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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Norman C. Bay, Chairman;
Cheryl A. LaFleur, Tony Clark,
and Colette D. Honorable.

Arizona Public Service Company

Docket Nos. ER16-938-000
ER16-938-001

ORDER ON PROPOSED TARIFF REVISIONS TO PARTICIPATE IN THE ENERGY
IMBALANCE MARKET

(Issued April 29, 2016)

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1. On February 12, 2016 (February 12 Filing), as corrected on February 17, 2016, Arizona Public Service Company (APS) filed proposed revisions to its Open Access Transmission Tariff (OATT) in order for APS to participate in the Energy Imbalance Market (EIM) created by the California Independent System Operator Corporation (CAISO). In this order, the Commission accepts APS’s proposed revisions subject to condition, as discussed below, effective as of the dates requested.

I. Background

A. The EIM

2. Since its implementation in 2014, the EIM has enabled entities with balancing authority areas (BAAs) outside of CAISO to voluntarily take part in the imbalance energy portion of the CAISO locational marginal price (LMP)-based real-time market alongside participants from within the CAISO BAA.¹ The EIM allows participating BAAs to buy and sell five-minute real-time energy, under a market-driven process to satisfy energy imbalance needs. Specifically, CAISO runs its market software to economically dispatch the energy of all BAAs that participate in the EIM. This optimizes imbalance energy across the broader EIM footprint to the extent that transmission between an EIM Entity² and CAISO, or among EIM Entities, is available.³ CAISO

¹ *Cal. Indep. Sys. Operator Corp.*, 147 FERC ¶ 61,231, *order on reh’g*, 149 FERC ¶ 61,058 (2014). CAISO administers the EIM pursuant to section 29 of the CAISO tariff.

² An EIM Entity is a BAA that represents one or more EIM transmission service providers and enters into an agreement with CAISO to enable the operation of the EIM in its BAA.

³ Traditionally, in other Western BAAs that do not participate in the EIM, each utility maintains balance between supply and demand on an individual basis through the manual dispatch of the generating resources available to it.

financially settles the EIM in a manner that recognizes the costs attributable to each participating BAA. In turn, the EIM Entities charge transmission customers taking energy imbalance service and generator imbalance service according to the EIM Entities' respective OATTs. The EIM does not change the reliability functions of CAISO or of any EIM Entity. Participation is voluntary, and there is no fee for an EIM Entity to exit the EIM.

3. Under the EIM, each participating EIM Entity must submit resource plans to CAISO which, taken together, provide the baseline for the operation of the real-time market. The EIM resource plan presents the complete picture of each EIM Entity's circumstances prior to real-time operations. CAISO then uses load forecasts, base schedules submitted by EIM Entities and EIM Participating Resources, energy bids, and information regarding Available Balancing Capacity to optimize imbalance energy across the EIM footprint and issue dispatch instructions in both five and 15-minute increments.⁴

4. The EIM footprint has gradually expanded since its implementation. PacifiCorp's two BAAs were the initial participants in the CAISO EIM, commencing financially-binding operations on November 1, 2014.⁵ Nevada Power Company and Sierra Pacific Power Company (collectively, NV Energy), the second entity to join the EIM, commenced financially binding operations on December 1, 2015.⁶ The EIM footprint currently spans across seven states, and will expand to include eight states once APS begins EIM operations.

B. APS's Planned Participation in the EIM

5. APS plans to commence financially binding EIM operations on October 1, 2016. APS, a wholly-owned subsidiary of Pinnacle West Capital Corporation, is a vertically integrated public utility engaged in the business of generating, transmitting, and distributing electricity to eleven of Arizona's 15 counties. APS states that it owns

⁴ Available Balancing Capacity is capacity that an EIM Entity has available to maintain reliable operations in its own BAA but has not bid into the EIM.

⁵ *PacifiCorp*, 147 FERC ¶ 61,227 (PacifiCorp EIM Order) (conditionally accepting in part and rejecting in part revisions to PacifiCorp's OATT to enable participation in the EIM), *order on reh'g*, 149 FERC ¶ 61,057 (2014), *reh'g rejected*, 150 FERC ¶ 61,084 (2015).

⁶ *Nevada Power Co.*, 151 FERC ¶ 61,131 (NV Energy EIM Order) (conditionally accepting revisions to NV Energy's open access transmission tariff to enable participation in the EIM), *reh'g denied*, 153 FERC ¶ 61,306 (2015) (NV Energy EIM Rehearing Order).

approximately 6,426 MW of generation capacity, provides open access transmission service pursuant to its Commission-approved OATT, and participates in wholesale markets throughout the West. APS is registered with the North American Electric Reliability Corporation (NERC) for purposes of compliance with the Electric Reliability Standards and performs ten of the possible twelve registered NERC functions.⁷

6. The Commission requires public utility transmission providers to offer energy imbalance service to transmission customers and generators as ancillary services under the *pro forma* OATT.⁸ APS currently manages energy imbalances across its BAA by utilizing both automated and manual processes to provide imbalance services from its resources under Schedule 4 (Energy Imbalance Service) and Schedule 10 (Generator Imbalance Service) of its OATT. CAISO manages its BAA through the operation of a bid-based real-time energy market that automatically dispatches the least-cost resource every five minutes to serve load while managing transmission congestion using a detailed network model. Under the EIM, CAISO will run its market software to economically dispatch the energy of APS's BAA, allowing for optimization of imbalance energy across the broader CAISO EIM footprint to the extent that transmission between an EIM Entity and CAISO, or among EIM Entities, is available. APS transmission customers that do not participate in the CAISO EIM will continue to take service under the APS OATT.

7. Prior to submitting its proposal, APS states that it filed an EIM benefits study with the Arizona Corporation Commission, which it presented during a May 13, 2015 open meeting.⁹ APS states that it contracted with Energy and Environmental Economics, a consulting firm specializing in utility analytics and economics, to perform a study to evaluate the benefits of APS joining the EIM administered by CAISO. APS states that the study revealed qualitative benefits, which include reliability improvements due to enhanced situational awareness and responsiveness as well as allowing more cost-effective renewable integration. APS indicates that the study also revealed quantitative benefits, producing a base result of total economic savings to the EIM footprint

⁷ APS Transmittal Letter at 2.

⁸ *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996) (Order No. 888), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048 (Order No. 888-A), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

⁹ APS Transmittal Letter at 6.

(including APS) of \$12.9 million to \$18.6 million for 2020. APS states that benefits associated with sub-hourly dispatch savings comprised \$10.3 million of this benefit, with \$1.4 million of that amount directly benefiting existing EIM participants. APS explains that the remaining \$2.6 million to \$8.3 million relates to reduced need for procuring flexible operating reserves.¹⁰

8. On July 31, 2015, the Commission accepted an implementation agreement between CAISO and APS to establish the scope and schedule of implementing the EIM within APS's footprint and to account for APS's upfront costs associated with EIM implementation.¹¹

II. APS's Filing

A. Overview

9. To facilitate participation in the EIM, APS proposes the following revisions to its OATT: (1) a new Attachment Q, which sets forth the roles and responsibilities of customers and APS as the EIM Entity; (2) revisions to Schedule 1 to allocate EIM-related administrative costs charged by CAISO; (3) revisions to Schedule 4 (Energy Imbalance) and Schedule 10 (Generator Imbalance); (4) a new Schedule 12 (Real Power Losses) to be used in conjunction with proposed section 8 of Attachment Q, which addresses settlements and billing, to recover administrative costs and reflect the use of LMP-based pricing for imbalance energy and losses; (5) new definitions in section 1; and (6) certain other necessary revisions to parts of its OATT.¹² APS states that the provisions the Commission approved for PacifiCorp and NV Energy informed APS's own proposed OATT revisions. Moreover, APS explains, while participation in the EIM is voluntary for APS's transmission customers, APS's participation in the CAISO EIM will impose obligations on all of its transmission and generator interconnection customers, whether or not those specific customers choose to participate in EIM. For instance, APS will require all of its transmission and generator interconnection customers to provide operational data consisting of resource operational characteristics, and forecast and outage data.¹³

¹⁰ *Id.* at 4-5.

¹¹ *Cal. Indep. Sys. Operator Corp.*, 152 FERC ¶ 61,090 (2015).

¹² APS Transmittal Letter at 9.

¹³ This includes initial registration data, operational characteristics of generators, updates to the initial registration data, planned and forced outage and derate information, and forecast data. *Id.* at 14.

According to APS, this data is necessary to operate the EIM and is consistent with the provisions proposed by NV Energy and accepted by the Commission.¹⁴

10. Under its proposal, APS will utilize Available Transfer Capability (ATC) and Interchange Rights Holder donations to provide transmission capacity for generating resources internal to APS's BAA, similar to the provisions adopted by PacifiCorp. APS states that it anticipates that ATC will be the primary method by which parties will obtain transmission capacity for EIM transfers and proposes four locations for EIM transfer with CAISO: (1) North Gila, (2) Palo Verde, (3) West Wing, and (4) Moenkopi. APS explains that it has not yet identified any Interchange Rights Holder capacity for EIM transfers but proposes OATT revisions to address Interchange Rights Holder capacity in the event that such capacity becomes available.¹⁵

11. APS states that, under its proposal, generating resources external to APS's BAA may also participate in the EIM by either utilizing a pseudo-tie arrangement¹⁶ or using dynamic schedules as Balancing Authority Area Resources.¹⁷ APS states that resources who intend to participate through either of these methods must arrange firm transmission over a third-party transmission system to an APS BAA intertie boundary point and must enter into a transmission service agreement with APS.¹⁸

12. APS states that, while its proposed OATT revisions are generally consistent with the Commission-accepted language used for PacifiCorp and NV Energy, there are certain key provisions that differ. Specifically, APS points out that, under its proposal, it will: (1) allow generating resources external to the APS BAA to participate in the EIM as APS

¹⁴ *Id.* at 22.

¹⁵ *Id.* at 21; *see also* APS Proposed OATT, Attachment Q, § 5.2.

¹⁶ A pseudo-tie is a type of dynamic transfer in which the output of an external generating unit physically interconnected to the electric grid in a native BAA is telemetered to and deemed to be produced in an attaining BAA (i.e., APS's BAA) that provides balancing authority services for and exercises balancing authority jurisdiction over the external generating unit. APS Proposed OATT, § 1.35(2).

¹⁷ A Balancing Authority Area Resource is an external resource that may participate in the APS EIM as an EIM Participating Resource upon meeting specified criteria defined in proposed Attachment Q, including dynamic scheduling into the APS BAA, availability of automatic generation control, and dispatchability by the EIM Entity. APS Transmittal Letter at 10.

¹⁸ *Id.* at 16; APS Proposed OATT, Attachment Q, §§ 3.1 and 3.2.

EIM Participating Resources through a pseudo-tie or dynamic schedule; and (2) retain the penalty tiers under Schedule 4 (Energy Imbalance) and Schedule 10 (Generator Imbalance) of the APS OATT, which will continue to apply to resources and loads that are not participating in the EIM. APS also explains that, under its proposal, it will not: (1) allocate payments and charges from CAISO for operating reserves back to transmission customers; (2) collect unreserved use penalties for generation that exceeds the sum of a transmission customer's reservation plus dispatch operating point; or (3) allow the physical payback of real power transmission losses.¹⁹ APS argues that its proposed OATT revisions, which differ in many ways from those of PacifiCorp and NV Energy, reflect APS's unique circumstances and asserts that the Commission has previously allowed for more than one rate design that satisfied the statutory just and reasonable standard.²⁰

B. APS's Roles and Responsibilities as an EIM Entity

13. APS explains that, as the EIM Entity, it has a number of responsibilities with respect to the EIM.²¹ Under its proposal, APS must: (1) qualify as the EIM Entity Scheduling Coordinator or retain the services of a single third-party entity to perform this role; (2) process applications for participating resources; (3) provide required information regarding modeling data to CAISO and register all non-participating resources with CAISO; (4) provide data to CAISO regarding the day-to-day operation of the EIM, including the submission of EIM base schedules and resource plans and any changes to such plans; (5) provide CAISO with information regarding the reserved use of the transmission system and interties, and any changes to transmission capacity; and (6) submit information regarding planned and unplanned generation and transmission outages and derates.²² According to APS, these responsibilities are necessary to facilitate

¹⁹ APS Transmittal Letter at 12.

²⁰ *Id.*

²¹ APS includes references throughout its Transmittal Letter and in its proposed OATT revisions to the "APS EIM Entity," defined in proposed section 1.11 of APS's OATT as "[APS] in performance of its role as an EIM Entity under the [CAISO tariff] and this Tariff, including, but not limited to, Attachment Q." Consistent with the PacifiCorp EIM Order and NV Energy EIM Order, we simply will refer to APS in this order. Likewise, we will refer to CAISO in this order instead of the "Market Operator," defined in proposed section 1.64 of APS's OATT as "[t]he entity responsible for operation, administration, settlement, and oversight of the EIM," as CAISO is currently performing these functions.

²² APS submits this information pursuant to section 29.9 of the CAISO tariff, which addresses outages and critical contingencies. *Id.* at 13.

the operation of the EIM in accordance with the requirements specified in section 29.4(b) of the CAISO tariff, which addresses the roles and responsibilities of EIM Entities.

14. APS states that, under section 29.4(b)(3)(F) of the CAISO tariff, the EIM Entity must identify its Load Aggregation Points used for settlement purposes.²³ APS proposes to use a single Load Aggregation Point for its BAA. APS states that this provision is consistent with the joint dispatch methodology currently in place for APS and CAISO.²⁴

15. APS also proposes to use the CAISO load forecast to prepare the base schedules for its BAA. Under CAISO's market design, an entity participating in the EIM may elect to use either its own load forecast or a load forecast produced by CAISO. APS states that by choosing to submit EIM base schedules using the CAISO load forecast, it can minimize exposure to charges for under- or over-scheduling. APS asserts that there is no incremental cost to its customers for using the CAISO forecast. Finally, APS explains that using the CAISO load forecast does not preclude APS from using its own forecast to balance its schedule in a given hour if it concludes it is appropriate to do so.²⁵

16. Lastly, APS states that, under its proposal, it will act as the Scheduling Coordinator Metered Entity in accordance with section 29.10 of the CAISO tariff, which addresses metering and settlement data. Therefore, APS states that proposed section 4.1.1.3(4) of Attachment Q indicates that APS will act as the Scheduling Coordinator Metered Entity on behalf of its transmission customers, including transmission customers with non-participating resources.²⁶ As the Scheduling Coordinator Metered Entity, APS must provide CAISO with timely and accurate meter data for EIM settlements.²⁷

²³ Under CAISO's tariff, a Load Aggregation Point is defined as a set of pricing nodes used for the submission of bids and settlement of demand. The Load Aggregation Point price is the marginal price for a particular Load Aggregation Point, calculated as a weighted average of the nodal LMPs at the associated pricing nodes pursuant to CAISO tariff section 27.2.2. *See* CAISO Tariff, Appendix A (Definitions); *see also* APS Proposed OATT, § 1.58.

