncertainty materializes, while the Imbalance Reserves represent a form of insurance to protect against uncertainty materializing, and the \$55/MWh cap represents the maximum cost the CAISO market would be willing to incur to purchase that insurance. CAISO also states that the purpose of modeling deliverability in the day-ahead market is not to predict the impact of real-time uncertainty on day-ahead congestion prices. Instead, CAISO claims that it is to assess whether the Imbalance Reserves would still be deliverable under a constrained transmission system so that the

²²⁷ *Id.* at 3 (citing CAISO, Day-Ahead Market Enhancements Revised Final Proposal at 35 (May 1, 2023), <http://www.caiso.com/InitiativeDocuments/RevisedFinalProposal-Day-AheadMarketEnhancements.pdf>)).

²²⁸ *Id.* at 3-4.

²²⁹ *Id.* at 10.

market does not award Imbalance Reserves behind transmission constraints modeled as binding in the day-ahead market.²³⁰

170. CAISO argues that it has presented ample justification to conclude this value falls within a range of what is just and reasonable, and WPTF has presented no evidence to support a claim that the cost of providing Imbalance Reserves exceeds \$55/MWh.²³¹

171. Vistra reiterates its request that the Commission reject the DAME proposal. Vistra states that CAISO has not provided any evidence that demonstrates sellers will have a reasonable opportunity to recover their costs and that capping offers and prices based upon a percentile of spinning reserve bids is not appropriate. Further, Vistra asserts that because CAISO is proposing an offer cap, even if the Commission were to find Imbalance Reserves consistent with spinning reserves, CAISO has not explained why it is using a value below the highest spinning reserve offer.²³²

172. Further, Vistra explains that CAISO has not considered the seller's view of the costs and risks of providing Imbalance Reserves. Vistra states that sellers are informed by the risk that its resource will be deployed to meet system needs and that the likelihood of deployment for spinning reserves versus Imbalance Reserves is vastly different and therefore the costs cannot be the same to a seller. Vistra argues that the costs of providing Imbalance Reserves is likely to be closer to that of providing energy because there is a higher likelihood that Imbalance Reserves will be deployed and sellers must be ready in real-time to meet system needs, whereas spinning reserves is a product only released during infrequent and low probability events.²³³ Vistra claims that CAISO overlooked the evidence that sellers will not be able to recover their costs with the \$55/MWh cap in place. Vistra states that it demonstrated in its comments the opportunity cost of providing FRP exceeds \$55/MWh during certain periods.²³⁴

²³⁰ CAISO Second Answer at 2-4.

²³¹ *Id.* at 4-5.

²³² Vistra Answer at 2-3.

²³³ *Id.* at 4.

²³⁴ *Id.*

iv. **Determination**

(a) **General Need for Imbalance Reserves**

173. We find that CAISO has demonstrated that its proposed Imbalance Reserves product is just and reasonable. We agree with CAISO that introducing Imbalance Reserves is a reasonable approach to help CAISO address new system needs brought on by the changing resource mix, such as large differences between CAISO's day-ahead net load forecast and real-time system needs. CAISO has demonstrated that these imbalances have created operational challenges that CAISO currently addresses with manual adjustments to its RUC process, which can result in inefficient resource commitments and higher overall costs.²³⁵ We agree with CAISO that the Imbalance Reserves product, coupled with the Reliability Capacity product discussed below, are a just and reasonable approach to address CAISO's net load variability and uncertainty challenges and enhance the efficiency of day-ahead unit commitment by securing flexible reserves in a way that reasonably evaluates the tradeoffs between energy, Imbalance Reserves, and other ancillary service products.

174. We are not persuaded by NV Energy's or WPTF's protests that Imbalance Reserves will be over-procured or will adversely affect the procurement of other ancillary services. As an initial matter, as discussed further below, we find CAISO's proposed demand curves for Imbalance Reserves to be just and reasonable. CAISO's proposal to base its procurement targets on the 95% uncertainty range in the day-ahead load, solar, and wind forecasts is a methodology the Commission has already found to be just and reasonable for the FRP, and CAISO has demonstrated that this approach will help CAISO meet its operational needs as the resource mix continues to evolve.²³⁶

175. We find CAISO's proposal to settle unavailability charges and ramp deviation charges to be just and reasonable and not unduly discriminatory or preferential. We agree with CAISO that its proposal appropriately charges resources commensurate with any costs that they cause the system to incur in real-time when they are unavailable and therefore satisfies the principles of cost causation. Further, we agree with CAISO that its proposal for ramp deviation—or imbalance—settlement is an appropriate extension of the two-part settlements used for energy; day-ahead Imbalance Reserves is analogous to real-time FRP and therefore the appropriate imbalance on which to settle against. As is the case with energy settlements, the proposed imbalance settlement for Imbalance Reserves will prevent a resource from being paid twice for the same product. Regarding PG&E's

²³⁵ See, e.g., Transmittal at 6, 8.

²³⁶ See *Cal. Indep. Sys. Operator Corp.*, 166 FERC ¶ 61,226, at P 36 (2016) (accepting methodology for procuring real-time FRP based on 95% confidence interval).

request for formal reporting, we decline to require additional reporting, but we emphasize the importance of the ongoing monitoring and reporting that CAISO currently performs.

(b) Nodal vs. Zonal Procurement

176. As a threshold matter, under FPA section 205, a filing party “need only demonstrate that its proposed revisions are just and reasonable, not that its proposal is the most just and reasonable among all possible alternatives.”²³⁷ CAISO has demonstrated that its proposal to procure Imbalance Reserves on a nodal basis is just and reasonable, as discussed herein; therefore, we need not consider protesters’ alternate proposal that CAISO procure Imbalance Reserves zonally. In any case, we are not persuaded by protesters’ arguments that Imbalance Reserves should be procured zonally. In particular, the distinctions that protesters draw between the existing real-time FRP and the proposed day-ahead Imbalance Reserves product are minimal: (1) the biddable nature of the product; and (2) procurement being based on day-ahead congestion that could differ from real-time congestion. Neither difference renders CAISO’s proposal to procure Imbalance Reserves on a nodal basis unjust and unreasonable. In fact, CAISO’s experience procuring FRP both system-wide and nodally shows that system-wide FRP procurement can result in awards to resources that are transmission-constrained, thus making the ramp capacity undeliverable to the market. Nodal procurement addresses this problem by accounting for transmission constraints in procurement and can enhance price formation for ancillary services by sending more granular price signals that better reflect system conditions, such as transmission constraints. Additionally, CAISO has sufficiently explained how procuring Imbalance Reserves on a nodal basis addresses this problem as it applies to the procurement of Imbalance Reserves.²³⁸

177. We disagree with WPTF’s argument that the reason that FRP has been awarded to undeliverable capacity is because that capacity had high energy bids (and therefore did not clear the energy market). In reality, when procured on a system-wide basis, FRP was often awarded to undeliverable capacity due to transmission constraints, and therefore had no opportunity costs (i.e., \$0/MWh).²³⁹ Further, we are not persuaded by Vistra’s arguments that CAISO’s proposal will result in undeliverable capacity being awarded

²³⁷ *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,103, at P 59 (2014), *order denying reh’g*, 155 FERC ¶ 61,061 (2016); *see, e.g.*, WEIM Order, 147 FERC ¶ 61,231 at P 222 (citing *Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,265, at P 21 (2009); *Cities of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984) (*Cities of Bethany*)).

²³⁸ Transmittal at 97-98.

²³⁹ *See* CAISO Department of Market Monitoring, *2021 Annual Market Issues & Performance*, at 121-125 (July 2022), <https://www.caiso.com/Documents/2021-Annual-Report-on-Market-Issues-Performance.pdf>.

Imbalance Reserves. Vistra's assertion is speculative and lacks any supporting data or analysis. Vistra's claim that nodal FRP procurement has led to FRP being awarded to undeliverable capacity is also unsupported by evidence. To the contrary, data provided in CAISO's Market Performance and Planning Forum shows that when FRP Up capacity is not used, the overwhelming reason is because cheaper capacity was available.²⁴⁰

178. Regarding Vistra's claim that nodal procurement of Imbalance Reserves will result in "phantom" congestion, we agree with CAISO that day-ahead market congestion that is a consequence of the use of deployment scenarios should not be referred to as "phantom" congestion. The use of deployment scenarios is an attempt to model actual system conditions, such as transmission constraints, in the day-ahead market model and is, in that way, not fundamentally different from the other modeled constraints that may produce congestion in the day-ahead market. Similarly, Vistra's contention that market participants will lack accurate information about the value of energy and congestion if day-ahead LMPs are not driven by actual system conditions ignores that the day-ahead market relies on forecasts rather than real-time system conditions. We are also not persuaded by this argument because the day-ahead market and resulting clearing prices are, by design, an estimation of what the real-time conditions will be. Information about actual system conditions, which are not known until the operating day, are reflected in the real-time market.

179. Although the cost of procuring Imbalance Reserves nodally could be higher than if they were procured zonally, this does not render CAISO's proposal to use nodal procurement unjust and unreasonable.²⁴¹ Nodal procurement of Imbalance Reserves is intended to increase the probability that the capacity will be deliverable in real-time. It is just and reasonable to incorporate these deliverability costs into market clearing prices because transmission-constrained Imbalance Reserves cannot help CAISO address the system's ramping needs. We also agree with CAISO that nodal procurement should help to avoid the cost of future commitments in the RUC and real-time unit commitments, reduce the amount of and cost associated with out-of-market operator actions to secure more ramping capability, and mitigate the reliability risks of undeliverable ramping capability that zonal procurement could cause.

²⁴⁰ See CAISO Answer at 162; CAISO, *Market Performance and Planning Forum* presentation, Slide 192 (Sept. 27, 2023), <https://www.caiso.com/Documents/Presentation-MarketPerformancePlanningForum-Sep27-2023.pdf>.

²⁴¹ See *Cities of Bethany*, 727 F.2d at 1136 (pursuant to FPA section 205, "the filing party need only demonstrate that its proposed revisions are just and reasonable, not that its proposal is the most just and reasonable among all possible alternatives").

180. Finally, we disagree with WPTF's claim that nodal procurement of Imbalance Reserves will put a higher priority on ensuring Imbalance Reserves are deliverable than the priority placed on ensuring other ancillary services in CAISO (i.e., non-spinning reserves, spinning reserves, and frequency regulation) are deliverable. We note that EDAM will only procure energy, Imbalance Reserves, and Reliability Capacity, so this issue is unique to CAISO's day-ahead market. While the deliverability threshold for procuring ancillary services will be lower, congestion will be accounted for in the co-optimization of Imbalance Reserves, which will drive up the costs of Imbalance Reserves. Combined with the fact that the constraint relaxation penalty parameters for non-spinning reserves, spinning reserves, and frequency regulation are higher than that for Imbalance Reserves, we would expect the market optimization to choose to forego procuring Imbalance Reserves instead of other ancillary services.

(c) Market Parameters

181. We find that CAISO's new market parameter, the deployment factor, and new process to permit CAISO to activate/deactivate transmission constraint parameters in the Imbalance Reserves deployment scenarios are just and reasonable. In response to concerns that the deployment factor will be "tunable" at will and could introduce substantial uncertainty that would discourage market participants from obtaining CRRs, we agree with CAISO that its market parameters are normally static. CAISO affirms that it will continue this practice and provide participants advanced notice of any changes to the parameters at issue here.²⁴² We further note that protesters have not pointed to specific examples to the contrary, where last-minute changes undermined expectations that were the basis of CRR participation. Permitting CAISO to review and adjust the level of feasibility after gaining experience with Imbalance Reserves will allow it to ensure the new products are performing as intended and yielding efficient market outcomes, while also providing a level of certainty that the Imbalance Reserves will be deliverable to the market. Additionally, permitting CAISO to activate/deactivate transmission constraint parameters aligns with flexibility the Commission has previously granted to CAISO as to the FRP.²⁴³

182. However, we find that protesters raise a legitimate concern regarding the adequacy of detail in CAISO's Tariff about how it will adjust the Imbalance Reserves deployment factor and activate or deactivate transmission constraint parameters. Thus, as discussed

²⁴² CAISO Answer at 73.

²⁴³ *E.g.*, *Cal. Indep. Sys. Operator Corp.*, 184 FERC ¶ 61,119 (2023) (accepting, subject to condition, CAISO's filing to, among other things, establish a process to permit temporary changes to parameter values the CAISO market uses to reflect relative scheduling priorities and constraints).

below, we accept CAISO's proposal, subject to condition, and direct CAISO to submit a compliance filing to include in its Tariff the considerations it will use for tuning the deployment factor and activating/deactivating transmission constraints.²⁴⁴

183. Whether an item should be placed in an OATT or BPM is guided by the rule of reason, under which provisions that "significantly affect rates, terms, and conditions" of service, are readily susceptible of specification, and are not so generally understood in a contractual agreement as to render recitation superfluous should be included in the OATT, while items better classified as implementation details need not be included in an OATT and may be included in the BPM.²⁴⁵ The U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) has recognized that "[i]t is obviously left to the Commission, within broad bounds of discretion, to give concrete application to this amorphous directive."²⁴⁶ Furthermore, when applying the rule of reason, the Commission assesses not "some absolute prescribed standard literally set forth in the statute and regulations, but . . . the minimum specificity that the Commission could reasonably require."²⁴⁷ The D.C. Circuit also recently confirmed that "even specifiable practices that significantly affect rates need not be included if they are clearly implied by the tariff's express terms."²⁴⁸

184. As the Commission recently explained, "sufficiently detailed tariff provisions can satisfy FPA section 205 and the rule of reason's requirement that such practices that are 'readily susceptible of specification' be on file with the Commission."²⁴⁹ Here, to allow for adjustments and to ensure it maintains operational flexibility as it deploys the new

²⁴⁴ As we note below, CAISO identifies in its transmittal and initial Answer a matrix containing the considerations that it intends to use to derive the deployment factor and determine activation/deactivation of transmission constraints. Transmittal at 101 (citing CAISO, *Flexible Parameter Matrix*, <http://www.aiso.com/InitiativeDocuments/FlexibleParameterMatrix-Day-AheadMarketEnhancements.pdf>).

²⁴⁵ See, e.g., *N.Y. Indep. Sys. Operator, Inc.*, 179 FERC ¶ 61,102 (2022); *City of Cleveland v. FERC*, 773 F.2d 1368, 1376 (D.C. Cir. 1985).

²⁴⁶ *City of Cleveland v. FERC*, 773 F.2d at 1376.

²⁴⁷ *Id.*

²⁴⁸ *Hecate Energy Greene Cty. 3 LLC v. FERC*, 72 F.4th 1307, 1314 (D.C. Cir. 2023) (citing *City of Cleveland v. FERC*, 773 F.2d at 1376)).

²⁴⁹ *Am. Elec. Power Serv. Corp. v. Sw. Power Pool, Inc.*, 184 FERC ¶ 61,207, at P 29 (2023).

Imbalance Reserves products, CAISO proposes to specify the deployment factor in its BPM rather than its Tariff, which is permissible under the rule of reason and Commission precedent, provided that its Tariff contains sufficient detail regarding how CAISO will set that deployment factor.²⁵⁰ However, CAISO has not proposed such detail in its Tariff, which must, at a minimum, include the considerations CAISO intends to use to derive the deployment factor that will be reflected in the BPM. We likewise find that the rule of reason requires CAISO to include in its Tariff additional detail on the considerations CAISO will use to determine the activation and deactivation of transmission constraints.

185. Accordingly, we direct CAISO to submit a compliance filing, within 60 days of the date of this order, with proposed Tariff revisions containing: (1) considerations that CAISO will use to derive the deployment factor that it will include in its BPM; and (2) considerations CAISO will use to determine the activation and deactivation of transmission constraints.²⁵¹

(d) \$55/MWh Offer Cap, Demand Curve, and Mitigation

186. We find that CAISO's proposed \$55/MWh value for the maximum willingness to pay, offer cap, and default availability bid for market power mitigation for the Imbalance Reserves product is just and reasonable. We acknowledge that a range of values could be selected for these parameters and we find that CAISO supported its proposal to use a single value for all three parameters and that \$55/MWh is a just and reasonable value.

187. With respect to the maximum willingness to pay for Imbalance Reserves (i.e., the maximum height of the demand curve), CAISO has supported the \$55/MWh value based on its determination that, above this price, it is more advisable to rely on other tools and products, such as spinning reserves, or forego Imbalance Reserves entirely, to address expected real-time needs.²⁵²

²⁵⁰ See, e.g., *Energy Storage Ass'n v. PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,296, at P 105 (2018) (finding PJM must include the market parameter methodology in its tariff while retaining operational flexibility).

²⁵¹ For example, CAISO identifies in its transmittal and initial answer a matrix containing the considerations that it intends to use to derive the deployment factor and determine activation/deactivation of transmission constraints. See Transmittal at 101 (citing CAISO, *Flexible Parameter Matrix*, <http://www.caiso.com/InitiativeDocuments/FlexibleParameterMatrix-Day-AheadMarketEnhancements.pdf>).

²⁵² *Id.* at 70.

188. With respect to the proposed \$55/MWh value of the Imbalance Reserves offer cap, we agree with CAISO that the value is just and reasonable. CAISO explained that setting the bid cap for Imbalance Reserves based on the product's value to the system was a design decision, and we agree this approach is reasonable.²⁵³ CAISO estimated this value based on the costs that CAISO would likely incur if it chose not to procure Imbalance Reserves. CAISO indicated that it would likely purchase spinning reserves instead of Imbalance Reserves and thus used the “high end,” or 80th percentile, of a recent sample of spinning reserve offers to estimate that cost.²⁵⁴ Commenters critiqued the use of offers for spinning reserves as a proxy cost for foregoing Imbalance Reserves. Although we acknowledge that a range of possible approaches could be used to estimate the value that Imbalance Reserves will provide, we find that CAISO has sufficiently justified that spinning reserves offers are a reasonable proxy.

189. We also find that CAISO has sufficiently justified the historical sample of spinning reserve offers that it chose. We agree with CAISO that, due to the rapidly changing resource mix, weather patterns, load patterns, and other features of CAISO's grid, no historical data will be fully reflective of the market conditions CAISO will encounter after DAME's implementation, or the costs resources incur to provide Imbalance Reserves, which are highly uncertain. As such, it is reasonable to use a recent sample of spinning reserve offers. Moreover, no party has provided evidence that the cost of clearing Imbalance Reserves in the day-ahead market, including opportunity costs, will exceed \$55/MWh. Finally, although protestors have proposed alternative potential datasets, we find that CAISO “need only demonstrate that its proposed revisions are just and reasonable, not that its proposal is the most just and reasonable among all possible alternatives.”²⁵⁵ Because we find CAISO's proposal to be just and reasonable, we need not consider alternative rate designs protestors recommend, nor do we need to determine that CAISO's approach is the *most* just and reasonable.²⁵⁶

190. With respect to the proposed \$55/MWh value for the Imbalance Reserves default availability bid, we agree with CAISO and DMM that it is appropriate to impose market power mitigation on Imbalance Reserves offers to address market power concerns and ensure competitive market outcomes. CAISO explained that the proposed default mitigation bid is a simplified version of mitigation, and we find this method to be just and reasonable. Additionally, CAISO commits to reevaluate the default availability bid in the

²⁵³ *Id.* at 57.

²⁵⁴ *Id.* at 70.

²⁵⁵ *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,103 at P 59.

²⁵⁶ *See, e.g., Cities of Bethany*, 727 F.2d at 1136.

future when more data is available in order to reflect actual market conditions. As CAISO noted, the cost of providing Imbalance Reserves is highly uncertain.

191. We also reject SDG&E's argument that setting the offer cap on Imbalance Reserves lower than the offer cap on FRP, and therefore possibly incenting entities to bid in the real-time market instead of the day-ahead market, is unjust and unreasonable or unduly discriminatory or preferential. SDG&E states that because Resource Adequacy resources will be obligated to bid in the day-ahead market for Imbalance Reserves, whereas other entities are not, it will be exposed to a price differential those other entities will not face. We find \$55/MWh to be a just and reasonable offer cap, even though it is lower than the offer cap for FRP. CAISO explained that different values are appropriate here because the costs CAISO incurs for being short FRP in real-time are higher than those CAISO incurs for being short Imbalance Reserves in the day-ahead market as CAISO has more alternatives to address ramp capability shortages in the day-ahead time frame relative to the real-time operating time frame.²⁵⁷

192. Section 31.3.1.6.2 of the Tariff lists the upper bound of the procurement curve as "\$55 per MW." We believe this is an error because bid curves for CAISO's markets indicate a \$/MWh offer.²⁵⁸ Accordingly, we direct CAISO to submit a compliance filing, within 60 days of the date of this order, with proposed revisions that update section 31.3.1.6.2 to reflect an upper bound of the procurement curve as \$55/MWh.²⁵⁹

b. Reliability Capacity Product

i. Filing

193. CAISO proposes a new product, Reliability Capacity, in the RUC process (the day-ahead market process that ensures sufficient resources are committed to meet real-time forecasted demand). CAISO proposes to procure both Reliability Capacity Up and Down.²⁶⁰ CAISO explains that Reliability Capacity Up is a new name for the existing RUC capacity awards.²⁶¹ Under the proposal, Reliability Capacity will be procured to meet positive or negative differences between cleared physical supply in the IFM and the

²⁵⁷ CAISO Answer at 19-20.

²⁵⁸ *E.g.*, eTariff, app. A Definitions (0.0.0) (defining Energy Bid Curve).

²⁵⁹ *Id.* § 31.3.1 Market Clearing Price Determination (15.0.0), § 31.3.1.6.2; *see id.* app. A Definitions (0.0.0) (defining Imbalance Reserves Bid).

²⁶⁰ Transmittal at 46.

²⁶¹ *Id.* at 56.

load forecast.²⁶² CAISO argues that the new Reliability Capacity Down product will obviate the need for manual operator intervention in many cases of oversupply. CAISO explains that oversupply has increased during certain hours due to increasing system variability and uncertainty. Thus, CAISO states, Reliability Capacity Down will help the day-ahead market match demand forecasts rather than merely ensure sufficient supply.²⁶³

194. CAISO proposes that all eligible resources offering energy bids in the IFM must submit bids for Reliability Capacity Up at the same quantity as their energy bid plus ancillary service self-provision to ensure that all resources in the EDAM RSE are available for RUC; and, in general, all resources currently eligible for the RUC process will be eligible to provide Reliability Capacity, including storage resources.²⁶⁴

195. Suppliers would provide separate single segment price and quantity bids for Reliability Capacity Up and Down, limited to the resource's 60-minute ramp capability, and the market would use those bids to determine optimal awards. CAISO proposes to cap bid prices for the Reliability Capacity Up and Down products at \$250/MWh, matching the existing limits on RUC bids.²⁶⁵ CAISO proposes a change from current practice, in that Resource Adequacy capacity could bid into RUC at any price between the bid floor and bid cap.²⁶⁶ CAISO states that this is an important change to facilitate the implementation of EDAM because it would distort the operation of EDAM if all Resource Adequacy capacity were bidding RUC capacity at zero dollars, while resources in the rest of the EDAM area were able to bid economically.²⁶⁷

196. Unlike Imbalance Reserves, RUC will not use a demand curve to procure Reliability Capacity, choosing to forego procurement if prices are too high. RUC will instead procure the full reliability requirement subject to penalty prices when there is a physical shortage.²⁶⁸ However, CAISO proposes to include a distinct local market power

²⁶² *Id.* at 48.

²⁶³ *Id.* at 55.

²⁶⁴ eTariff, § 30.5.2 Supply Bids (34.0.0), § 30.5.2.8.

²⁶⁵ *Id.*

²⁶⁶ Resources with Resource Adequacy contracts are currently required to make their capacity available in the RUC process at \$0/MWh. *Id.* § 31.5.1 RUC Participation (11.0.0), § 31.5.1.2.

²⁶⁷ Transmittal at 63.

²⁶⁸ eTariff, § 31.5.3 RUC Procurement Target (5.0.0).

mitigation pass before RUC to assess the competitiveness of bids for Reliability Capacity Up. CAISO explains that under the proposal, because the current \$0 bidding obligation in RUC for Resource Adequacy capacity will be removed, market mitigation is now appropriate. If mitigation is triggered, CAISO proposes that the market power mitigation pass will mitigate a bid for Reliability Capacity Up to the higher of the default/negotiated availability bid or the competitive locational Reliability Capacity Up price. CAISO proposes to apply the same \$55/MWh default availability bid it proposes for Imbalance Reserves to Reliability Capacity.²⁶⁹

197. As with Imbalance Reserves, CAISO proposes that resources with awards for Reliability Capacity must provide economic energy bids for the full range of their Reliability Capacity awards in the real-time market.²⁷⁰ Also like Imbalance Reserves, should a resource be unavailable to provide Reliability Capacity, CAISO proposes to charge that resource for its failure to perform. CAISO states that a resource will be deemed to have undispachable Reliability Capacity Up in a settlement interval if the resource's upper economic limit (as adjusted for outages) is less than the sum of energy from IFM, upward ancillary services, Imbalance Reserves Up award, and the Reliability Capacity Up award. Similarly, a resource will be deemed to have undispachable Reliability Capacity Down in a settlement interval if the resource's lower economic limit exceeds the award for energy from the IFM minus downward ancillary services minus the Imbalance Reserves Down award minus the Reliability Capacity Down award. In addition, a resource will be deemed to have undispachable Reliability Capacity Up or Down if the resource goes on outage between day-ahead and real-time or fails to submit the required real-time market bids. Undispachable Reliability Capacity will be charged back to the resource at the relevant locational price for Reliability Capacity.²⁷¹

ii. Comments/Protests

198. PacifiCorp supports the proposed Reliability Capacity product as a market-based solution that will minimize the frequency and magnitude of out-of-market interventions by CAISO and give the market flexible capacity that can be used to cover net load uncertainties. PacifiCorp states that the Reliability Capacity products will maintain CAISO's ability to use RUC and real-time scheduling to manage reliability events.²⁷²

²⁶⁹ *Id.* § 31.9.2 RUC Bid Mitigation (0.0.0).

²⁷⁰ *Id.* § 31.5.8 RTM Bidding Obligations from RUC Awards (0.0.0).

²⁷¹ Transmittal at 80-81; eTariff, § 11.2.2 Calculation of Hourly RUC Compensation (5.0.0), § 11.2.2.2.

²⁷² PacifiCorp Comments at 26.

199. DMM recommends CAISO reconsider other aspects of its real-time market resettlement and performance incentive design for Reliability Capacity in an initiative to enhance the initial EDAM implementation. DMM agrees with the Market Surveillance Committee that unavailable Reliability Capacity should be subject to an incentive penalty rather than simply not receiving payment of its day-ahead award.²⁷³ DMM further states that local market power tests and mitigation for Reliability Capacity Up are important aspects of the proposal.²⁷⁴

200. PG&E does not oppose the proposed value for the Reliability Capacity bid cap and default availability bid but is concerned that they may not be sufficient to mitigate market power for Reliability Capacity.²⁷⁵

iii. Determination

201. We find CAISO's proposed Reliability Capacity product to be just and reasonable. We find that the proposal will aid CAISO in reducing the need for out-of-market operator actions, thus improving the transparency of market prices. Allowing Resource Adequacy resources to make non-zero bids to supply Reliability Capacity will also enhance the efficiency of market prices and provide additional transparency. Further, while the current RUC design produces awards for capacity that can add additional capacity, it does not de-commit units or otherwise provide for downward movement. This proposal will add this important functionality so that sufficient capacity is available to ramp down when conditions call for such movement.

202. We find CAISO's proposed treatment of unavailable Reliability Capacity just and reasonable and not unduly discriminatory or preferential. As discussed above, we find that CAISO's proposal follows cost causation principles by appropriately charging unavailable resources commensurate with any costs that they cause the system to incur in real-time. While DMM might prefer a different design for real-time resettlements for unavailable Reliability Capacity, the Commission need not consider alternative rate designs that DMM recommends.²⁷⁶

203. We find that PG&E's concern regarding the default availability bid and bid cap are speculative and unsupported. We find that the \$250/MWh bid cap and \$55/MWh default availability bid is just and reasonable. We note that the \$250/MWh bid cap

²⁷³ DMM Comments at 9.

²⁷⁴ *Id.* at 11.

²⁷⁵ PG&E Comments at 17.

²⁷⁶ *See, e.g., Cities of Bethany*, 727 F.2d at 1136.

matches the existing RUC bid cap.²⁷⁷ We also find that the default availability bid is just and reasonable, given CAISO's reasoning that Reliability Capacity Up is similar to a RUC capacity award and that \$55/MWh represents a high percentile value of historical non-RA RUC availability offers.²⁷⁸

204. We find that comments concerning future design changes and enhancements are beyond the scope of this proceeding. However, we encourage CAISO to consider refinements as it gains experience with Reliability Capacity. Additionally, we emphasize the importance of the ongoing monitoring and reporting that CAISO currently performs.

3. Proposed Extended Day-ahead Market

a. Participation Within EDAM

i. Filing

205. CAISO states that each entity that participates in EDAM must evaluate changes that may be required to its OATT to implement EDAM. CAISO states that while the EDAM framework has been designed with the goal of accommodating each of the diverse group of balancing authorities in the West, ultimately each balancing authority and transmission provider must address its unique considerations to develop OATT changes for participation in EDAM. CAISO further notes that entities administering jurisdictional OATT services will need to harmonize their existing rules with the EDAM framework, particularly in the context of making transmission available to EDAM, and cost allocation considerations in their BAA. CAISO explains that each BAA will need to develop a methodology to re-allocate EDAM revenues and costs within the BAA, as the proposed EDAM provisions do not prescribe intra-BAA allocations.²⁷⁹

206. For its part, CAISO notes that it employed a stakeholder process to identify the Tariff amendments necessary to allow CAISO to participate in EDAM. CAISO states that balancing authorities will similarly need to work through their own stakeholder processes to harmonize their existing rules under their individual OATTs with the EDAM framework. For example, CAISO expects balancing authorities will need to determine the allocation of congestion and transfer revenues through their own stakeholder processes. The EDAM framework allocates transfer and congestion revenues to the

²⁷⁷ Transmittal at 58.

²⁷⁸ *Id.* at 75.

²⁷⁹ Transmittal at 197-98.

balancing authority and each balancing authority will need to develop a methodology to re-allocate the revenues and costs under their associated OATT.²⁸⁰

207. To participate in EDAM, entities will need to execute a participation agreement that corresponds with their anticipated role. Consistent with the outlined roles, CAISO includes the following *pro forma* participation agreements and addenda: (1) EDAM Entity Implementation Agreement; (2) EDAM Addendum to EIM Entity Agreement; (3) EDAM Addendum to EIM Entity Scheduling Coordinator Agreement; (4) EDAM Addendum to EIM Participating Resource Agreement; (5) EDAM Addendum to EIM Participating Resource Scheduling Coordinator Agreement; (6) EDAM Transmission Service Provider Agreement; and (7) EDAM Load Serving Entity Agreement. CAISO does not lay out a specific timeline for implementation in its filing but does lay out the process for joining.²⁸¹ Balancing authorities seeking to join EDAM must enter into an implementation agreement that establishes the implementation date for their participation. The implementation date shall be between six and 24 months after the date when the agreement becomes effective.²⁸² This agreement will require CAISO to perform changes to its systems and specify the implementation fee to allow CAISO to recover its costs. Participants will have the option to delay their implementation date if they determine that they cannot proceed on the agreed date.²⁸³

208. Prior to the implementation date, CAISO and the EDAM Entity will engage in market simulation that accounts for the prospective EDAM Entity's implementation circumstances and will carry out at least 30 days of parallel operations to test the prospective EDAM Entity's implementation, as well as completing the implementation activities set forth in revised Tariff section 33.2.5. No later than 10 days prior to the agreed implementation date, CAISO will determine, in consultation with the prospective EDAM Entity, whether the prospective EDAM Entity will be ready to participate in EDAM. If either entity decides that the participant is not ready, they will establish a new

²⁸⁰ *Id.* at 198.

²⁸¹ CAISO had previously announced that it would launch its extended day-ahead market in 2025, but at the September 21, 2023 CAISO Board of Governors meeting CEO Elliot Mainzer indicated that a 2026 onboarding timeline for EDAM is more likely given the revised participation timeline announced by BANC and PacifiCorp.

²⁸² eTariff, § 33.2.2 Implementation Date (0.0.0).

²⁸³ Transmittal at 107-08.

implementation date and reflect it in an amended version of the implementation agreement.²⁸⁴

209. CAISO proposes to apply the existing WEIM transitional price discovery mechanism to EDAM. For a period of six months following implementation for an EDAM Entity, CAISO will not apply certain transmission constraints and will relax certain transmission constraints or the power balance constraint. In these circumstances, CAISO will effectively substitute the last economic bid for what would otherwise be a parameter price. Six days prior to the end of the transition period, CAISO proposes to post an assessment of whether an extension of the transition period for said EDAM Entity for up to another six months is needed, subject to Commission approval.²⁸⁵ CAISO also proposes to extend its day-ahead price correction authority from five business days to 10 business days for a three-month period following an EDAM implementation date.²⁸⁶ CAISO states that extending the window will help facilitate resolution of any lingering implementation-related issues.

ii. Comments/Protests

210. CEBA supports the application of transitional protective measures to allow CAISO and other entities time to manage risk should there be unexpected operational, reliability, or financial impacts from participation in EDAM.²⁸⁷ CEBA states that it supports CAISO's Tariff changes regarding the implementation of EDAM.²⁸⁸

211. PacifiCorp states that implementing the EDAM market design will involve a multi-step process and urges the Commission to accept CAISO's proposal and grant the requested effective dates. PacifiCorp explains that while only CAISO's Tariff revisions are before the Commission in this proceeding, CAISO indicates that several important components of the total EDAM design will be determined when prospective EDAM transmission service providers undertake amendments to their respective OATTs. PacifiCorp avers that to accommodate EDAM, the first set of OATT revisions will have to address certain EDAM settlements as the EDAM Entity will be a clearing house for many EDAM charges and credits, including several categories of EDAM-related sub-allocations that are not addressed by CAISO's filing (such as appropriate methods to

²⁸⁴ *Id.* at 105-06; eTariff, § 33.2.6 Readiness (0.0.0).

