

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

PacifiCorp

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Docket No. ER25-951-000

**ANSWER OF POWEREX CORP**

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Pursuant to Rules 212 and 213 of the Rules of Practice Procedure of the Federal Energy Regulatory Commission (“Commission” or “FERC”)<sup>1</sup> Powerex Corp (“Powerex”) hereby submits this answer (“Answer”) to the various pleadings filed in the above-captioned proceeding<sup>2</sup> attempting to rehabilitate PacifiCorp’s deficient filing proposing revisions to its Open Access Transmission Tariff (“OATT”) to facilitate its participation in the California Independent System Operator Corporation’s (“CAISO”) Extended Day-Ahead Market (“EDAM”) (“Proposal”).<sup>3</sup>

**I. EXECUTIVE SUMMARY**

The answers of PacifiCorp, the CAISO, Portland General Electric Company (“Portland”) and Balancing Area of Northern California (“BANC”) fail to provide a substantive response addressing or refuting the concerns raised in the protests and comments filed by Powerex and nearly twenty other parties. These answers misstate or mischaracterize Commission policy and established practices, raise meritless arguments

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<sup>1</sup> 18 C.F.R. § 385.211, 213 (2024).

<sup>2</sup> Motion for Leave to File Answer and Answer of the California Independent System Operator Corporation, Docket No. ER25-951-000 (filed Mar. 7, 2025) (“CAISO Answer”); Motion for Leave to Answer and Limited Answer of the Balancing Authority of Northern California, Docket No. ER25-951 (filed Mar. 11, 2025) (“BANC Answer”); Motion for Leave to Answer and Answer of Portland General Electric Company, Docket No. ER25-951 (filed Mar. 11, 2025) (“Portland Answer”); Motion for Leave to Answer and Answer of PacifiCorp, Docket No. ER25-951 (filed Mar. 12, 2025) (“PacifiCorp Answer”); Motion for Leave to Answer and Answer of Wyoming Industrial Energy Consumers, Docket No. ER25-951 (filed Mar. 14, 2025) (collectively, “Answers”).

<sup>3</sup> PacifiCorp, Revisions to the PacifiCorp OATT to Implement the Extended Day-Ahead Market, Docket No. ER25-951-000 (filed Jan. 16, 2025) (“Proposal”).

in an effort to rebut the substantive concerns raised by a broad array of intervenors, and seek to reframe the central issues in this proceeding in a manner that would improperly preclude the substantive Commission review required under the Federal Power Act, (“FPA”).

In response, Powerex now provides testimony from Dr. David Patton, the president of Potomac Economics and the independent market monitor for four Commission-approved organized markets.<sup>4</sup> Dr. Patton is one of the most highly regarded experts on organized electricity markets in the nation, and his testimony provides an independent perspective to the issues in this docket. Dr. Patton explains in Attachment 1 that:

- “All other organized markets provide financial transmission rights that correspond to *all* of the constraints that are priced in the markets’ LMPs, which is the basis for the congestion costs charged to customers.”<sup>5</sup>
- “In sharp contrast, PacifiCorp proposes to only provide a hedge for congestion associated with constraints on PacifiCorp’s system, and no hedge for congestion costs associated with all other constraints in EDAM.”<sup>6</sup>
- “PacifiCorp’s proposal [is] unjust and unreasonable, and clearly inferior to both the financial transmission rights RTOs and ISOs provide their firm transmission customers and to the physical scheduling rights firm transmission customers receive in non-market areas receive under the *pro forma* OATT.”<sup>7</sup>
- “Without effective congestion hedges, the long-term nature of resource investment decisions – 30 years or more – would carry substantial locational risk that will inhibit investments by risk averse market participants. This is problematic because such investment is necessary to maintain reliability over time.”<sup>8</sup>
- “PacifiCorp could meet the requirement for transmission service that is consistent with or superior to the *pro forma* OATT, despite the incomplete nature of the current EDAM design. This could be accomplished by submitting a revised tariff that

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<sup>4</sup> ISO New England, NYISO, MISO and ERCOT.

<sup>5</sup> Powerex Answer, Attach. 1, Patton Testimony at 4:3-7.

<sup>6</sup> *Id.* at 4:7-10.

<sup>7</sup> *Id.* at 6:13-16.