²⁴ APS Transmittal Letter at 13; *see also* APS Proposed OATT, Attachment Q, § 4.1.1.3(2).

²⁵ APS Transmittal Letter at 14; *see also* APS Proposed OATT, Attachment Q, § 4.1.1.3(3).

²⁶ APS Transmittal Letter at 14.

²⁷ *Id.*; *see* CAISO Tariff, § 10 and Appendix A (Master Definition Supplement).

C. Transmission Customer Responsibilities

17. APS outlines the responsibilities of customers with respect to the EIM in proposed section 4.2 of Attachment Q. These responsibilities include providing: (1) initial registration data, including operational characteristics of generators; (2) updates to the initial registration data; (3) planned and forced outage information; and (4) forecast data. APS notes that provisions in proposed Attachment Q differ slightly from other EIM Entities' OATTs in order to reflect circumstances unique to APS. For example, APS states that it will reflect scheduling requirements for generation resources in its EIM Business Practices rather than in Attachment Q. Additionally, APS states that it has eliminated tariff provisions pertaining to physical payback of real power losses because it does not currently provide for the physical payback of real power transmission losses and does not propose to do so once it becomes an EIM Entity.²⁸ Furthermore, APS states that it does not perform variable energy resource forecasting for its own resources, but instead contracts with third parties for forecasting. Thus, APS will require customers with non-participating variable energy resources to self-supply forecast data or rely on CAISO forecasts, and transmission customers with variable non-participating resources to rely on APS's variable energy resource forecast.²⁹

D. Transmission Customers' Eligibility to Participate in the EIM

18. APS states that proposed section 3 of Attachment Q provides the eligibility criteria resources must meet to participate in the EIM. Under APS's proposal, participating resources include both internal resources located within the metered boundaries of APS's BAA and external resources not physically located within APS's boundaries, subject to conditions. A transmission customer that owns or controls a resource must have transmission rights on the APS system based on one of the following: (1) the resource is a network customer's designated network resource and the customer has elected to participate in the EIM through its network integration transmission service agreement, or (2) the resource is associated with either a service agreement for firm point-to-point transmission service or an umbrella service agreement for non-firm point-to-point transmission service and the customer has elected to participate in the EIM.³⁰ APS notes that neither these provisions, nor proposed section 8.7 of Attachment Q, which addresses

²⁸ APS Transmittal Letter at 14; APS Proposed OATT, Attachment Q, § 4.2

²⁹ APS Transmittal Letter at 14-15; APS Proposed OATT, Attachment Q, § 4.2.4.2.

³⁰ APS Proposed OATT, Attachment Q, § 3.1.

EIM transmission service charges, impose transmission service charges on EIM transactions.³¹

19. In addition, APS proposes to allow any generating resource external to APS's BAA to participate in the EIM if it: (1) implements a pseudo-tie into the APS BAA; (2) has arranged firm transmission over any third-party transmission systems to an APS BAA intertie boundary in an amount equal to the amount of energy that will be dynamically transferred through a pseudo-tie into APS's BAA; and (3) has entered into a transmission service agreement with APS, consistent with proposed section 3.1 of Attachment Q, which addresses transmission rights for internal resources.³²

20. Additionally, APS proposes to allow Balancing Authority Area Resources to participate in the EIM if the resource: (1) is dynamically scheduled to the APS BAA; (2) is equipped to respond to signals from APS's automatic generation control system and is fully dispatchable by APS; (3) has arranged firm transmission over any third-party transmission systems to an APS BAA intertie boundary in an amount equal to the amount of energy that will be dynamically transferred into APS's BAA; and (4) has secured transmission service consistent with section 3.1 of Attachment Q.³³

21. APS notes that the Balancing Authority Area Resource concept has been introduced to the EIM as part of the Commission's Available Balancing Capacity proceedings.³⁴ APS claims that its proposal to allow dynamically scheduled Balancing Authority Area Resources is necessary because, in at least one case, APS does not have the contractual ability to require its external Balancing Authority Area Resources to pseudo-tie into the APS BAA.³⁵ Furthermore, APS argues that its dynamically scheduled, automatic generation control-equipped Balancing Authority Area Resources are subject to the same reliability standards as pseudo-tied generation and have been dedicated to balancing the APS BAA. Thus, APS argues that allowing dynamically scheduled resources to participate in the market is essential for the APS BAA to function

³¹ APS Transmittal Letter at 16.

³² *Id.*

³³ *Id.* at 16-17; *see also* APS Proposed OATT, Attachment Q, § 3.2.

³⁴ APS Transmittal Letter at 17 (citing *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,305 (2015) (December 2015 Order) (accepting CAISO's proposal to enhance EIM functionality to account for capacity that is available to an EIM entity to maintain reliable operations within its BAA, but has not been bid into the EIM)).

³⁵ *Id.* at 18.

in the EIM.³⁶ APS's proposal differs from the approach adopted by PacifiCorp and NV Energy, which both allow external resource participation only through the use of pseudo-ties.

22. APS states that, unlike proposals set forth by PacifiCorp and NV Energy, APS does not propose to collect unreserved use penalties for generation output that exceeds the sum of a transmission customer's reservation plus dispatch operating point.³⁷ APS explains that, under its "schedule-based" system, it charges penalties only when a customer schedules service in excess of its reserved capacity or fails to procure service in a timely manner. When a customer's schedule is within the bounds of the reservation, excess generation is settled as imbalance under Schedule 10 of the APS OATT. According to APS, transmission service is not "used" unless it is scheduled and, since generation that responds to an EIM dispatch instruction is inherently unscheduled, APS will not assess an unreserved use charge.³⁸

E. Available Balancing Capacity

23. To address certain pricing anomalies that occurred during the initial operation of the EIM, and following a technical conference, CAISO filed, and the Commission accepted, three measures to address the underlying causes of the price spikes in the EIM and to protect consumers from potential price anomalies that do not reflect actual market conditions. Specifically, CAISO revised its tariff to provide for: (1) requirements and criteria to assess a prospective EIM Entity's readiness prior to commencing EIM operations;³⁹ (2) a six-month transition period during which a new EIM Entity is not subject to the pricing parameters that normally apply when the market optimization relaxes a transmission constraint or the power balance constraint in clearing the real-time market;⁴⁰ and (3) enhancements to EIM functionality so that the EIM will automatically

³⁶ *Id.*

³⁷ APS proposes to define a dispatch operating point as the incremental change, in MW output, of (1) a APS EIM Participating Resource due to an EIM bid being accepted and the APS EIM Participating Resource receiving a dispatch instruction, or (2) a Balancing Authority Area Resource for which a dispatch instruction has been issued by CAISO with respect to EIM Available Balancing Capacity. APS Proposed OATT, § 1.34.

³⁸ APS Transmittal Letter at 19.

³⁹ *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,205 (2015).

⁴⁰ *Cal. Indep. Sys. Operator Corp.*, 153 FERC ¶ 61,104 (2015).

recognize and account for capacity that is available to an EIM Entity to maintain reliable operations in its own BAA, but has not been bid into the EIM (Available Balancing Capacity).⁴¹

24. APS proposes to revise its OATT to implement CAISO's Available Balancing Capacity solution at the outset of EIM implementation, which will ensure that its BAA is shielded from problems associated with false scarcity.⁴² APS proposes revisions to allow APS to: (1) obtain default energy bids from CAISO for non-participating resources that are Balancing Authority Area Resources,⁴³ (2) communicate CAISO's EIM Available Balancing Capacity dispatch instructions to non-participating resources,⁴⁴ and (3) provide for settlement of energy output associated with EIM Available Balancing Capacity dispatches.⁴⁵ In conjunction with incorporating the Available Balancing Capacity Solution, APS also proposes to adopt the following definitions, including: "Balancing Authority Area Resource," "EIM Available Balancing Capacity," "Resource Plan," "Dispatch Instruction," and "Dispatch Operating Point."⁴⁶

25. In addition, section 4.1.3.4 of proposed Attachment Q states that, upon CAISO's notification, APS will notify non-participating resources of the dispatch operating point for any EIM Available Balancing Capacity, except in circumstances in which APS has reason not to follow the dispatch instruction.⁴⁷

F. Transmission Operations

26. APS proposes to utilize two mechanisms for the provision of APS transmission capacity for EIM transfers: ATC and Interchange Rights Holder donations. Proposed

⁴¹ December 2015 Order, 153 FERC ¶ 61,305.

⁴² APS Transmittal Letter at 23.

⁴³ APS Proposed OATT, Attachment Q, § 4.1.2.2.

⁴⁴ APS Proposed OATT, Attachment Q, § 4.1.3.4.

⁴⁵ APS proposes to define "EIM Available Balancing Capacity" as "any upward or downward capacity from a Balancing Authority Area Resource APS has a right to, by virtue of ownership or a voluntary contractual arrangement, which has not been bid into the EIM and is included in [APS]'s Resource Plan." APS Proposed OATT, § 1.4.

⁴⁶ APS Proposed OATT, § 1.

⁴⁷ APS Proposed OATT, Attachment Q, § 4.1.3.4.

section 5 of Attachment Q states that APS will provide CAISO with real-time transmission data and information regarding changes to transmission capacity or the transmission system due to operational circumstances.

27. APS states that it anticipates that ATC will be the primary method for EIM transfers.⁴⁸ APS proposes to provide CAISO with the amount of ATC made available and to implement the ATC-related EIM transfer capacity by submitting e-Tags to CAISO at least 40 minutes prior to the operating hour.⁴⁹ The e-Tag will include an Open Access Same-Time Information System (OASIS) reservation number(s) and all parties associated with the reservation. The amount of ATC reflected on an e-Tag will be based upon the lower of the amount of ATC calculated by each EIM Entity at that interface.⁵⁰

28. APS states that it has not yet identified any Interchange Rights Holder capacity but states that it has submitted tariff provisions for Interchange Rights Holders in the event that transmission capacity becomes available.⁵¹ Proposed Attachment Q states that the Interchange Rights Holder will submit an e-Tag no later than 75 minutes prior to the operating hour (T-75). The e-Tag will include OASIS reservation numbers and will reflect all parties associated with the reservation. Finally, the e-Tag will be subject to approval by all required e-Tag approval entities.⁵² APS will also provide relevant data to CAISO.

29. Similar to the timelines utilized by CAISO, PacifiCorp, and NV Energy, APS plans to require all transmission customers to submit final proposed base schedules no later than 77 minutes before the beginning of the operating hour (T-77) and to submit revised schedules up to and until 57 minutes prior to the top of the operating hour (T-57). Those schedules become financially binding when APS sends CAISO the base schedule at 55 minutes prior to the top of the operating hour (T-55). APS's proposal states that if a

⁴⁸ APS Transmittal Letter at 20.

⁴⁹ APS notes that such amounts will be in addition to any amounts made available by an APS Interchange Rights Holder. *Id.*; *see also* APS Proposed OATT, Attachment Q, § 5.2

⁵⁰ APS Proposed OATT, Attachment Q, § 5.3.

⁵¹ APS Transmittal Letter at 21; APS Proposed OATT, Attachment Q, § 5.2.

⁵² APS Proposed OATT, Attachment Q, § 5.2.

transmission customer fails to submit a forecast data value, the default will be 0 MW for that operating hour.⁵³

G. EIM Operations

30. APS states that its participation in the EIM does not modify, change, or otherwise alter the manner in which it must comply with the applicable NERC and Western Electricity Coordinating Council (WECC) reliability standards. APS explains that it will remain responsible for: (1) maintaining appropriate operating reserves and for its obligations pursuant to any reserve sharing group agreements; (2) NERC and WECC responsibilities; (3) processing e-Tags and managing schedule curtailments at the interties; and (4) monitoring and managing real-time flows within system operating limits on all transmission facilities within APS's BAA.⁵⁴

31. APS explains that proposed section 6 of Attachment Q (System Operations under Normal and Emergency Conditions) is intended to ensure that EIM operations remain consistent with APS's reliability responsibilities as a balancing authority. Specifically, APS states that it will continue to implement real-time flow management and mitigation consistent with its current system operations, including coordinated unscheduled flow mitigation consistent with WECC's procedures. APS explains that it will continue to schedule interchanges between APS's BAA and other BAAs, thereby allowing for nondiscriminatory transmission curtailments. Additionally, APS asserts that it will gain an additional tool, the EIM security-constrained economic dispatch, which is useful for mitigating unscheduled flow, without losing any of its existing capabilities or responsibilities. To counter loop flow, the EIM, in conjunction with APS's transmission operations, will have the ability to re-dispatch generation automatically or using manual dispatch. Finally, APS states that it will include an energy profile in e-Tags used for EIM transfers, which is necessary for compatibility with unscheduled flow mitigation procedures.⁵⁵

H. EIM Settlements

32. APS proposes to revise Schedule 1 of its OATT, which addresses scheduling, system control, dispatch service, and EIM administrative services, to sub-allocate the EIM administrative charges incurred from CAISO to all transmission customers on the

⁵³ APS Proposed OATT, Attachment Q, § 4.2.4.5.2.

⁵⁴ APS Transmittal Letter at 23.

⁵⁵ *Id.*

basis of measured demand.⁵⁶ APS states that its proposal is consistent with the process utilized by PacifiCorp and NV Energy. APS also proposes to revise Schedule 1 to allow APS to pass through any other costs of services that a transmission customer elects to receive directly from CAISO.⁵⁷

33. APS proposes to settle energy imbalance service for transmission customers serving load within APS's BAA under Schedule 4 (Energy Imbalance) of the APS OATT using the Load Aggregation Point price produced by the EIM.⁵⁸ Similarly, APS proposes to price generator imbalance service provided under Schedule 10 (Generator Imbalance) of its OATT to customers with generating resources that are not APS EIM Participating Resources using the LMP.⁵⁹ APS states that APS EIM Participating Resources will settle imbalances directly with CAISO. APS clarifies that it plans to utilize the full aggregated Load Aggregation Point price or LMP rather than backing out a loss component. APS asserts that, in order to avoid duplicative charges for losses, it will assess average system losses under proposed Schedule 12 using the "balanced" component of transmission customer base schedules.⁶⁰

34. For non-participating resources and loads inside the APS BAA, APS proposes to apply the existing penalty tiers for energy and generator imbalance under *pro forma* Schedule 4 and Schedule 10 of its OATT.⁶¹ APS states that these existing provisions incentivize accurate scheduling for entities that choose not to participate in the EIM. Although APS acknowledges that the Commission has previously accepted LMP-based markets as an efficient and nondiscriminatory means of settling imbalances, APS argues that, due to the voluntary nature of the EIM, not all resources and load are responsive to incentives created by locational prices related to economic bids. Nonetheless, APS states

⁵⁶ APS proposes to define "Measured Demand" to include all metered demand plus e-Tagged export volumes from the APS BAA, excluding dynamic schedules that support EIM transfers and exports that ultimately serve load in the APS BAA. APS Proposed OATT, § 1.66.