²⁸⁵ eTariff, § 33.27.1 Transitional Process (0.0.0).

²⁸⁶ Transmittal at 108.

²⁸⁷ CEBA Comments at 8.

²⁸⁸ *Id.* at 1.

allocate EDAM transfer revenues and congestion revenues). PacifiCorp further states that the EDAM Entity's OATT will also address issues related to the use of OATT rights in the market. In addition, PacifiCorp states, it will have to adopt OATT changes that address the procedural implications of administering EDAM, such as adopting provisions governing EDAM dispute resolution and procedures to secure assurances that transmission customers agree to satisfy all requirements to participate in EDAM. PacifiCorp states that although it has already begun efforts to consider potential OATT changes to reflect the EDAM proposal, it does not plan to commence its own stakeholder process until the Commission has acted on this filing and provided sufficient certainty that the proposal will go forward on or close to the terms laid out in CAISO's filing.²⁸⁹

212. Tri-State asserts that the delineation of responsibilities and authorities among transmission service providers, balancing authorities, and CAISO under EDAM needs further clarification. As an example, Tri-State states that under the proposed section 33.9.1, in addition to an EDAM Entity (i.e., an EDAM balancing authority), an EDAM transmission service provider or transmission operator within EDAM shall remain responsible for performing engineering studies and approving maintenance outages. However, according to Tri-State, the further requirement in this section that an EDAM Entity scheduling coordinator must submit notice of maintenance outages approved by that EDAM Entity to CAISO appears to give the EDAM Entity broad approval over any type of maintenance outage within its BAA. This, argues Tri-State, could have a negative impact on transmission providers like Tri-State performing maintenance on their own system.²⁹⁰

213. Tri-State expresses concern that, once a BAA joins EDAM, transmission providers with transmission and generation assets and transmission rights within that BAA will be forced to participate in EDAM. Tri-State asserts that while CAISO references potential exceptions and carve-outs to this forced participation may be available under an EDAM Entity's OATT, it is essential that the proposal be clear that the assets and firm transmission rights of transmission providers within an EDAM BAA retain broad authority to carve-out those assets and rights from EDAM participation.²⁹¹

214. NV Energy states that whereas resources can elect to forego participation in the WEIM, under the EDAM participation model, all resources and load in an EDAM BAA would be required to submit an economic bid or self-schedule.²⁹² NV Energy asserts that

²⁸⁹ PacifiCorp Comments at 6-9.

²⁹⁰ Tri-State Comments at 6-7.

²⁹¹ *Id.* at 5.

²⁹² NV Energy Comments at 6.

sub-allocating the resource sufficiency requirements and DAME requirements to OATT customers will be important because it ensures all customers are responsible for their capacity requirements.²⁹³

215. Shell states that transmission service provided for resource sufficiency will have congestion/transfer revenues settled through the EDAM Entity in a yet-to-be-determined manner. Shell argues that it would be preferable to have a consistent mechanism to enable economic bidding at EDAM external interties within the Tariff, rather than allowing economic bidding at interties to be enabled by the EDAM Entity under section 29.34(i)(2) of the existing CAISO Tariff. ACP and Shell argue that section 33.4.1(g) of CAISO's proposed Tariff revisions delegates to EDAM Entities the responsibility to identify and inform CAISO of which resource types are eligible to participate in the day-ahead market, leaving open the possibility of different resource eligibility rules within the EDAM area on an entity-by-entity basis.²⁹⁴

216. Bonneville recommends that the Commission emphasize the importance of CAISO developing an effective strategy for addressing market-to-market seams.²⁹⁵ Bonneville emphasizes that the transfer and transmission services it and other entities provide will be impacted by BAA decisions to join EDAM.²⁹⁶ Bonneville urges the Commission to recognize these impacts and require renegotiated coordinated transmission agreements before EDAM go-live.²⁹⁷ Bonneville emphasizes that in the past it has negotiated specific provisions before joining regional agreements like WEIM and the Western Resource Adequacy Program (WRAP).²⁹⁸ Bonneville requests that the Commission acknowledge that entities such as Bonneville may need special provisions in

²⁹³ *Id.* at 7.

²⁹⁴ ACP Comments at 5; Shell Protest at 8.

²⁹⁵ Bonneville Comments at 12.

²⁹⁶ *Id.* at 6-7.

²⁹⁷ *Id.* at 10-12.

²⁹⁸ WRAP is a voluntary resource adequacy planning and compliance framework administered by WPP and includes financially-binding capacity and transmission requirements for participating entities to meet their identified capacity needs. *See Nw. Power Pool*, 182 FERC ¶ 61,063 (2023) (accepting WRAP proposal).

agreements with CAISO regarding EDAM, and that such agreements should be a prerequisite to EDAM go-live in participating BAAs.²⁹⁹

iii. Answer

217. CAISO counters Tri-State's position that generators and transmission providers with assets or firm third-party capacity within the participating BAAs should have the ability to "carve-out" themselves from EDAM. CAISO states that this position has no foundation and contradicts the premise that all loads and resources be accounted for in the market, either through an economic bid or a self-schedule, and notes that a "carve-out" such as this has not been provided in other organized wholesale electric markets. CAISO notes that third-party transmission providers should coordinate with EDAM Entities to ensure appropriate modeling of their transmission system in their BAAs.³⁰⁰

218. In response to suggestions from ACP and Shell that proposed Tariff section 33.4.1(g) may cause different resource eligibility rules within the EDAM area on an entity-by-entity basis, CAISO states that it will support participation by any resource type supported by its Tariff.³⁰¹ CAISO notes, however, that it remains the responsibility of each EDAM Entity to determine which resource types it can support, consistent with the WEIM approach.³⁰² In response to Shell's argument that it would be challenging for the participating balancing authorities to implement EDAM because some of the proposals are open to interpretation and there may be different ways of complying with them to participate in the market, CAISO offers that EDAM participation is predicated on an entity's participation in the WEIM, its existing OATT and contractual relationship with CAISO, and potential OATT changes to support EDAM participation.³⁰³

219. In response to Bonneville, CAISO states that it will work with each participant to reach agreements that ensure smooth onboarding and will file non-conforming agreements that are jurisdictional with the Commission. CAISO also states that it is committed to continuing to engage with Bonneville in regular meetings as contemplated

²⁹⁹ Bonneville Comments at 8.

³⁰⁰ CAISO Answer at 61-62.

³⁰¹ *Id.* at 151-52.

³⁰² *Id.* at 152.

³⁰³ *Id.* at 60-61.

by the Coordinated Transmission Agreement and to revising the same, as CAISO and Bonneville have done in the past, to account for the implementation of EDAM.³⁰⁴

iv. Determination

220. We find that CAISO's voluntary participation model and *pro forma* implementation agreements are just and reasonable. Similar to participation in the WEIM, EDAM participation is voluntary, and an EDAM Entity has flexibility in determining how much of its resource's capacity it is willing to offer into the day-ahead market. We agree with CAISO that WEIM entities (i.e., balancing authorities participating in the WEIM) are the appropriate participants in EDAM because in many cases, the EDAM Entity will be the only or most significant transmission service provider in a BAA. We note that uniform participation of relevant resources within a BAA helps to account for all load and resources and aligns demand forecasts with the supply and demand for which a balancing authority is responsible. We disagree with Tri-State that roles within EDAM require further clarification. Although Tri-State argues that resources operating within an EDAM Entity should not be forced to participate in EDAM, the Commission's obligation is to determine whether CAISO's proposal is just and reasonable, and not whether it is superior to alternatives.³⁰⁵ Further, to the extent Tri-State's arguments criticize the WEIM participation framework, we find that such arguments are outside the scope of the EDAM proposal.

221. We are not persuaded by Shell and ACP's concerns that Tariff section 33.4.1(g) will lead to different resource eligibility rules within the EDAM area. While CAISO does delegate this responsibility to EDAM Entities, CAISO's Tariff sections on EDAM participation specify characteristics of eligible EDAM resources and EDAM Resource Facilities. As in WEIM, CAISO's proposal supports participation based on defined Tariff rules but delegates to each EDAM Entity the ability to further define these rules within its BAA, which we find an acceptable accommodation given that each EDAM Entity would be best placed to perform this assessment rather than CAISO. Therefore, we are not persuaded that this level of granularity must be included in the EDAM Tariff provisions here.

222. Finally, we find Bonneville's request to modify the EDAM proposal to accommodate Bonneville's participation in EDAM outside the scope of this proceeding. We do, however, note that CAISO has agreed to work with Bonneville to revise the

³⁰⁴ *Id.* at 150.

³⁰⁵ *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,103 at P 59 (PJM "need only demonstrate that its proposed revisions are just and reasonable, not that its proposal is the most just and reasonable among all possible alternatives."); *see also, e.g., Cities of Bethany*, 727 F.2d at 1136.

Coordinated Transmission Agreement as necessary to facilitate Bonneville's participation in EDAM.

b. External Resource Participation

i. Filing

223. CAISO states that external resource participation in EDAM provides the opportunity for resources physically located outside of the EDAM area to participate in the day-ahead market operating in the EDAM area. CAISO states that the EDAM Tariff provisions would provide options for source-specific and non-source-specific resources outside of the EDAM area to bid economically and self-schedule into the day-ahead market consistent with current practices in the CAISO BAA and BAAs in the WEIM. CAISO states that Tariff requirements for external resource participation account for existing rules at CAISO interties,³⁰⁶ existing rules at WEIM interties,³⁰⁷ and the RSE.³⁰⁸

224. Thus, CAISO explains that an external resource's participation might depend on whether it is pseudo-tied, dynamically scheduled, or an economic bid, as well as on the nature of the intertie in question.³⁰⁹ First, CAISO proposes that pseudo-tied external resources will continue their association with either a WEIM, EDAM, or CAISO intertie consistent with the arrangements they use today. Second, CAISO explains that EDAM will not support dynamic schedules between EDAM BAAs.³¹⁰ Instead, resources that are dynamically scheduled between BAAs in the WEIM may participate in EDAM via pseudo-tie. CAISO explains that external resources delivered through a dynamic schedule are currently modeled through a "mirror system resource" feature in the WEIM, which allows accurate real-time pricing of a resource in a WEIM BAA dynamically scheduled into another WEIM BAA. CAISO states these resources may continue to participate in EDAM but represent source-specific supply located outside of a BAA; this

³⁰⁶ Transmittal at 155 (citing eTariff, § 27 CAISO Markets and Processes (2.0.0); *id.* § 30.5.2 Supply Bids (33.0.0), § 30.5.2.4.1; *id.* § 31.8 Constraints Enforced at Interties (3.0.0)).

³⁰⁷ *Id.* (citing eTariff, § 29.34 EIM Operations (25.0.0), §§ 29.34(f)(3), 29.34(i)(2)).

³⁰⁸ *Id.* (citing eTariff, § 33.30.8 Bids from External Resources (0.0.0), § 33.30.8.3).

³⁰⁹ For example, if the intertie is associated with a boundary between a BAA in the WEIM and a BAA outside the WEIM, an external intertie in all cases, or a boundary between a WEIM BAA and EDAM BAA, etc. *Id.*

³¹⁰ *Id.* at 157-58; eTariff, § 33.30.8 Bids from External Resources (0.0.0).

might mean that dynamic schedules between WEIM BAAs may become dynamic schedules between two EDAM BAAs. In these cases, CAISO states that the transfer of the resource's output through a dynamic schedule will no longer produce accurate modeling and pricing even with the mirror system resource feature.

225. Third, CAISO's EDAM design will support external resource participation by source-specific, off-system designated network resources. Similarly, CAISO also notes that source-specific supply that is otherwise not associated with a designated network resource (but owned or under contract to serve load within an EDAM BAA) can self-schedule or economically bid with a BAA in the WEIM or outside of the WEIM.³¹¹ Fourth, CAISO proposes that non-source specific, contracted supply at an intertie between an EDAM BAA and a non-EDAM BAA can participate in EDAM by self-scheduling, but will not be able to economically bid.³¹²

226. Finally, CAISO proposes that non-source-specific supply not under contract to serve demand within an EDAM BAA cannot offer supply at external interties of EDAM balancing authorities, unless the balancing authority has enabled economic bidding at external interties with respect to WEIM. CAISO explains this is an extension of the Commission-approved WEIM approach and premised upon stakeholder concerns that EDAM BAAs will be exposed to increased uncertainty about supply delivery, raising reliability risks.³¹³

ii. Comments/Protests

227. Idaho Power supports CAISO's limitation on external intertie bidding as it incentivizes additional expansion of the day-ahead market and avoids cost of service shifts and reliability concerns.³¹⁴ Interwest expresses its support for Tariff section 33.30.3, which would allow individual EDAM Entities to enable intertie bidding at their

³¹¹ Transmittal at 159.

³¹² CAISO notes this may include non-source-specific import supply under contract such as firm energy contracts where the generation source is unknown ahead of the 10:00 a.m. day-ahead market close, such as WSPP Agreement Schedule C arrangements. CAISO also notes such contracts must satisfy certain e-tag requirements outlined in the Tariff. *Id.*; eTariff, § 33.30.8 Bids from External Resources (0.0.0) §§ 33.30.8.2, 33.30.8.3.

³¹³ Transmittal at 159; eTariff, § 33.30.3 Economic Bids at EDAM Interties (0.0.0).

³¹⁴ Idaho Power Comments at 6.

interties. Interwest states that intertie bidding will help smooth trading across seams between EDAM and SPP's proposed Markets+. ³¹⁵

228. ACP explains that the dynamics of Western market development have shifted significantly since stakeholders worked with CAISO to develop the provisions for intertie bidding. Specifically, ACP explains that SPP has moved forward with its development of Markets+, another day-ahead market platform; thus, it is now possible that EDAM external interties will interface with another day-ahead market. As such, ACP requests that the Commission conditionally approve the current intertie-bidding structure for EDAM, contingent upon a requirement for CAISO to propose modifications on or before another day-ahead market platform in the West is scheduled to commence operations. ³¹⁶

229. Shell represents that CAISO's proposed limitations on economic bidding at interfaces between EDAM BAAs and non-EDAM BAAs raise transparency concerns. Shell states that section 33.30.8 of the proposed CAISO Tariff allows economic bids to be submitted by generation resources that have a contract to serve load in a non-EDAM BAA and (1) are scheduled dynamically or pseudo-tied to the external BAA, or (2) are designated network resources by the non-EDAM BAA's load. ³¹⁷ Shell states that non-source-specific supply or contractually defined resources that schedule normally must self-schedule rather than being able to economically bid. Shell argues that this may introduce unreasonably high congestion or basis price risks for transactions. ACP and Shell also state that the inability of non-source-specific, non-contracted supply to self-schedule or economically bid into EDAM risks creating inconsistencies amongst EDAM Entities. ³¹⁸

230. Finally, Shell argues that it would be preferable to have a consistent mechanism to enable economic bidding at EDAM external interties within the Tariff, rather than allowing economic bidding at interties to be enabled by the EDAM Entity under section 29.34(i)(2) of the existing CAISO Tariff. ³¹⁹

231. DMM states that CAISO proposes that DMM and CAISO monitor and report on activity related to certain external resource participation scenarios, such as the "volume of day-ahead non-resource specific schedules that fail to submit valid e-Tags prior to

³¹⁵ Interwest Comments at 6.

³¹⁶ ACP Comments at 13.

³¹⁷ Shell Protest at 9 (citing Transmittal at 155-60).

³¹⁸ *Id.* at 10; ACP Comments at 6.

³¹⁹ Shell Protest at 8-9.

conclusion of the WEIM RSE.”³²⁰ To monitor these scenarios, DMM states CAISO will need to provide DMM all relevant e-Tag data for any transaction that goes into or out of any EDAM or WEIM BAA. However, DMM notes such monitoring and reporting is unlikely to be sufficient for preventing undesirable behavior and recommends that CAISO and stakeholders consider more nuanced rule and design changes to better prevent the same capacity from being counted more than once towards EDAM BAAs’ RSEs.³²¹

232. DMM also notes that CAISO’s proposal would model a non-resource specific import counted towards an EDAM BAA’s RSE as a distributed injection at the sink BAA’s demand aggregation points. DMM requests that CAISO clarify whether it is the EDAM resource scheduling coordinator or the EDAM Entity scheduling coordinator that is expected to execute the base transfer deviation and what market—the CAISO day-ahead market or an external market—it settles in. Additionally, DMM asks what the settlement implications are for the EDAM resource, the source and sink EDAM Entities, and the import resource. DMM also inquires what the settlement rules would be if the non-resource specific import into the CAISO BAA was at an interface with a non-EDAM BAA, and the source was tagged from an EDAM BAA, through that non-EDAM area, to the CAISO border.³²²

iii. Answer

233. In response to ACP, CAISO states that there is no reason for the Commission to condition approval of the proposed intertie bidding structure for EDAM on CAISO proposing modifications on or before the date another day-ahead market platform in the West is scheduled to commence operations. CAISO further states that there has been no showing that the WEIM external resource participation rules or their extension to EDAM would not be just and reasonable. CAISO notes that it is unclear how the Commission could accept any proposed solution at this time given such a change would create conflict with the existing market rules for WEIM external resource participation. CAISO notes

³²⁰ DMM Comments at 24-25 (quoting CAISO, Extended Day-Ahead Market Final Proposal at 68 (Dec. 7, 2022)).

³²¹ *Id.* at 26-27 (stating, for example, that the overall design may benefit from crafting more explicit rules prohibiting supply that has received an EDAM energy or capacity award, and that therefore has a real-time must offer obligation, from supporting a non-source specific import that was counted towards each BAA’s EDAM resource sufficiency requirements).

³²² *Id.* at 27-28.

that it will work with its stakeholders and other interested entities to address concerns on this matter.³²³

234. In response to Shell's contention that proposed limitations for external resources to submit economic bids may introduce unreasonably high congestion and/or basis price risks for transactions, CAISO emphasizes that external resource participation in organized markets must appropriately account for uncertainties associated with supply delivery. With respect to other BAAs participating in EDAM, CAISO states there may be a need for additional transmission service provider rules that appropriately accommodate external participation.³²⁴

235. CAISO addresses DMM's comments by clarifying that all non-resource-specific intertie resources at the EDAM scheduling points will be subject to the same structure and the hour-ahead scheduling process rule will be equally applied. CAISO also clarifies that a non-resource-specific import from an EDAM BAA would be modelled as an EDAM transfer associated with a contract reference number, energy transfer system resources, and a self-schedule linked back to a resource in the EDAM BAA. CAISO notes it is developing the implementation details through its BPM development process and training materials that will respond to the intricacies raised by DMM.³²⁵

236. In response to arguments from ACP and Shell about EDAM's prohibition against non-source specific, non-contract supply self-scheduling or economically bidding at external interties unless provided for in current Tariff section 29.34(i)(2), CAISO states that the same is true today, where economic participation at external interties is optional for each balancing authority to determine.³²⁶ CAISO reiterates that such participation can introduce operational risk that the supply may not be deliverable, can displace other supply, and can force the balancing authority to replace the supply in real-time.³²⁷ CAISO further states that it will work with stakeholders to address any concerns based on actual operational experience and understood circumstances.

³²³ CAISO Answer at 110.

³²⁴ *Id.* at 110-11.

³²⁵ *Id.* at 112.

³²⁶ *Id.* at 153-54; eTariff, § 29.34 EIM Operations (25.0.0), § 29.34(i)(2).

³²⁷ CAISO Answer at 154 (citing Transmittal at 156, 159-60).

iv. **Determination**

237. We find that CAISO's proposal for allowing EDAM participation by source-specific and non-source-specific resources is just and reasonable. We find that CAISO's proposal maintains consistency with existing WEIM policies for participation of external resources and maintains consistency with the RSE.

238. We deny ACP's request to condition approval upon modifications prior to another day-ahead market platform in the West commencing operations. We agree with CAISO that it is unnecessary to condition acceptance of the proposal on future considerations, such as the emergence of a new day-ahead market platform in the West including SPP's Markets+ initiative. In declining to condition acceptance on other day-ahead market platforms commencing operations in the West, we find the calls to coordinate with future, as-yet-unfiled operations premature.³²⁸ We note that CAISO has committed to work with its stakeholders and other interested entities to address matters of concern regarding future day-ahead market platforms in the West.

239. We do not find persuasive Shell and ACP's assertion that CAISO's proposal to limit non-source specific resources' ability to economically bid or self-schedule may introduce inconsistencies, unreasonably high congestion, or basic price risks for transactions. We agree with CAISO that certain limitations on non-source specific external resources is a reasonable accommodation to mitigate risk that non-source specific supply that is not deliverable could displace internal generation; however, we note that, as in the WEIM, balancing authorities will continue to have the option to enable economic bidding at interties. Furthermore, as CAISO correctly identifies, the proposed prohibition against non-source specific, non-contract supply self-scheduling or economically bidding at external interties unless enabled, as provided in Tariff section 29.34(i)(2), is consistent with current practice in the WEIM. Accordingly, the EDAM proposal does not deviate from how the WEIM currently addresses non-source specific, non-contract supply. We also agree with CAISO that enabling or changing this framework could introduce operational risk that the supply may not be deliverable, may displace other supply, and may force the balancing authority to replace the supply in real-time. We therefore find that CAISO's proposed prohibition is just and reasonable, on balance, given that it can avoid these operational risks.³²⁹ However, we note that CAISO has committed to work with stakeholders on these matters based on actual operational experience.

³²⁸ By comparison, we address EDAM's interaction with the previously-accepted WRAP below in section IV.B.3.c.i (Transmission Framework).

³²⁹ We note that this limitation does not apply at the CAISO external interties but applies to non-CAISO EDAM BAAs external interties.

240. We also disagree with suggestions that CAISO should have a mechanism to enable economic bidding at external interties within the Tariff, rather than allowing economic bidding at interties to be enabled by the EDAM Entity under section 29.34(i)(2) of the existing CAISO Tariff. As in WEIM, EDAM necessitates both BAAs to have enabled economic bidding for the relevant market horizon in order to function; we disagree that this is a necessary condition to find the EDAM market design to be just and reasonable, noting that the EDAM proposal already accommodates a variety of external resource participation. Further, to mandate external BAAs or resources to enable day-ahead economic bidding capability is outside the scope of this proceeding. The Commission need only determine whether the proposal before us is just and reasonable, and not whether it is the most just and reasonable among all possible alternatives.³³⁰

c. Market Design

i. Transmission Framework

(a) Filing

241. CAISO explains that the proposed EDAM transmission framework maximizes transmission capacity available to the market, thus improving market efficiency, while respecting rights of transmission customers.³³¹ CAISO states that this framework will require each transmission service provider in an EDAM BAA to amend its OATT to account for market availability of transmission on its system. CAISO contends that the specific amendments to the individual transmission service providers' OATTs will be addressed in future filings submitted by those transmission providers and thus are beyond the scope of this proceeding.³³²

242. CAISO asserts that in EDAM, unlike in the WEIM where as-available transmission supports market optimization and real-time transfers, transmission capability available to support day-ahead schedules must remain available through the real-time market to ensure the integrity of day-ahead market results and provide confidence in transfers between BAAs.³³³ CAISO states that the transmission framework in EDAM has three elements, with certain distinctions associated with transmission used to support transfers between BAAs.

³³⁰ See, e.g., *Cities of Bethany*, 727 F.2d at 1136.

³³¹ Transmittal at 120.

³³² *Id.* at 121.

³³³ *Id.* at 123.

243. First, to properly account for transmission capability available to EDAM, CAISO proposes to require EDAM BAAs to provide necessary transmission system information such as their network model, transmission outages, and any scheduling limits so that the day-ahead market optimization and congestion management can account for physical internal and intertie transmission constraints.³³⁴

244. Second, CAISO proposes to give balanced self-schedules associated with legacy transmission contracts and third-party ownership rights (i.e., transmission service rights not otherwise subject to an EDAM Entity's OATT) a higher scheduling priority in the day-ahead and real-time markets than other self-schedules.³³⁵ CAISO explains that to receive this scheduling priority, the EDAM Entity must register the transmission rights with CAISO and obtain a contract reference number, similar to the requirements for transmission ownership rights registration requirements in CAISO. CAISO further proposes that balanced self-schedules associated with contract reference numbers have financial protection from congestion charges and losses and provides the option for such legacy contract rights holders to voluntarily make their transmission capacity available at interties between BAAs in exchange for transfer revenues.³³⁶

245. Third, CAISO proposes several provisions for how an EDAM Entity's transmission customers can exercise their OATT rights in the market. CAISO proposes to require firm point-to-point and network transmission customers to register their rights with CAISO and obtain contract reference numbers by associating their transmission service with sources and sinks within or external to the EDAM.³³⁷ According to CAISO, an OATT customer of an EDAM transmission service provider can submit a balanced self-schedule and receive a scheduling priority consistent with the terms of the applicable EDAM transmission provider's OATT if the self-schedule is submitted by 10:00 a.m., the close of the day-ahead market (i.e., 10:00 a.m. on the day prior to delivery).³³⁸ CAISO contends that the 10:00 a.m. submission deadline is a key element of EDAM and allows the day-ahead market to identify the volume of transfers between BAAs and ensure

³³⁴ *Id.* at 124-25; eTariff, § 33.4.2 EDAM Transmission Service Provider (0.0.0).

³³⁵ eTariff, §§ 33.16 EDAM Legacy Contracts (0.0.0), 33.17 EDAM Transmission Ownership Rights (0.0.0).

³³⁶ Transmittal at 126.

³³⁷ eTariff, §§ 33.18.1 Transmission at EDAM External Interties (0.0.0), 33.18.2 Transmission at EDAM Internal Interties (0.0.0), 33.18.3 Contract Reference Number (CRN) (0.0.0).

³³⁸ *Id.* § 33.18.3 Contract Reference Number (CRN) (0.0.0), §§ 33.18.3.1, 33.18.3.3.2.

EDAM BAAs can serve load reliably through the market. CAISO states that it expects intra-day (i.e., after 10:00 a.m.) schedule changes associated with OATT rights will be accommodated by the EDAM transmission service provider “if practicable,” consistent the *pro forma* OATT section 13.8, and that the EDAM transmission provider will make the ultimate determination whether any such schedule change is practicable. CAISO states that it will give firm OATT rights intra-day schedule changes higher priority than other real-time self-schedules and equal priority to day-ahead self-schedules, unless instructed otherwise by the EDAM transmission provider. However, CAISO continues, if there is insufficient redispatch capability in the real-time market to accommodate high priority self-scheduled transfers and demand, the two will be afforded equal priority.³³⁹ CAISO further provides that, if instructed by an EDAM transmission service provider, it will afford balanced intra-day self-schedules or schedule changes associated with a contract reference number, a higher priority in real-time market than cleared day-ahead self-schedules not based on specific firm OATT rights, including transfers between BAAs serving load.³⁴⁰ In CAISO’s view, these provisions afford firm OATT transmission customers more protection than the *pro forma* OATT contemplates.³⁴¹

246. CAISO avers that a key policy element of the EDAM market design is that resources in EDAM must have transmission reserved under the respective EDAM transmission service provider’s OATT and that the EDAM design establishes a transmission charge for schedules that do not have an associated transmission reservation. Specifically, CASIO states that the EDAM transmission service provider will assess a transmission charge to resources located in an EDAM BAA that submit a bid in the day-ahead market and have not reserved transmission capacity associated with their schedule under the applicable OATT through firm, conditional firm, or network integration service.³⁴² CAISO explains that this EDAM transmission service provider charge will be based upon the shortest duration of firm transmission service offered under the transmission service provider’s OATT, including any applicable penalties.³⁴³

³³⁹ Transmittal at 125-29; eTariff, § 33.7.5 EDAM Transfer Priority Relative to Demand (0.0.0).

³⁴⁰ eTariff, § 33.18.2 Transmission at EDAM Internal Interties (0.0.0), § 33.18.2.2.3; *id.* § 33.18.3 Contract Reference Number (CRN) (0.0.0), § 33.18.3.1.

³⁴¹ Transmittal at 127-30.

³⁴² eTariff, § 33.23 Transmission Service Requirements for EDAM Resources (0.0.0).

³⁴³ Transmittal at 131-32.

247. As a further safeguard for protecting transmission customer rights, CAISO offers that if an EDAM Entity or the EDAM Entity scheduling coordinator for the transmission service provider informs it that transmission availability should be restricted in the day-ahead market to accommodate the exercise of transmission customer rights, CAISO will adjust day-ahead market transmission availability on the affected transmission elements.³⁴⁴ CAISO expects requests to limit transmission availability to be infrequent because such limits are only appropriate where there are repeated market infeasibilities due to intra-day schedule changes. CAISO avers that, ultimately, the EDAM BAA and transmission provider must manage infeasibilities and it is appropriate to defer to them in removing transmission availability from the market.³⁴⁵

248. CAISO proposes to model transfer of energy, Imbalance Reserves, and Reliability Capacity among EDAM BAAs using “transfer system resources” using three categories of transmission availability: (1) internal intertie capacity an EDAM BAA makes available to import external supplies under contract to its LSEs by informing CAISO of the transmission capability available at each of its internal interties for such transfers; (2) transmission capacity associated with legacy contracts and OATT rights that can be self-scheduled, as described above, or released to the market in return for transfer revenues; and (3) unsold available transmission capacity at the interface of two EDAM balancing authorities that must be calculated per an EDAM BAAs’ OATT and communicated to CAISO for inclusion in the day-ahead market for optimizing transfers. Regarding the third category, CAISO states that the EDAM balancing authority may resume sales of available transfer capability after the day-ahead market results are published and CAISO produces a report identifying how much intertie transfer capability remains unused.³⁴⁶

249. CAISO explains that it considered and responded to several stakeholder concerns in its final proposal, for example by: (1) clarifying that legacy and firm OATT rights remain eligible for scheduling after the close of the day-ahead market into real-time where WEIM scheduling practices would apply; (2) affording intra-day legacy and firm OATT rights higher priority than other cleared day-ahead self-schedules if instructed by an EDAM transmission provider; and (3) providing for carve-out available transmission capacity if the EDAM BAA finds it necessary and consistent with its OATT. Regarding concerns about the interaction of WRAP and EDAM, CAISO clarifies that allowing an EDAM Entity to instruct CAISO to treat intra-day firm OATT self-schedules with higher priority than other day-ahead self-schedules means such OATT transmission rights may

³⁴⁴ eTariff, § 33.18.3 Contract Reference Number (CRN) (0.0.0), § 33.18.3.3.

³⁴⁵ Transmittal at 134-35.

³⁴⁶ Transmittal at 132-34; eTariff, § 33.18.2 Transmission at EDAM Internal Interties (0.0.0).

support WRAP schedules, if such priority treatment arises out of the EDAM transmission provider's OATT.³⁴⁷

(b) Comments/Protests

250. AEU states that EDAM could improve transmission efficiency and reliability and lower costs by advancing the transition of participating entities' transmission from contract-path to flow-based operation. AEU further states that the EDAM market will provide significantly greater transparency into transmission congestion and its associated costs through transparent locational marginal pricing, which can improve both transmission owner and third-party transmission planning and strengthen the incentives to develop new transmission where it is needed most.³⁴⁸

251. Six Cities argue that rules for transmission service in the EDAM area must ensure confidence in EDAM transfers and equal priority of service to load throughout the market. Six Cities state that while it supports, or does not oppose, the structure and framework described in CAISO's filing for the use and availability of transmission in EDAM, it seeks clarification on several elements of the filing, including: (1) confirmation that CAISO LSEs will not incur additional charges in connection with the belated exercise of OATT scheduling rights by transmission customers on systems external to CAISO, nor will transmission service to CAISO entities be impaired as a result of these entities' delayed exercise of their rights; (2) confirmation that the language used in CAISO's proposed Tariff revisions related to the formulation of scheduling priorities is not, in any way, intended to create priorities of service throughout EDAM that will impair the confidence in the EDAM transfers that will be necessary to serve CAISO load; and (3) clarification regarding which transmission in EDAM is intended to support WRAP and, to the extent that there are any special requirements applicable to WRAP transactions, how those will be integrated into EDAM.³⁴⁹

252. Six Cities express concerns regarding the ability and willingness of rights holders to make transmission available for the optimization, or whether there are opportunities for rights holders to inappropriately withhold transmission or engage in strategic decision-making about how to deploy their rights within the EDAM. Six Cities explain that rights holders may refuse to make transmission available through sales to parties that may need such transmission to demonstrate deliverability of resources needed for the RSE, particularly if rights holders perceive more favorable economics associated with the use of their rights under the options available for transmission customer participation.

³⁴⁷ *Id.* at 138-43.

³⁴⁸ AEU Comments at 8-9.

³⁴⁹ Six Cities Comments at 4-11.