⁵⁷ APS Proposed OATT, Schedule 1.

⁵⁸ APS Proposed OATT, Schedule 4.

⁵⁹ APS Proposed OATT, Schedule 10.

⁶⁰ APS Transmittal Letter at 24-25.

⁶¹ *Id.* at 25; *see* APS Proposed OATT, Schedules 4 and 10.

that it intends to monitor customer behavior and remains open to future reevaluation of its proposal.⁶²

35. APS also proposes a new Schedule 12, which addresses real power losses, to charge transmission customers for real power losses according to the hourly APS BAA Load Aggregation Point price as established by the CAISO tariff and consistent with APS's proposed revisions to Schedules 4 and 10 of its OATT described above.⁶³ Previously, real power losses settled against the Hourly Pricing Proxy as described in the APS Business Practice Manual.⁶⁴

36. APS proposes to sub-allocate to transmission customers charges or payments from CAISO for instructed imbalance energy that occur because of (1) operational adjustments of any affected interchange or intrachange,⁶⁵ including changes by transmission customers to interchange after T-57; (2) resource imbalances created by manual dispatch or EIM Available Balancing Capacity dispatch; or (3) adjustments to resource imbalances created by adjustments to resource forecasts pursuant to section 11.5 of the CAISO tariff and using the real-time dispatch or 15-minute market price at the applicable PNode. APS also proposes to sub-allocate to transmission customers CAISO-instructed imbalance energy pursuant to section 29.11(b)(1) and (2) of the CAISO tariff.⁶⁶ APS states that under proposed sections 8.2 and 8.3 of Attachment Q, which address uninstructed imbalance energy and unaccounted for energy, it will not sub-allocate to transmission customers charges or payments from CAISO due to residual uninstructed imbalance energy or unaccounted for energy that have not been otherwise recovered under Schedules 4 or 10 of its OATT.⁶⁷

⁶² APS Transmittal Letter at 26.

⁶³ *Id.*; APS Proposed OATT, Schedule 12.

⁶⁴ The Hourly Pricing Proxy is the average of several Intercontinental Exchange Indices. APS Business Practice Manual, *Business Practice: Transmission Loss Payment for Point to Point Service*, http://www.oasis.oati.com/AZPS/AZPSdocs/PTP_Transmission_Losses_BP_v1.pdf.

⁶⁵ APS defines "Intrachange" as "E-Tagged energy that transfers title within APS's BAA, not including real-time actual energy flows associated with EIM Dispatch Instructions." APS Proposed OATT, § 1.57.

⁶⁶ APS Proposed OATT, Attachment Q, § 8.1.

⁶⁷ APS Transmittal Letter at 26; APS Proposed OATT, Attachment Q, §§ 8.2 and 8.3.

37. In proposed section 8.5 of Attachment Q, APS proposes to sub-allocate several charges to transmission customers on the basis of measured demand, including: (1) flexible ramping constraint;⁶⁸ (2) real-time market neutrality;⁶⁹ (3) BAA real-time congestion offset;⁷⁰ (4) EIM Entity real-time marginal cost of losses offset;⁷¹ (5) real-time bid cost recovery;⁷² and (6) EIM neutrality settlement provisions.⁷³ APS proposes to hold customers harmless for several other charges that it states are more under APS's control than that of transmission customers. These charges include the invoice deviation, default invoice interest payment, default invoice interest charge, invoice late payment penalty, financial security posting late payment penalty, shortfall receipt distribution,

⁶⁸ APS explains that CAISO determines the flexible ramping requirement for each EIM Entity BAA based on the demand forecast change across intervals, the demand forecast error, and energy variability. APS asserts that sub-allocating charges based on measured demand ensures that customers benefiting from greater transmission system reliability share the costs of maintaining that reliability. APS Transmittal Letter at 27.

⁶⁹ APS explains that real time market BAA neutrality can be charges or credits related to (1) an excessive rate mitigation measure in the pricing formula for Load Aggregation Points, (2) differences between the load forecast in and actual metered load, (3) uninstructed imbalance energy of generation, (4) regulation energy in CAISO, (5) the real-time marginal loss surplus, and (6) unaccounted for energy. *Id.* (citing CAISO *Energy Imbalance Market: Draft Final Proposal* at 5, <http://www.caiso.com/Documents/energyimbalancemarket-draftfinalproposal092313.pdf>).

⁷⁰ APS states that amounts in this account arise when CAISO has to re-dispatch generation resources in real-time to manage congestion. *Id.* at 28.

⁷¹ APS states that this provision is related to its proposal to use full LMP pricing in Schedules 4, 10, and 12 of its OATT. APS notes that this provision is consistent with the terms the Commission approved for NV Energy, even though it is different from the provisions utilized by PacifiCorp. *Id.*

⁷² Bid cost recovery refers to CAISO's payments to generators in the event that real-time market revenues do not cover a resource's real-time commitment and dispatched bid costs. *Id.*

⁷³ APS states that CAISO, as a revenue-neutral entity, imposes daily and monthly neutrality adjustments and rounding adjustments to market participants in order to collect shortfalls due to rounding. *Id.*

shortfall reversal, shortfall allocation, default loss allocation, and the generator interconnection process forfeited deposit allocation.⁷⁴

38. APS proposes to assign charges for under- or over-scheduling load to transmission customers subject to Schedule 4 of its OATT that contributed to the imbalance for that hour based on their respective under- and over-scheduling imbalance ratio share.⁷⁵ APS states that, similar to PacifiCorp and NV Energy's approach, it will allocate daily excess revenues from CAISO pursuant to section 29.11(d)(3) of the CAISO tariff due to under- or over-scheduling charges to transmission customers on the basis of metered demand.

39. APS states that it does not, under proposed section 8.12 of Attachment Q, propose to allocate to transmission customers payments or charges from CAISO associated with operating reserves. APS claims that its approach is more equitable than the method utilized by PacifiCorp and NV Energy because it allows participating resources to remove this variable from their bid curve. According to APS, including operating reserves skews a resource's bid curve because the allocation is a payment in one direction and a charge in the other direction even though the resource's variable energy cost may be the same either way. APS states that its approach presents a better market structure because it prevents unnecessary risk for market participants and encourages bidding that more accurately reflects the variable energy cost of production.⁷⁶

40. Additionally, APS states that EIM participation can change the amount of operating reserves a BAA is obligated to provide. APS argues that, because the EIM is an energy-only market, Participating Resources are not inherently providing reserve capacity. To ensure that resource capacity would be available to respond to a contingency event, a separate contract would be required. APS states that, because the payments and charges associated with operating reserves are market-driven and that EIM instruction occurs after base schedules have already been submitted, the costs associated with reserve service are already incurred. According to APS, any payment allocation would leave load and non-participating generation customers with the cost for service without the benefit.⁷⁷

⁷⁴ *Id.* at 28-29.

⁷⁵ Ratio share is defined as the ratio of the transmission customer's under or over-scheduled load imbalance relative to all other transmission customers' under or over-scheduled load imbalance amounts for the operating hour, expressed as a percentage. Proposed OATT, Attachment Q, §8.4.

⁷⁶ APS Transmittal Letter at 29.

⁷⁷ *Id.* at 29-30.

41. APS states that it charges customers for operating reserves through its OATT based on its cost of service. APS asserts that it will include any impacts reflecting incremental payments or charges through the EIM in its cost of service and future rate adjustments. APS contends that its approach is consistent with the Commission's cost causation principles.⁷⁸

42. APS states that directly assignable charges will be directly assigned or sub-allocated to the customers that cause the costs to be incurred. These charges include (1) penalties for inaccurate or late settlement quality meter data; (2) tax liabilities; and (3) the variable energy resource charge.⁷⁹

43. Consistent with section 29.11(1) of the CAISO tariff, APS states that, while it will be subject to CAISO's payment calendar for certain deadlines, such as issuing settlement statements, APS will follow its own OATT and APS EIM Business Practices for issuing invoices regarding the EIM.⁸⁰ APS notes that, because CAISO has the authority to correct prices and modify settlement statements through its dispute resolution process, APS proposes to make corresponding changes to its sub-allocations to pass through CAISO's revisions to its settlements.

44. APS states that, under proposed section 8.10 of Attachment Q, EIM-related charges or payments that are not captured elsewhere in the APS OATT will be placed in an EIM residual balancing account pending Commission approval of a future FPA section 205 filing proposing an allocation methodology, with interest accruing in accordance with the Commission's regulations. APS compares the EIM residual balancing account to formula rate true-ups and asserts that this methodology provides protection from over or under-recovery of costs.⁸¹

I. Dispute Resolution

45. APS proposes modifications to section 12 of its OATT, which addresses billing disputes, to provide a dispute resolution process for EIM-related charges and payments.

⁷⁸ *Id.* at 30.

⁷⁹ APS Proposed OATT, Attachment Q, §§ 8.5.7, 8.6, and 8.8.

⁸⁰ APS Transmittal Letter at 39; Proposed OATT, Attachment Q, § 8.9.

⁸¹ As an example, APS states that, if CAISO implemented a new charge before APS could make a corresponding OATT change, the charge amount would be placed in this account until APS files a proposed cost allocation methodology with the Commission. APS Transmittal Letter at 31.

Under its proposal, disputes between APS and a transmission or interconnection customer regarding the manner in which APS has sub-allocated EIM payments or charges from CAISO will be processed in accordance with APS's existing dispute resolution procedures. Disputes between CAISO and any APS EIM Participating Resource Scheduling Coordinator related to settlement statements provided to the EIM Participating Resource Scheduling Coordinator from CAISO will proceed according to CAISO's dispute resolution process. APS states that it may raise disputes with CAISO regarding the settlement statements it receives from CAISO in accordance with the process specified in the CAISO tariff. If a dispute arises regarding a charge or payment from CAISO to APS that is subsequently charged to or paid by a transmission or interconnection customer, and the transmission or interconnection customer wishes to raise a dispute with CAISO, APS states that it will file a dispute on behalf of the customer in accordance with the CAISO tariff and work with the customer to resolve the dispute through the process provided in the CAISO tariff.⁸²

J. Compliance

46. APS proposes six general rules of conduct that customers must follow to facilitate an environment in which all parties can fairly participate in the EIM. In general, these rules require customers to (1) comply with dispatch instructions and APS operating orders in accordance with good utility practice; (2) submit bids for resources that are reasonably expected to be available and capable of performing at the levels specified in the bid; (3) notify CAISO and APS of outages in accordance with section 7 of Attachment Q; (4) provide complete, accurate, and timely meter data to APS and maintain responsibility to ensure the accuracy of such data; (5) provide information to APS, including the information requested in Attachment Q, by applicable deadlines; and (6) use commercially-reasonable efforts to ensure that forecasts are accurate and based on all information that is known or should have been known at the time of submission. Finally, proposed section 9.3 of Attachment Q states that APS may refer a violation of the rules of conduct to the Commission. APS asserts that these provisions are necessary and are designed to put customers on notice as to expected conduct.⁸³

K. Market Contingencies

47. Under proposed section 10 of Attachment Q, APS may invoke certain corrective actions to mitigate price exposure in the event of certain market contingencies related to the EIM. Pursuant to section 10.2, if APS submits a notice to terminate its participation in the EIM to CAISO, APS may mitigate price exposure during the 180-day period

⁸² *Id.*; APS Proposed OATT, Attachment Q, § 12.5.

⁸³ APS Proposed OATT, Attachment Q, §§ 9.2 and 9.3.

between submitting the notice and the effective date of termination. Specifically, APS may ask that CAISO prevent EIM transfers and separate the APS BAA from operation of the EIM and suspend settlement of EIM charges with respect to APS.⁸⁴ Following implementation of these corrective actions, APS would utilize temporary schedules set forth in sections 10.4.1, 10.4.2, and 10.4.3 of Attachment Q.⁸⁵

48. In addition, proposed section 10.3 addresses corrective actions that APS may invoke if it declares a temporary contingency. Specifically, section 10.3 provides that APS may declare a temporary contingency and invoke corrective actions for the EIM when operational circumstances have caused abnormal system conditions, or communications between CAISO and APS are disrupted. In such circumstances, APS may request that CAISO prevent EIM transfers and separate the APS BAA from operation of the EIM, or suspend settlement of EIM charges with respect to APS.⁸⁶ According to APS, it must have this ability to take corrective actions as part of its BAA responsibilities.⁸⁷

L. Other Proposed Changes to APS's OATT

49. APS proposes additional OATT revisions necessary to implement its EIM participation, including, among other things, new definitions in section 1 of its OATT and changes to ensure the applicability of Attachment Q to all transmission and interconnection customers prior to EIM participation and on an ongoing basis. APS states that these revisions ensure that customers will provide APS with the requisite information to meet the registration, outage reporting, and forecast requirements included

⁸⁴ APS Proposed OATT, Attachment Q, § 10.2.

⁸⁵ APS Proposed OATT, Attachment Q, §§ 10.2 and 10.4. APS notes that the temporary schedules reflect the existing pre-EIM provisions of the APS OATT. APS Transmittal Letter at 32.

⁸⁶ APS Proposed OATT, Attachment Q, § 10.3.

⁸⁷ APS Transmittal Letter at 32; APS Proposed OATT Attachment Q, § 10.

throughout Attachment Q. APS's proposal includes new OATT subsections or modifications that specifically include point-to-point customers,⁸⁸ network customers,⁸⁹ and interconnection customers⁹⁰ under the terms of Attachment Q.⁹¹

50. APS states that, under proposed section 18.5 of its OATT, a transmission customer that wishes to participate in the EIM that is not a network or firm point-to-point transmission customer may do so by executing a completed agreement for non-firm point-to-point service consistent with section 18.1 of the APS OATT and by providing the information requested in section 18.2 of the APS OATT.⁹²

51. APS also proposes to revise its OATT to allow network customers the option to participate in the EIM without having to un-designate all or a portion of a network resource in order to make off-system sales from its EIM Participating Resource. APS states that these changes are reflected in revised OATT sections 28.6-7, 36.6, and 38.1.

52. Finally, APS states that it has incorporated revisions to section 10.2, which addresses indemnification, to reflect that its new market responsibilities as an EIM Entity be subject to a gross negligence or intentional wrongdoing standard of liability, as opposed to its responsibilities as a transmission provider under the *pro forma* OATT, which are subject to the ordinary negligence standard of liability.⁹³ APS contends that the Commission has previously accepted the use of the gross negligence standard for CAISO and its participating transmission owners under the transmission control

⁸⁸ Proposed section 16.1.7 requires that point-to-point customers comply with Attachment Q.

⁸⁹ Proposed section 29.2.9 requires network customers to provide information specified in Attachment Q.

⁹⁰ Proposed section 2.5 of Attachment O (addressing large generator interconnection procedures) and proposed section 5 of Attachment P (addressing small generator interconnection procedures) require interconnection customers to comply with Attachment Q.

⁹¹ APS Transmittal Letter at 33.

⁹² *Id.*; APS Proposed OATT, § 18.

⁹³ APS Transmittal Letter at 34; APS Proposed OATT, § 10.2.

agreement and the CAISO tariff, and for transmission providers in other organized markets.⁹⁴

M. Other Considerations Related to EIM Implementation

53. APS explains that it has developed a series of EIM Business Practice Manual documents to help customers understand the terms and conditions of service stipulated in the APS OATT concerning the EIM. Specifically, APS states that its EIM Business Practice Manual provides information regarding the application and certification processes for an APS EIM Participating Resource, the initial registration with the CAISO, the process for providing informational updates, systems used to report outages and transmission derates, charge code numbers, penalty distribution methodology, timing for billing disputes and additional information related to suspension or termination of the EIM. APS states that it will post final versions of these documents on its website prior to APS's active participation in the EIM.⁹⁵

54. APS states that it has authority to sell at market-based rates in its first tier markets, which include the Salt River Project, Imperial Irrigation District, Western Area Power Administration – Lower Colorado, Los Angeles Department of Water and Power, Tucson Electric Power, Public Service Company of New Mexico, PacifiCorp – East, and CAISO. APS explains that it does not have market-based rate authority in the APS BAA. However, APS indicates that it will request market-based rate authority for EIM transactions in all BAAs within the EIM footprint including the APS BAA.⁹⁶ APS notes that its proposed OATT revisions and market power analysis will be prepared in a manner consistent with the guidance provided to PacifiCorp and NV Energy.⁹⁷

⁹⁴ APS Transmittal Letter at 34.

⁹⁵ *Id.* at 35.

⁹⁶ On April 7, 2016, and April 8, 2016, respectively, APS submitted revisions to its market-based rate tariff and a market power analysis filing seeking market-based rate authority for EIM transactions. *See Ariz. Pub. Serv. Co., Market-Based Rate Tariff Revisions*, Docket No. ER16-1363-000 (filed Apr. 7, 2016); *Ariz. Pub. Serv. Co., EIM Market Power Analysis*, Docket Nos. ER10-2437-004 & ER16-1363-000 (filed Apr. 8, 2016) (currently pending).

⁹⁷ APS Transmittal Letter at 36.

N. Proposed Effective Dates and Requests for Waiver

55. Exhibit C of APS's filing contains APS's requested effective dates for its proposed OATT revisions. APS requests that the language associated with the applicability of Attachment Q and related requirements such as initial registration data requirements for APS transmission customers become effective May 1, 2016, to provide greater certainty with respect to EIM design for APS, CAISO, and customers as they prepare for startup of APS's parallel operations in the EIM scheduled for August 1, 2016, with financially binding settlements as of October 1, 2016. Specifically, APS requests that proposed revisions to sections 1, 10, 17, 18 and 29 of its OATT, section 2.5 of Attachment O, section 5 of Attachment P, and proposed sections 1, 2, 3, certain provisions in section 4,⁹⁸ and proposed sections 9 and 10.2 of Attachment Q become effective May 1, 2016. APS requests that proposed revisions to sections 13, 14, 28, 30, 36, 38 of its OATT and other provisions in section 4,⁹⁹ together with proposed sections 5, 6, and 7 of Attachment Q become effective on the later of July 25, 2016, or seven days prior to the start of parallel operations. APS states that this request supports its need for information supporting EIM operation several business days in advance of parallel operations. Finally, APS requests an effective date of the later of October 1, 2016, or the implementation date of APS's participation in EIM, for revisions to sections 7, 12, and 16 of its OATT, Attachment Q sections 4.1.5, 4.1.6, 8, and 10, and revisions to Schedules 1, 4, 10, and 12. APS states that these provisions relate to the financial settlement of charges associated with the EIM and additional aspects related to implementation of the EIM.¹⁰⁰

56. APS seeks waiver of the Commission's notice requirements set forth in section 35.3(a)(1) of the Commission's regulations, 18 C.F.R. § 35.3(a)(1), because the requested effective date of certain provisions will be more than 120 days after APS's filing. APS states that granting of waiver will allow APS's proposed OATT revisions to be in place in a timeframe necessary to support final design, testing, and startup and provide operational and regulatory certainty.¹⁰¹

57. Additionally, APS requests waiver of the cost support requirements of section 35.15 of the Commission's regulations, 18 C.F.R. § 35.15, because APS states that EIM charges will be market-driven or otherwise addressed in the CAISO tariff. Finally, APS

⁹⁸ These proposed sections include: 4.1.1.1, 4.1.1.2, 4.1.1.3, 4.1.1.4, 4.1.1.5, 4.1.2, 4.1.2.2, 4.2.1, 4.2.1.1, 4.2.1.2, 4.2.2, 4.2.2.1, 4.2.2.2, and 4.2.3.

⁹⁹ These proposed sections include: 4.1.2.1, 4.1.3, 4.1.4, 4.2.4, and 4.2.5.

¹⁰⁰ APS Transmittal Letter at 36.

¹⁰¹ *Id.*

requests waiver of Part 35 of the Commission's regulations to the extent they are not satisfied by APS's filing.

O. Notice and Responsive Filings

58. Notice of APS's February 12 Filing was published in the *Federal Register*, 81 Fed. Reg. 8950 (2016), with interventions and protests due on or before March 4, 2016. Notice of APS's February 17, 2016 errata filing was published in the *Federal Register*, 81 Fed. Reg. 9180 (2016), with interventions and protests due on or before March 9, 2016. NV Energy; PacifiCorp; Portland General Electric Company; Puget Sound Energy; the Transmission Agency of Northern California; the Cities of Santa Clara, California and Redding, California, and the M-S-R Public Power Agency; the Modesto Irrigation District; the Los Angeles Department of Water and Power; Navopache Electric Cooperative; the Salt River Project; and Imperial Irrigation District filed timely motions to intervene. CAISO filed a timely motion to intervene and comments. The Western Power Trading Forum (WPTF), Southwest Public Power Agency (SPPA), and Powerex each filed timely motions to intervene and protests. Puget filed an answer to protests on March 21, 2016, and PacifiCorp filed an answer to comments on March 25, 2016. On March 31, 2016, APS filed an answer to comments and protests. On April 6, 2016, Powerex filed an answer to answers. On April 12, 2016, SPPA submitted an answer to APS's answer.

III. Discussion

A. Procedural Matters

59. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2015), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

60. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2015), prohibits an answer to a protest unless otherwise ordered by the decisional authority. We will accept Puget's, PacifiCorp's, APS's, and Powerex's answers because they have provided information that assisted us in our decision-making process. We are not persuaded to accept SPPA's answer and will, therefore, reject it.

B. Substantive Matters

1. Overview of APS's EIM Proposal

61. APS's proposal sets forth the rules for APS and its customers to participate in CAISO's EIM. APS states that its filing is the product of an extensive stakeholder process, spanning from August 2015 through January 2016 and involving three stakeholder meetings and several opportunities for stakeholders to submit comments on

the proposed OATT revisions.¹⁰² APS asserts that its proposed OATT changes closely track those already accepted as just and reasonable for PacifiCorp and NV Energy, in addition to pending changes recently filed by each entity to address and accommodate CAISO's ability to incorporate Available Balancing Capacity into its economic dispatch model.¹⁰³

62. While APS's proposal differs in certain respects from PacifiCorp's and NV Energy's respective OATTs, APS avers that there can be more than one rate design that may satisfy the statutory just and reasonable standard.¹⁰⁴ As noted above, APS states that its proposal differs in the following respects: (1) the ability of external resources to participate in the EIM as APS EIM Participating Resources via dynamic scheduling, in addition to the use of pseudo-ties; (2) retention of the penalty tiers applicable to imbalance Schedules 4 and 10 under the APS OATT that apply to resources and loads which are not participating in the EIM market; (3) the election not to collect unreserved use penalties for generation that exceeds the sum of a transmission customer's reservation plus dispatch operating point; (4) the election not to allocate payments and charges from CAISO for operating reserves back to transmission customers; and (5) the settlement of losses financially at the LMP produced by the EIM, to the exclusion of in-kind replacement.¹⁰⁵

a. Comments

63. CAISO states that it supports APS's proposed OATT revisions and requests that the Commission accept them as filed and allow them to become effective as requested.¹⁰⁶ CAISO contends that APS's proposed OATT revisions largely track those proposed by other entities to facilitate their participation in the EIM and which the Commission has accepted as just and reasonable. CAISO also argues that APS's proposed OATT revisions are consistent with the CAISO tariff. Finally, CAISO asserts that, while some

¹⁰² *Id.* at 5-6.

¹⁰³ *Id.* at 9-10.

¹⁰⁴ *Id.* at 12 (citing *ISO New England Inc.*, 145 FERC ¶ 61,014, at P 37 (2013); *Midwest Indep. Transmission Sys. Operator, Inc.*, 127 FERC ¶ 61,109, at P 20 (2009); *ISO New England Inc.*, 123 FERC ¶ 61,266, at P 26 (2008); *Oxy USA, Inc. v. FERC*, 64 F.3d 679, 692 (D.C. Cir. 1995); *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (D.C. Cir. 1984)).

¹⁰⁵ *Id.* at 10-12.

¹⁰⁶ CAISO Comments at 2.

stakeholders may have different preferences regarding APS's proposal, APS has sufficiently addressed their concerns in its stakeholder process and there is no reason to reject any of APS's proposed OATT revisions.¹⁰⁷

64. No intervenors object to APS's participation in the EIM. However, WPTF and Powerex submit comments regarding – and SPPA protests – certain aspects of APS's proposal, including: (1) APS's proposal to allow external resources to participate in the EIM via dynamic scheduling; (2) APS's proposal regarding OATT Schedules 4 and 10; (3) APS's proposal regarding allocation of unreserved use penalties; (4) APS's proposal regarding allocation of operating reserves charges; (5) APS's proposal to require financial settlement of losses; (6) APS's definitions of terms related to Available Balancing Capacity; and (7) APS's request for market-based rate authority.

b. Commission Determination

65. The Commission accepts this filing subject to condition, as discussed below.¹⁰⁸ We find that APS's proposed OATT revisions as modified here are just and reasonable and will facilitate APS's participation in the EIM as well as the operation of the EIM as a whole by providing a framework that is consistent with the EIM provisions in CAISO's tariff and PacifiCorp's and NV Energy's OATTs. While, with some exceptions, APS's proposed OATT revisions generally track those accepted by the Commission in the PacifiCorp EIM Order and the NV Energy EIM Order, we find that APS has independently supported its proposal to adopt these revisions and explained how its proposed OATT revisions that differ from previous EIM Entities' proposals are tailored to accommodate the unique nature of APS's system and the needs of its customers. However, we note that the actual implementation of APS's participation in the EIM is subject to APS's compliance with the readiness requirements set forth in section 29 of CAISO's tariff.

66. With respect to APS's proposal regarding APS's responsibilities as an EIM Entity, we find that APS has clearly explained how it will satisfy the requirements of EIM Entities set forth in section 29 of CAISO's tariff. Specifically, APS's revisions will enable it to, among other things, provide data to CAISO regarding the day-to-day operation of the EIM through the submissions of EIM base schedules and resource plans, provide CAISO information regarding the reserved use of the transmission system and

¹⁰⁷ *Id.* at 3.

¹⁰⁸ The Commission can revise a proposal filed under section 205 of the FPA as long as the filing utility accepts the change. *See City of Winnfield v. FERC*, 744 F.2d 871, 875-77 (D.C. Cir. 1984). The filing utility is free to indicate that it is unwilling to accede to the Commission's conditions by withdrawing its filing.

interties and any changes to transmission capacity, and communicate information regarding planned and unplanned outages and derates. With the exception of matters addressed further below, we also find that APS has described and justified the responsibilities of transmission customers with respect to the EIM, such as the requirements to provide outage and derate data and initial registration data to the EIM Entity. Such information is necessary to ensure that CAISO has the most accurate information possible to support the reliable operation of its system as well as provide APS the information it needs to manage, operate, and conduct accurate settlements for its customers.

67. With respect to transmission operations, APS's proposed revisions governing transmission operations provide sufficient explanation as to how APS will facilitate the provision of transmission capacity needed to effectuate EIM Transfers on APS's system. Further, with respect to EIM operations, we find that APS's proposed revisions will work to ensure that EIM operations do not infringe upon APS's reliability obligations as a balancing authority. These proposed revisions will ensure that APS will remain responsible for its NERC and WECC obligations, maintaining appropriate operating reserves and reserves required for its obligations under its reserve sharing group agreements, processing e-Tags and managing schedule curtailments at the interties, in addition to managing real-time flows within system operating limits on all transmission facilities within its BAA.

68. We will address certain aspects of APS's proposal that have been contested by various intervenors and accept certain provisions, subject to condition, as discussed further below. We find the aspects of APS's proposal that are not contested or specifically discussed herein to be just and reasonable and therefore accept them for filing, effective as requested by APS.

69. We also find good cause to grant waiver of the Commission's maximum 120-day notice requirement, 18 C.F.R. § 35.3(a)(1) (2015), to permit APS's requested effective dates. Accordingly, we grant APS the effective dates requested by APS in its February 12 Filing and listed above, including the requested effective date of May 1, 2016; the requested effective date of July 25, 2016, or seven days prior to the start of parallel operations for the proposed revisions related to actual implementation of the EIM; and the requested effective date of October 1, 2016, or the implementation date of APS's participation in the EIM, whichever is later. We also grant APS's request for waiver of the cost support requirements of section 35.13 of the Commission's regulations, 18 C.F.R. § 35.13 (2015). EIM charges are market-driven, and are based on EIM provisions in section 29 of CAISO's tariff, which the Commission has accepted. This waiver is

consistent with the Commission's waiver of the requirements of Part 35 in the PacifiCorp and NV Energy EIM orders.¹⁰⁹

2. Participation of External Resources

a. APS's Proposal

70. Like PacifiCorp and NV Energy, APS proposes to allow resources both internal and external to the APS BAA to participate in the EIM. However, as discussed above, while PacifiCorp and NV Energy allow participation of external resources only through the use of pseudo-ties, APS proposes to allow resources external to the APS BAA to participate in the EIM via two types of dynamic transfer: (1) the use of pseudo-ties, or (2) dynamic scheduling, where the external resource is responsive to APS's automatic generation control and operational control.¹¹⁰

71. Specifically, proposed section 3.2.1 of Attachment Q states that a resource that is not physically located inside the metered boundaries of the APS BAA is eligible to become an APS EIM Participating Resource if the transmission customer implements a pseudo-tie into the APS BAA, arranges for transmission service over any third-party system to transfer the power to an APS BAA intertie boundary point equal to the amount of energy that will be dynamically transferred through the pseudo-tie, and secures transmission service on APS's transmission system.¹¹¹ APS states that these eligibility requirements for implementing a pseudo-tie are the same as those adopted by other EIM Entities.¹¹²

72. In addition, an external resource is eligible to participate in the EIM as an EIM Participating Resource if the resource qualifies as a Balancing Authority Area Resource. APS defines a Balancing Authority Area Resource as "an APS Participating or Non-Participating Resource that (1) is unit specific, (2) can provide regulation and load following services to enable the APS EIM Entity to meet reliability criteria, and (3) is either owned by APS or APS has contracted for the right to call upon the capacity for regulation or load-following services from that resource."¹¹³ The resource must also

¹⁰⁹ PacifiCorp EIM Order, 147 FERC ¶ 61,227 at P 83; NV Energy EIM Order, 151 FERC ¶ 61,131 at P 87.