Six Cities request that the market monitors evaluate these elements related to transmission availability and use, with a view toward ascertaining if appropriate protections against the exercise of transmission market power are in place and whether additional protective measures are needed.³⁵⁰

253. WPP states that a critical aspect of WRAP is that participants can use their firm transmission rights to ensure deliverability of their forward showing resources. WPP notes that CAISO includes language in its Tariff revisions that would allow a transmission service provider to notify CAISO that a self-schedule is associated with firm service and have that self-schedule be accorded a higher priority. WPP is concerned, however, that setting the priority for intra-day self-schedules equal to day-ahead market schedules could undermine the value proposition of WRAP by making the deliverability of WRAP resources more uncertain. WPP seeks confirmation of its understanding of the provisions allowing a transmission customer, through its transmission provider, to make its transmission unavailable to EDAM. WPP also asks CAISO to clarify the timing and process requirements for individual transmission service provider tariff filings, and to confirm that transmission service providers are prohibited from imposing additional conditions on transmission customers that would impact or limit their ability to afford intra-day schedule changes a higher priority than EDAM transfers.³⁵¹ Idaho Power states that CAISO appears to have come to a workable compromise that allows the market maximum transmission usage while providing mechanisms for firm OATT transmission customers to use their rights within the market construct.³⁵² Similarly, Arizona Utilities urge the Commission to encourage CAISO to continue to work closely with the WPP to address interoperability between WRAP and DAME.³⁵³

254. PIOs express appreciation for CAISO's efforts to develop a Tariff that seeks to maximize the amount of transmission made available and support the general transmission availability framework. PIOs believe that eventually a flow-based transmission framework that enables transparent use and allocation, maximizes efficiency, and ensures fairness in compensation will result in significant reliability and economic benefits for participants across the EDAM area. Additionally, as EDAM participants implement interoperability with overlapping resource adequacy frameworks,

³⁵⁰ *Id.* at 13-14.

³⁵¹ WPP Comments at 11-16.

³⁵² Idaho Power Comments at 5.

³⁵³ Arizona Utilities Comments at 14.

PIOs request that the Commission encourage consistency across entities' OATTs, potentially through regular reporting on transmission access and use in EDAM.³⁵⁴

255. CMUA states that it supports CAISO's proposal to honor the existing rights and OATT-service obligations of EDAM transmission service providers, consistent with principles articulated in applicable Commission orders and regulations. CMUA also supports CAISO's proposal that transmission associated with an EDAM RSE, and unused available transmission capacity, be made available to the market optimization. CMUA seeks assurance that nothing in the EDAM design erodes these existing OATT rights or affects the operation of the current CAISO market.³⁵⁵

256. BANC states that CAISO's treatment of OATT rights in EDAM is at least as good as that provided under section 13.8 of the *pro forma* OATT. BANC argues that CAISO will have a more robust set of resources to accomplish redispatch and accommodate OATT rights as compared to a standalone BAA. BANC argues that the EDAM design both honors existing contractual and OATT rights in a manner equal or superior to rights under the OATT and seeks to ensure opportunity to exercise unused rights.³⁵⁶

257. NV Energy states that with the appropriate protections for existing OATT customers to self-schedule and to continue to export from the EDAM area, it supports the EDAM transmission availability paradigm. NV Energy argues that CAISO's transmittal letter creates confusion regarding the ability of OATT customers to continue to make intra-day changes while preserving the firmness of their reserved transmission capacity. NV Energy states that the transmittal letter suggests that there are two classes of firm OATT rights—one worthy of hold harmless protection and one that should be accommodated only if practicable. NV Energy asserts that such a formulation is incorrect given the Commission's policy that there are no flavors of firm transmission under the *pro forma* OATT.³⁵⁷

258. NV Energy also argues that proposed Tariff section 33.18.2.2.3 can be made to work if there is a common understanding among CAISO and EDAM Entities that firm point-to-point reservations will be given higher priority, whether scheduled in the day-ahead market or intra-day, which ensures all firm transmission reservations are treated equally. With respect to conditional firm reservations, NV Energy argues that the transmission provider would provide CAISO with instructions related to the periods

³⁵⁴ PIOs Comments at 5-6.

³⁵⁵ CMUA Comments at 5.

³⁵⁶ BANC Comments at 10-11.

³⁵⁷ NV Energy Comments at 9-10.

under which the conditions will apply, which retains the value of firm transmission rights by providing the customer with a higher market scheduling priority for intra-day self-schedules. NV Energy avers that CAISO addressed the potential interoperability issues with WRAP by using pricing parameters in the optimization to hold customers harmless for their existing OATT schedule change rights. NV Energy asserts that transmission capacity would be carved out only if schedule changes are persistent and cause concerns with redispatch, meaning the risk is no different to OATT customers than under their pre-EDAM rights.³⁵⁸

259. PacifiCorp argues that while work remains to be done in the OATT reform processes, CAISO's transmission rights and scheduling proposals are just and reasonable. PacifiCorp asserts that it is critical to protect the firm OATT service that customers under the OATT have a right to expect, but on the other hand, the nature of scheduling of flows under the traditional OATT must give way to self-schedules for the market to work. PacifiCorp avers that the benefit of EDAM is that the market algorithm determines the least-cost security constrained solution across the entire EDAM area, including which units should serve the aggregate load, and that this economic dispatch model is what leads to the efficiencies of the market and the resulting customer savings. PacifiCorp explains that the high market-clearing priority embedded in the self-scheduling mechanism ensures transmission customers' resources serve the transmission customers' load.³⁵⁹

260. Although the EDAM proposal does not include conversion of physical OATT rights to CRR or similar financial rights used in other RTO markets, PacifiCorp states that CAISO devised a different mechanism to help offset OATT customer exposure to these market charges by collecting congestion charges from load and allocating the revenues to the BAA in which congestion occurs. PacifiCorp comments that CAISO's mechanism protects legacy contracts and ownership rights through a perfect hedge that backs out congestion and losses to that category of customer. PacifiCorp supports CAISO's decision to not use that treatment for OATT customers, stating that this method has the potential to return the congestion revenues to OATT customers without regard to contract path or quantity associated with their schedule, while noting that the sub-allocation of congestion revenue received from CAISO by the EDAM Entity will be governed by the entity's OATT, and those specific terms have not yet been developed.³⁶⁰

261. PacifiCorp states that the EDAM proposal presents an additional opportunity for OATT customers to earn an allocation of transfer revenue when they make intertie rights

³⁵⁸ *Id.* at 10-12.

³⁵⁹ PacifiCorp Comments at 11-12.

³⁶⁰ *Id.* at 12-14, 14 n.31.

available to the market for optimization. Specifically, PacifiCorp explains that the use of intertie rights will be subject to a special scheduling protocol under the three pathways described in section 33.18.2.2 of the Tariff and that the market's use of these intertie rights will give rise to transfer revenue, which is allocated to the market participant that made the transmission available to the market. PacifiCorp avers that CAISO reasonably preserves the firm nature of OATT service in a manner that is consistent with or superior to the *pro forma* OATT.³⁶¹

262. Finally, PacifiCorp states that the EDAM proposal appropriately addresses WRAP needs as CAISO's proposal includes a just and reasonable approach for facilitating resource adequacy. PacifiCorp explains that CAISO's proposal would integrate limited scheduling priority preferences and transmission carve-outs in discrete circumstances, noting that granting "across the board" exemptions might undermine EDAM functionality.³⁶²

263. Google notes that CAISO's proposal for transmission scheduling, which provides an opportunity for firm transmission rights customers to self-schedule after the day-ahead market, is a way to preserve BAA autonomy while also building confidence in the market. However, Google notes that there may be instances where a path is both scheduled in the market and subsequently self-scheduled, leading to potential infeasibility.³⁶³

264. SDG&E supports the design of transmission availability and believes that it honors OATT rights and appropriately accounts for historical revenue recovery. SDG&E is concerned that there could potentially be a mismatch between the reliability of import and export legs of an economic wheel through where the CAISO BAA would assume the risk of firming up an EDAM transfer but see no benefit to the CAISO BAA by doing so. SDG&E encourages monitoring to ensure that no unintended cost shifts occur when last minute transmission schedule changes are made due to self-schedules.³⁶⁴

265. DMM supports CAISO's proposal to address transmission rights that are neither released to EDAM nor used by customers by close of the day-ahead market by allowing each EDAM Entity to determine how the real-time market will prioritize those rights relative to day-ahead market schedules and native load if the transmission customer self-schedules energy over those rights after the day-ahead market. DMM explains that

³⁶¹ *Id.* at 14-15.

³⁶² *Id.* at 16-18.

³⁶³ Google Comments at 7-10.

³⁶⁴ SDG&E Comments at 4-7.

providing each EDAM BAA the choice of how it prefers to prioritize late transmission service requests seems to align with the intent of the *pro forma* OATT and helps integrate OATT practices and procedures in the rest of the West with CAISO's centralized market structure.³⁶⁵

266. Regarding proposed Tariff section 33.7.5, DMM states its understanding is that there is a difference between how real-time optimization software will prioritize between demand and EDAM transfers, and how operators in an EDAM BAA that has to curtail load and/or EDAM transfers will prioritize between demand and EDAM transfers. DMM notes, however, that it has not identified Tariff language that defines the policy for how real-time optimization will prioritize between demand and EDAM transfers, though it believes the policy in the final proposal clarifies the software will prioritize EDAM transfers over demand. DMM requests that CAISO clarify its intention to implement the prioritization of EDAM transfers over demand in real-time market software, and to consider revising the proposed Tariff language if necessary to ensure this aspect of the final policy proposal is effectuated.³⁶⁶

267. SoCal Edison states the EDAM transmission availability provisions will allow for all transmission to be made available and efficiently used by EDAM, including: (1) transmission necessary for each EDAM BAA to meet its own resource sufficiency requirements; (2) existing transmission contracts or transmission ownership rights held by customers of the EDAM transmission entity; and (3) unsold transmission of the EDAM BAA transmission entity itself.³⁶⁷

268. Idaho Power states that CAISO's proposal allows customers with transmission service rights under the *pro forma* OATT to elect how to use those rights in EDAM. Idaho Power states that firm point-to-point reservations would be registered and given higher priority, allowing for self-scheduling backed by an OATT rights mechanism, and ensuring that all firm transmission reservations are treated equally. Further, Idaho Power states that the transmission provider would provide CAISO with instructions related to periods under which the conditions would apply only with respect to conditional firm reservations. Idaho Power emphasizes the importance of protecting the firm transmission rights of its OATT customers as an integral construct of the EDAM proposal.³⁶⁸

³⁶⁵ DMM Comments at 30.

³⁶⁶ *Id.* at 20.

³⁶⁷ SoCal Edison Comments at 7.

³⁶⁸ Idaho Power Comments at 3-4.

269. CalCCA argues that because EDAM transmission providers' OATTs may require self-schedules with higher priority than the schedule provided by the day-ahead market, CAISO should allow those BAAs to indicate when their OATT requires self-schedules to supersede cleared day-ahead schedules.³⁶⁹ SMUD states that it is supportive of CAISO's implicit requirement that transfers are accorded comparable treatment to native load.³⁷⁰

270. Portland General states that the EDAM proposal allows for transmission customers to designate certain transmission rights to ensure compliance with the WRAP deliverability framework by allowing the market to use all transmission capacity available while honoring existing legacy and long term OATT rights. As such, Portland General states that the EDAM transmission framework allows for the maximization of economic value through energy markets while preserving the reliability framework that supports WRAP.³⁷¹

271. PG&E asserts that the provisions allowing rights holders to exercise their real-time scheduling rights correctly assign redispatch costs based on cost causation principles.³⁷²

272. Powerex seeks clarification by CAISO in two discrete areas. According to Powerex, firm transmission service under the *pro forma* OATT provides transmission customers with (1) priority to flow ahead of others, and (2) the benefit of receiving the difference in the value of electricity delivered between two locations connected by firm transmission rights. Powerex asserts that these features of firm transmission service are increasingly important in load-serving entities' confidence in forward procurement of supplies as Western markets tighten.³⁷³

273. Powerex avers that whereas in the *pro forma* OATT unscheduled firm transmission service can be released and offered strictly on a non-firm basis to others, firm transmission right-holders continue to have the ability to use their unscheduled rights after the release and all the way up to the delivery hour and any non-firm customers will be curtailed first if both firm and non-firm customers cannot be accommodated. In contrast, Powerex states that under proposed Tariff sections 33.18.2.2.3 and 33.18.3.1, any firm transmission rights that are scheduled after 10:00 a.m. the day prior to delivery will have a priority in the real-time market equal to cleared day-

³⁶⁹ CalCCA Comments at 3.

³⁷⁰ SMUD Comments at 3.

³⁷¹ Portland General Comments at 5.

³⁷² PG&E Comments at 5-6.

³⁷³ Powerex Comments at 6-8.

ahead self-schedules, including transfer schedules between BAAs serving load. Powerex alleges that this essentially amounts to reselling unused firm transmission as firm each day beginning at 10:00 a.m.³⁷⁴

274. Powerex states that while CAISO has attempted to address this concern with Tariff language that permits an EDAM participant to instruct CAISO to afford balanced intra-day self-schedules of firm OATT transmission right-holders a higher priority in real-time, CAISO's proposed default treatment is not consistent with Commission policy or consistent with or superior to the *pro forma* OATT. Powerex asks that CAISO provide additional Tariff language or otherwise confirm its commitment that EDAM transfers that use firm transmission rights that have not been affirmatively made available to EDAM will have lower priority compared to those firm rights under all circumstances. In addition, Powerex notes that CAISO has explained that firm OATT right-holders can use their rights on an intra-day basis, but only by submitting balanced self-schedules by the close of the real-time market, generally set as 57 minutes prior to the start of delivery hour (T-57).³⁷⁵ Powerex asserts that it would be inappropriate for firm transmission right-holders to be restricted from submitting fixed hourly block schedules at T-57 and for any increased deliveries after T-57 to fail to receive firm priority of flow. Powerex requests that CAISO confirm, and file appropriate Tariff amendments, to make clear that firm right-holders will be able to communicate to the respective transmission service providers the range of intended deliveries in the delivery hour, with the final quantities communicated subsequently consistent with applicable scheduling deadlines.³⁷⁶

275. ACP states that the current transmission availability framework is flawed. Specifically, ACP is concerned that certain proposed Tariff provisions may incentivize generators that own transmission rights within EDAM to self-schedule their output in EDAM more than is necessary. ACP explains that it is concerned that the potential over-reliance on self-schedules could reduce EDAM's benefits by clogging up transmission availability with transactions that may not actually flow and by reducing the amount of generation that is economically offered into the market. As such, ACP requests that the Commission require CAISO to submit ongoing informational reports on the self-schedules within EDAM and evaluate potential enhancements to the transmission availability approaches.³⁷⁷

³⁷⁴ *Id.* at 8-10.

³⁷⁵ *Id.* at 10-12 (citing Transmittal at 128-29).

³⁷⁶ Powerex Comments at 12-13.

³⁷⁷ ACP Comments at 9-11.

276. ACP explains that the addition of new language to Tariff section 33.18.3.1 will allow EDAM transmission service providers to inform CAISO when a late submitted transmission schedule on firm transmission rights should have scheduling priority over day-ahead self-schedules. ACP supports these modifications and requests that the Commission accept these provisions and direct CAISO to make informational filings on the implementation of this provision after EDAM becomes operational.³⁷⁸

277. WAPA states that, since it has statutory obligations to serve project use load with the highest priority using federal hydropower and federal transmission, it may need to negotiate additional terms that allow it to meet these obligations. WAPA urges that the EDAM market design must ensure that the project use loads are getting proper access to federal power without added costs or constraints on deliveries. WAPA requests the highest scheduling priority and an exemption from congestion costs when WAPA uses its transmission to serve its project use loads.³⁷⁹

278. WAPA states that due to the difference in transmission loss accounting between WAPA and EDAM, WAPA would lose a significant source of revenue if it changes its current loss accounting practice and consequently increases its power revenue requirements that must be collected from all its power customers, including those that are already in the CAISO BAA. WAPA requests an exemption to maintain its current transmission loss accounting approach.³⁸⁰ Redding explains that it is a customer of WAPA and therefore shares WAPA's concerns about transmission revenue issues, including transmission loss accounting and transparency of EDAM charges. Redding supports WAPA's efforts to establish any mechanisms that will protect its ability to recover costs of its transmission system.³⁸¹

279. Bonneville objects to the requirement to notify CAISO to avoid having firm transmission rights be given equal priority with day-ahead schedules. Bonneville states that special notification should not be required for a transmission customer to have the same priority firm transmission rights provided today under an OATT.³⁸²

280. Shell asserts that the EDAM proposal leaves too many components to interpretation and implementation by individual transmission providers outside the

³⁷⁸ *Id.* at 12.

³⁷⁹ WAPA Comments at 6.

³⁸⁰ *Id.* at 5-6.

³⁸¹ Redding Comments at 3-4.

³⁸² Bonneville Comments at 13.

CAISO footprint. Shell states that while CAISO has proposed a general framework for EDAM coordination in proposed Tariff section 33.18, CAISO has not proposed Tariff language that explains how EDAM transmission providers will hold firm point-to-point, network integration transmission service, and pre-Order No. 888 legacy transmission customers harmless from EDAM transfers, congestion costs, or redispatch costs incurred when scheduling transmission rights between the EDAM scheduling deadline and real-time.³⁸³

281. Shell agrees with ACP that there are other areas of EDAM-wide market consistency that should be addressed. Shell and ACP argue that resource types eligible to participate in EDAM might differ on an entity-to-entity basis, and that Tariff section 33.23 affords EDAM transmission service providers with the ability to charge either a daily firm or hourly firm transmission service rate to EDAM market participants that do not meet other transmission provisions.³⁸⁴

(c) Answer

282. CAISO asserts that its transmission availability provisions are carefully designed to strike an appropriate balance between respecting transmission rights under legacy contracts and the *pro forma* OATT, while providing sufficient transmission to the market to benefit customers across the West.

283. CAISO asserts that WPP's request for clarification on CAISO's transmission scheduling proposals as they relate to WRAP scheduling requirements in advance of the day-ahead market are beyond the scope of this proceeding.³⁸⁵ In response to WPP's request for confirmation that day-ahead self-schedules submitted by WRAP participants with firm transmission service will be given priority over economic transfers in real-time, CAISO confirms that it will provide market clearing priority above day-ahead EDAM transfers for "properly qualified rights with notification" if redispatch or other actions by the host EDAM BAA are unable to resolve any scheduling infeasibility. CAISO further states that any additional schedule adjustments may be done by the EDAM transmission service provider who is responsible for managing schedules and flows on its system.³⁸⁶ In response to WPP's request for confirmation that self-schedules associated with firm or conditional firm transmission service submitted after the day-ahead market have priority over other schedules, CAISO explains that it will take direction from EDAM

³⁸³ Shell Protest at 7-8.

³⁸⁴ *Id.* at 7-8; ACP Comments at 5-6.

³⁸⁵ CAISO Answer at 84-86.

³⁸⁶ *Id.* at 86-87.

transmission service providers with respect to OATT rights exercised after the day-ahead market, without condition. CAISO states that once a contract reference number representing OATT rights is configured in its system as high priority based on an EDAM transmission service provider's instruction, CAISO will not have further discretion to ignore the requested schedule change. CAISO explains that it anticipates receiving any schedule changes associated with appropriately configured contract reference numbers by 75 minutes prior to the operating hour (T-75) and will fully reflect them in the hour-ahead scheduling process. CAISO explains that any schedule changes after T-75 and up to T-40 would be submitted by the EDAM BAA as a pre-hour schedule change and can be updated through the real-time market while any schedule changes between T-40 to T-20, depending on the timing, will be reflected in the 15-minute market or will be accommodated as instructed imbalance energy outside of the real-time market. CAISO states that implementation details for this process will be provided in the BPM for EDAM and confirms that properly qualified rights will have a market clearing penalty price higher than cleared day-ahead EDAM transfer schedules.³⁸⁷

284. CAISO contends that WPP's requested clarification about the timing and process for individual EDAM transmission service providers' OATT revisions to implement the EDAM transmission availability framework is premature. CAISO states that it cannot prejudge what provisions those parties planning to participate in EDAM may decide to include in their filings regarding transmission service on their systems. Similarly, CAISO argues that WPP's request for greater clarity regarding intra-day process for maintaining transmission service priority would require addressing issues in advance of future filings by EDAM transmission service providers and is premature.³⁸⁸

285. In response to WPP's requested confirmation that, pursuant to section 33.18.3.3, transmission customers will be able to carve-out their firm transmission rights from EDAM, CAISO asserts that it expects that conditions warranting such a carve-out will be limited and that the transmission customer's option to exercise firm transmission rights at a higher market clearing priority above cleared day-ahead EDAM transfer schedules in real-time is a more efficient use of transmission capacity and should be implemented instead of carve-outs where possible. CAISO explains that the details of how carve-outs will be communicated to CAISO by EDAM transmission service providers will be included in its BPMs and any details regarding how a transmission customer can request a carve-out will be specified in the OATT of each EDAM transmission service provider and, therefore, is outside the scope of this proceeding.³⁸⁹

³⁸⁷ *Id.* at 88-89.

³⁸⁸ *Id.* at 90-91.

³⁸⁹ *Id.* at 92-93.

286. Responding to Six Cities' request for clarification, CAISO explains that new Tariff section 33.18.2.2.3 affords discretion to EDAM transmission providers, consistent with their OATTs and their roles as transmission providers and balancing authorities, to inform CAISO of the priority to afford particular exercise of firm/conditional firm OATT rights in the real-time market across its own system and that this provision does not confer transmission rights on other transmission systems, which naturally includes a determination of relative priority. CAISO explains that transmission service on the CAISO controlled grid is provided under new Tariff section 33.18.4, which specifically references section 23 and Appendix L with respect to the provisions of transmission service on CAISO interties and that this separation within section 33.18 and the additional cross-reference intentionally distinguish transmission service on the CAISO controlled grid from transmission service on an EDAM transmission service provider system under that Tariff.³⁹⁰

287. CAISO explains that, with respect to EDAM transmission service provider systems, a transmission customer may exercise its firm OATT rights across the system to an adjacent intertie and that the exercise of these rights will be afforded a priority across an EDAM transmission service provider system consistent with its OATT without impacting the priority afforded the exercise of the OATT rights on other EDAM transmission systems. CAISO states that to the extent the customer wanted to exercise its OATT rights across multiple EDAM transmission systems, its real-time market self-schedule would need to exercise the OATT rights across all of those systems in order to receive the available market scheduling priority across the full path and that, to the extent those rights are not exercised across the full path, the schedule would not be afforded the priority commensurate with exercise of the OATT rights as supported by the Tariff.³⁹¹

288. CAISO clarifies, in response to Six Cities, that Tariff section 33.18.2.2.3 is intended to recognize the deference afforded to any EDAM transmission service provider administering its own OATT and the terms and conditions of associated transmission contracts, not specifically to support WRAP participants. CAISO reiterates that this section is not intended to imply that it can be used by only a subset of customers or otherwise limit application to WRAP transactions or other uses of transmission rights through the real-time market as it is intended to respect the exercise of firm transmission rights in CAISO's market. CAISO further states that, ultimately, the EDAM transmission service provider will need to identify within its OATT the nature of

³⁹⁰ *Id.* at 64.

³⁹¹ *Id.* at 65.

transmission service rights on its system and if, when, and how it would request application of this provision of the Tariff.³⁹²

289. Responding to Six Cities' concerns about transmission rights and market power, CAISO avers that concerns that there are paths across the West, particularly interties between California and the Northwest, with limited availability of transmission capability or with a high concentration of transmission rights is widely understood. However, CAISO states that it is less clear whether there exists potential for the exercise of transmission market power and, if so, what the impacts there may be to the market or, more specifically, whether in such instances the ability to tag certain transactions consistent with Tariff requirements may be impacted.

290. CAISO explains that the potential for transmission market power on certain constrained paths may exist today absent EDAM due to limited available transmission capability and the holding of transmission rights by a few entities, and EDAM does not introduce or exacerbate that risk. CAISO explains that the applicable transmission providers, administering transmission service under their OATTs, ultimately have the responsibility to identify and resolve issues associated with availability and reservation of transmission service on their transmission systems. CAISO states that it will work with EDAM participants and monitor how transmission is being made available and tagged to support EDAM transactions and, based on operational experience and information gathered through monitoring, CAISO will engage with stakeholders and evaluate any issues that may come up. CAISO avers that this consideration will be a priority as EDAM gets underway and expands over time.³⁹³

291. In response to CMUA, CAISO explains that the proposal to afford deference to the transmission provider to inform CAISO of the market scheduling priority for the exercise of firm OATT rights in the real-time market will not undermine performance of CAISO markets and the operation of the CAISO BAA in the context of those markets because transmission service within the CAISO BAA, although provided separately, is accounted for consistently in the market optimization under the Tariff, similar to how accounting for transmission in the WEIM functions today.³⁹⁴

292. In response to ACP's concerns over potential over-reliance on self-schedules reducing the benefit EDAM can provide by clogging up transmission availability, CAISO explains that these concerns do not undercut the justness and reasonableness of CAISO's EDAM proposal and that the market optimization determines flow based on all offers in

³⁹² *Id.* at 65-66.

³⁹³ *Id.* at 67-68.

³⁹⁴ *Id.* at 68-69.

the market, including self-schedules, and mechanisms are in place to address the use of self-schedules in the day-ahead market, including buyback options between day-ahead and real-time. CAISO avers that any congestion potentially caused by self-schedules must be accounted for in the market, and while self-scheduling practices may be increased at the outset while market participants gain experience, it anticipates that participants would increase their participation in the market through economic bidding over time.³⁹⁵

293. CAISO states that there is no need for the Commission to direct CAISO to evaluate potential enhancements to the transmission availability approaches in a year-one EDAM enhancements stakeholder initiative, as requested by ACP. CAISO states that, based on operational experience, it is committed to ongoing consideration of proposals to address significant issues that may arise, and to develop appropriate enhancements for future consideration by the Commission. CAISO avers that this approach is consistent with the evolution of the WEIM, with numerous enhancements having been presented and accepted by the Commission over the years, though any such specific future design change and potential enhancement are beyond the scope of this proceeding.³⁹⁶

294. With regard to NV Energy's concern about whether CAISO's filing creates confusion regarding the ability of OATT customers to continue to make intra-day changes while preserving the firmness of their reserved transmission capacity, CAISO acknowledges that it did reference the language in section 13.8 of the *pro forma* OATT which provides: "Schedules submitted after 10:00 a.m. will be accommodated, if practicable." CAISO believes this provision is relevant to the consideration of how firm OATT rights not scheduled by 10:00 a.m. day-ahead will be treated. CAISO explains that this proposal does not create a distinction between classes of firm rights holders, and there was no intention of doing so. CAISO avers that it would anticipate that EDAM transmission service providers would amend their OATTs, not to provide different classes of firm transmission rights, but to clarify the process by which firm transmission rights scheduled after the 10:00 a.m. deadline will be accommodated under EDAM. CAISO explains that the Tariff describes how firm OATT rights can be exercised in the day-ahead market and then, separately, if those same rights are not exercised, how they may be exercised in the real-time market. CAISO asserts that new Tariff section 33.18.2.2.3 defers to EDAM transmission service providers to identify and inform CAISO in advance of the priority it would otherwise expect to afford exercises of firm OATT rights on its system and that, in this way, the real-time market offers a more efficient mechanism for the administration of firm OATT rights that otherwise would need to be managed by the EDAM transmission service provider in real-time should an

³⁹⁵ *Id.* at 69-70.

³⁹⁶ *Id.* at 70.

infeasibility result from the market optimization. CAISO states that it is not proposing that EDAM transmission service providers would need to establish a new class of firm OATT rights.³⁹⁷

295. In response to WAPA's request for an exemption both to maintain its current transmission loss accounting approach and to provide its project use loads a higher transmission priority, CAISO states that it is engaging with WAPA on this issue and that any such exemptions should be considered as part of entities' participation agreements.³⁹⁸

296. In response to Bonneville's argument that special notification should not be required for a transmission customer to have the same priority firm transmission rights provided today under an OATT, CAISO explains that it has developed a number of provisions consistent with section 13.8 of the *pro forma* OATT to accommodate intra-day schedule changes by firm OATT rights holders in accordance with the OATTs of EDAM transmission service providers. CAISO states that, in addition, the EDAM proposal does not create a distinction between classes of firm rights holders and that to the extent Bonneville is essentially asking that all OATT transmission customers with firm rights automatically receive a higher priority than cleared day-ahead schedules, CAISO believes such a result cannot be justified. CAISO asserts that this is not required under the *pro forma* OATT and that the proposed transmission availability framework strikes the appropriate balance by distinguishing between firm rights used to support day-ahead and real-time uses.³⁹⁹

297. In response to Powerex's argument that CAISO's proposal appears to be a departure from the principle that unused firm transmission capacity is only sold as non-firm transmission capacity, CAISO explains that the EDAM proposal does not diminish existing firm OATT rights administered by EDAM transmission service providers. CAISO asserts that EDAM provides equivalent and additional mechanisms for firm rights holders to exercise their rights in the day-ahead market or real-time market, or to make them available in exchange for transfer revenue should they not be needed by the rights holder. CAISO states that for all intraday self-schedules associated with firm OATT rights submitted through the real-time market, the market will redispatch the system through the real-time market to accommodate both the transfer optimized in the day-ahead market and the transmission customer's self-schedule submitted after the close of the day-ahead market and that in the rare case where the market cannot accommodate both transactions through redispatch, the market will first inform the transmission service provider of the infeasibility and afford the transfer equal priority with demand in the

³⁹⁷ *Id.* at 71-72.

³⁹⁸ *Id.* at 148-49.

³⁹⁹ *Id.* at 72-73.

BAA if resolution through all available means is not possible within the market timelines. CAISO explains that deference to the balancing authority to resolve infeasibilities in real-time based on information available through the real-time market is consistent with the practice today in the WEIM. According to CAISO, EDAM builds on this deference to the balancing authority and provides additional mechanisms to maintain confidence in transfers, maximize transmission available to the day-ahead market, and support reliable operation of the participating BAAs.⁴⁰⁰

298. CAISO explains that EDAM transmission service providers also have the ability, under the filed EDAM provisions of the Tariff and in accordance with their own OATTs, to issue instructions to the market operator for intra-day self-schedules associated with firm OATT transmission service. CAISO states that these instructions will recognize the associated market scheduling priority when submitted in accordance with instructions by that EDAM transmission service provider. CAISO additionally explains that the EDAM design provides for the physical carve-out of certain transmission rights across particular frequently scheduled paths where the applicable EDAM transmission service provider determines such carve-outs are necessary in accordance with its OATT. CAISO asserts that exercising this carve-out option would remove physical transmission capability from the day-ahead market and preserve it for the exercise of rights in the real-time market, reducing the potential need for redispatch and risk of market infeasibilities, even though the carve-out option is sub-optimal and use of the market scheduling priority mechanism is preferable.⁴⁰¹

299. CAISO disagrees with Powerex's proposal to change Tariff sections 33.18.2.2.3 and 33.18.3.1, asserting that the Powerex's modifications would undermine confidence in the extension of the existing CAISO day-ahead markets to other participating regions. CAISO asserts that it is important to maintain confidence in transfers established through the market optimization with appropriate accounting for firm OATT transmission rights that these provisions would enable. CAISO explains that the application of these provisions will be subject to the EDAM transmission service providers' OATTs, while the Tariff provides for how the real-time market would account for the firm transmission rights and maintain confidence in transfers between BAAs.⁴⁰²

300. In response to Powerex's request for clarification and additional Tariff revisions about scheduling deadlines, CAISO asserts that it does not agree that further Tariff changes are required to address Powerex's request for clarification. CAISO explains that the final deadline for the hour-ahead scheduling process in CAISO's market is T-75,

⁴⁰⁰ *Id.* at 74-75.

⁴⁰¹ *Id.* at 75-76.

⁴⁰² *Id.* at 76-77.

while T-40 is the deadline for the real-time market where submissions must be made, including WEIM base schedules, e-tags, and other critical information required for the real-time market. CAISO states that the opportunity for schedule changes by an EDAM BAA remains until the final e-tag deadline at T-20. CAISO explains that it will accept schedule change submissions from an EDAM balancing authority associated with OATT transmission rights throughout the real-time market and all the way through until T-20, similar to CAISO's administration of schedule changes associated with legacy contracts and the WEIM today. CAISO asserts that any interim or additional timelines would be subject to the EDAM transmission service provider OATT.⁴⁰³

301. CAISO states that each EDAM transmission service provider will need to establish an appropriate deadline for the communication from the EDAM transmission service provider, and CAISO confirms that it will support communication of schedule changes from the EDAM transmission service provider. CAISO explains that, as an example, a T-57 deadline was accepted by the Commission as an amendment to the OATTs of participating WEIM entities so they would be able to account for supply and pass the WEIM RSE.⁴⁰⁴ CAISO states that it anticipates that EDAM transmission service providers may develop appropriate timelines to support their administration of these transmission customer rights consistent with the Tariff.⁴⁰⁵

302. CAISO disagrees with Powerex's suggestion that it is necessary to allow a range of potential transactions in intra-day schedule changes. CAISO explains that the registered contract reference number and its association with an EDAM transfer system resource will support the exercise of firm transmission rights and each transmission customer may submit a self-schedule in the day-ahead market that effectively reserves its OATT rights. CAISO explains that after the close of the day-ahead market, submitted self-schedules will be accepted and accounted for in the real-time market and that this opportunity to submit intra-day schedule changes and the associated accounting in the real-time market is an equivalent mechanism. CAISO asserts that a firm OATT rights holder in coordination with its EDAM transmission service provider can exercise, release, or reserve its rights within the EDAM transmission availability framework consistent with the terms of the underlying OATT rights.⁴⁰⁶

303. CAISO states that it has expressed its commitment to monitoring and reporting on market performance and that there is no need for the Commission to mandate the

⁴⁰³ *Id.* at 77-78.

⁴⁰⁴ *Id.* at 78 (citing *Nev. Power Co.*, 151 FERC ¶ 61,131, at PP 161-164 (2015)).

⁴⁰⁵ *Id.*

⁴⁰⁶ *Id.* at 79.

additional reporting requirements related to transmission availability. CAISO explains that it is engaged in extensive and ongoing reporting of market performance published for all stakeholders to consider and that it fully expects that EDAM will be captured within existing or additional reports, including elements unique to EDAM as suggested in submitted comments. CAISO agrees that it is reasonable to monitor and report on the use of transmission and associated availability and scheduling issues, and that it is not necessary for the Commission to impose additional reporting obligations. CAISO avers that it engages regionally in a variety of forums to disseminate the information included in its reports. CAISO asserts that it will leverage these forums to engage concerns as expressed by DMM as its ongoing monitoring takes place and information becomes available on the use of transmission on the transmission systems included in the EDAM area. CAISO argues that it will coordinate with interested participants and either introduce an EDAM-specific forum or obtain input on how to include EDAM within existing forums, so that the operation and performance of EDAM receives the attention it deserves within the region.⁴⁰⁷

304. In response to Arizona Utilities' request that CAISO work with WPP on interoperability issues, CAISO states that it will continue to work with WPP and its members on interoperability issues after EDAM implementation, but notes that any future enhancements to EDAM are beyond the scope of this proceeding.⁴⁰⁸

305. Responding to DMM's request for clarification on EDAM BAA prioritization between EDAM transfers and demand (proposed Tariff section 33.7.5), CAISO explains that it intends to follow the mathematical formulation included in its final proposal to establish conditions when the power constraint within a BAA will be relaxed to support equal priority between day-ahead transfers and demand. According to CAISO, in essence, the real-time market will treat EDAM transfers as fixed at a higher penalty than power balance constraint relaxation. CAISO explains that further details will be in the business requirements specification, and consistent with past practice, CAISO will share the business requirements documentation with DMM and will publish and update an external version for stakeholder review.⁴⁰⁹

306. In response to arguments from ACP and Shell that suggest proposed Tariff section 33.23 creates the potential for significantly different transmission costs in different EDAM transmission service provider footprints, CAISO asserts that the EDAM design

⁴⁰⁷ *Id.* at 81-83.

⁴⁰⁸ *Id.* at 84.

⁴⁰⁹ *Id.* at 80.

seeks to apply the lowest-granularity firm rate.⁴¹⁰ CAISO states that entities currently reserve the granularity of service based on the products offered and they may be exposed to different costs and risks, which will be true under EDAM.⁴¹¹

(d) Determination

307. We find that CAISO's proposed EDAM transmission framework is just and reasonable and not unduly discriminatory or preferential. Most elements of the proposed EDAM transmission framework are not contested, including: the EDAM Entity's use of its transmission rights to meet EDAM resource sufficiency requirements; uncommitted available transmission capacity being made available to the market; and the treatment of legacy transmission rights. We find these design elements are just and reasonable because they allow EDAM Entities to use their transmission rights to participate in EDAM, allow EDAM to use unsold transmission capacity on an as-available basis, respect legacy rights, and are otherwise consistent with or superior to the *pro forma* OATT. As further discussed below, we also find CAISO's proposed approach to preserving firm transmission rights under the OATT to be just and reasonable. We find that CAISO's proposal strikes an appropriate balance between preserving a transmission customer's rights under an EDAM transmission service provider's OATT and ensuring that there is confidence that EDAM transfers will be delivered.

308. While we accept CAISO's EDAM transmission framework as proposed, we note that EDAM Entities and transmission service providers will have to revise their OATTs prior to joining EDAM to avail themselves of some of the proposed features of the EDAM transmission framework (e.g., to establish and communicate the priority in the real-time market of their EDAM transfers). In accepting CAISO's proposal, we are not pre-judging a prospective EDAM Entity's or EDAM transmission service provider's future filing to revise its OATT; these entities will still need to demonstrate that their proposed OATT revisions are consistent with or superior to the *pro forma* OATT.⁴¹²

⁴¹⁰ *Id.* at 152-53.

⁴¹¹ *Id.* at 153.

⁴¹² In Order No. 890, the Commission allowed transmission providers to propose non-rate terms and conditions that differ from those in Order No. 890 if those provisions are consistent with or superior to the *pro forma* OATT. *See Preventing Undue Discrimination & Preference in Transmission Serv.*, Order No. 890, 118 FERC ¶ 61,119, at P 135, *order on reh'g*, Order No. 890-A, 127 FERC 61,297 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

309. We find that CAISO's clarification regarding proposed Tariff section 33.7.5 (prioritization of EDAM transfers and demand) confirms DMM's understanding of the proposal. Noting that DMM has not suggested that CAISO's proposed Tariff provisions are inaccurate, we find appropriate CAISO's proposal to include in the BPMs more granular detail on specific conditions affecting the power balance constraint in the context of day-ahead transfer and demand prioritization.

310. We disagree with commenters' arguments that under the EDAM transmission framework, firm transmission customers' intra-day schedule changes will have lower priority than they would under the *pro forma* OATT. We find that CAISO's proposed Tariff revisions in section 33.18.2.2.3 allow an EDAM Entity scheduling coordinator to instruct CAISO to afford intra-day self-schedules of firm transmission customers higher priority than EDAM day-ahead schedules. In addition, we note that section 13.8 of the *pro forma* OATT requires schedules for firm point-to-point transmission service to be submitted to the transmission service provider no later than 10:00 a.m. of the day prior to service and provides that "[s]chedules submitted after 10:00 a.m. will be accommodated, if practicable."⁴¹³ Under CAISO's proposal, firm transmission customers are not required to submit their self-schedules any earlier than under the *pro forma* OATT, and EDAM will attempt to accommodate any intra-day schedule changes if practicable. Specifically, CAISO states that EDAM will attempt to accommodate any intra-day schedule changes via redispatch and if there is an infeasibility, CAISO will notify the EDAM Entity, which is then responsible for resolving the infeasibility through its OATT procedures.⁴¹⁴

311. We also disagree with concerns that under EDAM, firm point-to-point transmission service is being made less firm due to EDAM's treatment of intra-day schedule changes. Powerex argues that CAISO's proposal is contrary to Commission policy because it effectively allows unused firm transmission service to be resold as firm transmission service. We disagree. CAISO proposes giving EDAM transfers a scheduling priority higher than non-firm transmission service in order to ensure that day-ahead schedules are dispatched. The amount of firm transmission capacity for which a transmission customer has contracted will not be affected. Further, as CAISO notes in its answer, the EDAM proposal preserves the rights of firm transmission customers because they may submit intra-day schedule changes up until T-20 of a scheduling interval and have a higher scheduling priority than EDAM transfers if CAISO is so notified by the EDAM transmission service provider.⁴¹⁵ As such, under CAISO's proposal, the EDAM

⁴¹³ *Pro forma* OATT § 13.8 Scheduling Firm Point-to-Point Transmission Service.

⁴¹⁴ CAISO Answer at 74-75.

⁴¹⁵ *Id.* at 76-77.

Entities and EDAM transmission service providers are responsible for proposing changes to their respective OATTs to accommodate EDAM participation and for demonstrating that those changes are consistent with or superior to the *pro forma* OATT.

312. We disagree with Bonneville's argument that special notification should not be required for a firm transmission customer to have the same priority firm transmission rights provided today under an OATT because, as described by CAISO, the notification is done one time when establishing a firm transmission customer's contract reference number and, once established, intra-day schedule changes submitted prior to the notification deadline will be afforded a higher priority than EDAM transfers.⁴¹⁶ We recognize that this extra step in which the EDAM Entity would need to inform CAISO that a firm transmission customer has made an intra-day schedule change with a higher priority than EDAM transfers may necessitate some changes to the deadlines in an EDAM Entity's OATT to ensure that it would be able to meet EDAM's deadlines. We note that the Commission has previously accepted changes to *pro forma* OATT deadlines proposed by WEIM Entities to facilitate their participation in the WEIM.⁴¹⁷ However, any potential changes to the deadlines in an EDAM Entity's OATT are not before us. The Commission will determine the justness and reasonableness of any such proposed change when it is filed.

313. We agree that CAISO's proposed framework is compatible with WRAP. As discussed above, EDAM Entities will be able to notify CAISO what contract reference numbers are associated with WRAP, thereby indicating that a firm transmission customer's intra-day schedule should be afforded a higher priority than EDAM transfers.⁴¹⁸ Once CAISO has been notified, it will give the schedule a real-time market clearing priority above cleared day-ahead EDAM transfer schedules without being subjected to a further test or exercise of discretion.⁴¹⁹ Further, we find that the proposed EDAM provisions preserve the rights of firm transmission customers under an EDAM Entity's OATT and should therefore be compatible with WRAP participation. We also note CAISO's commitment to continue working with stakeholders to ensure that EDAM is compatible with WRAP participation.⁴²⁰

⁴¹⁶ *Id.* at 72.

⁴¹⁷ *See, e.g., Nev. Power Co.*, 151 FERC ¶ 61,131 at PP 161-164, *order on reh'g*, 153 FERC ¶ 61,306 (2015).

⁴¹⁸ CAISO Answer at 87-88.

⁴¹⁹ *Id.* at 88-89.

⁴²⁰ *Id.* at 84.

314. With regard to WPP's question of whether proposed section 33.18.3.3 can be used to "carve-out" firm transmission capability for use for WRAP transfers,⁴²¹ CAISO in its answer states that the details of how any carve-outs will be communicated to CAISO by EDAM transmission service providers will be included in its BPMs and any details regarding how a transmission customer can request a carve-out will likely be included in an EDAM transmission service provider's OATT.⁴²² We note that section 33.18.3.3 does not explicitly limit any designation of non-availability and states that designating unavailable transmission capacity would be done according to the EDAM transmission service provider's OATT. Therefore, any use of section 33.18.3.3 to carve-out transmission rights from EDAM would be contingent on the EDAM transmission service provider's OATT provisions allowing for such carve-out.

315. Regarding Six Cities' concerns about scheduling priorities within CAISO's transmission system, CAISO states that section 33.18.4 specifically provides that transmission service on the CAISO system will be pursuant to section 23 and Appendix L of the Tariff.⁴²³ CAISO further clarifies that the EDAM transmission framework in section 33.18.2.2.3 does not confer transmission rights on other transmission systems.⁴²⁴ We find that these clarifications adequately respond to Six Cities' concerns on this matter.

316. We do not share ACP's concern that self-schedules will "clog up" available transmission capacity.⁴²⁵ We agree with CAISO that self-schedules are not inherently undesirable, as they present a viable approach to making supply resources available to CAISO's markets.⁴²⁶ Moreover, we decline to require CAISO to provide reports on the use of self-schedules and the transmission priority framework as requested by ACP.⁴²⁷ We acknowledge CAISO's commitment to engage with its stakeholders to evaluate the use of transmission in EDAM as it gets more data and analyzes actual EDAM dispatches, as well as its commitment to provide data to stakeholders as appropriate.

⁴²¹ WPP Comments at 16.

⁴²² CAISO Answer at 92-93.

⁴²³ *Id.* at 64.

⁴²⁴ *Id.* at 65.

⁴²⁵ ACP Comments at 9-12.

⁴²⁶ CAISO Answer at 71.

⁴²⁷ ACP Comments at 9-12.

317. We find as speculative Six Cities' concerns about whether there may be opportunities for transmission rights holders to withhold transmission or whether there are opportunities to engage in strategic decision-making about how to deploy their rights within the EDAM market. Further, we are satisfied with CAISO's commitment to monitor the usage of transmission to identify any inappropriate withholding and other forms of market manipulation and expect CAISO to propose Tariff revisions should the need arise.

318. Regarding Powerex's request for confirmation that firm OATT right holders can submit schedules with a range of delivery quantities by T-57 for the upcoming hour, with any increases in deliveries communicated after that time receiving firm priority of flow,⁴²⁸ we agree with CAISO that no further Tariff changes are needed on this subject. As CAISO notes in its answer, the deadlines for transmission customer schedule submissions to an EDAM transmission service provider belong in the transmission provider's OATT.⁴²⁹ CAISO explains that it will accept schedule change submissions from an EDAM balancing authority throughout the real-time market up to T-20. We agree with CAISO that EDAM transmission service providers would have to establish in their respective OATTs any interim (T-57 to T-20) transmission customer schedule submission deadlines that accommodate their participation in EDAM.⁴³⁰

319. With regard to WAPA's concern regarding ensuring that its deliveries are not subject to congestion charges or redispatch costs, and its concern that changing its transmission loss accounting in order to participate in EDAM will cause it to lose a source of revenue,⁴³¹ we find that such concerns are outside of the scope of this proceeding. Such concerns are more appropriately addressed when a prospective EDAM Entity or EDAM transmission service provider proposes OATT revisions to implement participation in EDAM, as congestion charges and redispatch costs for firm transmission customers will be determined pursuant to these entities' OATTs. We note that CAISO states that it has engaged with WAPA with respect to the fixed-loss accounting mechanism and will assist WAPA in developing a method to account for fixed losses within the context of CAISO's marginal loss construct, including developing any special arrangements as part of a participation agreement. We thus deny WAPA's request on this matter, finding that it is more appropriately addressed in specific participation agreement accommodations as needed.

⁴²⁸ Powerex Comments at 12-13.

⁴²⁹ CAISO Answer at 77-78.

⁴³⁰ *Id.* at 78-79 (citing *Nev. Power Co.*, 151 FERC ¶ 61,131 at PP 161-164).

⁴³¹ WAPA Comments at 5-6.

320. We disagree with Shell and ACP that CAISO is leaving too many components of EDAM to interpretation and implementation by individual transmission providers outside the CAISO footprint and in doing so it risks inconsistency of EDAM implementation across the West.⁴³² We are not persuaded that EDAM implementation will be inconsistent across EDAM Entities' and EDAM transmission service providers' OATTs. The Commission will evaluate any proposed revisions to these entities' OATTs implementing EDAM participation and will determine if any variations among such implementation proposals are just and reasonable and not unduly discriminatory or preferential at that time.

321. Further, with regards to ACP and Shell's argument that Tariff section 33.23 allows transmission service providers to charge either a daily firm or hourly firm transmission service rate to EDAM market participants that do not have firm transmission rights for their full capacity,⁴³³ we find that ACP and Shell are misinterpreting the Tariff language as there is no optionality present: EDAM transmission providers are required to use the "transmission rate for the lowest duration of firm transmission service offered under its [OATT]."⁴³⁴ We find that this is an appropriate treatment as not all transmission service providers offer hourly firm transmission service and the Commission's *pro forma* OATT provides that the minimum duration for firm point-to-point transmission is one day.⁴³⁵

ii. Resource Sufficiency Evaluation

(a) Filing

322. CAISO states that a key element of the just and reasonable design of EDAM is the RSE, which is designed to respect each BAA's existing resource adequacy regime and control over its own transmission system, but sets a minimum expectation of sufficient resources needed to satisfy day-ahead needs of the BAA. CAISO states this RSE structure discourages an EDAM BAA with insufficient resources from "leaning" on its neighboring BAAs. CAISO notes the EDAM RSE is designed to run alongside (not in lieu of) the WEIM RSE.⁴³⁶

⁴³² Shell Protest at 7-8.

⁴³³ *Id.* at 7-8; ACP Comments at 5-6.

⁴³⁴ eTariff, § 33.23 Transmission Service Requirements for EDAM Resources (0.0.0).

⁴³⁵ *Pro forma* OATT § 13.1 Term.

⁴³⁶ Transmittal at 144-45; eTariff, § 33.31.1 EDAM Resource Sufficiency

323. CAISO states the proposed EDAM RSE will apply uniformly to produce an hour-by-hour assessment of resource sufficiency for the day-ahead time frame for each EDAM BAA. CAISO will first require information submission to generate advisory RSE runs at 6:00 and 9:00 a.m. each day and a binding run at 10:00 a.m. each day. Each advisory and binding run will establish the hourly quantity of both upward sufficiency and downward insufficiency across three day-ahead components: forecasted demand, Imbalance Reserves, and ancillary services requirements. CAISO explains it will model each BAA's entire load and supply on a single bus and will perform a unit commitment optimization, with the optimal function set to minimize the total cost. According to CAISO, this determines the most efficient use of the resource diversity in EDAM.⁴³⁷

324. CAISO explains that a BAA in EDAM will pass the final binding RSE if it meets all of the three day-ahead components in each hour of the day-ahead time horizon. CAISO notes that BAAs that pass the EDAM RSE will be pooled together and evaluated as a single group in the WEIM RSE (entities passing the upward requirements together and downward requirements together). If a BAA fails to satisfy all components, it will remain eligible for inclusion in the upward and/or downward pool if it can resolve insufficiency through supply procured in the IFM. If not, then the failing entity will be evaluated individually for WEIM resource sufficiency purposes.⁴³⁸

325. CAISO's RSE proposals include certain RSE failure surcharges if an entity does not satisfy any aspect of the evaluation and would distribute revenue from surcharges to scheduling coordinators for EDAM BAAs that passed the RSE. CAISO notes that each entity that receives surcharge revenue will distribute the revenue in accordance with the applicable OATTs. CAISO explains the surcharges vary based on whether on-peak or off-peak hours are not met, with the on-peak failures deemed as riskier; thus, the off-peak failures will yield a lower surcharge. Finally, CAISO explains that the formulas contain certain inflation factors that apply if there are any repeated RSE failures.⁴³⁹ CAISO

Evaluation (EDAM RSE) (0.0.0).

⁴³⁷ Transmittal at 145; eTariff, § 33.31.1 EDAM Resource Sufficiency Evaluation (EDAM RSE) (0.0.0), § 33.31.1.1.

⁴³⁸ Transmittal at 147. CAISO notes that pooled entities will commit to timely e-tag imports and exports; those who do not comply will be removed from the pool and evaluated individually. eTariff, § 33.31.1 EDAM Resource Sufficiency Evaluation (EDAM RSE) (0.0.0), § 33.31.1.4.

⁴³⁹ Specifically, CAISO will calculate the On-Peak and Off-Peak Upward Sufficiency surcharge as the product of: (1) failure quantity; (2) applicable surcharge price; and (3) a scaled adder for severe and persistent failures. The surcharge price will be based on certain applicable trading hubs such as Mid-Columbia or Palo-Verde. The

states that each of the surcharges is narrowly tailored to address the unique circumstances presented, and taken together they constitute a just, reasonable, and not unduly discriminatory structure to address resource sufficiency failures.

326. CAISO notes that the RSE does not include a deliverability or transmission evaluation. According to CAISO, although there was stakeholder interest in this, the computational complexity required to achieve it would not increase the test accuracy sufficiently to justify the effort of modeling transmission; however, CAISO will continue to evaluate this. Finally, CAISO states it will allow counting of resource or load modification programs EDAM cannot explicitly model, including delivered firm energy contracts such as WSPP, Inc. (WSPP) Agreement Schedule C Service. CAISO states the RSE will use a registration system to prevent double counting.

327. Finally, CAISO proposes to provide participating EDAM Entities the option to apply a net export transfer constraint to help control a BAA's supply to meet its own needs before assisting others' needs via EDAM transfers. The net export transfer constraint, CAISO explains, will be a configurable element that allows an EDAM Entity to enforce an hourly limit on the amount of net EDAM transfer exports, thus allowing each BAA to maintain excess supply to meet its expected day-ahead needs and reliability conditions. An EDAM Entity must elect to enable the constraint prior to 9:00 a.m. on the day before the trading day and choose the hours of the operating day to which the constraint will apply.⁴⁴⁰

(b) Comments/Protests

328. SMUD supports the resource sufficiency provisions.⁴⁴¹ SoCal Edison states that the net export constraint is a crucial element of EDAM because it: (1) enhances grid reliability; (2) provides a safeguard for unforeseen issues; and (3) provides an optional tool for BAAs with specific needs.⁴⁴² SoCal Edison states that each balancing authority should be able to control its supply to meet its own needs before assisting the needs of others, and without this function or a similar substitute, CAISO cannot be certain it will

Downward Failure Insufficiency Surcharge will be the product of (1) the failure quantity and (2) the applicable surcharge price. eTariff, § 33.31.1 EDAM Resources Sufficiency Evaluation (EDAM RSE) (0.0.0), 33.31.1.5.

⁴⁴⁰ *Id.* § 33.31.3 Net Export EDAM Transfer Constraint (0.0.0).

⁴⁴¹ SMUD Comments at 3.

⁴⁴² SoCal Edison Comments at 4-5.

be able to maintain reliability, hence the need to include the net export transfer constraint in EDAM's feature.⁴⁴³

329. NV Energy states that, like the other core components of the EDAM design, the proposed RSE represents the culmination of extensive stakeholder negotiations. According to NV Energy, it builds on the approved approach for the WEIM and presents a viable package to support startup of the expanded day-ahead market.⁴⁴⁴ BANC states that similar to the WEIM RSE, the EDAM RSE will ensure availability of sufficient resources while allowing EDAM participants to benefit from the pooling of optimized resources.⁴⁴⁵ BANC states that the design elements of the EDAM RSE represent a significant step towards balancing the need to ensure prudent planning and forward resource comment with the benefits of the pooled optimization and the ability to count on firm transfers between participating BAAs.⁴⁴⁶ BANC asserts that the EDAM RSE both discourages entities with insufficient resources from leaning on neighboring BAAs and ensures adequate procurement of resources necessary to recognize the benefits of the pooled optimization of resources.⁴⁴⁷

330. Bonneville requests that the Commission direct CAISO to provide more transparent resource sufficiency test evaluations among BAAs to prevent BAAs from potentially leaning on the market. Bonneville recommends that the Commission direct CAISO to clearly identify the difference between failures to procure adequate resource supply given forecasts and declaring an Energy Emergency Alert due to specific unforeseen changes where an LSE does not have the opportunity to secure additional supply. Bonneville also requests that CAISO explain how WRAP will interact with California's Resource Adequacy program. Finally, Bonneville requests that the Commission assess how CAISO will treat WRAP with respect to EDAM's resource sufficiency implementation and decries the absence of a uniform resource adequacy program across the EDAM area.⁴⁴⁸

331. PacifiCorp generally supports the RSE design as the process will facilitate regional efficiencies and eliminate concerns over leaning on neighboring BAAs.

⁴⁴³ *Id.* at 5.

⁴⁴⁴ NV Energy Comments at 18.

⁴⁴⁵ BANC Comments at 6.

⁴⁴⁶ *Id.* at 8.

⁴⁴⁷ *Id.* (quoting Transmittal at 145).

⁴⁴⁸ Bonneville Comments at 14-16.

PacifiCorp avers that it also supports the penalty structure and the allocation of penalties to BAAs that pass the RSE in the interval giving rise to the penalty. PacifiCorp argues that additional work remains at the EDAM Entity level (including at CAISO in its role as EDAM participant) to ensure that the RSE can be implemented in an equitable manner, as the RSE is run on a BAA-wide basis and penalties and allocations occur between CAISO and the EDAM Entity for the affected BAA. PacifiCorp explains that CAISO's filing does not mandate the method by which entities within an EDAM BAA must pool their resources to collectively meet the RSE, meaning that EDAM Entities will have to propose a methodology for satisfying the RSE in their respective OATTs. PacifiCorp avers that CAISO has nevertheless provided sufficient information about the operation of the RSE for the Commission to accept it.⁴⁴⁹

332. SDG&E explains that in CAISO and the West, there are pre-existing reliable firm energy contracts, such as WSPP Agreement Schedule C, that are commonly backed up by liquidated damage provisions to guarantee reliability. SDG&E asserts that such contracts have a measure of dependability and are already accounted for in OATT rights, and thus the transactions exercised under those contracts should be included in the EDAM and count towards RSE passes.⁴⁵⁰

333. DMM supports CAISO's proposal for a penalty for EDAM Entities who fail to procure sufficient capacity, finding it creates appropriate incentive, and notes that bilateral hub prices should be a reasonable reflection of the costs a BAA would need to incur to avoid an EDAM resource evaluation failure.⁴⁵¹

334. DMM comments that transmission rights holders may potentially be able to exercise market power in the market for supply to meet RSE requirements. DMM explains that this potential exists where a resource owner within a source EDAM BAA has procured firm transmission between its resource and the sink EDAM BAA in order to count as a resource meeting the EDAM RSE requirement of the sink EDAM BAA. Specifically, DMM explains that the proposal to require generation in a source EDAM BAA to have firm transmission to the sink EDAM BAA before each day's EDAM market run can limit the resource pool within EDAM BAAs competing to meet a sink BAA's RSE requirement⁴⁵² to resources that already own transmission rights to the sink

⁴⁴⁹ PacifiCorp Comments at 21-22.

⁴⁵⁰ SDG&E Comments at 6.

⁴⁵¹ DMM Comments at 21-22.

⁴⁵² Currently, if a sink BAA does not require a resource to have firm transmission before the 10:00 a.m. day-ahead time frame, the set of resources the BAA can contract with is not limited to the resources with transmission rights into the BAA; thus, a larger resource pool can compete to sell supply to meet the BAA's day-ahead capacity

EDAM BAA and give large rights holders market power. DMM further states that resource holders that are affiliated with such transmission rights holders could thus exercise market power in the RSE market by charging excessively high prices for capacity.⁴⁵³

335. DMM argues that, as long as there are a limited number of participating EDAM BAAs, the ability for EDAM LSEs to contract with generation from no-EDAM BAAs for RSE can mitigate potential market power exercise by entities holding large amounts of transmission rights. DMM recommends CAISO assess this possibility and develop enhancements to mitigate it where the potential exists before a substantial number of BAAs join EDAM.⁴⁵⁴

336. DMM states that CAISO's proposal acknowledges the potential for double counting of non-source specific energy in the RSE, if a supplier has not procured the capacity or energy it schedules into EDAM to meet resource sufficiency requirements by the 10:00 a.m. day-ahead market close. In this scenario, DMM states that the supplier could be either relying on there being excess capacity in non-EDAM BAAs, or that there is capacity in an EDAM BAA that had counted towards the EDAM Entity's RSE requirements.⁴⁵⁵ Although CAISO proposes to monitor this, DMM asserts this monitoring is unlikely to be sufficient to prevent undesirable behavior and adverse outcomes.⁴⁵⁶

337. DMM recommends that CAISO and stakeholders consider more nuanced rule and design changes to the RSE in the future, noting, for example, that real-time must offer

requirement and should keep capacity contract prices at near competitive levels.

⁴⁵³ *Id.* at 23.

⁴⁵⁴ *Id.* at 23-24.

⁴⁵⁵ *Id.* at 25.

⁴⁵⁶ For example, DMM notes that the proposal explains that "WEIM entities depend upon [energy contracts for which the source and transmission path may not be known by the day-ahead market close] to varying degrees." DMM notes that there are likely to be efficiency benefits from power marketers waiting until close to real-time to determine the least expensive energy available to serve import schedules. *Id.* at 26 (quoting CAISO, Extended Day-Ahead Market Final Proposal at 66 (Dec. 7, 2022)).

obligations assigned by the EDAM could be enhanced by incorporating each EDAM BAA's entire EDAM RSE into the RUC load forecast.⁴⁵⁷

338. DMM requests that CAISO clarify its policy on modeling a non-resource specific import counted towards an EDAM BAA's RSE, noting that it is unclear whether the scheduling coordinator for the resource or for the EDAM Entity is expected to execute a base transfer deviation, what the direction of the base transfer deviation is, and which market it settles in. Finally, DMM also believes the process by which a scheduling coordinator is "expected" to cancel the day-ahead schedule is vague, requests clarification on what adjustments to import, generator, and base transfer schedules will be automated, and requests that CAISO better specify what the settlement implications will be for impacted entities and resource schedules.⁴⁵⁸

339. DMM generally supports CAISO's net export constraint proposal, noting that in tight system conditions, each BAA needs a mechanism to help ensure EDAM transfers do not cause it to take responsibility for load curtailment caused by another BAA with a capacity shortfall.⁴⁵⁹ DMM notes that EDAM should increase coordination and collaboration between Western BAAs, because CAISO's proposal does not propose that all EDAM BAAs share load curtailment in a collective supply shortfall. DMM states that each EDAM BAA needs a mechanism to help ensure EDAM transfers do not cause that BAA to take responsibility for load curtailment caused by another EDAM BAA with a capacity shortfall—the net export constraint is designed to provide this critical function.⁴⁶⁰

340. DMM further states that it believes the ideal EDAM design would involve a stringent day-ahead resource requirement sufficient for meeting all participating EDAM BAAs' reliability thresholds, but acknowledges that it would have been extremely difficult for diverse BAAs to agree upon one standard set of day-ahead reliability

⁴⁵⁷ *Id.* at 26-27.

⁴⁵⁸ *Id.* at 28.

⁴⁵⁹ *Id.* at 16.

⁴⁶⁰ *Id.* at 16-17. DMM also notes that BAAs without day-ahead offer obligations or that do not allow virtual bidding could prevent adverse outcomes; but even for these areas, using a net export constraint would be more efficient as it allows BAA to bid their excess capacity into EDAM.

standards at this phase. DMM recommends that CAISO and participating EDAM BAAs work towards this goal in upcoming initiatives to enhance EDAM design.⁴⁶¹

341. PG&E writes that it strongly supports the net export constraint because it addresses an asymmetry between CAISO and other potential EDAM participants, and it also prevents EDAM export transfers that could jeopardize reliability within a BAA. According to PG&E, the net export constraint is a necessary tool for enabling CAISO to place reasonable limits on the amount of day-ahead firm exports scheduled by EDAM. PG&E states that the net export constraint does not prohibit exports or infringe on any rights to export from a BAA, stating for example that high-priority exports from non-Resource Adequacy capacity will not be blocked by this constraint in the CAISO BAA. PG&E writes that the net export constraint cannot lower the available supply below the minimum required by the RSE.⁴⁶²

342. PG&E comments that the net export constraint only limits the quantity of day-ahead exports to EDAM BAAs, meaning that all types of generation can support the scheduled exports without bias and that the exports to non-EDAM BAAs will not be affected. Finally, PG&E requests that the Commission require CAISO to complete a currently active stakeholder initiative to address how the CAISO BAA and its contributing entities will cure e-Tag deficiencies. PG&E explains that after the EDAM RSE is satisfied, entities placed in the EDAM upward pool and EDAM downward pool must timely e-tag all imports and exports. PG&E further explains that if an entity fails to comply with the e-tagging requirement and does not otherwise re-supply, it will be removed from the pool. PG&E believes it is important to provide specific information to market participants as to how tagging deficiencies can be cured, and that it is concerning this issue remains unresolved at the time of filing.⁴⁶³

343. Idaho Power explains that the EDAM RSE ensures each BAA can meet its own obligations before engaging in transfers with other BAAs in the EDAM area through the day-ahead market. Further, Idaho Power explains that by requiring each BAA to demonstrate sufficient forward procured supply each day, entities are discouraged from leaning on neighboring BAAs. Idaho Power states that the RSE focuses on meeting the next day's requirements and is not a substitute for long-term resource adequacy programs. As such, Idaho Power states that it supports the RSE approach for EDAM.⁴⁶⁴

⁴⁶¹ *Id.* at 18.

⁴⁶² PG&E Comments at 6-7.

⁴⁶³ *Id.* at 7-8.

⁴⁶⁴ Idaho Power Comments at 9.

344. Vistra states that a broader and more diverse set of resources to meet BAA needs would be beneficial, but it is concerned that the EDAM as proposed does not sufficiently prevent BAAs leaning on each other. According to Vistra, the WEIM RSE framework already has issues that should not be extended to the EDAM.⁴⁶⁵ Vistra asserts that the existing WEIM RSE framework has allowed the CAISO BAA to lean on the rest of the market and pass evaluation when it should not. Vistra argues that this renders the RSE mechanism ineffective in actually ensuring BAAs procure sufficient resources and will exacerbate reliability challenges in the West if extended into EDAM.⁴⁶⁶ Next, Vistra points to the proposal's lack of an assessment to determine if RSE eligible resources can actually be delivered to a BAA that is using them to fulfill its RSE obligations, arguing that this could potentially allow BAAs that cannot meet their own needs to artificially pass the RSE test without their shortages being addressed and that constraints such as transmission should be accounted for.⁴⁶⁷ Additionally, Vistra criticizes the proposal to allow BAAs to trade their RSE obligations, again pointing to the lack of an assessment of deliverability. Vistra claims that this undermines the idea of having RSE obligations and does not incentivize BAAs to procure sufficient resources.⁴⁶⁸

345. Vistra argues that the penalties proposed for RSE failures are insufficient. Vistra states that the proposed up and down RSE surcharges are not impactful enough to incent a BAA into investing in long term supply capacity versus paying what would likely be a limited surcharge. Vistra asserts that reducing costs for BAAs participating in EDAM by undercutting the RSE mechanism and ability to penalize failure will not address long term resource sufficiency in the West. Vistra also takes issue with the proposal to allow deficient BAAs that fail the RSE test to pool their resources with BAAs that passed the test and collectively increase the risk of real-time shortfalls, likening the proposal to a free pass for non-complying BAAs that could potentially aggravate an already flawed RSE test.⁴⁶⁹

346. Six Cities argue that CAISO's tagging requirements in EDAM and the WEIM, which provide for transactions supporting the RSE to be tagged prior to the start of the Short-Term Unit Commitment process, may exacerbate concerns about the potential exercise of market power, because these tagging requirements effectively nullify the OATT-based requirement for the automatic release of unscheduled transmission, which

⁴⁶⁵ Vistra Protest at 34.

⁴⁶⁶ *Id.* at 35-36.

⁴⁶⁷ *Id.* at 36-37.

⁴⁶⁸ *Id.* at 38-39.