¹¹⁰ APS Transmittal Letter at 10, 16.

¹¹¹ *Id.* at 16; APS Proposed OATT, Attachment Q, § 3.2.

¹¹² APS Transmittal Letter at 16.

¹¹³ APS Proposed OATT, § 1.20.

arrange for transmission service over any third-party system to transfer the power to an APS BAA intertie boundary point, and secure transmission service on APS's transmission system.¹¹⁴

73. APS explains that certain of its resources that would qualify as Balancing Authority Area Resources currently provide regulation and load-following services that facilitate the efficient, effective, and economic performance of APS's obligations within its BAA. Specifically, APS states that these resources are automatic generation control-responsive units that supplement resources within the APS BAA with additional, dedicated capacity and ramping capability that APS asserts should be included in demonstrations of the APS BAA's sufficiency during flexible ramping tests. According to APS, such resources are fully dispatchable in the APS BAA and are therefore operationally comparable within the APS BAA to both internal resources and external resources participating via pseudo-ties.¹¹⁵ APS argues that its proposal to allow Balancing Authority Area Resources to participate in the EIM and supply imbalance energy into the market as EIM Participating Resources is valuable for the APS BAA and its customers, noting that these resources are subject to the same reliability standards as pseudo-tied generation. According to APS, the ability of Balancing Authority Area Resources to participate in the market is essential for the APS BAA to function in the EIM with a complete and accurate set of resources and in a manner that fully represents the Available Balancing Capacity of the APS BAA.¹¹⁶

74. APS asserts that its proposal to allow participation by those resources who qualify as Balancing Authority Area Resources is not unduly discriminatory, because participation would be available to any similarly situated external resource that voluntarily contracts with APS to be a Balancing Authority Area Resource and satisfies the requirements of proposed section 3.2 of Attachment Q. APS explains that external resources may also participate in the EIM using a pseudo-tie, or by becoming an EIM BAA through the process CAISO has established in its tariff.¹¹⁷ Moreover, APS contends that allowing Balancing Authority Area Resources to participate in the EIM is appropriate because it (1) reflects and accommodates unique operational characteristics of APS's BAA; (2) will provide greater benefits for APS customers; (3) ensures all

¹¹⁴ *Id.* at 16-17; Proposed OATT, Attachment Q, § 3.2.2.

¹¹⁵ APS Transmittal Letter at 17.

¹¹⁶ *Id.* at 18.

¹¹⁷ *Id.*

currently-utilized resources are evaluated and used in resource sufficiency tests; and (4) is not unduly discriminatory.¹¹⁸

b. Comments

75. Powerex supports APS's proposal to allow resources external to its BAA to participate in the EIM, but argues that APS's proposal requires further clarification. Specifically, Powerex contends that it is unclear whether APS's proposal would limit the participation of Balancing Authority Area Resources to the provision of Available Balancing Capacity or whether its proposal would allow Balancing Authority Area Resources to participate fully in the EIM. Powerex argues that limiting these resources to providing only Available Balancing Capacity is consistent with the Commission's acceptance of similar approaches adopted by PacifiCorp and NV Energy. Powerex does not, however, support allowing Balancing Authority Area Resources to participate fully in the EIM stating that, consistent with PacifiCorp's and NV Energy's proposals, qualifying as a Balancing Authority Area Resource "is not an alternative means of participating in the EIM."¹¹⁹

76. Powerex explains that, if APS allows the dynamic scheduling arrangements intended to provide Balancing Authority Area Resources with limited participation in the EIM to instead facilitate full EIM participation, then APS would have the discretion to improperly condition access to the CAISO EIM to any third-party resource that wishes to participate via dynamic scheduling, which Powerex contends is less burdensome.¹²⁰ Powerex explains that this discretion arises because APS is under no obligation to enter into an agreement with an external generator seeking to qualify as a Balancing Authority Area Resource and, thus, the generator denied access would have little recourse pursuant to APS's OATT.¹²¹ Powerex asserts that affording APS discretion over the terms and conditions of market access creates opportunities for undue discrimination, impedes competition, and violates Commission precedent.¹²² Therefore, Powerex argues that the Commission should direct APS to clarify the intended participation limitations for Balancing Authority Area Resources and revise its OATT to reflect that external resources must meet the technical qualifications set out in section 3.2.2 of Attachment Q

¹¹⁸ *Id.*

¹¹⁹ Powerex Comments at 9, n.20.

¹²⁰ *Id.* at 10.

¹²¹ *Id.* at 10-11, n.23.

¹²² *Id.* at 11.

to qualify as an APS EIM Participating Resource. Alternatively, Powerex requests that the Commission direct APS to revise its OATT to eliminate references to Balancing Authority Area Resources as EIM Participating Resources.¹²³

77. WPTF supports the use of dynamic schedules for EIM participation but argues that it should be extended to all resources that meet APS's technical criteria.¹²⁴ WPTF argues that APS's proposal is unduly discriminatory because it requires resources wishing to participate in the EIM through the use of dynamic schedules that currently operate under tolling agreements with APS to contract with APS to be a Balancing Authority Area Resource.¹²⁵ WPTF argues that there is no technical reason why a resource must be a Balancing Authority Area Resource to satisfy the requirements of section 3.2 of Attachment Q to participate in the EIM through the use of dynamic schedules.¹²⁶ WPTF requests that the Commission direct APS to modify its OATT to eliminate the requirement that external resources have an underlying contract with APS so that all resources that meet the technical requirements to dynamically schedule may participate in the EIM.¹²⁷

78. CAISO supports APS's proposal to allow external resources that qualify as Balancing Authority Area Resources and meet other specified criteria to participate in the EIM as APS EIM Participating Resources. CAISO states that APS's proposed criteria will ensure that such external resources can participate in the EIM in a manner equivalent to dynamically scheduled resource-specific system resources participating in the CAISO markets.¹²⁸ CAISO also supports APS's proposal to allow external resources to participate in the EIM through a pseudo-tie agreement, rather than allowing economic bidding at the interties, which CAISO asserts is consistent with the approaches adopted by NV Energy, PacifiCorp, and the CAISO tariff.¹²⁹

¹²³ *Id.*

¹²⁴ WPTF Comments at 8.

¹²⁵ *Id.* at 9.

¹²⁶ *Id.*

¹²⁷ *Id.*

¹²⁸ CAISO Comments at 6.

¹²⁹ *Id.* at 5.

c. APS's and Powerex's Answers

79. According to APS, the requirements attached to Balancing Authority Area Resources are necessary for moment-to-moment regulation of APS load and to preserve APS's ability to maintain certain sufficiency requirements. Additionally, APS argues that, rather than being discriminatory, its proposal objectively expands the ability of external resources to participate in EIM. APS argues that WPTF misunderstands APS's dynamic scheduling proposal, stating that having an underlying contract with APS is only one of the qualifying criteria for Balancing Authority Area Resources. APS asserts that a more important criterion is the resource's ability to follow load and provide regulation, which requires appropriate technical capabilities, including the obligation for the resource to respond immediately when it receives a real-time dispatch signal from APS.¹³⁰ APS states that the value of Balancing Authority Area Resources in the APS BAA resides in the combination of dynamic schedules, the contractual relationships between APS and resource owners, and the operation of units synced to APS's automatic generation control. According to APS, these elements cannot be decoupled.¹³¹

80. Powerex clarifies in its answer that it would not object to a requirement that external resources enter into an operational agreement with APS as long as (1) the agreement is limited to operational and technical responsibilities and, (2) APS is not permitted to refuse to enter into an agreement with a resource that is capable of meeting the applicable technical requirements. However, Powerex maintains its position that a requirement for external resources to agree to a commercial agreement is unjust and unreasonable.¹³²

d. Commission Determination

81. We accept, subject to condition, APS's proposal to allow EIM participation by external resources through the use of both pseudo-tie arrangements and dynamic scheduling.

82. Specifically, we find that APS's proposal to allow external resources to use a pseudo-tie arrangement to deliver electricity from the external BAA to APS's BAA is a reasonable means of allowing external resources to participate in the EIM. Through pseudo-ties, resources physically located outside of the APS BAA can be transferred and operated as though they are located within the BAA. Importantly, in a pseudo-tie

¹³⁰ APS Answer at 5-6.

¹³¹ *Id.*

¹³² Powerex Answer at 7.

arrangement, the attaining BAA—in this case, APS—obtains operational responsibility for the load or resource¹³³ and is able to dispatch that resource as though it was physically within, or directly connected to, APS's BAA. Further, we note that this proposal is similar to the arrangements in PacifiCorp and NV Energy's EIM OATTs that the Commission has previously accepted,¹³⁴ and we find that APS has shown that its proposal is appropriate given the nature of APS's system.

83. While we accept APS's proposal to allow external resources to participate in the EIM through the use of dynamic scheduling, we do so subject to the condition that APS clarify in a compliance filing that a potential APS EIM Participating Resource is not required to enter into a commercial arrangement with APS in order to participate via dynamic scheduling. We find it appropriate for APS to require any external resource that seeks to dynamically schedule to meet certain technical and operational requirements including the requirement for the generator to be fully dispatchable by APS and equipped to respond to signals from APS's automatic generation control system. However, under APS's proposal, a resource that seeks to dynamically schedule must be designated as a Balancing Authority Area Resource, which also requires that the resource be owned or have a contract with APS where APS can call upon the resource for load following or regulation service. We agree with Powerex that these resources should not be required to enter into a commercial arrangement with APS for the sale of energy, ancillary services or capacity and that APS may not condition participation of a dynamically-scheduled resource on that resource contracting to provide load-following or regulation service. Therefore, we accept APS's proposal to require resources to meet the technical requirements specified in section 3.2, subject to condition.

84. For these reasons, we direct APS to submit a compliance filing, within 30 days of the date of this order, modifying section 3.2 of Attachment Q to remove the requirement that an external resource qualify as a Balancing Authority Area Resource to be eligible to participate via dynamic scheduling, as described above, and clarifying that dynamically scheduled external resources are not required to enter into commercial contracts with APS in order to participate in the EIM as APS EIM Participating Resources.

¹³³ See, e.g., NERC, *Operating Manual: Dynamic Transfer Reference Guidelines*, (Aug 2014) http://www.nerc.com/comm/OC/Operating%20Manual%20DL/opman_20140825.pdf (“In the instance of a pseudo-tie, the operational and procedural responsibility for a load/generation is a key.”).

¹³⁴ See PacifiCorp EIM Order, 147 FERC ¶ 61,227 at PP 130-131; NV Energy EIM Order, 151 FERC ¶ 61,131 at P 185.

3. Schedules 4 and 10 Penalty Tiers

a. APS's Proposal

85. APS proposes to price energy imbalance service using the Load Aggregation Point price produced by the EIM and to retain the existing *pro forma* penalty tiers for both Energy Imbalance (Schedule 4) and Generator Imbalance (Schedule 10) for non-participating resources and loads inside the APS BAA. For energy imbalance, APS proposes to charge or pay transmission customers based on the difference between their metered load and the load component of their base schedule at the applicable Load Aggregation Point price where the load is located.¹³⁵ For generator imbalance, APS proposes to charge or pay transmission customers based on the difference between their metered generation and the resource component of their base schedule for the period of the deviation at the applicable LMP where the generator is located.¹³⁶ APS argues that its proposal to retain the penalty tiers for both energy and generation imbalances is consistent with the Commission's policies in Order Nos. 888¹³⁷ and 890,¹³⁸ and aligns

¹³⁵ For example, deviations within 1.5 percent (with a minimum of 2 MW) of the scheduled transaction will be applied hourly to any energy imbalance that occurs as a result of the transmission customer's scheduled transaction(s), netted on a monthly basis, and settled financially at 100 percent of the LAP price at the end of the month. APS Proposed OATT, Schedule 4.

¹³⁶ For example, when a transmission customer's metered generation deviates from the resource component of its base schedule by greater than 1.5 percent up to 7.5 percent (or between 2 and 10 MW), APS will settle generator imbalance service at 110 percent of the applicable PNode real-time dispatch price where the generator is located for under-scheduling or 90 percent of this price for overscheduling. APS Proposed OATT, Schedule 10.

¹³⁷ *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048, *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

¹³⁸ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241, *order on reh'g*, Order No. 890-A, FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (*continued ...*)

with the Commission's principle to ensure that imbalance charges provide an incentive for accurate scheduling. According to APS, APS EIM Participating Resources will submit economic bids into the EIM and will be appropriately incentivized to generate to schedule, and these resources will settle imbalance directly with CAISO without penalty tiers. Since participation in the EIM is voluntary, not all resources and load are responsive to incentives created through economic bids submitted into the EIM and corresponding locational prices.¹³⁹ Accordingly, APS proposes to maintain the *pro forma* penalty tiers for resources and loads that are not participating in the EIM market to provide incentives for accurate scheduling practices.¹⁴⁰

86. APS asserts that it believes the penalty tiers continue to provide an incentive for timely and accurate scheduling of resources, which aids in prudent system resource planning and real-time reliability.¹⁴¹ However, APS states that it will monitor customer behavior to determine whether LMP prices for energy imbalances, absent penalties, may independently act as a suitable incentive for accurate scheduling, and that it will reevaluate its proposal if necessary.

b. Comments

87. Powerex and SPPA contend that APS's proposal to retain penalty tiers for non-participating transmission customers under proposed Schedules 4 and 10 of the APS OATT is unjust and unreasonable because it contradicts Commission precedent and fails to account for existing features of the EIM structure that discourage over- and under-scheduling. Powerex asserts that the Commission previously rejected arguments that PacifiCorp be required to retain its existing tiered imbalance penalties because "the [use of] real-time LMPs for imbalances [is] an adequate inducement for the customer to act rationally in an energy market."¹⁴² Powerex contends that APS has failed to provide any evidence that would justify departing from this precedent. Similarly, SPPA argues that the Commission recognized in Order No. 890-A that LMPs alone provide incentive to

(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).