⁴⁶⁹ *Id.* at 40-43.

operates as a control on the exercise of market power. Six Cities request that CAISO continue to monitor the performance of intertie bids that receive day-ahead schedules. Six Cities further state that if such schedules subsequently tag and perform comparably to schedules awarded to delivered firm energy contracts over time, then CAISO should re-evaluate eligibility of intertie bids for consideration in the RSE. Six Cities claim that, under the proposed Tariff, an EDAM BAA that fails to meet e-tagging requirements in a timely manner will be removed from the pooled group of BAAs for purposes of applying the WEIM RSE test. Six Cities question whether this is a reasonable outcome in instances where the quantity of untagged schedules is *de minimis*.⁴⁷⁰

347. Powerex alleges that the WEIM's resource sufficiency framework has allowed CAISO to lean on the rest of the footprint and socialize the reliability risk of its resource shortfall. Powerex suggests that for EDAM not to do the same, the ideal solution would be for all participants to be part of the same resource adequacy program. Absent that, Powerex offers that the next best design would be one where reliability consequences of resource shortfalls are borne by the entities that are resource deficient.⁴⁷¹

(c) Answer

348. In response to Powerex's and Vistra's assertions that EDAM is flawed because it does not have a common resource adequacy structure for all participants, CAISO contends that the EDAM RSE is designed to work with, but not replace, EDAM participants' resource adequacy programs and notes that several intervenors support this structure. CAISO states that EDAM balancing authorities will remain responsible for maintaining the reliability in their BAAs, including meeting operating reserve and capacity requirements, and that the EDAM RSE design respects this framework. CAISO claims that the Commission's prior orders on the WEIM and WRAP have recognized that there can be multiple resource adequacy programs in the West and that the majority of stakeholders agree that the EDAM RSE appropriately complements and maximizes the value of these resource adequacy programs by allowing participants to account for the capacity they have procured to support reliability within their footprints.⁴⁷²

349. In response to Bonneville's and Powerex's questions about the alignment of the EDAM RSE with WRAP, CAISO states that the RSE serves as a "universal adapter" that will account for supply adequacy and shortfalls across various resource adequacy programs and that the RSE will explicitly recognize the supply secured under all resource adequacy programs. In response to Vistra's question on whether a short EDAM Entity

⁴⁷⁰ Six Cities Comments at 13-15.

⁴⁷¹ Powerex Comments at 20-21.

⁴⁷² CAISO Answer at 95-98.

can pay another EDAM Entity to assume a portion of its RSE obligation, CAISO clarifies that a deficient EDAM Entity may enter into a bilateral agreement with a sufficient balancing authority, but such arrangements would not be facilitated by CAISO. With regard to Six Cities' and PG&E's concerns about tagging obligations, CAISO states that it will assess whether a *de minimis* tagging exception is warranted through future enhancements initiatives and that the specifics of how tagging deficiencies can be cured will be included in a BPM. In response to SDG&E's comment that firm energy contracts such as WSPP Agreement Schedule C should count toward RSE obligations, CAISO explains that such contracts are sufficient to satisfy RSE obligations, subject to minimal requirements that will be detailed in the applicable BPM.⁴⁷³

350. With respect to Bonneville's request that CAISO provide more transparent RSE tests to prevent BAAs from leaning on the market to meet their capacity needs, CAISO clarifies that it will provide each component of the RSE to EDAM Entities so they can measure their progress toward satisfying RSE and, to ensure transparency, will make RSE information publicly available. Regarding Bonneville's request that CAISO create a mechanism that clearly identifies the difference between failure to procure adequate supply versus system emergencies when a BAA fails the RSE, CAISO explains that the RSE failure financial penalties provide a strong incentive for EDAM Entities to maintain resource sufficiency practices that support forward procurement and further points to its proposal to publish the result of EDAM RSE on a daily basis. Therefore, argues CAISO, no additional mechanism for tracking RSE results is needed.⁴⁷⁴

351. CAISO disagrees with Vistra that, like the WEIM RSE, the EDAM RSE does not ensure BAAs procure sufficient resources. CAISO argues that it has enhanced WEIM RSE recently and that it will do so with EDAM RSE as it gains experience with it. With regard to Vistra's concern that EDAM RSE does not account for the deliverability of resources, CAISO states that it concluded that deliverability is not required for a just and reasonable solution at this time and that it is appropriate for it to consider RSE rules and design changes in the future. In response to Vistra's concern about the RSE failure surcharges not being high enough to deter resource insufficiency, CAISO avers that it and stakeholders considered a variety of options and agreed that the proposed surcharges reasonably address the risks of RSE failures. CAISO further explains that it, along with DMM, will monitor RSE performance to determine if financial consequences of RSE failure should be revised.

352. In response to Vistra, CAISO clarifies that EDAM Entities that are not resource sufficient after CAISO clears the day-ahead market will not be included in the pool of

⁴⁷³ *Id.* at 100-03.

⁴⁷⁴ *Id.* at 105-06.

BAAs that are jointly evaluated for WEIM RSE. CAISO explains that Vistra is incorrect in asserting that the proposal allows a “failing EDAM BAA to lean on the supply of other BAAs to pass the real-time RSE test.” CAISO explains entities that cure their deficiency through the day-ahead market procure supply from any resource and not only the supply of other BAAs; only when sufficient supply is secured through the day-ahead market is an entity included in the passing pool and therefore, cured deficiencies are not carried into the WEIM.⁴⁷⁵ CAISO also clarifies that BAAs deficient in RSE advisory runs will rationally take action to fill the deficiency—which could include bilateral arrangements—but these would not be facilitated through CAISO as a payment to assume a portion of an RSE obligation; CAISO notes such a practice is not set forth in its proposed revisions.⁴⁷⁶

353. CAISO explains that the tagging requirement Six Cities referenced is intended, in part, to provide confidence that the scheduled transactions supporting resource sufficiency will be delivered after the day-ahead market runs and that this is comparable to tagging practices today where import transaction e-tags, including a transmission profile, are submitted soon after the publication of day-ahead market results. CAISO asserts that this practice was the primary reason these proposed tagging deadlines were identified as appropriate and that the tagging timelines for the resource sufficiency pooling requirements also recognize the varied timelines in the West for further release of transmission capability, above and beyond what may be available. CAISO disagrees that the tagging proposal necessarily exacerbates or induces any exercise of market power. CAISO states that it will work with EDAM participants to monitor how transmission is made available and tagged to support EDAM transactions and will evaluate how to address any issues that arise. CAISO notes this consideration will be a priority when EDAM goes live.⁴⁷⁷

354. In response to DMM’s comments that potential transmission rights holders could exercise market power in the market for supply to meet the EDAM RSE requirements, CAISO states that it will evaluate the prioritization of EDAM-related enhancements, including the concern noted by DMM. CAISO states that the risk of transmission market power is not introduced by EDAM but is a potential concern that exists today due to limited firm transmission capacity on certain paths and interties. CAISO explains that through the implementation of EDAM, it will enable use of existing rights and unsold available transfer capability to support transfers between BAAs and will monitor for impacts on the market. CAISO states that it will ultimately, in coordination with EDAM

⁴⁷⁵ *Id.* at 106-08.

⁴⁷⁶ CAISO Answer at 101.

⁴⁷⁷ *Id.* at 66-68.

transmission service providers, gather information necessary to determine what, if any, action may be warranted to address these concerns. CAISO explains that its actions may include market design changes, enhanced monitoring or reporting, or other appropriate measures and confirms its commitment to identify and resolve any identified transmission market power concerns.⁴⁷⁸

(d) Determination

355. We find that CAISO's EDAM RSE proposal is just and reasonable. We agree with CAISO that an EDAM-wide RSE is important and will yield a more efficient day-ahead market. Specifically, we find that the RSE can serve as a common mechanism to ensure a certain level of resource sufficiency within the EDAM area without supplanting existing resource adequacy frameworks in the West and without impeding the participation of EDAM BAAs in those different frameworks. Thus, the RSE has the potential to both ensure that all EDAM Entities are meeting their own resource adequacy needs and make the largest pool of potential resources available for optimization. For these reasons, we also disagree with commenters' suggestions that the Commission reject the RSE as proposed on the basis that it is better for the West to have a single or standardized resource adequacy framework. We accept CAISO's EDAM surcharge settlement provisions as just and reasonable, including CAISO's proposal to distribute revenue generated by the RSE surcharges to scheduling coordinators for BAAs that passed the RSE, which we recognize can serve as incentive to EDAM participants to procure sufficient resources (noting that sub-BAA allocations will be determined within relevant EDAM Entity OATTs).

356. We also disagree with commenters' concerns that the existence of a common resource sufficiency demonstration would necessarily encourage an EDAM BAA with insufficient resources to lean on its neighbors. Instead, we find that shared resource access will not disincentivize sufficient resource procurement, especially considering CAISO's RSE penalty (surcharge proposal), which imposes penalties based on the severity of failure.⁴⁷⁹ Moreover, under CAISO's proposal, the surcharge will increase in magnitude for repeated failures, which we believe should incentivize EDAM BAAs to procure sufficient resources.

357. Further, we believe that the possibility of extremely stressed conditions does not in itself render an RSE proposal deficient; to the contrary, such an RSE adds visibility into participants' resource positions that did not previously exist. We note that the Commission has recognized, in the context of WEIM resource sufficiency and WRAP,⁴⁸⁰

⁴⁷⁸ *Id.* at 80-81.

⁴⁷⁹ eTariff, § 33.11.2 EDAM RSE Failure Surcharge (0.0.0).

⁴⁸⁰ *Cal. Indep. Sys. Operator Corp.*, 183 FERC ¶ 61,146, at PP 18-19 (2023); *Nw.*

the benefit of allowing a shared resource access framework based on common standards and requirements, when paired with a commensurate penalty mechanism that disincentivizes insufficient resource availability.

358. With regard to concerns that the proposed RSE surcharges are insufficient, we find that the proposed penalties are reasonable and tailored to address the type of risk that the EDAM area might face, which is that of EDAM BAAs failing to procure their minimum projected capacity and ancillary service requirements. First, we note that the goal of the RSE and its surcharges is not to incentivize long-term resource procurement in the West, as it is not a coordinated resource adequacy framework; rather, the goal of the RSE is to ensure sufficiency going into the expanded day-ahead and real-time markets. The RSE surcharge therefore need not induce long-term resource adequacy in EDAM BAAs in order to be just and reasonable. Further, we also note that the RSE surcharge proposal contains a multiplier that increases the surcharge if an EDAM BAA repeatedly fails its RSE demonstration, which we find to be an adequate incentive for EDAM participants to meet the requirements. Similarly, we find that it is reasonable for EDAM Entities that have already demonstrated that they have satisfied requirements for their BAA to be pooled together for the WEIM RSE, noting that such pooling can unlock the very type of diversity benefit that EDAM seeks to achieve.

359. Last, we are not persuaded by assertions that CAISO's e-tagging requirements might lead to market power or discrimination. We recognize that there exist constrained paths and that limited transmission capability might create the potential for entities to exercise market power. However, we are not persuaded that EDAM increases this possibility or makes it more likely, and we find that there is benefit in providing confidence in the deliverability of RSE transactions, especially given that the RSE establishes the baseline for the day-ahead market run. However, in response to Six Cities' concern that e-tagging requirements might lead to instances of withholding transmission, we note that CAISO affirms it will work with EDAM participants and monitor how transmission is made available and tagged to support EDAM transactions.⁴⁸¹ Importantly, we agree with CAISO that it might better engage with stakeholders on this matter based on operational experience and information after EDAM implementation.

Power Pool, 182 FERC ¶ 61,063 at P 105.

⁴⁸¹ CAISO Answer at 68.

iii. **GHG Accounting**

(a) **Filing**

360. As part of EDAM, CAISO proposes a GHG emissions accounting framework, building upon the one currently used in the WEIM. CAISO explains that the proposal will allow resource scheduling coordinators to recover their cost of compliance with a state’s carbon pricing policy by designating certain “GHG regulation areas.” Thus, CAISO states, the proposal does not embed the cost of state GHG policies to demand that is located outside of these areas, and it provides a mechanism to identify which scheduling coordinators are electricity importers into a GHG regulation area. CAISO notes that currently two states in the region—California and Washington—have GHG emissions compliance and pricing policies. CAISO states that California has a cap-and-trade program requiring covered entities to retire allowances for the emissions they produce; allowances are made available in an auction that establishes a price for GHG emissions. CAISO further explains that Washington’s cap-and-invest program is not linked to California’s program and uses a different compliance instrument, so the price of GHG compliance can be different in the two states.⁴⁸²

361. Currently in the WEIM, CAISO explains, emitting resources outside California can indicate a willingness to supply into California and reflect the compliance cost within their energy bids by including a bid adder. CAISO also explains that currently, the WEIM models GHG compliance using BAAs (including those in GHG regulation areas) to determine the volume of real-time supply to attribute to participating resources based on submitted bid adders. First, CAISO proposes to update the current BAA boundaries used for modeling and GHG accounting in the WEIM to create separate GHG regulation areas based on the GHG boundary as defined by a state’s jurisdiction; CAISO proposes to use this new boundary proposal in both EDAM and WEIM GHG accounting.⁴⁸³ Second, CAISO proposes to use a bid adder structure to reflect GHG compliance costs in EDAM that is conceptually similar to the WEIM. According to CAISO, this design allows a scheduling coordinator for a resource located outside of a GHG regulation area to submit a voluntary bid adder (containing a price and MW quantity) reflecting its willingness to serve demand in a GHG regulation area as an electricity importer. Scheduling coordinators for resources located within a GHG regulation area will not submit a bid

⁴⁸² Transmittal at 161-63.

⁴⁸³ CAISO notes that its new proposed term “GHG Regulation Area” would encompass the nodes of a BAA within a state jurisdiction that has priced GHG emissions as part of a state carbon reduction law or regulation. *Id.* at 163 (citing eTariff, app. A Definitions (0.0.0) (defining GHG Regulation Area); *id.* § 29.32 Greenhouse Gas Regulation and Bid Adders (6.0.0)).

adder to serve demand within that GHG regulation area, and will instead include any GHG compliance costs in their energy bids.⁴⁸⁴ CAISO then proposes to reflect compliance costs for resources within these boundaries in both EDAM and the WEIM; resources outside GHG regulation areas will not be subjected to these costs unless they offer their supply to support a transfer into a GHG regulation area.⁴⁸⁵ To align market rules in the WEIM with EDAM, CAISO proposes to recognize GHG bid adders related to each new GHG regulation area in the 15-minute market and real-time dispatch.⁴⁸⁶

362. Similar to the WEIM, CAISO proposes to calculate a maximum GHG bid adder price for each resource located outside each GHG regulation area on a daily basis, reflecting a resource's highest heat rate curve, applicable GHG allowance price, and applicable emission rate. CAISO also provides an option for resources to negotiate a maximum GHG bid adder for each regulation area, not less than \$0/MWh and not greater than 110% of the resource's maximum GHG bid adder price maximum compliance cost. Finally, CAISO explains its proposal will allow resources to bid above the soft energy bid cap when their bids are cost-verified (including the relevant GHG bid adder), consistent with Order No. 831. Where a reference level change request process is used, CAISO will allow a resource to bid up to the sum of its adjusted default energy bid and relevant maximum daily GHG bid adder; the sum of the GHG bid adder price and energy bid price cannot exceed the hard energy bid cap of \$2,000/MWh, as is the case today.⁴⁸⁷

363. CAISO notes that a consequence of modeling EDAM with GHG regulation areas is a phenomenon known as secondary dispatch, which CAISO describes as the scenario where lower-emitting resources receive instruction to serve demand in a GHG regulation area, leading to higher-emitting resources to backfill to serve the non-GHG regulation areas that the original resource otherwise would have served. CAISO explains that its proposal seeks to minimize secondary dispatch using two mechanisms: (1) an optimized counterfactual (or GHG reference pass) run in the IFM; and (2) a GHG net export

⁴⁸⁴ Transmittal at 164; eTariff, § 33.32.1 GHG Compliance Cost Recovery (0.0.0).

⁴⁸⁵ CAISO notes that it will currently only model California and Washington; however, the modeling approach is flexible to accommodate new GHG regulation areas if needed or combine a larger GHG area into an existing boundary. Transmittal at 163; eTariff, § 33.32.1 GHG Compliance Cost Recovery (0.0.0), § 33.32.1.2; *id.* § 29.32 Greenhouse Gas Regulation and Bid Adders (6.0.0).

⁴⁸⁶ Transmittal at 164; eTariff, § 29.32 Greenhouse Gas Regulation and GHG Bid Adders (6.0.0), § 29.32(a)(2)(A).

⁴⁸⁷ Transmittal at 164-65; eTariff, § 33.32.1 GHG Compliance Cost Recovery (0.0.0) §§ 33.32.1.3, 33.32.1.5, 33.32.1.6.

constraint.⁴⁸⁸ CAISO states these mechanisms aim to reduce the possibility of secondary dispatch by reducing GHG attributions to resources that would have generated even without demand in the GHG regulation area.

364. CAISO explains that the optimized GHG counterfactual, known as a GHG reference pass, would result in an optimal market schedule without any net imports into the GHG regulation areas to simulate how BAAs outside GHG regulation areas will meet their own load with internal generation as well as supply from other areas outside of the GHG regulation area. CAISO states that this will serve as a counterfactual baseline to compare a dispatch profile and associated costs when GHG regulation areas are counted.⁴⁸⁹ CAISO states that the GHG reference pass results will be used to limit attribution of GHG transfers to EDAM resources in the IFM to the difference between a resource's reference schedule and its upper economic limit, which should reduce secondary dispatch.⁴⁹⁰ CAISO argues that the mechanism will improve the accuracy of CAISO's GHG attributions to generation actually dispatched to serve demand in a GHG regulation area and will reduce GHG attributions to resources that would have generated even without demand in the GHG regulation area.⁴⁹¹

365. CAISO also proposes to use a new GHG net export constraint that will further limit attribution of resources serving a GHG regulation area.⁴⁹² CAISO explains that

⁴⁸⁸ Transmittal at 166-67.

⁴⁸⁹ For resources participating in just WEIM and not EDAM, CAISO will continue to use self-submitted base schedules; for resources participating in EDAM and WEIM, CAISO will use the GHG counterfactual which instead of a base schedule will be the difference between the resource's day-ahead market schedule and day-ahead market GHG award. *Id.* at 169; eTariff, § 33.32.2 Consideration of GHG Bid Adders in Market Clearing (0.0.0) 33.32.2.3.

⁴⁹⁰ Specifically, in the IFM, EDAM would limit an attribution to the lower of: (1) the GHG bid capacity; (2) the positive difference between a resource's upper economic limit and its GHG reference pass; or (3) the optimal energy schedule. In real-time, CAISO would rely on the EDAM resource's day-ahead schedule to limit the MW value of a real-time GHG transfer, the lower of: (1) the MW value of the GHG bid adder; (2) the resource's upper economic bid minus day-ahead energy schedule, plus the resource's total day-ahead attribution to serve in a GHG regulation area; or (3) the resource's real-time market energy schedule.

⁴⁹¹ Transmittal at 167-68; eTariff, § 33.32.5 GHG Net Export Constraint (0.0.0).

⁴⁹² The GHG net export constraint is only a feature of CAISO's GHG modeling, and not the same as the net export transfer constraint that is another EDAM proposal,

under the constraint, attributions of GHG transfers to EDAM resources located in a non-GHG BAA cannot exceed the net exports of the resources' native EDAM BAA; thus, if an EDAM Entity is a net importer for a given hour, no EDAM resources within that BAA may be attributed to serving load in a GHG regulation area during that hour. According to CAISO, the constraint reflects how EDAM Entities rely on their internal supply as well as imports to meet demand (and might not have surplus supply to serve a GHG regulation area). CAISO asserts this constraint will reduce secondary dispatch by eliminating the possibility for a different resource to backfill demand in an importing BAA.⁴⁹³ In circumstances where this constraint might pose reliability risks, CAISO proposes to relax the GHG net export constraint.⁴⁹⁴

366. With multiple GHG regulation areas, each with its own GHG compliance price, CAISO proposes to calculate a separate marginal GHG cost for each GHG regulation area in both day-ahead and real-time markets (i.e., for both EDAM and the WEIM). According to CAISO, this would create an additional payment above the marginal energy cost called "Greenhouse Gas Emission Cost Revenue" for resources located outside a GHG regulation area that receive an attribution to serve demand in the GHG regulation area.⁴⁹⁵

367. For the day-ahead market, CAISO states that GHG payments to resource scheduling coordinators will be the product of the obligation to serve demand in a specific GHG regulation area and the marginal GHG cost from the IFM for the respective GHG regulation area. For the real-time dispatch, CAISO explains the GHG payments to resource scheduling coordinators will be the product of the obligation to serve demand in a specific GHG regulation area and the marginal GHG cost for the respective GHG regulation area. Similar to how the WEIM works today, CAISO states that real-time market settlements of GHG payments reflect deviations or imbalances from day-ahead

discussed in the filing section above. *See* Transmittal at 170.

⁴⁹³ *Id.* CAISO states that the constraint will not apply to capacity from a non-GHG regulation area that is already obligated to serve demand within a GHG regulation area so long as the scheduling coordinator registers this capacity with CAISO as being so committed.

⁴⁹⁴ *Id.* at 171. For example, if a BAA within a GHG regulation area fails its RSE in the upward direction, and thus is in need of imports to maintain reliability, CAISO will allow the attribution, even if such attribution is above the net exports of the resource's native BAA. *Id.*

⁴⁹⁵ *Id.* at 173. Currently in the WEIM, CAISO calculates one marginal GHG cost (for the GHG regulation area of California). eTariff, § 33.32.3 GHG Marginal Cost (0.0.0).

market settlements.⁴⁹⁶ For both day-ahead and real-time, CAISO states that EDAM will collect GHG payments through LMPs paid by load in the GHG regulation areas, and scheduling coordinators for resources within a GHG regulation area will recover GHG compliance cost through energy payments.⁴⁹⁷

368. With the formation of more than one GHG regulation area with different GHG compliance prices for both EDAM and the WEIM, CAISO proposes to calculate separate marginal GHG costs for each GHG regulation area. In the day-ahead market, GHG payments to resource scheduling coordinators will reflect the product of the obligation to serve demand in a specific GHG regulation area and the marginal GHG cost from the IFM for the respective GHG regulation area. CAISO explains that EDAM will collect these payments through LMPs paid by load in the GHG regulation area and scheduling coordinators for resources within a GHG regulation area will recover the GHG compliance cost through energy payments.⁴⁹⁸

369. CAISO proposes that in the 15-minute market and five-minute real-time dispatch, the GHG payments to resource scheduling coordinators will reflect the product of the obligation to serve demand in a specific GHG regulation area and the marginal GHG cost for the respective GHG regulation area. The WEIM will collect these payments through LMPs paid by load in GHG regulation areas; scheduling coordinators for resources within a GHG area will recover GHG compliance cost through energy payments, similar to how the WEIM works today.⁴⁹⁹

370. Finally, CAISO proposes to establish offset accounts in the day-ahead and real-time markets for marginal GHG costs associated with a specific GHG regulation area; these accounts ensure a balance between amounts collected from a GHG regulation area demand and payments made to compensate units called to serve that demand.⁵⁰⁰ CAISO explains that offset accounts help maintain fiscal neutrality for CAISO as a market operator and address variances arising between dispatch and settlement quantities, noting that the Commission has accepted using such neutrality adjustments through offset

⁴⁹⁶ Transmittal at 174.

⁴⁹⁷ *Id.*

⁴⁹⁸ *Id.* at 173; eTariff, § 11.2.1 IFM Settlements (6.0.0), § 11.2.1.1; *id.* § 33.11.3 Day-Ahead Market Settlement (0.0.0), § 33.11.3.7.

⁴⁹⁹ Transmittal at 174; eTariff, § 11.5.10 Greenhouse Gas in the RTM (0.0.0).

⁵⁰⁰ eTariff, § 33.11.3 Day-Ahead Market Settlement (0.0.0) § 33.11.3.9; *id.* § 11.5.4 Imbalance Energy Pricing; Non-Zero Offset Amount Allocation (15.0.0), § 11.5.4.1.4.

accounts in CAISO.⁵⁰¹ CAISO proposes to use a separate offset account for each GHG regulation area, ensuring neutrality within each.⁵⁰²

(b) Comments/Protests

371. Bonneville and Vistra ask that the Commission direct CAISO to update its GHG accounting proposal to minimize secondary dispatch. Bonneville believes that once the EDAM area expands to Washington, modifications will be necessary to accommodate BAAs with a footprint across multiple states to properly attribute specific resources to load in the state.⁵⁰³ Vistra states that even with the proposed changes to the WEIM GHG framework, the changes are not enough to mitigate the existing issues and that extending the existing framework into the day-ahead market, where much greater volumes of energy are settled, would be a mistake. Vistra asserts that the WEIM GHG framework has a host of issues leading to secondary dispatch, undermined state GHG programs, and hindered accurate price formation. Vistra states that the WEIM's approach leads to the dispatch of higher-emitting resources with no obligation to comply with GHG compliance programs to support California load, rather than California's own cleaner and GHG-compliant resources, thereby underestimating the GHG emissions associated with serving California load. Vistra and Powerex argue this effect distorts the true GHG costs of California imports, prevents imported clean generators from appropriately being compensated, and mutes price signals for development of zero- and low-emitting resources.⁵⁰⁴

372. PG&E asserts that the GHG net export constraint may cause inaccurate attributions resulting in higher costs and may be unnecessary given the resource-specific constraints.⁵⁰⁵ PG&E explains that if every resource within a BAA is already restricted by resource-specific attribution constraints, there is no need for an aggregate constraint. Because of these concerns, PG&E requests that the Commission (1) require CAISO to test for mis-attributed GHG emissions during market testing and report its results in a

⁵⁰¹ Transmittal at 175 (citing *Cal. Indep. Sys. Operator Corp.*, Delegated Letter Order, Docket No. ER19-2497-000 (Sept. 6, 2019)).

⁵⁰² CAISO notes that today, it uses a real-time imbalance energy offset account to ensure neutrality between payments made to resources based on their attributions to serve California demand. CAISO also notes that it is proposing Tariff revisions to exclude marginal GHG costs from the current real-time imbalance energy offset.

⁵⁰³ Bonneville Comments at 16-17.

⁵⁰⁴ Vistra Protest at 46-48; Powerex Comments at 18.

⁵⁰⁵ PG&E Comments at 9-10.

compliance filing, and (2) direct CAISO to provide a plan for monitoring this issue in EDAM in a compliance filing.⁵⁰⁶

373. PG&E also argues that CAISO's proposal to create one reference pass for the whole non-GHG area would effectively aggregate those BAAs into one area, resulting in undue discrimination by effectively giving BAAs in the non-GHG zone preferential access to residual economic supply. PG&E argues that the issue could be resolved by creating GHG reference passes (counterfactuals) for each individual BAA, as is done today in the WEIM. According to PG&E, an individual GHG reference pass is more accurate at identifying which resources are needed to meet a BAA's native load needs while also providing equitable access to all BAAs. PG&E requests that the Commission (1) require CAISO to test for this issue with the GHG reference pass during market testing and report its results in a compliance filing, and (2) direct CAISO to provide a plan for monitoring this issue, post EDAM launch, in a compliance filing.⁵⁰⁷

374. DMM does not oppose a static implementation of the GHG net export constraint but has concerns with a dynamic application of the constraint, stating that situations can arise in which the price paid to a resource with attributions do not support the optimal dispatch. DMM states that in such a situation, the resource's LMP and share of GHG congestion rents may only cover the cost of the resource operating at a MW level equal to its GHG attribution. DMM also requests that CAISO clarify a discrepancy between Tariff section 33.32.5 and the transmittal, finding that CAISO's proposal is not clear as to whether the GHG net export constraint limit would be: (1) the difference between its net exports in the GHG reference pass and the IFM pass; or (2) the maximum of #1 and the net exports in the IFM pass. DMM also asks CAISO to clarify how it will determine the limit for GHG net export constraint and to revise its proposed Tariff amendment as necessary.⁵⁰⁸

375. Vistra asserts that the EDAM GHG framework would magnify the issues it alleges exist in the WEIM GHG program, noting that the WEIM algorithm systematically underestimates the GHG emissions associated with serving load in California by attributing imports to clean and low-emitting resources rather than to the fossil-fuel resources that actually support the imports (via backfilling elsewhere), thus undermining state GHG policies and distorting prices and market outcomes.⁵⁰⁹ Vistra states that the reference pass is too blunt an instrument to achieve CAISO's goals because it only

⁵⁰⁶ *Id.* at 12.

⁵⁰⁷ *Id.* at 12-13, 15.

⁵⁰⁸ DMM Comments at 32-34.

⁵⁰⁹ Vistra Protest at 44-45.

reflects awards to least-cost resources regardless of where they are and how likely they are to actually serve load within GHG compliance areas. Vistra also asserts that conducting the reference pass on non-GHG compliance areas can undermine state GHG programs and lead to double counting GHG attributes.⁵¹⁰

376. PIOs state that since GHG accounting within EDAM must be measured in a manner consistent with compliance with state clean energy goals for states with participating entities, consistency is crucial to achieving long-term decarbonization goals in the West. PIOs offer specific comments for CAISO regarding elements of the GHG framework that should be monitored as EDAM is implemented to ensure alignment of market design with applicable state regulations and address issues that may emerge.⁵¹¹ PIOs state that they support the newly formed CAISO GHG Coordination Working Group and ask the Commission to require CAISO staff to report on the performance of EDAM in terms of its GHG optimization protocol for the first three years of its operation. Additionally, PIOs state that they believe either DMM or the WEIM Market Expert should assess the “deemed resources versus actually delivered resources” to ensure the GHG pricing rules are not unduly discriminatory and incentivize clean energy resources fairly for dispatch.⁵¹²

377. WPTF recommends periodic reporting regarding implementation of the GHG net export constraint and secondary dispatch.⁵¹³ Should the Commission accept the EDAM proposal as filed, Vistra requests that the Commission require CAISO to submit annual reports on the implementation of the GHG accounting mechanism, specifically, the types of resources attributable to GHG compliance areas as well as the percentage share for each BAA.⁵¹⁴ Six Cities urge CAISO and market monitoring entities to closely monitor and evaluate the impacts of the pooled approach to the GHG reference pass and the GHG net export constraint to ensure an appropriate balance between efforts to minimize secondary dispatch and preservation of reliability and efficiency in EDAM and the

⁵¹⁰ Vistra explains that CAISO’s approach does not prevent generation resources that have been developed to meet renewable portfolio standards or clean energy requirements of buyers in a non-GHG area from being deemed delivered to a GHG area for GHG accounting proposes; if these are deployed to a GHG area, then they would be counted once towards meeting clean energy requirements of the native state and once towards meeting the clean energy requirements of the sink state. *Id.* at 47-48.

⁵¹¹ PIOs Comments at 10-11.

⁵¹² *Id.* at 12-13.

⁵¹³ WPTF Protest at 23.

⁵¹⁴ Vistra Protest at 53.

WEIM.⁵¹⁵ Google recommends that CAISO report on how its proposed GHG accounting methodology is working in practice.⁵¹⁶ Powerex asks that the Commission direct CAISO to provide high-level data from 2020 forward so the GHG framework can be monitored by the Commission, market participants, and other entities.⁵¹⁷

(c) Answer

378. CAISO states that the Commission need not consider Vistra's or Powerex's critique of existing WEIM GHG accounting Tariff provisions in the context of this filing and asserts that these comments do not demonstrate that the proposed Tariff revisions are unjust and unreasonable. CAISO argues that the Commission accepted the current WEIM design as just and reasonable, and that the EDAM design enhances the current WEIM approach through mechanisms to make GHG transfer attributions more accurate and to mitigate secondary dispatch potential.⁵¹⁸

379. CAISO disagrees with Bonneville's request that the Commission direct CAISO to update its secondary dispatch minimization proposal, reiterating that the requirement to submit a GHG bid adder for a resource to receive attribution to serve demand in a GHG regulation area, the GHG reference pass, and GHG net export constraint mitigate secondary dispatch potential. CAISO notes it intends to continue discussions with stakeholders to enhance mitigation measures and increase accuracy of attributions to resources outside a GHG regulation area to serve demand in a GHG regulation area.⁵¹⁹

380. Regarding various concerns on the necessity of the GHG net export constraint, CAISO states generally that the GHG net export constraint helps to more accurately model the attribution of available supply within a BAA to serve demand in a GHG regulation area and helps to reduce secondary dispatch potential.⁵²⁰ CAISO disagrees with PG&E that resource-specific constraints may already mitigate the potential for

⁵¹⁵ Six Cities Comments at 16-17

⁵¹⁶ Google Comments at 10.

⁵¹⁷ Powerex Comments at 18-19.

⁵¹⁸ CAISO Answer at 114-15 (citing *Cal. Indep. Sys. Operator Corp.*, 141 FERC ¶ 61,135, at P 44 n.43 (2012)).

⁵¹⁹ CAISO Answer at 121.

⁵²⁰ *Id.* at 123 (citing *Cal. Indep. Sys. Operator Corp.*, 165 FERC ¶ 61,050, at P 17 (2018)).

secondary dispatch, as it might not be true all of the time.⁵²¹ CAISO also notes that if capacity outside of a GHG regulation area has a commitment to serve demand in a GHG regulation area, CAISO will not enforce the GHG net export constraint against committed capacity, ensuring it may receive necessary attribution.⁵²²

381. Regarding DMM's concern about using a dynamic constraint (instead of a static one), CAISO notes that a dynamic value gives the optimal GHG net transfer capability in the final market run for any interval, whereas a static value will reflect the optimal net transfer of the previous iteration of the market run for a given interval. CAISO states that it plans to use a static constraint as part of initial EDAM implementation and will describe this modeling approach in the applicable BPM. CAISO also clarifies that to determine the limit for the GHG net export constraint, the market will use the net energy export transfer from the iteration of the IFM or real-time market run prior to the run that results in a binding market solution.⁵²³

382. CAISO disagrees with PG&E's and Six Cities' opposition to there being one GHG reference pass for the whole non-GHG area rather than basing the reference pass on individual BAAs. CAISO asserts that these criticisms are misplaced and contends that the GHG reference pass should account for economic displacement across a non-GHG area to identify a more optimized counterfactual (and that the proposed approach mirrors the WEIM counterfactual approved by Commission that uses base schedules). CAISO argues the Commission should reject claims that the GHG reference pass could create undue discrimination regarding what capacity may serve demand in a GHG regulation area because LSEs within a GHG regulation area may secure capacity outside a GHG regulation area through forward contracting. CAISO explains that if scheduling coordinators register that capacity as committed to serving demand within the GHG regulation area, the reference pass will not schedule that capacity and it will remain available in the IFM for full attribution to serve load in the GHG regulation area.⁵²⁴

383. CAISO rejects Vistra's arguments that the GHG reference pass: (1) does not address the issue of allowing resources to be deemed to be delivered to a GHG area

⁵²¹ For example, CAISO explains that a BAA may have imports (plus internal thermal generation) exceeding its internal demand; the GHG reference pass may identify available capacity in that BAA that could support transfers to serve demand in a GHG regulation area, which may not have been available but for the imports into the BAA.

⁵²² *Id.* at 124.

⁵²³ Whereas DMM suggested CAISO revise the Tariff with this clarification as necessary, CAISO states it will explain this modeling approach in the applicable BPM.

⁵²⁴ *Id.* at 119.

regardless of the extent to which they are able to, or did, support these schedules; and (2) could undermine state programs and lead to double counting environmental attributes. CAISO states that the reference pass creates a baseline to inform attribution to serve demand in a GHG regulation area and mitigate secondary dispatch potential, noting the Commission has recognized that a similar constraint in the WEIM improves accuracy of CAISO's GHG attributions to generation. With respect to concerns on double counting environmental attributes, CAISO also argues that neither EDAM nor the WEIM will make any claims on environmental attributes of energy produced by resources.⁵²⁵

384. CAISO also disagrees with comments seeking to require CAISO to perform market testing and report results in a compliance filing prior to go-live, noting that it will conduct a thorough market simulation with market participants and report data through existing reporting and stakeholder discussion processes.⁵²⁶

385. CAISO generally disagrees with commenters' requests that it be required to file reports or publish data in this proceeding, noting that it either already tracks various information or commits to do so in the future to improve the proposed framework. CAISO states that it has initiated an ongoing GHG coordinating working group discussion with stakeholders about developing durable electricity market solutions for climate policies across the West. Among other things, CAISO agrees that this GHG Coordination Working Group should take up discussion of how EDAM and WEIM GHG design can support state programs that have capped carbon emissions but not established a carbon price. CAISO does not believe, as PIOs request, that Commission action is necessary to report on EDAM performance and GHG emissions. CAISO explains it will discuss the appropriate level of reporting and data transparency in the context of its GHG Coordination Working Group and will coordinate with DMM or the WEIM Market Expert on these information needs.⁵²⁷ CAISO states that it also plans to make available a data set reflecting hourly MWh and GHG intensity of attributions to serve California demand for calendar year 2022, and will discuss future data releases with the working group. Similarly, CAISO states that it already engages in ongoing monitoring and reporting on market performance (including on DAME and EDAM), and that it is unnecessary to require specific reporting, as requested by Vistra and WPTF.⁵²⁸

⁵²⁵ *Id.* at 120-21.

⁵²⁶ *Id.* at 120.

⁵²⁷ *Id.* at 125-26.

⁵²⁸ *Id.* at 127.

(d) Determination

386. We find that CAISO's proposed GHG accounting framework is a just and reasonable approach to account for diverse GHG policies in the EDAM area, and we accept CAISO's corresponding modifications to the existing WEIM GHG accounting and settlement framework so that both frameworks are aligned. In doing so, we note that the Commission accepted a fundamentally similar GHG framework in the WEIM,⁵²⁹ which includes resource-specific bid adders to reflect GHG pricing in the market runs and can accommodate state GHG policies without imposing unwarranted costs on customers in non-GHG regulation areas. We also find that CAISO's approach to modeling GHG accounting using GHG regulation areas is reasonable for both the WEIM and EDAM (in contrast to the BAA-specific modeling currently done in the WEIM). With the addition of the state of Washington's new GHG laws, we agree that it is not practical to model GHG attributions according to BAA footprints, as state regulations do not always align with BAA boundaries. We also believe CAISO's proposal to use bid adders to reflect GHG costs is just and reasonable. Although some commenters suggest that CAISO should consider other GHG accounting mechanisms, the Commission need not consider alternative approaches or the best possible approach—but rather must assess whether the proposal before it is just and reasonable.⁵³⁰

387. In addition, we find just and reasonable CAISO's GHG settlement proposal. Specifically, we find it just and reasonable for CAISO to use the marginal GHG cost for a GHG regulation area to reflect the GHG bid adder of the marginal resource selected by the market to serve demand in the GHG area in both EDAM and WEIM. We also find CAISO's proposal to establish two offset accounts (for each GHG regulation area) in both the day-ahead and real-time market is just and reasonable because it allows financial neutrality and better enables CAISO to manage any variance that might arise between dispatch and settlement quantities.

388. With regard to secondary dispatch, we first note that the primary goal of a GHG accounting framework is to find a reasonable way to factor and attribute GHG pricing within an existing market framework. Because the EDAM area will potentially span multiple jurisdictions, it is appropriate to design the market in such a way that it does not circumvent state policies. Thus, we do not find persuasive requests that the Commission direct CAISO to further modify its proposal to protect against secondary dispatch, as CAISO's proposal already contains two mechanisms to minimize secondary dispatch (a GHG net export constraint and the GHG reference pass) in the interest of respecting state policies.

⁵²⁹ *Cal. Indep. Sys. Operator Corp.*, 182 FERC ¶ 61,067, at P 26 (2023).

⁵³⁰ *See, e.g., Cities of Bethany*, 727 F.2d at 1136.

389. Similarly, we find that CAISO's proposal to implement the GHG net export constraint with a reliability exception to be just and reasonable. The GHG net export constraint addresses the concern that a non-GHG regulation area BAA would support exports of low-GHG power to GHG regulation areas by importing high-GHG power into its own BAA.⁵³¹ While constraining exports to GHG regulation areas in certain circumstances may result in curtailments of transfers not directly associated with secondary dispatch, we nevertheless find that the constraint is narrowly tailored to address the concern while not imposing unreasonable limitations on transfers. We disagree with assertions that the GHG net export constraint is superfluous due to already-existing resource-specific constraints. As CAISO points out, although the existing model might put constraints on resources, it cannot do so all the time, cannot mitigate supply stress on a balancing authority-wide scale (as it focuses specifically on a resource and associated area), and might not account for whether a BAA is a net exporter or importer. We note that CAISO commits to review and discuss the performance of the GHG net export constraint with stakeholders after EDAM becomes effective.

390. Regarding DMM's concern that the GHG net export constraint is dynamic rather than static and thus might not support the optimal dispatch, we note that in its answer, CAISO clarifies that it intends to implement a static constraint initially, which it has committed to describe in the applicable BPM, but will retain the flexibility to implement a dynamic constraint. We find this approach reasonable.

391. We find that CAISO's GHG reference pass methodology is an acceptable approach to determining the limits of GHG attribution for resources in non-GHG regulation areas. We find Vistra's concerns about the GHG reference pass undermining state programs or leading to double counting of GHG attributes to be speculative; Vistra does not provide sufficient basis to show how, plausibly, using a GHG reference pass could undermine existing state GHG programs simply on the possibility that backfilling may occur. In fact, without the reference pass, the EDAM framework would arguably increase the possibility of secondary dispatch (a sustained stakeholder concern), as there would be no baseline on which to establish any attribution limits. Finally, we reject protests on state clean energy counting and attribution rules because they address the legality of state GHG regimes, not whether the Tariff revisions are just and reasonable.⁵³² If a low GHG resource is developed to satisfy native state policy and is deployed to serve another state's demand, such a scenario represents a jurisdictional market transaction for wholesale energy that could happen with or without EDAM.

⁵³¹ See, e.g., CEBA Comments at 6; CMUA Comments at 3-4; PIOs Comments at 10.

⁵³² See *Cal. Indep. Sys. Operator Corp.*, 182 FERC ¶ 61,067 at PP 28-29.

392. We also decline to direct CAISO to modify the reference pass design to perform a reference pass for each non-GHG regulation area (instead of one reference pass for the whole non-GHG regulation area). We agree with CAISO that performing one reference pass for the whole non-GHG regulation area leads to a more accurate baseline of available capacity, noting that this approach is appropriately tailored to the goal of reflecting how supply resources can optimally serve demand in the whole EDAM area outside of the GHG regulation areas. We are not persuaded by PG&E's comment that the single reference pass effectively gives EDAM BAAs in the non-GHG regulation area preferential access to residual economic supply. In addition, as CAISO notes, LSEs within a GHG regulation area may still secure capacity outside of a GHG regulation area through forward contracting, and such capacity will remain in the IFM for full attribution to serve load in a GHG regulation area if registered by scheduling coordinators.

393. Finally, we decline to require CAISO to provide reports on the implementation of the GHG accounting mechanisms as requested by various commenters.⁵³³ We acknowledge CAISO's commitment to engage with its stakeholders to evaluate the GHG framework as it gets more data and analyzes actual EDAM dispatches, as well as its commitment to provide data to stakeholders as appropriate.

iv. Locational Marginal Price Formulation

(a) Filing

394. CAISO states that in its current market design, it derives a marginal energy cost based on the shadow price of the power balance constraint at the optimal solution across the entire market area. The system marginal energy cost is added to the marginal loss component and the marginal congestion component to derive the LMP at each pricing node. Under the EDAM proposal, CAISO proposes to calculate a marginal energy cost based on the shadow price of the power balance constraint at the optimal solution for each BAA in the market area.⁵³⁴ Thus, each EDAM Entity will have its own marginal energy cost used to calculate LMPs in its footprint.

395. CAISO explains that with the extension of the real-time market to other BAAs starting in 2014 under the WEIM, a power balance constraint is enforced for each BAA reflecting the net transfer as the mismatch of supply and demand within each BAA, resulting in a marginal energy cost for each BAA. CAISO states that to maintain the traditional system marginal energy cost as part of the WEIM, the difference among other BAAs' marginal energy cost and the CAISO BAA marginal energy cost is added to the

⁵³³ PIOs Comments at 12-13; WPTF Protest at 23; Vistra Protest at 53; Six Cities Comments at 16-17; Google Comments at 10; Powerex Comments at 18-19.

⁵³⁴ eTariff, app. C Locational Marginal Price (18.0.0).

marginal congestion component for each BAA in the WEIM to account for and allocate congestion offset costs among BAAs. CAISO argues that this transformation from the marginal energy cost to the system marginal energy cost in the WEIM does not alter the LMP, which remains the sum of its components. With the introduction of transfer settlement in EDAM and the separation between transfer and congestion revenue, however, CAISO asserts that this transformation is no longer applicable. CAISO argues that the marginal energy cost for each BAA in EDAM must be referenced and it is no longer necessary or appropriate to reference a system marginal energy cost in the LMP formulation.

396. CAISO proposes to continue to calculate a marginal energy cost based on the shadow price of the power balance constraint at the optimal solution for each BAA in the market area, as it does today in the WEIM. In EDAM, CAISO explains, the marginal energy cost may differ between BAAs in the market area when market transfers between the BAAs are scheduled at their respective scheduling limits, generating transfer revenue. CAISO proposes to calculate the marginal congestion component at each node as the net contribution of the shadow prices of the binding constraints at the optimal solution, weighed by the respective power transfer distribution factors. CAISO proposes to calculate the marginal loss component at each node as the product of the marginal energy cost and the rate for marginal losses at that node, where the rate for marginal losses is the sensitivity (partial derivative) of system losses to an increment of power injected at that node and absorbed by the reference bus.⁵³⁵

(b) Comments/Protests

397. Vistra argues that a BAA-specific marginal energy cost instead of a system marginal energy cost is inappropriate and that it does not allow a market participant to determine if an LMP difference is due to the marginal energy cost between BAAs being different or if it is due to congestion and/or losses. Vistra asserts that this removes an important price signal that market participants rely on and that market participants will have no way to distinguish which component is driving the LMP. Vistra asserts that this runs counter to principles of price formation and providing market participants transparency into inputs to LMP.⁵³⁶

⁵³⁵ *Id.* §§ A.1 LMP Composition in the Day-Ahead Market and the Real-Time Market, A.2 Marginal Energy Cost Component of the LMP, A.3 Marginal Congestion Component of the LMP.

⁵³⁶ Vistra Protest at 51-52 (citing *Uplift Cost Allocation and Transparency in Markets Operated by Reg'l Transmission Orgs. & Indep. Sys. Operators*, Order No. 844, 163 FERC ¶ 61,041, at P 121 (2018); Order No. 831, 157 FERC ¶ 61,115 at P 4; *Price Formation in Energy and Ancillary Servs. Markets Operated by Reg'l Transmission*

398. Powerex asserts that price formation is a critical topic in the context of EDAM and notes that EDAM will not incorporate fast-start or “robust” scarcity pricing, diverging from other organized markets and Commission policy on price formation. Powerex lists the lack of fast-start pricing or robust scarcity pricing in EDAM as a perceived shortcoming that has driven Powerex and others away from EDAM.⁵³⁷

(c) Answer

399. CAISO disagrees with Vistra’s claims that CAISO’s proposal to adopt a BAA-specific marginal energy cost ignores the Commission’s price formation requirements. According to CAISO, Vistra offers only conclusory claims and fails to explain how the proposal ignores such requirements. CAISO disagrees that its proposal deprives the market of price transparency. CAISO argues that its proposal is in line with the principles of the orders cited in Vistra’s comment. CAISO argues that calculating a marginal energy cost by BAA does not eliminate the price signal provided by the LMP and that the breakdown by BAA is essential to account for congestion and transfer revenues by BAA.⁵³⁸

400. CAISO counters Powerex’s claims that the lack of fast-start or “robust” scarcity pricing will substantially harm ratepayers and argues that this is at odds with Commission policy. According to CAISO, Powerex acknowledges that the lack of robust scarcity pricing and fast start pricing in EDAM is an extension of CAISO’s existing market design, which the Commission has found to be just and reasonable. CAISO also adds that it is considering adding these elements to its market design through its Price Formation Initiative.⁵³⁹

(d) Determination

401. We accept CAISO’s proposal for deriving LMP, including the proposed methodologies for calculating congestion and losses, as just and reasonable. We find convincing CAISO’s argument that calculating a single system marginal energy cost is not appropriate because EDAM will not operate as a single BAA and instead will comprise multiple BAAs, each with its own power balance constraint reflecting operational constraints of reliably balancing load and resources. We agree with CAISO that the WEIM formulation used to maintain the traditional system marginal energy cost

Orgs. & Indep. Sys. Operators, 153 FERC ¶ 61,221, at P 65 (2015)).

⁵³⁷ Powerex Comments at 16-17.

⁵³⁸ *Id.* at 128-30.

⁵³⁹ *Id.* at 130.

(using the CAISO BAA as a reference-setting BAA of the system marginal energy cost for the market area) is no longer appropriate because of the introduction of transfer settlements. CAISO explains that whereas in the WEIM, the difference among external BAAs' marginal energy cost and the CAISO BAA marginal energy cost is added to the congestion component for each BAA to account for and allocate congestion offset costs, this allocation is no longer applicable because the difference between the marginal energy costs of two BAAs in EDAM will result in transfer revenue from the transfers between them, and as such it cannot be added to the congestion component. We agree with CAISO's conclusion that, therefore, the marginal energy cost for each EDAM BAA must be computed, and that it is no longer necessary or appropriate to reference a system marginal energy cost in the LMP formulation and find CAISO's proposal to calculate a marginal energy cost for each EDAM BAA is just and reasonable. Further, we find that a separate marginal energy cost for each BAA will provide sufficiently accurate price signals as well as sufficient transparency. In addition, as CAISO notes, all components of LMP are published and transparent and their calculation is well-documented.⁵⁴⁰

402. Regarding Powerex's comments about price formation in EDAM, we note that CAISO has not proposed fast-start pricing here and, therefore, consideration of such pricing is beyond the scope of this proceeding. CAISO's existing market does not include fast-start pricing, and the Commission has not mandated fast-start pricing in RTOs/ISOs. Regarding scarcity pricing, we have found that CAISO's proposed pricing for its new day-ahead market products is just and reasonable and not unduly discriminatory or preferential for the reasons discussed above. Scarcity pricing for a power balance constraint violation carries over from CAISO's existing Tariff and scarcity pricing for ancillary services is not relevant to the EDAM proposal because ancillary services procurement will not be included in EDAM. Finally, we note that CAISO has a stakeholder initiative on price formation underway.

v. Virtual Bidding/Convergence Bidding

(a) Filing

403. CAISO explains that the day-ahead market currently enables virtual bidding (also known as convergence bidding) and proposes to allow EDAM transmission service providers the option to enable virtual bidding in their BAAs but not to mandate it. CAISO explains that virtual bidding would function the same as it does today. Alternatively, EDAM Entities may elect to forego allowing virtual bidding in their BAAs at the outset of EDAM. Once EDAM begins, CAISO states that it will begin a stakeholder process to consider a permanent virtual bidding design for the EDAM area and CAISO footprint, and notes the optional transitional period will give EDAM

⁵⁴⁰ *Id.* at 128-29.

transmission service providers, customers, and market participants experience with both day-ahead and real-time markets before any potential permanent virtual bidding design. CAISO notes that many stakeholders stressed the importance of such a transition period.⁵⁴¹

404. CAISO explains that if an EDAM transmission service provider elects to use the optional virtual bidding transitional period, LSEs within the BAA may not bid or self-schedule demand above the amount of BAA supply, which will mitigate the risk of inaccurate price signals in the day-ahead market. CAISO notes that it and DMM will continue to monitor EDAM performance with or without convergence bidding in BAAs to inform future design.⁵⁴²

(b) Comments

405. NV Energy argues that certain justifications for convergence bidding that exist in an RTO might not be present in the EDAM structure.⁵⁴³ NV Energy states that CAISO should consider an approach whereby, after there is operational experience with EDAM, CAISO would initiate a stakeholder process to consider whether the potential benefits of convergence bidding in the EDAM outweigh the potential for degraded market efficiency and significant uplift charges to loads such that convergence bidding be required for all BAAs participating in the new market.⁵⁴⁴ Six Cities emphasize the importance of close monitoring to identify gaming or unanticipated opportunities that may arise from virtual bidding.⁵⁴⁵

406. CEBA supports the proposal to allow convergence bidding, as it will provide more liquidity in the day-ahead market, minimize the spread between day-ahead and real-time prices, and provide market participants the flexibility to manage their exposure in the markets.⁵⁴⁶ Idaho Power supports a transition period and delay in implementation of virtual bidding. In addition, Idaho Power supports further consideration of virtual bidding during a stakeholder process to include not only how virtual bidding would be implemented but what basis for suspension, other than system reliability and grid

⁵⁴¹ Transmittal at 154; eTariff, § 33.30.7 Convergence Bidding (0.0.0).

⁵⁴² Transmittal at 155.

⁵⁴³ NV Energy Comments at 22.

⁵⁴⁴ *Id.*

⁵⁴⁵ Six Cities Comments at 16.

⁵⁴⁶ CEBA Comments at 8.

operations, would be needed given EDAM's unique market design.⁵⁴⁷ Interwest states that it promotes virtual bidding to be enabled as an integral part of market operations. Interwest explains that the EDAM Tariff will not fully integrate virtual bidding into its platform because inter-scheduling coordinator trading is not enabled, and it recommends that virtual bidding continue to be reviewed by EDAM participants so it can be evaluated for future implementation.⁵⁴⁸

(c) Answer

407. CAISO remarks, in response to NV Energy, that future enhancements to CAISO's authority to suspend convergence bidding are beyond the scope of this proceeding, but that CAISO is committed to evaluate appropriate adjustments to convergence bidding application. In response to Six Cities, CAISO notes it will monitor the implementation of virtual bidding in EDAM BAAs.

(d) Determination

408. We accept CAISO's virtual bidding proposal and its implementation in EDAM as just and reasonable. Although there are certain benefits in implementing virtual bidding—such as the potential for more liquidity and convergence between day-ahead and real-time prices—mandating participation in virtual bidding, especially for new market participants, is not a necessary condition to enable the broader EDAM framework. As such, we find that CAISO's proposal to provide the optionality for virtual bidding reasonably balances the need for flexibility while still allowing virtual bidding to occur where an EDAM transmission service provider elects to implement it. This initial transitional framework will provide data and experience and ultimately help to inform CAISO's future examinations of whether and how to implement any potential permanent virtual bidding framework in EDAM.

d. Settlement and Accounting

i. Filing

409. CAISO proposes that EDAM will financially settle in agreement with existing CAISO Tariff specified timelines and procedures for the settlement of market participant transactions.⁵⁴⁹ All day-ahead market charges will be settled as CAISO currently settles its BAA with a few EDAM-specific provisions that are specified in proposed new Tariff

⁵⁴⁷ Idaho Power Comments at 7.

⁵⁴⁸ Interwest Comments at 7.

⁵⁴⁹ eTariff, § 11 CAISO Settlements and Billing (0.0.0).

section 33.11. These EDAM-specific provisions pertain to where settlements involve the interaction of more than one BAA and will account for the RSE surcharge, GHG accounting rules, and the allocation of transfer and congestion revenues between BAAs.

ii. Comments/Protests

410. WAPA states that according to the proposed Tariff provisions, many charges and payments are allocated to EDAM Entities, and therefore CAISO must provide sufficient details in its EDAM Entity settlement statements to allow such charges and payments at the EDAM Entity level to be accurately allocated to the sub-entities of the EDAM Entities according to their respective rules.⁵⁵⁰ WAPA further states that greater transparency and access to EDAM Entity level data will be helpful for sub-entities within an EDAM Entity for operational awareness and analysis of EDAM participation, without having to wait for data to come through in the normal settlement timelines.⁵⁵¹

411. PacifiCorp generally supports the proposed EDAM settlements framework, but it notes that additional detail will have to be worked out in the PacifiCorp OATT to ensure that revenues and charges are allocated equitably. PacifiCorp notes that while CAISO will settle directly with EDAM resource owners and load for basic market clearing charges, in some instances CAISO would allocate transfer revenues to the EDAM Entity for sub-allocation under its OATT, and congestion revenues would need to be sub-allocated by the EDAM Entity.⁵⁵²

412. Deseret asserts that there have been some flaws in the design of markets operated by CAISO that have only become apparent with experience. Therefore, Deseret believes that the proposed EDAM design will inappropriately delegate to EDAM Entities functions that must be reserved for the market operator. Deseret also argues that all market participants should have the same access to the market operator without an EDAM Entity serving as a firewall.⁵⁵³ In addition, Deseret argues that a market participant should be able to delegate its settlement responsibility to a third-party, such as a balancing authority. However, Deseret contends, it is not appropriate for a market operator to delegate its market settlement functions to an entity that is not a market operator and does not have the same regulatory controls. By delegating such functions to

⁵⁵⁰ WAPA Comments at 6-7

⁵⁵¹ *Id.* at 7.

⁵⁵² PacifiCorp Comments at 22-24.

⁵⁵³ Deseret Comments at 6.

EDAM Entities, Deseret asserts that other market participants will lack the visibility they need to operate in the market.⁵⁵⁴

413. Tri-State contends that the lack of transparency and complexity of settlements that exist in that WEIM today will only increase with EDAM.⁵⁵⁵

iii. Answer

414. In response to WAPA's comment arguing that CAISO should provide all data used to calculate settlement charges, CAISO states that it is committed to providing EDAM Entities with the necessary transparency to settle transactions within their respective BAAs.⁵⁵⁶ CAISO states, however, that it will be incumbent on each EDAM BAA to provide the information to its customers.⁵⁵⁷

iv. Determination

415. We find that CAISO's proposed settlement design is just and reasonable. Specifically, CAISO's proposed settlement design is modeled on CAISO's existing settlement mechanisms used for ISO operations and in the WEIM, both of which the Commission has found to be just and reasonable.⁵⁵⁸ We find that CAISO's existing settlements design is appropriate for use in EDAM as well and thus find CAISO's proposal to be just and reasonable. We also note that CAISO makes certain EDAM-specific accommodations for settlements arising from RSE, GHG, and congestion/transfer revenue; as discussed above, we also accept these provisions as just and reasonable. We are not persuaded by Deseret's argument that too many of the settlement details are delegated to EDAM Entities and not to CAISO as the market operator. In order to participate in EDAM, EDAM Entities will have to file OATT revisions with the Commission that include new settlement provisions to participate in EDAM. Furthermore, flow through of settlements by EDAM Entities will allow for each EDAM Entity to propose an appropriate cost allocation among its customers. As a result, the Commission will determine when each EDAM Entity files its OATT revisions if its proposed settlement provisions are just and reasonable and not unduly discriminatory.

⁵⁵⁴ *Id.*

⁵⁵⁵ Tri-State Comments at 4.

⁵⁵⁶ CAISO Answer at 143.

⁵⁵⁷ *Id.*

⁵⁵⁸ *See, e.g.*, WEIM Order, 147 FERC ¶ 61,231 at P 195.

416. We agree with Tri-State that the complexity of settlements will be greater in EDAM than in the WEIM, which only settles real-time imbalances. Expanding the day-ahead market to settle energy in the EDAM area, potentially for the entire WEIM footprint, is inherently more complex, but that complexity does not render EDAM unjust and unreasonable. We expect CAISO to work with stakeholders to establish the appropriate balance of detail and data in settlement statements to ensure that applicable charges can be sub-allocated by EDAM Entities to their customers.

e. Congestion Revenue and Transfer Revenue

i. Filing

417. CAISO models internal transmission constraints, internal transmission limits, and transmission transfer limits in the WEIM today, and proposes to continue to do so in EDAM. If these internal transmission limitations or constraints are reached, the market will seek to redispatch around them.⁵⁵⁹ In EDAM, CAISO proposes to account for the resulting accrued incremental costs as internal congestion revenues and will allocate them to the BAA where the binding constraint is modeled.⁵⁶⁰

418. CAISO states that under EDAM, the practice of requiring WEIM entities to make transmission available at interties between BAAs to support energy transfers will continue, along with the addition of capacity transfers. Transmission across interfaces between BAAs may have limitations or other constraints, leading to price separation of the marginal energy component between the BAA where the constraint is located and the rest of the EDAM area (or price differences in Imbalance Reserves or Reliability Capacity). This price separation represents the accrual of transfer revenue in the extended day-ahead market. CAISO states that rather than settling these revenues under the umbrella of congestion revenue using one settlement charge code, CAISO proposes to separate this revenue component as accrued transfer revenue and settle it independently from accrued congestion revenue. This separation of the congestion revenue from the transfer revenue supports separate accounting, which in turn provides for the allocation of transfer revenue to the rights holders that voluntarily made transmission available to the day-ahead market. CAISO contends that otherwise, EDAM would not be able to account for the revenue these rights holders are entitled to under the EDAM transmission availability framework.⁵⁶¹

⁵⁵⁹ Transmittal at 185.

⁵⁶⁰ *Id.*; eTariff, § 33.11.1 Transfer Revenue and Congestion Revenue Allocation (0.0.0).

⁵⁶¹ Transmittal at 186; eTariff, § 33.11.1 Transfer Revenue and Congestion

419. CAISO states that the real-time BAA congestion revenue/shortfall in the WEIM does not distinguish between congestion generated by the price separation between BAAs versus internal transmission constraints.⁵⁶² However, to ensure the appropriate BAA is allocated the appropriate congestion revenue or congestion shortfall, the WEIM also calculates a Marginal Cost of Congestion (MCC) distribution price. Using the MCC, CAISO has developed a method to separate transfer revenues from congestion revenues in EDAM. This separation of the congestion revenue from the transfer revenue supports separate accounting, which in turn provides for the allocation of transfer revenue to the rights holders that voluntarily made transmission available to the day-ahead market.⁵⁶³

420. For the accrual and settlement of transfer revenue between BAAs, CAISO proposes that (1) the transfer revenues accrue when the scheduling limit is reached at a transfer point between two EDAM areas, (2) the transfer revenue is the difference in the energy component of the LMP between two EDAM areas, and (3) the two EDAM Entities that made the transmission available to facilitate the energy or capacity transfer generally will share the transfer revenue equally (50:50).⁵⁶⁴

421. CAISO states that without the separation of congestion revenue from transfer revenue, it would be unable to allocate transfer revenue cleanly and directly to transmission customers because the monies would be commingled with congestion revenue that would be allocated to the BAA supporting the transfer. CAISO states that this settlement mechanism supports an important dimension of transmission availability and relates to changes in the formulation of the marginal energy component of the LMP that facilitate extension of the day-ahead market across a multi-BAA footprint.⁵⁶⁵

ii. Comments/Protests

422. BANC argues that allocating congestion revenues to a BAA in which the constraint becomes binding is appropriate because it is the responsibility of that EDAM BAA to resolve that binding constraint, likely through out of merit order dispatch.⁵⁶⁶ BANC asserts that the responsibility to resolve a binding constraint is the same whether

Revenue Allocation (0.0.0), §§ 33.11.1.1, 33.11.1.2.

⁵⁶² Transmittal at 187.

⁵⁶³ *Id.* at 186-87.

⁵⁶⁴ *Id.* at 188.

⁵⁶⁵ *Id.* at 189.

⁵⁶⁶ BANC Comments at 11.

the cause of the constraint is an event on the BAA system, or parallel flows from outside the BAA.⁵⁶⁷

423. NV Energy states that it supports the proposed allocation of transfer and congestion revenue to the balancing authority acting as the transmission provider for sub-allocation in accordance with its revised OATT.⁵⁶⁸ Similarly, Idaho Power supports the proposed allocation of congestion and transfer revenue as it treats OATT customers equally.⁵⁶⁹ Interwest recommends direct settlements of congestion and transfer revenues from EDAM itself rather than flowing through EDAM Entities and states that it will support these changes after the Tariff is approved.⁵⁷⁰

424. DC Energy states that CAISO's proposal prevents additional uncertainty for CRR holders, who already face significant underfunding risk when valuing and hedging congestion in the energy market. In addition, by settling CRRs on the marginal cost of congestion differences between a source and sink in the Imbalance Reserves deployment scenarios, CRR holders are able to hedge congestion due to Imbalance Reserves procurement. DC Energy argues that CAISO's proposal to collect congestion revenue rent on Imbalance Reserves flows and redistribute it to entities entitled to congestion revenues is just and reasonable because it avoids the potential for unintended cost shifts. DC Energy supports a specific aspect of the DAME initiative, namely, CAISO's proposal to collect congestion revenue rent on Imbalance Reserves flows and redistribute it to entities entitled to congestion revenues, such as CRR holders. DC Energy also avers that the relevant BPM should include a requirement that CAISO provide advance notice to market participants of any changes to the deployment scenario parameters for Imbalance Reserves, in advance of CRR auctions, to facilitate dialogue between market participants and CAISO on potential changes.⁵⁷¹

425. Powerex suggests that CAISO's proposed allocation of congestion rents on interties is inequitable. Powerex claims that a 50/50 allocation of intertie congestion rents between BAAs fairly reflects the fact that transmission service on both sides of a transmission interface is necessary to enable energy transfers. Powerex asserts that CAISO's proposal to allocate congestion revenue entirely to the EDAM BAA where

⁵⁶⁷ *Id.*

⁵⁶⁸ NV Energy Comments at 15-17.

⁵⁶⁹ *Id.* at 8.

⁵⁷⁰ Interwest Comments at 7.

⁵⁷¹ DC Energy Comments at 3-5.

congestion appears is inequitable and reflects a design choice that is highly beneficial to California interests.⁵⁷²

426. CDWR explains that prior to the introduction of the day-ahead CRR program, CAISO had performed and shared several years' worth of day-ahead LMP pricing studies, which gave market participants a historical perspective when creating their own estimates of day-ahead congestion rents and revenues.⁵⁷³ CDWR is concerned that, in the absence of such data, it will have uncertainty when making its own estimates of CRR risks and revenues.⁵⁷⁴ CDWR explains that in the absence of MCC values for new products, such as Reliability Capacity, which impacts CRR Balancing Account settlements, it is a matter of concern due to the recent recurrence of revenue sufficiency issues in the CRR program that are ultimately funded by CAISO ratepayers.⁵⁷⁵

427. WAPA is concerned that EDAM will use its transmission system without providing adequate compensation, thereby leaving WAPA's customers to pay for others' usage.⁵⁷⁶ WAPA argues that although the Tariff language makes it possible for WAPA to receive transfer revenue and congestion revenue, it is uncertain whether the transfer revenue and congestion revenue can adequately meet the revenue requirements in proportion to the transmission capacity taken by the market.⁵⁷⁷

428. Shell and ACP comment that section 33.18.2.1 outlines provisions for EDAM transmission service to provide transmission so that EDAM's optimization can support resource sufficiency, but note that all transmission made available under this provision will have congestion/transfer revenues settled in an as-yet-to-be-determined manner.⁵⁷⁸ ACP requests that the Commission direct CAISO, as part of a "Year-One EDAM Enhancements" initiative, to evaluate requiring EDAM transmission service providers "to the extent feasible" to hold all firm point-to-point and network integration transmission service customers harmless from the EDAM transfer and congestion costs incurred in

⁵⁷² Powerex Comments at 19-20.