¹³⁹ APS Transmittal Letter at 25-26.

¹⁴⁰ *Id.* at 26.

¹⁴¹ *Id.*

¹⁴² Powerex Comments at 13 (citing PacifiCorp EIM Order, 147 FERC ¶ 61,227 at P 161).

schedule accurately.¹⁴³ Moreover, Powerex also asserts that APS's proposal fails to account for the penalties applicable to EIM Entities under section 29.11(d) of the CAISO tariff, which assesses charges for over- and under-scheduling. In addition, Powerex states that, under APS's proposal, over- and under-scheduling charges that CAISO assesses to APS under Schedule 4 will be sub-allocated to customers based on that customer's over- and under-scheduling imbalance ratio share. Powerex argues that APS has failed to justify penalizing Schedule 4 customers twice for the same imbalance under both section 29.11(d) of the CAISO tariff and Schedules 4 and 10 of the APS OATT.¹⁴⁴

88. Furthermore, WPTF and Powerex argue that imposing such penalties may have the effect of penalizing transmission customers for accurately scheduling their load and generation because the penalties are based on the transmission customer's base schedule. Since transmission customers must submit their base schedule 57 minutes before each trading hour, WPTF and Powerex contend that any adjustments made after this time increase the customer's exposure to imbalance penalties, even if those adjustments more accurately reflect the customer's actual load and generation.¹⁴⁵ Further, WPTF argues that APS's proposed penalty tiers violate the principles of Order No. 890 related to variable energy resources and that the proposed penalty tiers will create additional barriers for variable energy resources.¹⁴⁶ More generally, WPTF argues that the combination of the earlier EIM scheduling deadline and penalty tiers undermines the increased flexibility afforded by Order No. 764.¹⁴⁷ Thus, WPTF and Powerex request that the Commission direct APS to remove the tiered imbalance penalties from proposed Schedules 4 and 10 of its OATT.

89. SPPA states that if the Commission accepts APS's proposal, APS would be able to apply the tiered penalties even though it is not supplying imbalance energy and even when APS is not being assessed an imbalance penalty by CAISO.¹⁴⁸ SPPA contends that

¹⁴³ SPPA Protest at 8 (citing Order No. 890-A at P 265).

¹⁴⁴ Powerex Comments at 14-15.

¹⁴⁵ *Id.* at 15.

¹⁴⁶ WPTF Protest at 4-5 (citing Order No. 890 at P 663).

¹⁴⁷ *Id.* at 5.

¹⁴⁸ SPPA explains that CAISO would be providing imbalance energy at LMP-based prices and would typically not impose further penalties. According to SPPA, when CAISO did impose a penalty, APS would pass that penalty through to transmission customers who contributed to the over- or under-scheduling. SPPA Protest at 10-11.

APS's proposal violates cost causation principles because it would allow APS to charge for a service it did not provide.¹⁴⁹ Thus, SPPA asserts that it is unjust and unreasonable to apply both the tiered penalty structure and LMP pricing under Schedules 4 and 10 of APS's OATT, and recommends that the Commission reject APS's proposal and direct APS to either use LMPs alone or retain the existing penalty tiers and use the existing proxy pricing to determine imbalance charges.¹⁵⁰

90. Similarly, WPTF argues that APS's proposal to retain the penalty tiers in its OATT Schedules 4 and 10 is unjust and unreasonable given the use of EIM LMPs to determine the base price for service under those schedules. WPTF contends that penalty tiers may be appropriate to incent accurate scheduling when pricing of imbalance is not based on real-time market prices, but that customers should not be charged a penalty when the EIM LMPs will result in transmission customers being charged or paid the real-time cost or benefit associated with their imbalances.¹⁵¹ Additionally, by charging a penalty in addition to the EIM LMPs, APS will significantly modify the market price and possibly interfere with the proper function of EIM price signals.¹⁵²

91. PacifiCorp supports APS's proposal to maintain the penalty tier provisions under Schedules 4 and 10 of its OATT.¹⁵³ PacifiCorp asserts that retaining the penalty tiers in Schedule 4 is justified when there is concern that load will intentionally, or negligently inflate its base schedules to receive imbalance payments.¹⁵⁴ Similarly, PacifiCorp argues that retaining the penalty tiers in Schedule 10 is justified when there is concern that generation will intentionally or negligently over-generate to receive generator imbalance payments.¹⁵⁵ PacifiCorp adds that compensation received for generation imbalance in this scenario could discourage entities from participating in the EIM as participating resources. PacifiCorp supports APS's proposal to monitor customer behavior to determine whether LMP prices, absent penalties, provide the proper incentives for

¹⁴⁹ *Id.* at 11.

¹⁵⁰ *Id.*

¹⁵¹ WPTF Comments at 3.

¹⁵² *Id.* at 4.

¹⁵³ PacifiCorp Answer at 3.

¹⁵⁴ *Id.* at 2.

¹⁵⁵ *Id.* at 3.

accurate scheduling and its commitment to reevaluate this position if necessary is just and reasonable in light of APS's circumstances.¹⁵⁶

92. CAISO generally supports APS's proposal for defining each aspect of EIM settlement that CAISO does not directly settle, and indicates that it does not take a position on APS's proposal to retain the penalty tiers under Schedules 4 and 10 of its OATT.¹⁵⁷

c. APS's and Powerex's Answers

93. APS argues that while LMPs may provide sufficient incentives for participants in organized markets to adhere to dispatch instructions or load schedules, LMP incentives are not applicable to non-participating resources or load. According to APS, without penalty tiers, a resource could position itself to receive revenues above costs by over generating or provide energy at a lower cost by under generating. Similarly, APS argues that load customers would lack incentives to meet EIM timing requirements, causing APS to dispatch resources differently than its previous resource plan required.¹⁵⁸

94. APS further argues that charges related to penalty tiers and over- or under-scheduling penalties are not duplicative. Even though the same event could expose a customer to both charges, APS states that penalty tiers protect the BAA while over and under scheduling penalties protect market participants. Additionally, APS states that it would not receive double payment for imbalance services, as SPPA suggests, because it proposes to distribute collected penalties to non-offending transmission customers and to sub-allocate over or under scheduling penalties according to charges that CAISO assessed.¹⁵⁹

95. Powerex contends that transmission customers have little ability to manage their exposure to imbalance charges. Although PacifiCorp suggested in its answer that EIM participation was voluntary, Powerex argues that, under APS's proposal, all transmission customers would be exposed to EIM imbalance charges should they deviate from forecast data submitted at T-57.¹⁶⁰ Powerex states that transmission customers would be exposed

¹⁵⁶ *Id.*

¹⁵⁷ CAISO Comments at 9, n.14.

¹⁵⁸ APS Answer at 9-10.

¹⁵⁹ *Id.* at 10-11.

¹⁶⁰ PacifiCorp Answer at 3.

to penalties regardless of their intent to schedule accurately. According to Powerex, many transmission customers have limited ability to precisely predict their load or output at the T-57 forecast deadline and would be penalized for adjusting their schedules to reflect actual conditions. Additionally, Powerex describes a circumstance where it states that APS's proposal would penalize wheel-through customers for making full use of their scheduling rights.¹⁶¹

d. Commission Determination

96. We accept APS's proposal to charge energy imbalance (Schedule 4) and generator imbalance (Schedule 10) using LMP prices resulting from the EIM. We find that this proposal is just and reasonable because the EIM LMP will more accurately reflect the cost APS pays for providing that service. This finding is consistent with prior orders in which the Commission has found that prices set at LMPs in competitive markets are just and reasonable.¹⁶²

97. We do not, however, find that APS's support for retaining the *pro forma* penalty tiers in Schedules 4 and 10 of its OATT, in combination with LMP pricing, is persuasive. Specifically, we find that APS has failed to account for the existing features of the EIM structure that discourage over- and under-scheduling under section 29.11(d) of the CAISO tariff. We find that the penalty tiers would add additional charges without a clear indication that they would improve the incentives to adhere to dispatch instructions and load schedules in the EIM construct. In addition, we find that imposing such penalties may have the effect of penalizing transmission customers for accurately scheduling their load and generation because the penalties are based on the transmission customer's base schedule, which customers submit 57 minutes prior to the trading hour. Notably, the Commission has previously accepted LMPs as a superior alternative to the deviation band approach in competitive energy markets.¹⁶³

98. Moreover, as noted above, we also find LMP-based pricing for imbalances to be an adequate inducement for the customer to act in accordance to market rules.¹⁶⁴ The

¹⁶¹ Powerex Answer at 4-5.

¹⁶² NV Energy EIM Order, 151 FERC ¶ 61,131 at P 174; NV Energy EIM Rehearing Order, 153 FERC ¶ 61,306 at P 13; *Cal. Indep. Sys. Operator Corp.*, 116 FERC ¶ 61,274, at PP 62-64 (2006), *order on reh'g*, 119 FERC ¶ 61,076 (2007).

¹⁶³ PacifiCorp EIM Order, 147 FERC ¶ 61,227 at P 161.

¹⁶⁴ *Id.* P 161 (citing *Midwest Indep. Transmission Sys. Operator, Inc.*, 111 FERC ¶ 61,053, at P 197 (2005)).

Commission has previously asserted that the EIM LMP represents 100 percent of the cost of imbalance energy without any additional penalties.¹⁶⁵ Therefore, additional penalty tiers would be duplicative. Finally, under the Commission's *pro forma* OATT, transmission customers are allowed to manage their imbalance energy needs without any additional penalties.¹⁶⁶

99. For these reasons, we direct APS submit a compliance filing, within 30 days of the date of this order, to remove the penalty tier provisions of Schedules 4 and 10 of its OATT.

4. Unreserved Use Penalties

a. APS's Proposal

100. Under its proposal, APS will not impose any incremental transmission charges for transmission use related to the EIM. APS also states that participating resources and Balancing Authority Area Resources will not incur unreserved use charges solely as a result of EIM Dispatch Instructions. APS states that this proposal is consistent with the Commission's direction in the PacifiCorp EIM Order.¹⁶⁷ However, unlike PacifiCorp and NV Energy, APS does not propose to collect unreserved use penalties for generation output that exceeds the sum of a transmission customer's reservation plus dispatch operating point.¹⁶⁸

101. In support of its proposal, APS explains that it operates a schedule-based reservation system, rather than a flow-based system, meaning that transmission service is not deemed "used" unless it is scheduled. Accordingly, APS states that it currently charges unreserved use penalties only when a customer schedules transmission service in excess of its reserved capacity or fails to procure service in a timely manner. But when the schedule is within the bounds of the reservation, any generation in excess of the reservation is simply settled as generator imbalance under Schedule 10 of its OATT. APS explains that it does not propose to modify the mechanism by which unreserved use

¹⁶⁵ NV Energy EIM Order, 151 FERC ¶ 61,131 at P 179.

¹⁶⁶ *Id.*

¹⁶⁷ APS states that this proposal is consistent with the Commission's direction in the PacifiCorp EIM Order. APS Transmittal Letter at 19 (citing PacifiCorp EIM Order, 147 FERC ¶ 61,227 at PP 144-149).

¹⁶⁸ *Id.*

is assessed. According to APS, because generation that is responsive to an EIM dispatch instruction is inherently unscheduled, no unreserved use charges will result.¹⁶⁹

b. Comments

102. Powerex argues that APS's proposal to forego the assessment of unreserved use penalties to EIM resources is both inconsistent with Commission precedent and unjust and unreasonable. Powerex states that, in the PacifiCorp EIM Order, the Commission found that exempting EIM Participating Resources from unreserved use charges "could provide an incentive for a resource to not follow EIM dispatch instructions and run uninstructed to collect its nodal [locational marginal price]."¹⁷⁰ Here, Powerex claims that not applying unreserved use penalties to EIM Participating Resources and Balancing Authority Area Resources will provide these resources with the incentive not to follow dispatch instructions so that they receive the LMP for their positive imbalances.¹⁷¹ Powerex asserts that any additional unscheduled energy placed onto APS's transmission system as a result of APS's proposal will serve to exacerbate congestion and reduce the transmission capacity available to other transmission customers. Therefore, Powerex requests that the Commission direct APS to revise its OATT to assess unreserved use penalties to EIM Participating Resources and Balancing Authority Area Resources for any generation output that exceeds the sum of the customer's transmission reservation and EIM dispatch, consistent with the PacifiCorp EIM Order.¹⁷²

103. SPPA states that APS's proposal contravenes long-standing Commission policy and is unreasonably vague and ambiguous.¹⁷³ According to SPPA, the Commission stated in its order approving PacifiCorp's EIM-related OATT revisions that unreserved use penalties were required when a transmission customer exceeds its Reserved Capacity plus any additional capacity needed to respond to EIM dispatch instructions.¹⁷⁴ SPPA states that APS's proposal is unclear as to whether an owner of an APS EIM Participating Resource that exceeds an EIM dispatch instruction would be required to pay unreserved use charges on the output that the owner dispatched over and above the dispatch

¹⁶⁹ *Id.*

¹⁷⁰ Powerex Comments at 17 (citing *PacifiCorp*, 149 FERC ¶ 61,057 at P 68).

¹⁷¹ *Id.* at 18.

¹⁷² *Id.*

¹⁷³ SPPA Protest at 11 (citing Order No. 890 at PP 834-842).

¹⁷⁴ *Id.* at 11-13 (citing *PacifiCorp*, 151 FERC ¶ 61,261, at PP 25-26 (2015)).

instruction and the owner's transmission reservation. Further, SPPA argues that APS's transmittal letter suggests that, once a resource is registered as an APS EIM Participating Resource, it will be exempt from both unreserved use and Schedule 10 charges, including when the APS EIM Participating Resource is engaged in non-EIM-related transactions.¹⁷⁵ Thus, SPPA recommends that the Commission direct APS to revise proposed section 8.7 of Attachment Q so that it is consistent with PacifiCorp's OATT and previous Commission directives.¹⁷⁶

c. APS's and Powerex's Answers

104. APS states that its proposal reflects its existing operational practices related to the penalty tools associated with the *pro forma* OATT. APS asserts that it plans to utilize each of the three tools the Commission has adopted to encourage good customer behavior: overrun penalties, unreserved use penalties, and imbalance penalties. In response to SPPA's inquiry, APS states that it will retain its current unreserved use penalties for non-EIM transactions regardless of whether the offending resource participates in the EIM. However, for EIM transactions, APS states that LMP pricing and compensation provide sufficient incentive for good behavior.¹⁷⁷

105. Powerex maintains that unreserved use penalties are necessary to encourage good behavior. Powerex also argues that since the APS transmission system is utilized regardless of whether a particular resource is an EIM Participating or Non-Participating Resource, all resources should be subject to unreserved use penalties when their energy injections exceed their base schedules.¹⁷⁸

d. Commission Determination

106. We accept section 8.7 of Attachment Q, including APS's proposal not to assess unreserved use penalties for generation output that exceeds the sum of a transmission customer's reservation plus the dispatch operating point it receives from CAISO.