⁵⁷³ CDWR Comments at 5.

⁵⁷⁴ *Id.*

⁵⁷⁵ *Id.* at 5-6.

⁵⁷⁶ WAPA Comments at 4.

⁵⁷⁷ *Id.* at 5.

⁵⁷⁸ Shell Protest at 9; ACP Comments at 6.

scheduling on transmission rights between the EDAM scheduling deadline and real-time.⁵⁷⁹

iii. Answer

429. In response to Powerex's argument that assigning all congestion revenues at CAISO interties to CAISO ratepayers while evenly splitting transfer revenues at interties between WEIM entities unfairly favors California interests, CAISO asserts that its cost allocation approach appropriately assigns congestion revenues entirely within the BAA where the constraint is modeled, and appropriately includes accounting for transfer revenue.⁵⁸⁰ Therefore, CAISO contends that the change satisfies the principle of cost causation under Commission and court precedent. CAISO further argues that insofar as Powerex is objecting to the allocation of congestion revenue under the existing WEIM design, its comments are beyond the scope of this proceeding.

430. Regarding displaced congestion revenue, CAISO states that it has committed to provide the best information it can in the market simulation process to address CDWR's concern. CAISO notes that, naturally, data from the market simulation process will not provide perfect information about actual CRR settlements once the new market design is implemented. CAISO argues that regarding DC Energy's request, the Proposed Revision Requests process for revising BPMs is a multi-month process that provides notice and opportunity to comment.⁵⁸¹

431. In response to arguments from ACP and Shell that proposed Tariff section 33.18.2.1 will settle congestion or transfer revenues through the EDAM Entity, CAISO states that the same already applies to the WEIM. CAISO argues that experience with the WEIM has indicated that entities follow each other's processes, which has led to fairly aligned mechanisms in many areas.⁵⁸²

432. In response to comments from ACP that CAISO should include provisions directing transmission service providers to hold harmless transmission service customers from EDAM transfer and congestion costs incurred when scheduling transmission rights between the day-ahead and real-time market, CAISO states that such hold harmless

⁵⁷⁹ ACP Comments at 7 (noting that this proposal was contemplated in CAISO's EDAM Final Proposal but did not manifest in the final set of tariff revisions).

⁵⁸⁰ CAISO Answer at 144.

⁵⁸¹ *Id.* at 53.

⁵⁸² *Id.* at 153.

provisions would be unreasonable because CAISO is unable to track or account for such costs.⁵⁸³

433. Responding to WAPA, CAISO states that the EDAM access charge mechanism is designed to provide balancing authorities the ability to recover short-term transmission sales foregone due to EDAM participation and further, that the transfer and congestion revenue recovery and allocation proposal provide for accurate accounting of congestion costs and transfer revenue. CAISO asserts that WAPA will need to evaluate the sufficiency of these revenue streams in coordination with its balancing authority; although CAISO will support WAPA through implementation, CAISO maintains its proposal is just and reasonable. CAISO states that this proceeding does not foreclose a future Commission finding that CAISO may exempt WAPA from the marginal loss construct, arguing that it is not necessary to make that determination in this proceeding. CAISO explains it has engaged with WAPA on a fixed-loss accounting mechanism and believes these discussions should continue among the parties and should be considered as part of EDAM Entities' participation agreements.⁵⁸⁴

iv. Determination

434. We find that CAISO's congestion revenue and transfer revenue proposal is just and reasonable. Specifically, we accept CAISO's proposal to settle *intra*-BAA congestion revenue separately from *inter*-BAA transfer revenue because it enables allocation of transfer revenue rights to the holders that voluntarily made transmission available to the day-ahead market. In an expanded day-ahead market paradigm, separating these two streams for accounting purposes is reasonable as it allows CAISO to allocate transfer revenue accurately. Congestion revenue represents the cost to serve demand across just the internal BAA transmission system while *inter*-BAA transfer revenue represents the cost of serving demand across BAAs; it is thus necessary to keep those revenue streams separated. We also agree that CAISO's proposal to allocate congestion revenue to the BAA where the internal transmission constraint arises is reasonable.

435. With respect to Powerex's argument that assigning all congestion revenues at CAISO interties to CAISO ratepayers while evenly splitting transfer revenues at interties between WEIM entities favors California interests, we disagree. CAISO proposes to appropriately assign congestion revenues entirely within the BAA where the constraint is modeled, thus adhering to cost causation principles. As congestion revenues only account for congestion within each BAA, this methodology accurately assigns the revenue to the BAA where the congestion arose. We find that sharing the transfer

⁵⁸³ *Id.* at 154-55.

⁵⁸⁴ *Id.* at 147-49.

revenues equally between the two EDAM Entities that made transmission available to facilitate the energy or capacity transfers is also a just and reasonable method of accounting for transfer revenue. Because the transfer revenue is a function of the scarcity of transmission between BAAs, sharing the transfer revenue also represents a just and reasonable allocation of that revenue.

436. Regarding CDWR's and DC Energy's concerns pertaining to displaced congestion revenue, we note CAISO's commitment to provide the best information it can in the market simulation process. Regarding DC Energy's request concerning the Proposed Revision Requests process for revising BPMs, we encourage DC Energy to participate in the pertinent CAISO stakeholder process.⁵⁸⁵

437. With respect to ACP's and Shell's comments that proposed Tariff section 33.18.2.1 will settle congestion or transfer revenues through the EDAM Entity,⁵⁸⁶ we agree with CAISO's argument that previous experience from the WEIM, in which participants followed each other's processes, is indicative of the expected outcomes for EDAM. We encourage CAISO to address any potential Tariff issues pertaining to EDAM transmission service during the Tariff development process.

438. We reject ACP's request to direct CAISO to include provisions directing transmission service providers to hold transmission service customers harmless from EDAM transfer and congestion costs incurred when scheduling transmission rights between the day-ahead and real-time market because CAISO is unable to track or account for such costs. Furthermore, the issue is not pertinent to the Tariff revisions before us, as EDAM transfer and congestion costs and transmission services will be addressed in the OATTs submitted to the Commission by individual EDAM transmission service providers.

439. With respect to WAPA's concerns regarding the adequacy of the revenue requirement in proportion to the transmission capacity taken by the market, we do not find that CAISO's proposal here is unjust and unreasonable on the basis that resulting transmission usage might not match WAPA's revenue requirement. As discussed above, we find that the EDAM proposal accurately accounts for congestion costs and transfer revenues and provides for each EDAM Entity to sub-allocate costs and revenues within its BAA in accordance with its OATT or to a transmission customer. Additionally, certain shifts in transmission usage are an expected outcome of market adjustment; that one market's specific revenue profile might not match a participant's revenue requirement does not in itself render it unjust and unreasonable. Last, as CAISO has also noted, WAPA will need to evaluate the sufficiency of these revenue streams in

⁵⁸⁵ *Id.* at 53.

⁵⁸⁶ eTariff, § 33.18.2 Transmission at EDAM Internal Interties (0.0.0) § 33.18.2.1.

coordination with its balancing authority and CAISO has stated that it will support WAPA through the implementation process.⁵⁸⁷

440. Finally, we decline to direct CAISO to revise its BPM regarding the notice time frame for changes to Imbalance Reserves deployment scenario factors; we note that this is out of the scope of this proceeding and that revisions to CAISO's BPM specifications are appropriately addressed in CAISO's stakeholder process.

f. Transmission Revenue Recovery and EDAM Access Charge

i. Filing

441. CAISO states that participation in EDAM will not affect an EDAM transmission owner's costs because they will still be recovered pursuant to the transmission owner's transmission formula rate or stated rate under its respective OATT. CAISO states, however, that an EDAM transmission owner may have a change in the level of short-term and non-firm transmission revenue because it may face some forgone transmission sales at the outset of its EDAM participation. To address this issue, CAISO proposes an EDAM access charge that allows for the recovery of eligible transmission revenue shortfalls of an EDAM BAA from other EDAM BAAs.⁵⁸⁸ CAISO states that it expects the access charges will be relatively small and potentially become lower as EDAM transmission owners adjust their rates.⁵⁸⁹ CAISO also states that the EDAM access charge Tariff provisions are severable from the rest of its EDAM proposal.⁵⁹⁰

442. CAISO states that EDAM transmission owners may include in the EDAM access charges only those revenue shortfalls expected to result from transitioning to day-ahead market service under EDAM. CAISO explains that these include potential shortfalls associated with expected revenues from sales of short duration (i.e., monthly or shorter), such as sales of non-firm and short-term firm point-to-point transmission services,⁵⁹¹

⁵⁸⁷ CAISO Answer at 148-49.

⁵⁸⁸ eTariff, §§ 33.26 Transmission Revenue Recovery and Charges (0.0.0), 33.26.1 EDAM Access Charges (0.0.0).

⁵⁸⁹ Transmittal at 180-81.

⁵⁹⁰ *Id.* at 26, n.384 (“All provisions in new tariff section 33.26 are severable from each other, and new tariff section 33.26 as a whole is severable from the rest of this filing.”).

⁵⁹¹ For the CAISO BAA, shortfalls in historical short term transmission sale revenues are analogous to shortfalls in historical revenues collected through CAISO's

which are the ones most likely to be displaced by EDAM transfers.⁵⁹² Likewise, CAISO states it will permit EDAM transmission owners to recover revenue shortfalls associated with use of their transmission systems for energy transfers for an EDAM BAA or CAISO BAA in excess of the BAA's total net transfers.⁵⁹³ CAISO states that recovering these eligible revenue shortfalls through the EDAM access charge will mitigate potential rate shocks among ratepayers of EDAM transmission service owners.⁵⁹⁴

443. CAISO asserts that foregone revenues related to sales of transmission service to an EDAM transmission owner's merchant/marketing function are ineligible to be recovered through the EDAM access charge because EDAM participation will impact the total cost and revenue equally, negating any impact to ratepayers.⁵⁹⁵ CAISO explains that to determine the foregone revenues eligible for recovery through the EDAM access charge, EDAM transmission service providers will first calculate their recoverable revenue based on their average rate approved by the Commission, or applicable regulatory authority, for the preceding three years (three-year lookback). The EDAM access charge will then consist of the difference between the EDAM recoverable revenue and actual transmission recovered revenue eligible for recovery based on the average of those preceding three years.⁵⁹⁶

444. CAISO additionally states that EDAM transmission owners may recover in the EDAM access charge a portion of costs that would not appear in the three-year lookback, but whose cost recovery EDAM affects, such as certain new network upgrade costs and revenue shortfalls from sales of non-firm and short-term firm transmission associated with the release of transmission capacity resulting from the expiration of EDAM legacy contracts.⁵⁹⁷ CAISO explains that eligible new network upgrade costs are those that increase transfer capability between EDAM Entity BAAs or between the CAISO BAA and an EDAM Entity BAA and are energized after the EDAM Entity begins participation in the day-ahead market. CAISO states that an EDAM transmission owner cannot shift

wheeling access charge. *Id.* at 23.

⁵⁹² eTariff, § 33.26.2 Recoverable Revenue Shortfalls (0.0.0), § 33.26.2.1.

⁵⁹³ *Id.* § 33.26.2 Recoverable Revenue Shortfalls (0.0.0), § 33.26.2.3.

⁵⁹⁴ Transmittal at 181.

⁵⁹⁵ eTariff, § 33.26.2 Recoverable Revenue Shortfalls (0.0.0), § 33.26.2.1.

⁵⁹⁶ Transmittal at 181-82; eTariff, § 33.26.2 Recoverable Revenue Shortfalls (0.0.0), § 33.26.2.1.1.

⁵⁹⁷ eTariff, § 33.26.2 Recoverable Revenue Shortfalls (0.0.0), § 33.26.2.2.

all of its eligible new network upgrade costs into the EDAM access charge as it can only include a percentage of the projected revenue from the new network upgrades equal to the EDAM transmission owner's ratio of (1) the non-firm and short-term firm point-to-point historical EDAM recoverable transmission revenues to (2) the EDAM transmission owner's total revenue requirement. CAISO additionally states that it proposes to include a provision requiring CAISO to include examples of network upgrades that increase transfer capability in the applicable BPM.⁵⁹⁸

445. CAISO explains that, using the aggregate annual costs described above for each EDAM transmission owner, it will compute a \$/MWh rate specific to each EDAM BAA.⁵⁹⁹ CAISO also contends that to allocate an EDAM recoverable revenue shortfall, it will derive an annual rate specific to each EDAM Entity BAA by: (1) allocating each EDAM transmission service provider's revenue shortfall to the EDAM BAAs associated with the other EDAM transmission service providers, on behalf of such other EDAM transmission service providers, in proportion to: (a) the EDAM transmission service provider's gross load divided by (b) the total EDAM Area gross load minus the gross load of the EDAM transmission service provider; (2) calculating the total revenue shortfall allocation; and (3) dividing the total revenue shortfall by the EDAM transmission service provider's gross load.⁶⁰⁰ CAISO avers that accounting for an EDAM transmission service provider's gross load in relation to the overall EDAM gross load helps ensure EDAM access charges do not allocate costs beyond potential benefits, because the EDAM transmission owner's impact on the EDAM access charge will be proportional to its own share of gross load in the EDAM area.⁶⁰¹

446. CAISO states that it will assess the EDAM access charge to gross load in each EDAM BAA.⁶⁰² CAISO explains that gross load represents end-use customer demand (adjusted for distribution losses), including demand served by excess behind-the-meter production. CAISO avers that each EDAM access charge will recover the projected recoverable revenue shortfalls for the EDAM BAAs outside the BAA for that access

⁵⁹⁸ Transmittal at 182-83.

⁵⁹⁹ eTariff, § 33.26.1 EDAM Access Charges (0.0.0), § 33.26.1.1.

⁶⁰⁰ *Id.*

⁶⁰¹ Transmittal at 183.

⁶⁰² eTariff, § 33.26.3 Assessing Access Charges and Allocating Revenues in the EDAM (0.0.0).

charge, such that no EDAM BAA will be assessed its own projected recoverable revenue shortfalls.⁶⁰³

447. CAISO explains that revenues collected through the EDAM access charges will be allocated to EDAM Entities on behalf of each EDAM transmission owner, in proportion to its share of EDAM projected recoverable revenue shortfalls. CAISO avers that any under- or over- recovery of EDAM access charge revenue will be rolled into the next year's forecasted recoverable revenue from the access charge, which will help right-size the EDAM access charge year-to-year based on expected collections and actual collections.⁶⁰⁴ CAISO asserts that in order to ensure complete transparency over the EDAM access charges, CAISO proposes to require EDAM transmission owners to provide CAISO with all documentation necessary to determine each component of the EDAM access charge.⁶⁰⁵ CAISO explains that this documentation will minimally include: (1) the final order from the Commission or the local regulatory authority affecting the approved transmission rates; (2) the sums for each recoverable revenue component and true-up; and (3) an authorized affidavit from each EDAM transmission owner attesting to the accuracy of the data provided. CAISO states that it may include other requirements in its BPMs to ensure consistent practices, and to ensure third parties can review and verify the inputs to the EDAM access charges. CAISO explains that for each EDAM transmission owner, it will maintain on its website the current sum of each recoverable revenue component, the total true-up, and total eligible recovery. In addition, CAISO states the website will maintain each EDAM access charge, including the rate, the gross load, and the total eligible recovery in that BAA, similar to how CAISO maintains data for its transmission owners' transmission access charges. CAISO avers that this transparency will help ensure load-serving entities, regulators, and ratepayers can review and verify the accuracy of the inputs and assumptions within the EDAM access charges.⁶⁰⁶

ii. Comments

448. SMUD supports the EDAM access charge provisions.⁶⁰⁷ BANC states that the EDAM access charge ensures transmission providers are kept whole due to possible lost OATT sale revenues. BANC states it supports this make-whole approach rather than a

⁶⁰³ Transmittal at 183-84.

⁶⁰⁴ eTariff, § 33.26.1 EDAM Access Charges (0.0.0), § 33.26.1.2.

⁶⁰⁵ *Id.* § 33.26.4 Documentation (0.0.0).

⁶⁰⁶ Transmittal at 184-85.

⁶⁰⁷ SMUD Comments at 3.

per-transfer transmission charge because the latter may skew price signals and reduce market efficiency by discouraging efficient transfers that would otherwise clear the market. Further, BANC argues that the EDAM access charge will avoid harmful cost shifts as entities transition from bilateral OATT transmission sales to EDAM, while not interfering with market efficiency through an unnecessary transactional hurdle that would reduce beneficial EDAM transfers.⁶⁰⁸

449. CMUA does not oppose out-of-market payments to compensate transmission service providers for lost OATT sales in bilateral markets, explaining that this payment should help avoid cost shifts and ease transition of transmission service providers to EDAM. CMUA adds that avoiding any hurdle rate or other transaction charge, as CAISO's proposal does, should minimize impacts on market efficiencies and not impede economic transfers.⁶⁰⁹

450. Bonneville requests clarification that the EDAM access charge applies only to transmission made available to the EDAM by a transmission service provider and not to firm rights holders who purchase transmission from them. Bonneville also argues that CAISO should use already established transmission rates rather than new EDAM rates. Bonneville requests clarification on how transmission providers will be compensated as the EDAM expands.⁶¹⁰

451. Six Cities state that the EDAM transitional mechanism for transmission revenue shortfalls should be revisited after a reasonable period.⁶¹¹ Six Cities state that they do not oppose the concept of a transition mechanism to accommodate a reasonable adjustment period for transitioning to the new EDAM structure and explicitly support the application of this mechanism to reductions in Wheeling Access Charge revenues within CAISO, but Six Cities are concerned about the seemingly perpetual nature of this mechanism, which has no proposed sunset date.⁶¹²

452. PacifiCorp states that it conditionally supports the EDAM access charge subject to a cap. PacifiCorp explains that the access charge is designed to keep EDAM transmission service providers whole from revenue losses they may incur as a result of foregone opportunities to make certain sales that may be displaced by EDAM transfers.

⁶⁰⁸ BANC Comments at 14-15.

⁶⁰⁹ CMUA Comments at 2-33.

⁶¹⁰ Bonneville Comments at 13.

⁶¹¹ Six Cities Comments at 11.

⁶¹² *Id.* at 12.

PacifiCorp explains that the relative fairness of this market design element depends on sufficient volume of participation in EDAM by non-CAISO parties for such cost-sharing to be equitable and if, for example, PacifiCorp is the first, and for a time only, EDAM participant outside of CAISO, PacifiCorp would bear the entirety of lost revenue identified by all three of CAISO's major participating transmission owners. PacifiCorp explains that there is no hard data on what the liability for lost CAISO wheeling revenue would be and that in the stakeholder analysis of the transmission revenue recovery potential, a consensus estimate of potential liability did not result.⁶¹³

453. PacifiCorp argues that, in order to balance its support for the transmission revenue recovery concept with the uncertainty as to the potential exposure for PacifiCorp's customers, it conditions its support for the transmission revenue recovery element of the EDAM proposal on CAISO agreeing to cap the annual transmission revenue recovery liability for a single EDAM Entity at \$15 million. PacifiCorp explains that based on CAISO's assertion that this liability would be relatively small, PacifiCorp believes this value is a just and reasonable limit.⁶¹⁴

454. Tri-State points to the proposed Tariff section 33.26.3, which states that CAISO will assess an EDAM access charge to recover the EDAM projected recoverable revenue shortfall to gross load in the EDAM BAA. Tri-State asserts that this provision would require an EDAM transmission service provider's data to be submitted to CAISO by the EDAM BAA and for CAISO to calculate the shortfall subject to a non-existent BPM. To address this lack of transparency, Tri-state argues that CAISO's proposal should indicate what the BPM will require or otherwise directly incorporate measures for transparency and dispute resolution in the Tariff.⁶¹⁵

455. Idaho Power finds that the transmission revenue recovery proposal is integral to EDAM and disagrees with CAISO's representation that it is severable from the EDAM design as a whole. As a result, Idaho Power states that it will not consider joining EDAM on behalf of its customers without some form of transmission revenue compensation to avoid cost shifts to other users of the transmission system, particularly in the early years of EDAM.⁶¹⁶

456. Likewise, NV Energy states that it strongly opposes CAISO's claim that the transmission revenue recovery mechanism in section 33.26 is severable from the other

⁶¹³ PacifiCorp Comments at 18-19.

⁶¹⁴ *Id.* at 18-20 (citing Transmittal at 26).

⁶¹⁵ Tri-State Comments at 4.

⁶¹⁶ Idaho Power Comments at 5-6.

elements of the EDAM proposal. NV Energy asserts that CAISO undermines the cooperative stakeholder process with its suggestion that key compromise elements such as transmission revenue recovery are severable. NV Energy posits that the cost recovery elements were critical components of a comprehensive design involving the willingness of potential EDAM Entities to make firm available transfer capability accessible to the market without charge, and absent the provisions, the only potential response would be to reopen the stakeholder process to address a foundational aspect of the design.⁶¹⁷

iii. Answers

457. CAISO notes that many commenters support the proposed EDAM access charge and some argue that it is critical to EDAM.⁶¹⁸ CAISO agrees with PacifiCorp and other commenters that it will be critical for CAISO and stakeholders to evaluate and monitor the implementation of the EDAM access charge to ensure all costs and benefits align appropriately. CAISO believes that any enhancements should be based on data gathered as the EDAM transmission owners identify the costs that would go into the EDAM access charge, and on analysis of how the EDAM access charge allocates those costs to EDAM participants. CAISO states that it will promptly engage with its partners and stakeholders following acceptance by the Commission to review the application of the EDAM access charge based on the initial EDAM participants and based on the results of the review, CAISO will consider, develop, and propose any revisions necessary to ensure the EDAM access charge will be equitable when implemented, consistent with its design principles prior to go-live.⁶¹⁹

458. In response to Bonneville's requests for clarification, CAISO states that the EDAM access charge will not be a per-market transaction charge and so will not be able to differentiate self-scheduled exercise of OATT rights and exclude them from application of the charge.⁶²⁰

459. In its answer, PacifiCorp states that it is satisfied with CAISO's answer and commitment to beginning a stakeholder process to further analyze the applicability of EDAM access charges as well as filing Tariff changes prior to go-live if necessary. PacifiCorp states that it intends to participate in this stakeholder process and in the

⁶¹⁷ NV Energy Comments at 13-14.

⁶¹⁸ CAISO Answer at 139-40 (citing Idaho Power Comments at 5-6; NV Energy Comments at 14).

⁶¹⁹ *Id.* at 141.

⁶²⁰ *Id.* at 142.

interim agrees with CAISO and withdraws its request for a transmission revenue recovery cap to the extent it was interpreted as a protest.⁶²¹

iv. Determination

460. As discussed below, we reject CAISO's proposed EDAM access charge without prejudice.⁶²² CAISO has not demonstrated that the three components of the EDAM access charge are just and reasonable and not unduly discriminatory or preferential. CAISO stated that the EDAM access charge Tariff provisions are severable from the rest of its EDAM proposal,⁶²³ and therefore the rejection of the EDAM access charge does not impact the acceptance of the rest of the instant proposal.

461. CAISO's proposed EDAM access charge is designed to allow an EDAM transmission owner to recover three discrete components of foregone revenues: (1) the difference in its historical short-term transmission revenues it would have earned had it not joined EDAM and the actual amount it earns (or as applicable to CAISO, the difference in the historical and actual amounts of revenue collected through wheeling access charges); (2) a portion of network upgrade costs that is proportional to the amount of historical recoverable revenue in component (1) to the EDAM Entity's total revenue requirement; and (3) revenue shortfalls related to EDAM wheel-throughs in excess of an EDAM transmission owner BAA's net transfers (imports and exports).

462. As to the first component, we find that CAISO has not demonstrated that its proposal is just and reasonable. We find that there is ambiguity as to how this component will function in the first year EDAM is live. We agree with Six Cities that this component of the EDAM access charge was proposed as a permanent, rather than transitional, cost recovery mechanism given that CAISO did not propose an expiration date; however, CAISO's explanation of why its proposal is just and reasonable is limited

⁶²¹ PacifiCorp Answer at 3-4.

⁶²² See *NRG*, 862 F.3d at 114-15 (discussing the Commission's authority to propose modifications to a utility's FPA section 205 rate proposal).

⁶²³ Transmittal at 26, n.384 ("All provisions in new tariff section 33.26 are severable from each other, and new tariff section 33.26 as a whole is severable from the rest of this filing.").

to its role as a transitional mechanism.⁶²⁴ As such, we find that CAISO has not adequately explained why such a permanent mechanism is just and reasonable.⁶²⁵

463. With regard to the second component of the EDAM access charge, we find that, although CAISO explained that it may be appropriate to allow for recovery of a portion of the costs of certain network upgrades that benefit EDAM, CAISO has not demonstrated why it is just and reasonable to allocate those costs through the ratio of a transmission owner's historical revenue shortfalls associated with short-term transmission sales to its annual transmission revenue requirement.

464. Finally, as to the third component of the EDAM access charge, which is designed to allow an EDAM transmission owner to recover wheeling revenues associated with use of its transmission system in excess of an EDAM Entity's net imports/exports, we find that CAISO has not explained why the non-firm transmission rate is the appropriate transmission rate to use. In addition, CAISO has not explained why it is appropriate to use an EDAM Entity's non-firm transmission service rate and not the transmission rate of the applicable transmission service provider in instances where there are multiple transmission service providers operating within an EDAM Entity's BAA.

465. Several commenters state that they view the EDAM access charge as an integral component of EDAM.⁶²⁶ We note that while we are rejecting the EDAM access charge, we do so without prejudice to a future filing in which CAISO provides additional support for its proposal. Additionally, as we are rejecting the EDAM access charge at this time, we are not making a finding as to the issues raised by Tri-State. We also direct CAISO to submit a compliance filing within 60 days of the date of this order to reflect the removal of the EDAM access charge provisions from the Tariff.⁶²⁷

⁶²⁴ Transmittal at 180. "To avoid unintended cost shifts at the *outset* of their participation in EDAM, the CAISO proposes to protect EDAM transmission owners against the risk of foregone transmission revenues." *Id.* (emphasis added).

⁶²⁵ Six Cities Comments at 12.

⁶²⁶ *See, e.g.*, NV Energy Comments at 13-14; Idaho Power Comments at 5-6.

⁶²⁷ *See* eTariff §§ 33.2.5 Implementation Activities (0.0.0), 33.11.7 Transmission Revenue Recovery (0.0.0); *id.* app. A Definitions (0.0.0) (defining EDAM Access Charge).

g. Market Power Mitigation

i. Filing

466. At the start of EDAM, CAISO proposes to apply market power mitigation at the BAA level similar to the WEIM today. CAISO states that it intends to evaluate the overall market power mitigation design in its existing Price Formation Enhancements stakeholder initiative for EDAM and the WEIM.⁶²⁸

ii. Comments/Protests

467. NV Energy states that it supports the proposal to apply market power mitigation at the BAA level similar to the WEIM today, while continuing to examine the issue in the price formation initiative.⁶²⁹ NV Energy argues that in Order No. 861, the Commission declined to remove the requirement to submit indicative screens for WEIM Entities for sales into the WEIM.⁶³⁰ NV Energy asserts that with the expansion of the WEIM and the demonstrated ability of CAISO's market power mitigation measures to address potential market power, the Commission should consider the value versus the burden of requiring indicative market power screens for EDAM sales and future triennials of WEIM Entities.⁶³¹

468. DMM requests confirmation that CAISO intends to implement BAA-level local market power mitigation for all EDAM BAAs besides CAISO—noting that if CAISO intends to implement BAA-level local market power mitigation in EDAM, it may need to modify its proposed Tariff amendment language to effectuate this policy. Specifically, DMM notes that in the WEIM, when the power balance constraint shadow price of an EDAM BAA is elevated relative to the CAISO BAA during congestion, the entire BAA will be tested for competitiveness. DMM states that CAISO has proposed eliminating the system power balance constraint in the WEIM and replacing it with a CAISO BAA

⁶²⁸ Transmittal at 19.

⁶²⁹ NV Energy Comments at 25.

⁶³⁰ *Id.* at 26 (citing *Refinements to Horizontal Mkt. Power Analysis for Sellers in Certain Reg'l Transmission Org. & Indep. Sys. Operator Mkts.*, Order No. 861, 168 FERC ¶ 61,040, at P 56 (2019), *order on reh'g*, Order No. 861-A, 170 FERC ¶ 61,106 (2020)).

⁶³¹ *Id.*

power balance constraint and suggests this can directly be extended to EDAM BAA-level local market power mitigation as proposed in the Final Proposal.⁶³²

469. DMM notes that at the conclusion of the stakeholder process it understood this part of the proposal as intending to test an EDAM Entity's power balance constraint in the dynamic competitive path assessment for local market power mitigation when its power balance constraint's shadow price is larger in the positive direction than the CAISO BAA's. DMM explains that CAISO's proposed Tariff amendment in section 33.39 (and existing language in section 39.7) may accomplish DMM's understanding of the intent if it is interpreted to include BA-specific power balance constraints. DMM suggests CAISO should amend its proposed Tariff revisions to effectuate this intent if it is not captured in the proposed Tariff language already.⁶³³

470. Bonneville argues that CAISO's market power mitigation construct fails to adequately recognize or incorporate the physical constraints of cascading hydro operations.⁶³⁴ Bonneville also objects to CAISO using a pivotal supplier test rather than a conduct and impact test to determine market power mitigation. Bonneville believes that conduct and impact tests would better assess whether market power was exercised rather than the pivotal supplier test. Bonneville asserts that this issue is exacerbated with more granular/nodal level pricing regimes where a participant is more likely to be deemed to have market power.⁶³⁵

iii. Answer

471. CAISO affirms in its Answer that DMM correctly identifies the proposal to apply market power at the BAA-level for all EDAM BAAs, explaining that CAISO will deem the marginal energy price in the CAISO BAA as competitive and apply the dynamic competitive path assessment when an EDAM BAA's marginal energy cost is greater than CAISO's marginal energy cost. CAISO explains that if its assessment finds the constraints non-competitive, then the market power mitigation process will treat the differential similar to the non-competitive component of the marginal cost of congestion in CAISO's local market power mitigation process. CAISO also states it will assess the market power of all resource bids in that EDAM BAA above the CAISO marginal energy cost to determine any non-competitive contribution to LMPs for resources in that EDAM BAA and will mitigate these resources' bids if the net contribution from non-competitive

⁶³² DMM Comments at 35-36.

⁶³³ *Id.* at 36-37.

⁶³⁴ Bonneville Comments at 17.

⁶³⁵ *Id.*

constraints to these resources' LMP is positive. CAISO agrees to augment its description of the market power mitigation process in Tariff sections 29.39 and 33.39 as part of any compliance filing if the Commission so directs.⁶³⁶

472. CAISO states that Bonneville's comments appear to seek a Commission assessment that is out of the scope of this proceeding. CAISO explains it is not proposing to revise the fundamental approach to local market power mitigation in its Commission-approved Tariff but instead is extending the existing framework used in the WEIM to the day-ahead time frame. CAISO notes that it plans to discuss potential changes to its market power mitigation rules in the context of its price formation working group.⁶³⁷

iv. Determination

473. We find CAISO's proposal to extend its existing local market power mitigation used in the WEIM to the EDAM to be just and reasonable, and accept the proposal, subject to CAISO revising its Tariff on compliance to accurately augment its description of the process in Tariff sections 29.39 and 33.39, as CAISO offers in its Answer. Specifically, we direct CAISO to submit a compliance filing, within 60 days of the date of this order, with proposed Tariff revisions governing WEIM and EDAM local market power mitigation to better describe the market power mitigation process and clarify the application of market power mitigation at the BAA level for all EDAM Entities.

474. While we accept CAISO's market power mitigation proposal for EDAM, we note that, as in WEIM, EDAM participants will still need to comply with the requirements of the Commission's market-based rate program.⁶³⁸ Specifically, the EDAM area will constitute a new relevant geographic market for market power analysis purposes and potential EDAM participants will have to seek market-based rate authority in order to participate in EDAM.⁶³⁹

⁶³⁶ CAISO Answer at 131-32.

⁶³⁷ *Id.* at 133.

⁶³⁸ *See, e.g.*, WEIM Order, 147 FERC ¶ 61,231 at P 219; *PacifiCorp*, 147 FERC ¶ 61,227, at P 206, *order denying reh'g*, 149 FERC ¶ 61,057 (2014).

⁶³⁹ *PacifiCorp*, 147 FERC ¶ 61,227, at P 206; *Market-Based Rates for Wholesale Sales of Elec. Energy, Capacity & Ancillary Servs. by Pub. Utils.*, Order No. 697, 119 FERC ¶ 61,295, at PP 267-274 (2007), *order on reh'g*, Order No. 697-A, 123 FERC ¶ 61,055 (2008).

475. Finally, we find Bonneville’s comments on the existing local market power mitigation mechanisms to be out of the scope of this proceeding; CAISO’s underlying local market power mitigation framework—including the tests it employs—is not before the Commission in this proceeding.

h. EDAM Governance Structure and Market Monitor

i. Filing

476. CAISO does not propose Tariff provisions regarding EDAM governance but does explain how EDAM governance will function. CAISO states its Board of Governors approved overlaying an EDAM governance structure onto the existing WEIM Governing Body. CAISO explains that the EDAM governance framework builds upon the Tariff framework developed for the WEIM, which is governed by a five-member Governing Body that shares authority with the Board of Governors on rules specific to the WEIM.⁶⁴⁰

ii. Comments/Protests

477. Some commenters express concern about the independence of EDAM’s governance structure. PIOs request clarification from CAISO regarding what role the WEIM Market Expert will have for EDAM, as the current responsibilities for the WEIM Market Expert include providing market-related analysis, explanations, and opinions to aid in decision-making and reports on proposed market rule changes, business practices, market operations, and price formation.⁶⁴¹

478. Bonneville outlines its concerns with the non-independence of the CAISO Board of Governors and its preeminent role in the WEIM and EDAM. Bonneville states that it strongly believes that a truly independent and representative governance structure is necessary, especially given the potential that the EDAM proposal could eventually lead to development of an RTO.⁶⁴²

479. Powerex states that CAISO’s governance falls short of the Commission’s independence standards and its stakeholder processes in key areas tilt in favor of California interests. Powerex states that in designing EDAM governance, CAISO has

⁶⁴⁰ Transmittal at 38, 41-42, 103 n.175; *id.* attach. E CAISO Extended Day-Ahead Market Final Proposal at 130.

⁶⁴¹ PIOs Comments at 13.

⁶⁴² Bonneville Comments at 9-10.

departed from key principles Powerex and others identified in a 2019 letter to the CAISO and WEIM governing bodies.⁶⁴³

480. Deseret claims that CAISO's filing overlooks how it intends to ensure that the role of CAISO is appropriately defined in the EDAM to ensure that it is independent of market participants.⁶⁴⁴ Deseret argues that CAISO is acting in two roles, that of the market operator, making determinations in relations to system reliability, and that of a balancing authority itself, participating in EDAM.⁶⁴⁵

481. Deseret points out that the CAISO Board of Governors oversees both the Market Operator and balancing authority functions, which would not be the case in an independent regional transmission organization or independent system operator with day-ahead and real-time markets. Deseret urges the Commission to require distinct and strong separation between the market operator and market participants, particularly where the market operator will be evaluating market participants for participation in the market. Deseret notes Commission regulations requiring RTOs to be independent of any market participant and to demonstrate the following: (1) the RTO, its employees, and any non-stakeholder directors must not have financial interests in any market participant; and (2) the RTO must have a decision-making process that is independent of control by any market participant or class of participants.⁶⁴⁶

iii. Answer

482. CAISO argues that its governance structure meets the requirements relating to governance generally and independence specifically.⁶⁴⁷ In response to Powerex's argument that CAISO has departed from certain principles put forward by Powerex and others in a 2019 letter to the CAISO Board of Governors and WEIM Governing Body, CAISO states that these principles guided the development of EDAM through an extensive stakeholder process where the design was refined based on additional feedback by a range of interested parties over the past four years. CAISO believes that the original principles are reflected in the design and joint governance framework. CAISO states that

⁶⁴³ Powerex Comments at 15-16.

⁶⁴⁴ Deseret Comments at 2.

⁶⁴⁵ *Id.* at 3.

⁶⁴⁶ *Id.* at 4.

⁶⁴⁷ CAISO Answer at 166 (citing *Cal. Indep. Sys. Operator Corp.*, 112 FERC ¶ 61,010, at PP 32, 36 (2005); *Cal. Indep. Sys. Operator Corp.*, 133 FERC ¶ 61,067, at P 40 (2010)).

there are substantial existing protections to prevent CAISO decisions favoring California interests, such as the transparent and robust stakeholder process, the oversight of the independent WEIM/EDAM Governing Body, and the voluntary aspect of the EDAM market.⁶⁴⁸ In response to PIOs' request for clarification regarding what role the WEIM Market Expert will have in EDAM, CAISO states that proposed Tariff section 33.38 designates DMM as the market monitor for EDAM. CAISO states that it expects the WEIM Market Expert will evaluate various aspects of the EDAM design and advise the WEIM Governing Body.⁶⁴⁹

483. CAISO asserts that in any event, the exercise of measuring the EDAM design against the underlying principles is not an exercise for the Commission; this is a matter between CAISO and its stakeholders and that the question before the Commission is whether the proposed Tariff revisions are just and reasonable.⁶⁵⁰

iv. Determination

484. We note that CAISO's proposed EDAM governance structure is consistent with the existing WEIM governance, which the Commission previously concluded is just and reasonable.⁶⁵¹ We find satisfactory CAISO's clarification that DMM is the relevant market monitor for EDAM. We are not persuaded by commenters' concerns about CAISO's proposal to designate DMM as market monitor for EDAM, or concerns about the WEIM/EDAM Governing Body's independence. However, we note that EDAM is a voluntary market and participants may seek recourse with the Commission if they believe CAISO or DMM is acting in an unduly discriminatory manner in administering EDAM.

4. Other Issues

a. Gas-Electric Coordination

i. Comments/Protests

485. Arizona Utilities urge the Commission to direct CAISO to take steps to mitigate potential natural gas-electric coordination and reliability problems in EDAM. Arizona Utilities state that the proposed timing for posting EDAM day-ahead market results do

⁶⁴⁸ *Id.* at 168.

⁶⁴⁹ *Id.* at 133.

⁶⁵⁰ *Id.* at 73-74.

⁶⁵¹ *See* WEIM Order, 147 FERC ¶ 61,231 at P 109 (approving CAISO's proposed governance structure for the WEIM).

not align with the timing for natural gas trading and scheduling in the region. Specifically, Arizona Utilities notes that since the natural gas scheduling deadline occurs well before the identification of EDAM power awards, Arizona Utilities are at risk of not procuring enough natural gas supply for the market's needs.⁶⁵² Arizona Utilities represent that these gas procurement risks may result in an expense paid by Arizona ratepayers to the benefit of the broader West.⁶⁵³

486. Arizona Utilities request that the Commission direct CAISO to consider closer alignment of gas trading and EDAM market award schedules or, failing that, direct CAISO to provide EDAM participants with notification of the volume of gas necessary to support the day-ahead market award. Arizona Utilities further request that the Commission direct CAISO to consider providing a multiday market run projection for natural gas burn projections, and to extend the advisory results for natural gas resources to five days. Arizona Utilities state that the Commission should also direct CAISO to consider providing a nomogram or similar mechanism to inform the market software of limits on the natural gas system. Finally, Arizona Utilities urge the Commission to direct CAISO to consider how to improve the Reference Level Change Request process to be more user friendly.⁶⁵⁴

ii. Answer

487. CAISO responds that the gas-electric coordination issues are actively being discussed in the CAISO stakeholder working group on Gas Resource Coordination that meets monthly, which will help inform consideration of potential enhancements to existing designs, noting that Arizona Utilities have been active participants therein. CAISO does not support adopting any of Arizona Utilities' concepts at this time, stating that they are undeveloped. CAISO argues that it is not necessary to accept these concepts to find the EDAM proposal just and reasonable and extending the existing day-ahead processes is a reasonable starting point. CAISO adds that it would be premature to circumvent the stakeholder process on this matter.⁶⁵⁵

⁶⁵² Arizona Utilities Comments at 9-10. NV Energy similarly asserts that the additional market runs for the DAME products could push the day-ahead market results to 2:00 p.m. PST, and the delay in receiving market awards could exacerbate concerns with gas management. NV Energy Comments at 29.

⁶⁵³ Arizona Utilities Comments at 11.

⁶⁵⁴ *Id.* at 12-13.

⁶⁵⁵ CAISO Answer at 138-39.

iii. Determination

488. We recognize the importance of gas-electric coordination and the necessity for alignment between existing market processes. However, we find that the EDAM proposal reasonably uses the existing day-ahead market timelines, and the lack of a more coordinated framework for gas-electric timelines does not render the existing proposal unjust or unreasonable. Therefore, we decline to direct any revision to CAISO's day-ahead market timelines or to require CAISO to provide new notifications related to estimated natural gas volume.⁶⁵⁶ Given CAISO's representations on the ongoing Gas Resource Coordination working group (noting Arizona Utilities' participation), we find the stakeholder discussions and process to be the appropriate forum for developing any revisions to increase coordination.⁶⁵⁷ We also find the reference level request process beyond the scope of this proceeding, as CAISO does not propose any changes to that process here.

b. Inter-Scheduling Coordinator Trades

i. Filing

489. CAISO explains that it is not proposing at this time to support inter-scheduling coordinator trades within non-CAISO BAAs participating in EDAM. CAISO explains that the inter-scheduling coordinator trade functionality is a voluntary settlement service that CAISO makes available to scheduling coordinators to facilitate the market settlement of bilateral transactions that invoice energy and ancillary services delivery, as well as a means to allocate market payments and costs between bilateral counterparties. While CAISO admits this functionality has the potential to be helpful in EDAM, CAISO argues it is unnecessary to ensure that the extension of the day-ahead market is just and reasonable, noting it is not a necessary service for participation. CAISO further notes that buyers and sellers can still determine how they will manage the allocation of market payments and costs under bilateral transactions between them, and that it does not offer this functionality to WEIM participants either. CAISO states it will discuss with stakeholders whether to extend the settlement functionality to EDAM participants as a future design enhancement.⁶⁵⁸

⁶⁵⁶ We note that any revisions to the EDAM proposal would also necessitate a change to the existing day-ahead market timelines, which are not before us in this proceeding.

⁶⁵⁷ *Id.* at 138.

⁶⁵⁸ Transmittal at 194-95.

ii. Comments/Protests

490. ACP explains that it does not see a need to disable the inter-scheduling coordinator trade functionality in the EDAM area and recommends that the Commission direct CAISO to assess enabling inter-scheduling coordinator trades in EDAM. ACP notes that it is aware that inter-scheduling coordinator trades are not currently allowed in the WEIM, but it believes they would be beneficial in EDAM.⁶⁵⁹ ACP notes that it is not protesting this exclusion but recommends the Commission direct CAISO to assess enabling it as part of a “Year-One EDAM Enhancements” initiative.

491. AEU contends that it is disappointed that CAISO has chosen not to extend the inter-scheduling coordinator trade functionality, stating it is a valuable service allowing non-load-serving entities like AEU Buyers Group greater flexibility and certainty in bilateral transactions tied to market settlements. However, AEU admits it is not necessary for reliable EDAM market operation, nor to ensure it is just and reasonable. AEU supports extending this functionality as soon as practicable and urges the Commission and CAISO to support dialogue on its implementation.⁶⁶⁰

iii. Answer

492. Responding to concerns about a lack of inter-scheduling coordinator trade functionality, CAISO maintains that it is unnecessary to include this in the EDAM design at this time and asserts that discussion with stakeholders on the issue is beyond the scope of the proceeding; however, CAISO states it will consider this functionality as part of its overall commitment to prioritizing DAME and EDAM enhancements.⁶⁶¹

iv. Determination

493. We agree with CAISO that supporting inter-scheduling coordinator trades is not necessary to find EDAM to be just and reasonable. We note, however, CAISO’s intention to explore this functionality going forward based on experience with EDAM.⁶⁶²

⁶⁵⁹ ACP Comments at 12-13.

⁶⁶⁰ AEU Comments at 7.

⁶⁶¹ CAISO Answer at 151 (citing ACP Comments at 12-13; AEU Comments at 7).

⁶⁶² *Id.*

c. Monitoring and Reporting Requests

i. Comments/Protests

494. Some commenters suggest monitoring and reporting is appropriate following EDAM implementation. CMUA, Northern California Power Agency, and SoCal Edison generally support CAISO's proposals but urge the Commission to monitor market performance and implementation of Tariff provisions and encourage CAISO to evaluate the need for corrections and to maintain an ongoing stakeholder process.⁶⁶³

495. Some commenters request that CAISO monitor aspects of the DAME and EDAM proposals and submit performance reports. Vistra asserts that, if the Commission accepts the EDAM proposal as filed, CAISO should submit annual reports on the implementation of EDAM as a whole, as well as the RSE framework, GHG accounting mechanism, and the BAA specific marginal energy cost.⁶⁶⁴ Six Cities assert that a number of areas will require ongoing monitoring, reporting, and consideration of potential future revisions, including: (1) the availability and use of transmission within EDAM; (2) revenue recovery mechanisms associated with short-term transmission sales; (3) transmission market power; (4) eligibility of intertie bids for RSE; (5) consequences for *de minimis* failures to e-tag; and (6) impacts of measures to address secondary dispatch concerns.⁶⁶⁵

496. CalCCA argues that the proposed Tariff provisions in section 33.18.2.2.3 should be accompanied by monitoring and reporting requirements to ensure no balancing authorities use them in a manner inconsistent with their OATTs or that they unduly impact market outcomes for all balancing authorities.⁶⁶⁶

497. WPTF requests that the Commission require mandatory periodic reporting on three elements of the EDAM market design: (1) the use and impact of the net export transfer constraint to ensure its implementation does not adversely impact the markets or overall benefits of EDAM; (2) implementation of the GHG net export constraint and secondary dispatch; and (3) the frequency and quantity of self-scheduling of transmission

⁶⁶³ CMUA Comments at 2; Northern California Power Agency Comments at 1; SoCal Edison Comments at 3.

⁶⁶⁴ Vistra Protest at 53.

⁶⁶⁵ Six Cities Comments at 13-17.

⁶⁶⁶ CalCCA Comments at 2-4. CalCCA states that reporting should occur on a monthly basis for the first year after the effective date and on a quarterly basis thereafter.

rights, differentiated by BAA and by whether the EDAM Entity (or its affiliate LSE) or a third-party transmission customer is self-scheduling those transmission rights.⁶⁶⁷

498. Google recommends that the Commission require CAISO to file an annual report detailing how the transmission scheduling provisions of EDAM have worked in practice, including any instances of infeasibility, and what actions were taken to resolve the infeasibility. Google states that additional areas for reporting include market power mitigation, both for the DAME products and in EDAM, and how CAISO's proposed GHG accounting methodology is working in practice.⁶⁶⁸

499. PIOs recommend that CAISO publicly report data regarding resources that are already committed versus data about residual supply in the market. PIOs also recommend that CAISO periodically report specific carbon dioxide emission-related metrics to the Commission over the first three years of EDAM implementation.⁶⁶⁹

ii. Answer

500. CAISO states that it is committed to expanding its monitoring and reporting activities to include DAME and EDAM and providing frequent reports on DAME and EDAM performance, as well as opportunities to discuss market performance. CAISO states it will coordinate with stakeholders to enhance its monitoring and reporting activities, including appropriate forums to facilitate a common understanding of market operation and the ensuing reports. As a result of these commitments, CAISO asserts that there is no need for the Commission to impose the requested monitoring or reporting measures. CAISO states that in lieu of a reporting obligation, it will engage with interested market participants and stakeholders to focus resources on their greater concerns. CAISO also commits to establishing an appropriate forum to educate and engage in discussions with market participants to determine the specific metrics that should be in place for monitoring and assessing EDAM and DAME.⁶⁷⁰

501. In response to comments recommending specific processes, CAISO does not commit to year-one EDAM enhancements, claiming that EDAM will represent an area of

⁶⁶⁷ WPTF Protest at 22-23. WPTF recommends quarterly reports for three years following the entrance of an EDAM BAA into the market on the magnitude (MWh) and frequency (%) of self-scheduling differentiated by EDAM Entity affiliated transmission rights and third-party transmission rights within each EDAM BAA.

⁶⁶⁸ Google Comments at 10.

⁶⁶⁹ PIOs Comments at 11.

⁶⁷⁰ CAISO Answer at 5, 159-60, 163.

ongoing attention particularly in the early years of operation. CAISO adds there is an established process for considering market design enhancements, with a history of including stakeholders on proposed changes in the market design. CAISO expects EDAM to evolve and grow, just as prior major market enhancements have.⁶⁷¹ CAISO argues that Commission precedent limits its FPA section 205 review to the Tariff revisions before it and that arguments for monitoring and reporting are beyond the scope of the proceeding.⁶⁷²

502. CAISO additionally states that it has initiated an ongoing GHG Coordination Working Group discussion with stakeholders about developing durable electricity market solutions for climate policies across the West. Among other things, CAISO agrees that the GHG Coordination Working Group shall take up discussion of how EDAM and WEIM GHG design can support state programs that have capped carbon emissions but have not established a carbon price. CAISO does not believe, as PIOs request, Commission action is necessary to report on various EDAM and GHG emissions. CAISO explains it will discuss appropriate level of reporting and data transparency in context of its GHG Working Groups, and coordinate with DMM or WEIM Market Expert on these information needs.⁶⁷³

iii. Determination

503. We find that additional monitoring and reporting is not required at this time. We reject Tri-State's request for further process; we agree with CAISO that the existing record is sufficient for the Commission to address the merits of CAISO's filing. We agree with CAISO that it has provided opportunity for stakeholder input on the DAME and EDAM proposals. We acknowledge that CAISO has committed to monitor EDAM deployment, report on DAME and EDAM performance, and continue working with stakeholders to solicit feedback and improve the proposed DAME and EDAM frameworks,⁶⁷⁴ noting that CAISO has or will initiate working groups to look closely at GHG coordination, transmission constraint configurable parameters, price formation, and

⁶⁷¹ *Id.* at 59.

⁶⁷² *Id.* at 164-65 (citing *Sw. Power Pool, Inc.*, 160 FERC ¶ 61,087, at P 12 (2017); *Cal. Indep. Sys. Operator Corp.*, 154 FERC ¶ 61,169, at P 63 (2016); *PJM Interconnection, L.L.C.*, 144 FERC ¶ 61,191, at P 24 (2013)).

⁶⁷³ *Id.* at 125-26.

⁶⁷⁴ *Id.* at 4-5.

gas resource coordination.⁶⁷⁵ We encourage CAISO to engage in these and other required assessments as EDAM is implemented and evolves.

504. We note CAISO's obligation to timely provide market data, including Order No. 760 data, associated with EDAM and DAME to both DMM and the Commission.⁶⁷⁶

d. Seams

i. Comments

505. PIOs request that the Commission issue a set of guiding principles for a joint operating agreement or other coordination mechanism for adjoining day-ahead markets that can be used by CAISO and other day-ahead market operators to implement appropriate procedures for coordination and communication. PIOs state that these guiding principles for a coordination mechanism for day-ahead markets would provide CAISO and other day-ahead market operators with a common and consistent baseline for coordination procedures to proactively address anticipated seams issues – including transmission access scheduling, operating rules, and GHG accounting – without impeding the successful implementation of EDAM and its coordination with WRAP and the potential Markets+ initiative.⁶⁷⁷

506. Arizona Utilities request that the Commission order CAISO to work with SPP to identify and address potential seams issues between EDAM and Markets+, with the goal of developing an effective seams agreement. Arizona Utilities also urge the Commission to require CAISO to report on the status of those efforts periodically. Arizona Utilities request that the Commission evaluate holistically the seams that will arise between transmission providers' OATTs, market operators' Tariffs, and resource adequacy

⁶⁷⁵ *Id.* at 125-27, 38, 133, 137-38.

⁶⁷⁶ See *Enhancement of Elec. Mkt. Surveillance & Analysis through Ongoing Elec. Delivery of Data from Reg'l Transmission Orgs. & Indep. Sys. Operators*, Order No. 760, 139 FERC ¶ 61,053, at P 57 (2012) (requiring RTOs and ISOs to deliver data to the Commission); eTariff, §§ 20 Confidentiality (0.0.0), 20.4 Disclosure (7.0.0), § 20.4(a) ("CAISO . . . shall, consistent with 18 CFR § 35.28 (g)(4), electronically deliver to FERC, on an ongoing basis and in a form and manner consistent with the CAISO's own collection of data and in a form and manner acceptable to FERC, data related to the CAISO Markets."); *id.* app. P CAISO Department of Market Monitoring (6.0.0), § 7 ("The CAISO shall provide DMM access to the CAISO's databases of market information and any other market data necessary to enable DMM to carry out its duties as defined under this Appendix P.").

⁶⁷⁷ PIOs Comments at 9.

Tariffs. Arizona Utilities state the Commission should identify some guiding objectives for developing market protocols to enable efficient transaction between markets.⁶⁷⁸

507. Bonneville says it is imperative that CAISO and potentially participating EDAM BAAs coordinate with Bonneville regarding EDAM impacts and the use of EDAM participant transmission rights on Bonneville's system. Bonneville asks that the Commission require coordination between CAISO, EDAM Entities, and adjacent non-participating balancing authorities and transmission service providers to coordinate and manage market impacts.⁶⁷⁹

508. WAPA states that it shares the concerns of Bonneville and others about the need to effectively manage the market-to-market seams that will develop in the West as EDAM and other day-ahead initiatives move forward.⁶⁸⁰ WAPA further states that it believes formal agreements to address day-ahead market-to-market seams issues will be vital to maximizing the benefits of the markets in the Western Interconnection.⁶⁸¹

509. Interwest explains that market-to-market coordination will be crucial to reduce friction between markets, promote overall participation, and reduce wheeling costs across seams. Further, Interwest explains that coordination may require regular review and revision of the tariffs and business practices because the needs are specific to the types of operations adopted for each market.⁶⁸² Interwest states that allowing each EDAM Entity to decide whether to participate in some of the higher value services diminishes the effectiveness of the overall market, increases risks of friction at seams between EDAM and other markets to be formed in the West (including Markets+) and at seams with RTOs, and potentially reduces competition due to higher costs and unpredictable barriers to participation. Interwest details several suggestions related to seams mitigation.⁶⁸³

ii. Answer

510. CAISO states that it has begun preliminary discussions with SPP to foster a common understanding of seams issues but that it would be premature to begin

⁶⁷⁸ Arizona Utilities Comments at 15-16.

⁶⁷⁹ Bonneville Comments at 8.

⁶⁸⁰ WAPA Comments at 7.

⁶⁸¹ *Id.*

⁶⁸² Interwest Comments at 4.

⁶⁸³ *Id.* at 5-6.

negotiations on formal seams agreements.⁶⁸⁴ In response to commenters that suggest the Commission should require CAISO to report on seams issues with other markets in the West, CAISO argues that its current and enhanced reporting regime as well as an open stakeholder process will address any seams issues.⁶⁸⁵

511. CAISO argues that comments from Bonneville and WAPA on coordination between CAISO, participating balancing authorities, and adjacent non-participating balancing authorities are entity-specific, do not concern the EDAM design, and are thus beyond the scope of the proceeding.⁶⁸⁶ CAISO argues that given its demonstrated record of coordination, it is not necessary for the Commission to require coordination.⁶⁸⁷

iii. Determination

512. We find that requests for CAISO to coordinate on seams with other Western entities are premature. It is unclear where seams will exist before EDAM and other potential Western markets and services go live and, therefore, we decline to direct or require coordination at this time. Nevertheless, we acknowledge CAISO's commitment to continue coordination and discussion of potential seams issues with stakeholders and other entities.⁶⁸⁸

e. Miscellaneous Tariff Matters

i. Comments

513. Six Cities state that they have questions, clarifying revisions, or corrections regarding a number of specific proposed Tariff sections. Six Cities note that in proposed Tariff section 33.4.1, the fourth line should be changed from “disable” to “enable” or “implement.” Six Cities state that in Appendix B.29 (EDAM Addendum to EIM Participating Resource Agreement), with respect to section 4, it is Six Cities' understanding that all resources within an EDAM BAA must submit bids or self-schedules in EDAM, and in light of that requirement, the termination of an EDAM Addendum to EIM Participating Resource Agreement should be conditioned on termination of the relevant EDAM Entity's participation in the EDAM. Similarly, Six

⁶⁸⁴ CAISO Answer at 134.

⁶⁸⁵ *Id.* at 135.

⁶⁸⁶ *Id.* at 149-50.

⁶⁸⁷ *Id.* at 151.

⁶⁸⁸ *Id.* at 110, 134-36.

Cities note that in light of this requirement, in Appendix B.32 (EDAM Load Serving Entity Agreement), with respect to section 3.2.2, the termination of an EDAM Load Serving Entity Agreement should be conditioned on termination of the relevant EDAM Entity's participation in the EDAM or assumption of responsibility for scheduling the relevant load by some other qualified entity.⁶⁸⁹

514. Six Cities ask if, in proposed Tariff section 4.9.5, "Imbalance Reserves, Reliability Capacity" should be inserted in the line after "Energy." Six Cities further note cross-referencing errors in proposed Tariff sections 33.11.3.2, 33.18.5, and 33.31.1.2.1.2. Six Cities also request CAISO to change "will be" in the tenth line of proposed Tariff section 33.31.1.6 to "will not be." Six Cities state that they request clarification of proposed Tariff section 33.31.2.4 as to the nature of the language in the fifth through seventh lines, which reads "except that a reference to CAISO's Forecast of BAA Demand for CAISO refers to the total CAISO Forecast of BAA Demand for all Balancing Authority Areas across the EDAM Area," as it relates to section 31.5.⁶⁹⁰

ii. Answer

515. CAISO agrees with Six Cities that in the fourth line of new Tariff section 33.4.1, the word "disable" should be changed to "enable" or "implement" and agrees to correct this error on compliance in this proceeding.⁶⁹¹ CAISO notes that Six Cities suggest that termination of an EDAM Addendum to EIM Participating Resource Agreement⁶⁹² should be conditioned on termination of the relevant EDAM Entity's participation in EDAM. CAISO agrees with this comment and proposes to include language in section 4 of the EDAM Addendum to EIM Participating Resource Agreement stating that the agreement will terminate should the relevant EDAM Entity cease its participation in EDAM on compliance if so ordered.⁶⁹³ CAISO notes that Six Cities also comment that section 3.2.2 of the EDAM Load Serving Entity Agreement⁶⁹⁴ should include language that allows the EDAM LSE to terminate the agreement upon termination of the relevant EDAM Entity's

⁶⁸⁹ Six Cities Comments at 19.

⁶⁹⁰ *Id.* at 19-20.

⁶⁹¹ CAISO Answer at 155 (citing Six Cities Comments at 18); eTariff, § 33.4.1 EDAM Entity (0.0.0).

⁶⁹² eTariff, app B.29 EDAM Addendum to EIM Participating Resource Agreement (0.0.0).

⁶⁹³ CAISO Answer at 155-56 (citing Six Cities Comments at 18-19).

⁶⁹⁴ eTariff, app. B.32 EDAM Load Serving Entity Agreement (0.0.0).

participation in EDAM or assumption of responsibility for scheduling the relevant load by some other qualified entity. CAISO asserts that no change is needed, because section 3.2.1 of the EDAM Load Serving Entity Agreement already allows CAISO to terminate the agreement should the relevant EDAM Entity cease its participation in EDAM. CAISO agrees with Six Cities that the phrase “Imbalance Reserves, Reliability Capacity” should be inserted in the third line after “Energy” in new Tariff section 4.9.5 and agrees to correct this error on compliance in this proceeding.⁶⁹⁵ CAISO also states that Six Cities correctly identified cross-referencing errors and agrees to correct these errors on compliance in this proceeding.⁶⁹⁶

516. CAISO notes that Six Cities state that in the tenth line of new Tariff section 33.31.1.6, the phrase “will be” should be changed to “will not be.”⁶⁹⁷ CAISO agrees this should be corrected on compliance. In response to Six Cities’ request for clarification of the nature and purpose of the following language in the fifth through seventh lines of new Tariff section 33.31.2.4,⁶⁹⁸ CAISO clarifies that proposed Tariff section 31.5 is drafted to apply only to CAISO’s BAA, so it only refers to the forecasted demand in the CAISO BAA and that the purpose of the phrase in question is to clarify that the RUC process in EDAM will target the forecasted demand across the EDAM area rather than just the forecasted demand in the CAISO BAA.⁶⁹⁹

517. CAISO requests that the Commission accept proposed Tariff section 33.11.5, which addresses the EDAM implementation fee for prospective EDAM Entities that CAISO will collect pursuant to the *pro forma* EDAM Implementation Agreement, effective December 21, 2023 (i.e., the same effective date CAISO requested for the EDAM Implementation Agreement itself). CAISO explains that it inadvertently did not include a request for a December 21, 2023, effective date for Tariff section 33.11.5 in its

⁶⁹⁵ CAISO Answer at 156 (citing Six Cities Comments at 19); eTariff, § 4.9.5 Scheduling by or on Behalf of a MSS Operator (2.0.0).

⁶⁹⁶ CAISO Answer at 156-57 (citing Six Cities Comments at 19).

⁶⁹⁷ eTariff, § 33.31.1 EDAM Resource Sufficiency Evaluation (EDAM RSE) (0.0.0), § 33.31.1.6.

⁶⁹⁸ *Id.* § 33.31.2 Operation of the Day-Ahead Market in the EDAM Area (0.0.0) § 33.31.2.4.

⁶⁹⁹ CAISO Answer at 157-58 (citing Six Cities Comments at 20).

list of EDAM implementation Tariff sections for which it requested that effective date in the filing, but it is necessary to allow proper implementation of EDAM.⁷⁰⁰

iii. Determination

518. We agree with Six Cities and CAISO that the errors within the proposed Tariff provisions discussed above should be revised. We direct CAISO to submit a compliance filing within 60 days of the date of this order revising 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 appendix B.29. We agree with CAISO that no changes are needed to proposed section 3.2.2 of appendix B.32.

519. Additionally, as discussed above, we also direct CAISO to submit a compliance filing, within 60 days of the date of this order, to: (1) remove references to the EDAM access charge and proposed Tariff section 33.26 and its sub-sections, as discussed above; (2) submit revisions to the local market power mitigation sections of its Tariff (sections 29.29 and 33.39) to augment the description of the process; (3) submit revisions to include in the Tariff the considerations CAISO will use for tuning the deployment factor and activating/deactivating transmission constraints with respect to the deployment of Imbalance Reserves; and (4) submit revisions that update Tariff section 31.3.1.6.2 to reflect an upper bound of the Imbalance Reserves procurement curve as \$55/MWh.

520. We also accept proposed Tariff section 33.11.5, effective December 21, 2023, as requested, along with the other EDAM implementation Tariff sections.

The Commission orders:

(A) CAISO's proposed Tariff revisions and *pro forma* implementation agreements pertaining to EDAM implementation are hereby accepted, effective December 21, 2023, as requested, as discussed in the body of this order.

(B) CAISO's remaining proposed Tariff revisions are hereby accepted in part, subject to condition, and rejected in part, effective as of the actual implementation date, as discussed in the body of this order.

(C) CAISO is hereby directed to notify the Commission of the actual effective date of the revisions within five business days of the actual effective date, in an eTariff submittal using Type of Filing code 150 – Report.

⁷⁰⁰ *Id.* at 171; eTariff, § 33.11.5 Implementation Fee (0.0.0).

(D) CAISO is hereby directed to submit a compliance filing, within 60 days of the date of issuance of this order, as discussed in the body of this order.

By the Commission. Chairman Phillips is concurring with a separate statement attached. Commissioner Danly is not participating.

(S E A L)

Debbie-Anne A. Reese,
Deputy Secretary.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System Operator Corporation

Docket No. ER23-2686-000

(Issued December 20, 2023)

PHILLIPS, Chairman, *concurring*:

1. On August 23rd of this year, the California Independent System Operator Corporation (CAISO) filed its Day-Ahead Market Enhancements (DAME) and Extended Day-Ahead Market (EDAM) proposal. Today, we approved this proposal unanimously.
2. CAISO's proposal to improve the performance of its existing day-ahead market with new products, and to offer balancing authority areas (BAAs) outside CAISO's current footprint the opportunity to participate in and benefit from a new day-ahead market, will create significant savings for consumers in Western states. I believe such efforts will enhance reliability, expand the savings and efficiencies that wholesale markets provide, and contribute to consumers' bottom line.
3. According to CAISO, the estimated annual benefits of the proposal will range from \$100 million to more than \$1 billion, in addition to other benefits the Western Energy Imbalance Market (WEIM) will continue to provide.¹ I also note that CAISO's Department of Market Monitoring in general supports this proposal. Furthermore, as noted in the order, CAISO has committed to continuously monitor the performance of EDAM and DAME and make improvements, incorporating the input of its stakeholders, if necessary.
4. Focusing on the DAME proposal, these reforms are necessary to ensure that the day-ahead market schedule has the ramping capability needed to respond to real time variations in net-load. It is currently difficult for CAISO to forecast net load in each real-time interval, and this task will become more challenging over time as the resource mix changes. Focusing on the EDAM and DAME proposal together, the unpredictable weather, the increased penetration of renewables and other changes such as the growing importance of storage and electrification (including electric vehicles) together increase complexity for grid operators and make it more challenging to ensure sufficient resources will be available to serve real-time needs. CAISO explained that it currently meets these needs outside of the market with manual interventions, which can be inefficient, raise costs to load, and distort market outcomes. I applaud CAISO for its efforts in this

¹ Transmittal at 12.

proposal to reduce such manual interventions and incorporate more of the system's needs into the day-ahead market, thus enhancing transparency, price formation, and efficiency.

5. I understand some Western State Commissioners are concerned about the lack of communication between the stakeholders that are working on developing markets and the stakeholders focusing on transmission planning, and I strongly encourage greater communication and coordination among various stakeholders and regulators in future endeavors to expand participation in wholesale electricity markets. I believe that in the longer term, any seams issues should be discussed so that cost effective transactions can be facilitated through centralized and bilateral markets throughout the West.

6. I also recognize that there is a lot of activity in the West at the moment. States, utilities, and other stakeholders are evaluating possible participation in the Western Power Pool's Western Resource Adequacy Program, the Southwest Power Pool, Inc.'s (SPP) RTO West, SPP's Western Energy Imbalance Service, and SPP's Markets+, in addition to WEIM and EDAM. Furthermore, some states are performing benefit-cost analyses regarding joining regional transmission organizations.

7. Establishing a day-ahead market for a larger geographic area is complicated and represents stakeholders' significant efforts over the past few years to develop enhanced market mechanisms that jointly achieve reliability, affordability and sustainability for customers. I applaud these stakeholders for their efforts and believe the countless hours of work that went in to developing these proposals will deliver significant benefits to customers. Keep up the good work.

For these reasons, I respectfully concur.

Willie Phillips
Chairman