107. Section 8.7 of Attachment Q states:

There shall be no incremental transmission charge assessed for transmission use related to the EIM.

¹⁷⁵ *Id.* at 15 (citing APS Transmittal Letter at 15 and 19).

¹⁷⁶ *Id.*

¹⁷⁷ APS Answer at 16-17.

¹⁷⁸ Powerex Answer at 9.

Participating Resources and BAARs will not incur unreserved use charges solely as a result of EIM Dispatch Instruction.

As discussed above, APS's proposal differs from that of PacifiCorp and NV Energy in that PacifiCorp and NV Energy assess unreserved use penalties for generation output that exceeds the sum of a transmission customer's reservation plus the dispatch operating point.

108. We do not share SPPA's concern that APS's proposed OATT language regarding unreserved use penalties is ambiguous. We find that APS has made it clear that it intends to retain its current unreserved use penalties for non-EIM transactions regardless of whether a resource participates in the EIM, and that APS will not assess unreserved use charges for EIM transactions where generation output exceeds the sum of a transmission customer's reservation plus the dispatch operating point.

109. We are not persuaded by Powerex's and SPPA's assertions that APS's proposal is inconsistent with Commission precedent. While the Commission previously required PacifiCorp to revise its OATT to specify that it would assess unauthorized use penalties in instances when a transmission customer's transmission use exceeds the sum of its transmission reservation and its EIM resource directed dispatch,¹⁷⁹ we find that the Commission's actions with regard to PacifiCorp are inapposite here, because APS and PacifiCorp are differently situated.

110. As APS explains, it administers a schedule-based rather than a flow-based transmission system. Accordingly, transmission service is not considered "used" unless it is scheduled.¹⁸⁰ Consequently, APS does not presently assess unreserved use penalties solely because a customer's generation output exceeds its transmission service reservation, but rather assesses such penalties if a transmission customer schedules deliveries that exceed transmission reservations, or if it fails to procure transmission service in a timely manner.¹⁸¹ Accordingly, APS's proposal is consistent with its treatment of non-EIM transactions, because generation that is responsive to an EIM dispatch instruction is inherently unscheduled, so no unreserved use charges will result. In contrast, PacifiCorp administers a flow-based transmission system, and assesses

¹⁷⁹ See *PacifiCorp*, 149 FERC ¶ 61,057 at P 68.

¹⁸⁰ APS Transmittal Letter at 12, 19.

¹⁸¹ See APS Proposed OATT, Schedules 7 and 8; APS Business Practice Manual, *Business Practice: Billing for Unreserved Use*, (Jun. 2015), http://www.oasis.oati.com/AZPS/AZPSdocs/Overrun_Billing_v5_06052015.pdf.

unreserved use charges for non-EIM transactions when a generator's output exceeds its transmission reservation.¹⁸² Accordingly, in order for EIM transactions and non-EIM transactions to be treated comparably under PacifiCorp's tariff, PacifiCorp must assess unreserved use penalties for generation output that exceeds the sum of a transmission customer's reservation plus EIM-related dispatch.

111. We find that APS and PacifiCorp are differently situated, based on the differences in operating practices between APS and PacifiCorp. Furthermore, we find that APS's proposed Attachment Q, section 8.7 appropriately reflects APS's existing operational practices, and is tailored to meet the needs of APS's unique transmission system.

5. Operating Reserve Charges

a. APS's Proposal

112. Proposed section 8.12 of Attachment Q, addressing allocation of operating reserves, states that any payments or charges to the APS EIM Entity pursuant to section 29.11(n)(2) of the CAISO tariff will not be allocated to transmission customers. APS states that this approach differs from PacifiCorp's and NV Energy's proposals, under which those EIM Entities make such allocations. However, APS also states that its approach fosters a more transparent market environment for participating resources, is more equitable across all customers, and compensates fairly for services rendered.¹⁸³ According to APS, any effects related to these types of payments or charges will be included in APS's cost of service and, therefore, reflected in future rate adjustments for Spinning and Supplemental Reserve Service.

113. APS asserts that its proposal allows APS EIM Participating Resources to more accurately reflect their variable energy costs by removing reserves services costs from the APS EIM Participating Resource's bid curve. APS explains that EIM participation can change the amount of operating reserves a BAA is obligated to provide, but participating resources are not inherently providing reserve capacity because the EIM is an energy only market.¹⁸⁴ According to APS, both participating and non-participating resources have the same impact on APS reserve requirements for similar behavior. Because the payments and charges are market driven, not reflective of actual cost, and EIM

¹⁸² See PacifiCorp Business Practice Manual, *Business Practice #43: Generator Imbalance and Unauthorized Use Charge*, (Dec. 2012) <http://www.oasis.oati.com/PPW/PPWdocs/BP43.pdf>.

¹⁸³ APS Transmittal Letter at 29.

¹⁸⁴ *Id.*

instruction comes after base schedules are submitted, APS asserts that the costs associated with reserve service are already incurred. Furthermore, APS asserts, any payment allocation would leave load and non-participating generation customers with the cost for the service without the benefit.¹⁸⁵

b. Comments

114. Powerex supports APS's proposal not to sub-allocate payments or charges for operating reserves to transmission customers under section 29.11(n) of the CAISO tariff as just and reasonable, but asserts that proposed section 8.12 of Attachment Q contains an error that APS must address to effectuate its proposal. According to Powerex, while the language in proposed section 8.12 of Attachment Q provides that "any payments and charges to APS pursuant to section 29.11(n)(1) of the [CAISO] Tariff...shall not be sub-allocated to Transmission Customers,"¹⁸⁶ this provision is inconsistent with APS's transmittal letter, which Powerex contends correctly references section 29.11(n)(2) of the CAISO tariff.¹⁸⁷ Thus, Powerex argues that APS should revise section 8.12 of Attachment Q to its OATT to reflect both CAISO tariff section 29.11(n)(1), which addresses payments for operating reserves, and section 29.11(n)(2), which addresses charges for operating reserves.

115. SPPA states that it is unclear if APS's proposal to not charge or credit transmission customers for CAISO operating reserves payments or charges to APS will result in proper charges to transmission customers and could result in transmission customers being deprived of a major benefit of the EIM.¹⁸⁸ SPPA states that, while APS argues its proposal is just and reasonable because it follows cost causation principles by charging its transmission customers for operating reserves through its cost-based OATT rate, it is not clear when that rate will be updated to reflect the charges and payments from EIM participation. SPPA asserts APS would need to update its Spinning and Supplemental Reserve Service rates annually or replace them with a more transparent formula rate that included a true-up mechanism. Therefore, SPPA recommends that APS's proposal be rejected.¹⁸⁹

¹⁸⁵ *Id.* at 30.

¹⁸⁶ Powerex Comments at 6-7.

¹⁸⁷ *Id.* at 7 (citing APS Transmittal Letter at 29, n.63).

¹⁸⁸ SPPA Protest at 16-17.

¹⁸⁹ *Id.* at 17.

116. SPPA also states that it is not clear how APS's proposal is consistent with cost causation principles. SPPA uses the example of a resource in the APS BAA that provides contingency reserves. APS states that it is not clear how such a resource will be allocated any resulting contingency reserves payments from CAISO. APS also states that it is likewise unclear whether APS's proposal will ensure that the entity responsible for procuring contingency reserves will receive the requisite compensation for that service given APS's proposal to include CAISO operating reserves charges and payments in the cost of service rate through its OATT.¹⁹⁰

117. SPPA explains that under PacifiCorp's methodology, the sub-allocation of operating reserves payments is designed such that the ratio-share reflects the volume of operating reserves provided by the resource, compared to the total volume of operating reserves provided by other resources in the BAA(s) during the operating hour,¹⁹¹ which the Commission found resolved ambiguities in PacifiCorp's proposal and ensured that transmission customers shared in the benefits of PacifiCorp's participation in the EIM.¹⁹²

c. APS's Answer

118. APS claims that its proposal is consistent with cost causation principles. To support its claim, APS provides the example of wheel through transactions that impact operating reserve settlements but are unassociated with specific EIM Participating Resources. APS states that since it would be unable to link the payments or charges directly to the activities of EIM Participating Resources, it cannot support the sub-allocation of payments and charges. Rather, APS proposes to absorb the financial impacts of EIM operating reserve settlements and reflect them in future cost of service rate updates. Additionally, APS claims that SPPA's suggestion that APS should establish a new formula rate or true up mechanism for spinning and supplemental reserve service is unnecessary and burdensome.

d. Commission Determination

119. We accept, subject to condition, APS's proposal in section 8.12 to forgo sub-allocating payments and charges from CAISO for CAISO operating reserves that result from EIM Transfers and instead reflect these payments and charges in a future rate proceeding. We agree with APS that an EIM Participating Resource may be able to more

¹⁹⁰ *Id.* at 17-18.

¹⁹¹ *Id.* at 19-20. SPPA suggests that APS could adopt language similar to Attachment T, section 8.9 of PacifiCorp's OATT. *Id.* at 19-20.

¹⁹² *Id.* at 20 (citing *PacifiCorp*, 148 FERC ¶ 61,240, at PP 34-35 (2014)).

accurately reflect its costs in bids if operating reserve charges and payments are not part of the consideration. While we have accepted alternative methods for sub-allocating operating reserves charges and payments in other EIM Entities' OATTs, we find that APS has sufficiently supported its proposed method as just and reasonable under FPA section 205.¹⁹³ However, while APS indicates that these payments and charges will be reflected in future rate adjustments, we find that APS has not provided sufficient detail regarding how it will do so in practice, including how it will track such charges and payments. Therefore, we direct APS to submit a compliance filing, within 30 days of the date of this order, detailing how incremental operating reserves charges and payments will be reflected in APS's cost of service rates. Additionally, we direct APS to revise section 8.12 of Attachment Q to reflect both CAISO tariff section 29.11(n)(1) and section 29.11(n)(2) to be consistent with the provisions APS described in its transmittal letter and its answer.¹⁹⁴

6. Financial Settlement of Losses

a. APS's Proposal

120. APS proposes to use the Load Aggregation Point price to financially settle losses, pursuant to proposed Schedule 12 of its OATT. Specifically, proposed Schedule 12 states that the transmission customer shall compensate APS at a rate equal to the amount of real power losses assessed in a given hour multiplied by the hourly Load Aggregation Point price for the APS BAA in that hour.¹⁹⁵ APS proposes to require transmission customers to settle losses financially to the exclusion of physical payback of real power losses because APS does not currently provide for the physical payback of real-power transmission losses.¹⁹⁶ APS explains that, although Schedule 12 is a new schedule in its

¹⁹³ See *Oxy USA, Inc. v. FERC*, 64 F.3d 679, 692 (finding that, under the FPA, as long as the Commission finds a methodology to be just and reasonable, that methodology "need not be the only reasonable methodology, or even the most accurate one"); cf. *City of Bethany v. FERC*, 727 F.2d 1131, 1136 (when determining whether a proposed rate was just and reasonable, the Commission properly did not consider "whether a proposed rate schedule is more or less reasonable than alternative rate designs").

¹⁹⁴ APS Transmittal Letter at 29; APS Answer at 14.

¹⁹⁵ APS Proposed OATT, Schedule 12.

¹⁹⁶ APS Transmittal Letter at 14; see APS Proposed OATT, Schedule 12.

OATT, APS is not proposing a modification to the existing power losses percentages provided in sections 15.7, 28.5 and 36.5 of its OATT.¹⁹⁷

b. Comments

121. SPPA states that APS's current method for pricing losses, using proxy prices based on Intercontinental Exchange indices, is appropriate under the current market structure because it reflects the price APS or transmission customers would pay to physically replace those losses. SPPA objects to APS's proposal to only allow financial settlement for real power losses while replacing the Intercontinental Exchange index with EIM LMPs.¹⁹⁸ While use of EIM LMPs to charge for losses is consistent with PacifiCorp and NV Energy's OATTs, SPPA notes that those EIM Entities also allow transmission customers to use financial or physical settlement of losses (including pass-through purchases from third parties). SPPA states that the treatment for losses should be consistent among the EIM Entities, because to do otherwise would provide transmission customers of EIM Entities outside APS an unfair competitive advantage.¹⁹⁹

122. SPPA also states that if the Commission does not require APS to allow self-supply, it should require APS to justify the significant price change proposed for financial settlement of losses.²⁰⁰ Therefore, SPPA recommends that the Commission reject APS's proposal and direct APS to amend its proposal so it is consistent with other EIM Entities' treatment of losses.²⁰¹

c. APS's and Puget's Answers

123. APS explains that it has concerns with the in-kind replacement of losses because of mismatches in value between the energy prices at the time of the loss and at replacement. APS notes that the Commission has previously accepted financial

¹⁹⁷ APS Transmittal Letter at 26.

¹⁹⁸ SPPA Protest at 20.

¹⁹⁹ *Id.* at 21.

²⁰⁰ *Id.* While SPPA notes that it is APS's burden to justify the potential impact of a rate change, it provides several examples showing the disparity between Intercontinental Exchange index prices and EIM LMPs that could be reflected in APS's rate for financial settlement of losses.

²⁰¹ *Id.* at 23.

settlements of losses for APS and indicates that its proposed OATT revisions for the EIM are consistent with its prior proposal.²⁰²

124. In response to SPPA, Puget disagrees with SPPA's assertion that APS's proposal to financially settle real power losses by reimbursement is inherently unduly discriminatory because PacifiCorp and NV Energy allow their transmission customers to self-supply losses. Puget explains that it supports APS's proposal to only permit the financial settlement of losses, and states that APS's proposal is consistent with the Commission's previous finding that the financial settlement of losses to the exclusion of in-kind replacement as a just and reasonable method.²⁰³ Puget argues that there are legitimate operational reasons that favor a uniform method and rate structure for the settlement of losses. Specifically, Puget asserts that in-kind replacement of losses can yield inconsistent and unpredictable results for transmission providers because the price of energy at the time the energy is returned may differ from the price of energy associated with the losses supplied in real-time by the transmission provider.²⁰⁴ Thus, Puget argues that the Commission should accept APS's proposal as just and reasonable because it ensures that APS will not be exposed to temporal inconsistencies in the value of energy physically returned as losses during a later period.²⁰⁵

d. Commission Determination

125. We accept APS's proposal to add Schedule 12 (Real Power Losses) to its OATT. We find that the use of the Load Aggregation Point or LMP pricing is a just and reasonable charge for such losses as it represents the real-time cost of the energy needed to replace those losses. Further, we find it is reasonable to remove the option to settle losses by in-kind replacement (i.e., where losses in one delivery period are accounted for by supplying additional energy during another period). The Commission has found that Order Nos. 888 and 890 do not preclude the use of financial settlement of losses to the exclusion of in-kind replacement of losses.²⁰⁶ In addition, the Commission has stated that

²⁰² APS Answer at 16.

²⁰³ Puget Answer at 3 (citing *Ariz. Pub. Serv. Co.*, 143 FERC ¶ 61,280, at P 28 (2013)).

²⁰⁴ *Id.*

²⁰⁵ *Id.* at 3-4.

²⁰⁶ See *Ariz. Pub. Serv. Co.*, 143 FERC ¶ 61,280 at P 28 (citing Order No. 888, FERC Stats. & Regs. ¶ 31,036 at PP 217-218); see also Order No. 890, FERC Stats. & Regs. ¶ 31,241 at P 703.

the specific means of accounting for losses is left to the transmission provider to propose.²⁰⁷ Consistent with Commission precedent, we accept APS's proposal to account for the settlement of losses in proposed Schedule 12 as just and reasonable.

7. Allocation of Flexible Ramping Constraint Charges

a. APS's proposal

126. According to APS, CAISO determines the flexible ramping requirement for each EIM Entity BAA based on the demand forecast change across consecutive intervals, demand forecast error, and energy production variability.²⁰⁸ CAISO enforces this requirement, when necessary, as a constraint within the market optimization. This ensures that the commitment and dispatch of resources provide sufficient ramping capability for dispatch in the subsequent dispatch interval.

127. Under section 8.5.6 of Attachment Q, APS proposes to sub-allocate any charges to APS from CAISO pursuant to section 29.11(g) of CAISO's tariff for the flexible ramping constraint costs to transmission customers on the basis of Measured Demand.²⁰⁹ APS argues allocating flexible ramping constraint costs on the basis of Measured Demand ensures that those customers benefitting from the reliability of the transmission system also are responsible for sharing the costs incurred in maintaining that level of reliability.²¹⁰ APS contends that this approach is consistent with the approach authorized by the Commission for PacifiCorp and NV Energy.²¹¹

b. Commission Determination

128. We accept APS's proposal for allocating flexible ramping constraint charges. The flexible ramping constraint helps ensure that there is enough ramping capability to serve expected imbalance needs in the next relevant market interval, therefore supporting the reliability of the system. Moreover, in the time that has passed since the Commission

²⁰⁷ *Ariz. Pub. Serv. Co.*, 143 FERC ¶ 61,280 at P 28.

²⁰⁸ APS Transmittal Letter at 27; *see* CAISO Tariff, § 29.34(m).

²⁰⁹ APS Transmittal Letter at 27; APS Proposed OATT, Attachment Q, § 8.5.6.

²¹⁰ APS Transmittal Letter at 27 (citing *Midwest Indep. Transmission Sys. Operator, Inc.*, 117 FERC ¶ 61,237, at P 23 (2006)).

²¹¹ *Id.* (citing PacifiCorp EIM Order, 147 FERC ¶ 61,227 at P 184; NV Energy EIM Order, 151 FERC ¶ 61,131 at P 213).

issued the previous orders accepting PacifiCorp and NV Energy's similar method for allocating these charges, the Commission has seen evidence²¹² that allocating flexible ramping constraint charges in the manner proposed here is not significantly different from the way that CAISO allocates these charges in its own BAA, and thus presents a simplified alternative to allocating these charges to those that benefit from the additional reliability that the flexible ramping constraint provides to the system.

129. We note, however, that the EIM is still a relatively new and developing market. Accordingly, we direct APS to submit an informational report to the Commission within 15 months after APS's entry into the EIM, addressing the following: (1) whether continuing to allocate flexible ramping constraint charges on the basis of Measured Demand is appropriate; (2) whether APS has sufficient operational data to use the allocation mechanism used by CAISO; and (3) if APS contends that it does not have sufficient operational data at such time to use the same allocation mechanism used by CAISO, whether it would be feasible for APS to collect that data.

8. Revisions in Response to CAISO's Available Balancing Capacity Solution

a. APS's Proposal

130. APS proposes tariff revisions to implement CAISO's Available Balancing Capacity solution, which the Commission accepted in the December 2015 Order in Docket No. ER15-861-006.²¹³ Specifically, as discussed above, APS proposes revisions to allow APS to: (1) obtain default energy bids from CAISO for non-participating resources that are Balancing Authority Area Resources,²¹⁴ (2) communicate CAISO's EIM Available Balancing Capacity dispatch instructions to non-participating resources,²¹⁵ and (3) provide for settlement of energy output associated with EIM Available Balancing Capacity dispatches.²¹⁶ In conjunction with incorporating the

²¹² For example, PacifiCorp concludes that its analysis (based on two sample months from 2015) shows that the benefits of changing flexible ramping constraint charge allocation methodologies are very small and insignificant. *PacifiCorp*, Letter Regarding Energy Imbalance Market, Docket No. ER14-1578-000 at 3 (filed Feb. 1, 2016).

²¹³ December 2015 Order, 153 FERC ¶ 61,305.

²¹⁴ APS Proposed OATT, Attachment Q, § 4.1.2.2.

²¹⁵ APS Proposed OATT, Attachment Q, § 4.1.3.4.

²¹⁶ APS Proposed OATT, Schedule 10 and Attachment Q, § 8.1.

Available Balancing Capacity Solution, APS also proposes to adopt the following definitions, including: “Balancing Authority Area Resource,” “EIM Available Balancing Capacity,” “Resource Plan,” “Dispatch Instruction,” and “Dispatch Operating Point.”²¹⁷

131. In addition, section 4.1.3.4 of proposed Attachment Q states that, upon CAISO’s notification, APS will notify non-participating resources of the dispatch operating point for any EIM Available Balancing Capacity, except in circumstances in which APS has reason not to follow the dispatch instruction.²¹⁸ APS states that its proposed OATT revisions are similar to the OATT provisions adopted by PacifiCorp and NV Energy.²¹⁹

b. Comments

132. WPTF requests that APS clarify why its definitions for EIM Available Balancing Capacity²²⁰ and Balancing Authority Area Resource²²¹ differ from other EIM Entities’ definitions.²²² WPTF argues that consistency in the definitions of terms that are integral

²¹⁷ APS Proposed OATT, § 1.

²¹⁸ APS Proposed OATT, Attachment Q, § 4.1.3.4.

²¹⁹ The Commission accepted PacifiCorp’s and NV Energy’s filings to implement CAISO’s Available Balancing Capacity solution on March 4, 2016. *PacifiCorp*, 154 FERC ¶ 61,170 (2016); *Nevada Power Co.*, 154 FERC ¶ 61,171 (2016).

²²⁰ As discussed above, APS proposes to define “EIM Available Balancing Capacity” as “any upward or downward capacity from a Balancing Authority Area Resource APS has a right to, by virtue of ownership or a voluntary contractual arrangement, which has not been bid into the EIM and is included in [APS]’s Resource Plan.” APS Proposed OATT, § 1.4; *see supra* n.45.

²²¹ As discussed above, APS proposes to define a Balancing Authority Area Resource as “an APS Participating or Non-Participating Resource that (1) is unit specific, (2) can provide regulation and load following services to enable the APS EIM Entity to meet reliability criteria, and (3) is either owned by APS or APS has contracted for the right to call upon the capacity for regulation or load-following services from that resource.” APS Proposed OATT, § 1.20.

²²² PacifiCorp and NV Energy define “EIM Available Balancing Capacity” as “Any upward or downward capacity from a Balancing Authority Area Resource that has not been bid into the EIM and is included in the . . . EIM Entity’s Resource Plan.” PacifiCorp OATT, § 1.11F1; NV Energy OATT, § 1.13E1. PacifiCorp and NV Energy define “Balancing Authority Area Resource” as “A resource owned or voluntarily contracted for by [the EIM Entity] that can provide regulation and load following
(continued ...)

to the operation of the EIM will reduce the possibility of seams issues.²²³ WPTF requests that the Commission direct APS to modify its OATT to mirror the definitions used by other EIM Entities to reduce the potential for seams issues, reduce the likelihood of disparate implementation of resources by EIM Entities, and to ensure that third-parties are not involuntarily included in APS's Balancing Authority Area Resources.²²⁴ If the Commission does not direct APS to modify its OATT, WPTF requests that the Commission direct APS to clarify why it has proposed definitions that differ from those adopted by other EIM Entities and whether those differences will result in implementation of CAISO's Available Balancing Capacity solution in a way that differs from the implementation by other EIM Entities.²²⁵

c. APS's Answer

133. APS states that its proposed definitions of Balancing Authority Area Resource and EIM Available Balancing Capacity reflect the unique circumstances of the APS BAA, its operations, operational needs, and its Balancing Authority Area Resources proposal. APS asserts that its proposal is consistent with the Commission's direction to other EIM Entities to explore permitting external resources to participate in the EIM.²²⁶

d. Commission Determination

134. We accept, subject to condition, APS's proposed OATT revisions to implement CAISO's Available Balancing Capacity solution, including its proposed revisions to the definitions in section 1 and its proposed language in Schedule 10 and sections 4 and 8 of Attachment Q. Although we acknowledge WPTF's concerns, we do not believe that variations between EIM Entities' OATTs inherently represent unjust and unreasonable practices. We are not persuaded that APS's implementation of the Available Balancing

services to enable the . . . EIM Entity to meet reliability criteria. No resource unaffiliated with the . . . EIM Entity shall be a Balancing Authority Area Resource solely on the basis of one or more of the following reasons: (1) the resource is a Designated Network Resource; (2) the resource flows on a Point-To-Point Transmission Service reservation; and/or (3) the resource is an Interconnection Customer under the Tariff." PacifiCorp OATT, § 1.4B1; NV Energy OATT, § 1.5B1.

²²³ WPTF Comments at 6.

²²⁴ *Id.* at 8.

²²⁵ *Id.*

²²⁶ APS Answer at 7.

Capacity solution must include tariff revisions that are identical to the tariff provisions proposed and accepted by the Commission in other EIM Entities' OATTs, because we believe that APS's proposed tariff revisions achieve the same ends as the other EIM Entities' Available Balancing Capacity-related OATT provisions. Regarding resource implementation, CAISO made clear in its Available Balancing Capacity filing, and the Commission acknowledged in its December 2015 Order, that the EIM Entity retains dispatch authority over the resources providing Available Balancing Capacity.²²⁷ Given that APS proposes to outline its responsibilities within its OATT and its Business Practices and given the voluntary nature of the EIM market design, we find that allowing APS discretion in this regard is appropriate.

135. That said, we agree with WPTF that APS's definition of Balancing Authority Area Resource may result in a third-party resource being involuntarily obligated to act as a Balancing Authority Area Resource. Specifically, APS's proposed definition²²⁸ does not protect third-party resources from being designated as Balancing Authority Area Resources solely on the basis that they are designated network resources, they flow on a point-to-point transmission service reservation, or they are interconnection customers under the OATT. Accordingly, we direct APS to submit a compliance filing within 30 days of the date of this order modifying the definition of Balancing Authority Area Resource to prevent a third-party resource from being involuntarily included.

9. Market-Based Rates

a. APS's Proposal

136. APS states that, in the second quarter of 2016, it plans to submit proposed revisions to its market-based rate tariff to request market-based rate authority for EIM transactions in all BAAs within the EIM footprint, including the APS BAA. According to APS, those revisions will be accompanied by a market power analysis, prepared in a manner consistent with the guidance provided to PacifiCorp and NV Energy, which will assess APS's market power in the EIM.

b. Comments

137. SPPA states that APS's intent to file a market power analysis "prepared in a manner consistent with the guidance provided to PacifiCorp and NV Energy, which will assess APS's market power in the EIM," could be read to refer to the Commission's order

²²⁷ CAISO, Available Balancing Capacity Filing at 22 and Attachment C at 30 (filed Aug. 19, 2015); *see also* December 2015 Order, 153 FERC ¶ 61,305 at P 72.

²²⁸ *See* n.221, *supra*.

of May 2015,²²⁹ in which the Commission stated that NV Energy could be granted market-based rate authority for EIM transactions simply by demonstrating that it lacked market power in the combined EIM footprint.²³⁰ SPPA notes that in a later order, the Commission required a more stringent showing, recognizing that the CAISO BAA is the only part of the EIM footprint in which there is sufficient competition to ensure that price will be just and reasonable.²³¹

138. Therefore, SPPA states, unless APS can show that energy can flow unconstrained from CAISO into the APS BAA in quantities sufficient to meet EIM needs, APS must analyze its BAA as a separate submarket in its market-based rate application. Further, SPPA argues, if APS cannot show that it lacks market power within such submarket, or that existing mitigation measures are sufficient to curb its market power in the APS BAA, APS must propose sufficient mitigation measures. SPPA recommends that APS be required to offer its EIM Participating Resources in the EIM at or below each unit's default energy bid.²³²

c. Commission Determination

139. We reject as beyond the scope of this proceeding SPPA's comments regarding the analysis APS must include and the showing it must make in a future application for market-based rate authority for EIM transactions. APS's market-based rate authority is not before us in this proceeding, which is limited to the OATT revisions APS has proposed to enable its EIM participation.²³³

²²⁹ NV Energy EIM Order, 151 FERC ¶ 61,131 at P 202.

²³⁰ SPPA Protest at 23-24 (citing APS Transmittal Letter at 35-36).

²³¹ *Id.* at 24 (citing *Nevada Power Co.*, 153 FERC ¶ 61,206 (2015)).

²³² *Id.* at 24-25.

²³³ However, we note that APS recently filed a market power analysis and tariff revisions for EIM in Docket Nos. ER16-1363-000 and ER10-2437-004 in which SPPA could raise such concerns.

The Commission orders:

(A) APS's proposed OATT revisions are hereby accepted for filing, subject to condition, to be effective as of the dates requested, as discussed in the body of this order.

(B) APS is hereby directed to submit a compliance filing within 30 days of the date of this order, as discussed in the body of this order.

(C) APS's request for waiver of the cost support requirements of section 35.13 of the Commission's regulations, 18 C.F.R. § 35.13 (2015) is hereby granted, as discussed in the body of this order.

(D) APS is hereby directed to submit an informational report to the Commission regarding flexible ramping constraint costs within 15 months after APS's entry into the EIM, as discussed in the body of this order.

(E) APS is hereby directed to notify the Commission of the actual effective date of the OATT revisions within five business days of their implementation, in an eTariff submittal using Type of Filing Code 150 – Report.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.