<sup>8</sup> *Id.* at 18:9-13.

preserves PacifiCorp customers' ability to schedule the use of their firm transmission service ahead of EDAM[.]”<sup>9</sup>

The answers of the CAISO and PacifiCorp also include multiple attacks on Powerex, including unsupported and false statements disparaging Powerex and its motivations on the basis of events taking place entirely outside of this proceeding.<sup>10</sup> Powerex's Protest was supported by testimony from six witnesses, including from highly-regarded industry professionals with extensive and direct experience in the implementation of day-ahead organized markets in eastern regions where OATT transmission service similarly exists, including:

- The former Chief Operating Officer for SPP (Carl Monroe);
- The former Director of Transmission for SPP (Richard Dillon);
- The former Director of Operations for MISO (Joe Gardner); and
- A former economist for MISO and for Pacific Gas & Electric (Paul Gribik).

Each of these witnesses testified to the importance of critical design elements in day-ahead markets operated by ISOs and RTOs, but that are lacking in EDAM.

Twenty other protests and comments opposing PacifiCorp's OATT amendments were also filed, including some entities that *strongly support* EDAM and prefer EDAM over Markets+. This includes protests or opposing comments from public power entities, investor-owned utilities, a federal power marketing authority, multiple trade organizations,

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<sup>9</sup> *Id.* at 27:20-28:1.

<sup>10</sup> See, e.g., PacifiCorp Answer at 20, 22 (accusing Powerex of a “public disinformation campaign” and attempting to use “cherry-picked data to induce anxiety among PacifiCorp stakeholders to further its own policy preferences;”); CAISO Answer at 9 (warning the Commission to “be wary of misinformation and efforts to delay or diminish the benefits of the EDAM design”); Portland Answer at 21 (accusing Powerex of using “speculative claims and cherry-picked data” in order to “whip-up stakeholders in this docket and drive an inaccurate narrative”); BANC Answer at 6 (“This is nothing more than another ham-handed collateral attack and attempt to distract the Commission with issues that are irrelevant to whether PacifiCorp’s proposal is just and reasonable under the FPA”).

a transmission service provider, a load-serving entity within PacifiCorp's BAA, renewable energy developers, as well as a state energy office. PacifiCorp refers to other entities filing protests or opposing comments as merely "others that parrot [Powerex's] message."<sup>11</sup> These attacks are a transparent attempt to discredit Powerex and other entities that have filed protests or opposing comments to distract attention from (1) the substantive issues raised in this docket; (2) the legitimate industry concerns with the EDAM and PacifiCorp approach to congestion revenue associated with parallel flows; and (3) the CAISO's failure to disclose and discuss the implications of parallel flow congestion charges during the development and approval process of the EDAM tariff, and in the many months since it was filed.

In their respective Answers, PacifiCorp and the CAISO claim that each of Powerex's key concerns and supporting arguments—supported by six expert witnesses—are merely collateral attacks and therefore not properly before the Commission. They are not. Customers' involuntary exposure to unhedgeable parallel flow congestion charges in EDAM is clearly material to the Commission's inquiry, and this parallel flow congestion issue was never presented to the Commission in the EDAM tariff proceeding, in large part due to the CAISO's obfuscation. Indeed, the EDAM Order unambiguously reserved consideration of the application of EDAM congestion charges to firm transmission service for the current proceeding, like it did for the issue of scheduling priority of intra-day schedules.

In sum, the answers of PacifiCorp, CAISO, Portland, and BANC present nothing more than misdirection from the central issue before the Commission which PacifiCorp

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<sup>11</sup> PacifiCorp Answer at 21.

and the CAISO have failed to address: whether PacifiCorp's transmission service will remain consistent with or superior to the *pro forma* OATT if PacifiCorp's Proposal—which makes EDAM participation mandatory as a condition of transmission service—is accepted. This misdirection includes an attempt by the CAISO to placate intervenor concerns with the PacifiCorp Proposal with a pledge to *consider* temporary changes in a new EDAM stakeholder process, so as to secure the Commission's approval of PacifiCorp tariff provisions that will make all PacifiCorp transmission customers captive to EDAM, while preventing the use of PacifiCorp firm transmission service in a competing day-ahead market, Markets+. The Commission must reject such efforts and reject PacifiCorp's Proposal as unjust and unreasonable and not consistent with or superior to the *pro forma* OATT.

## II. ANSWER

### A. PacifiCorp's Congestion Allocation Proposal Is Unjust And Unreasonable And Is Not Consistent With Or Superior To The *Pro Forma* OATT

Supported by the sworn testimony of industry experts, Powerex's Protest detailed specific PacifiCorp proposed tariff revisions that will make its firm transmission customers captive participants in EDAM and expose them to new and unavoidable congestion costs when utilizing their firm transmission service rights. These proposed tariff amendments are unjust and unreasonable and inconsistent with the *pro forma* OATT.

In response, the CAISO and PacifiCorp argue, among other things, that firm transmission service is not entitled to protection from congestion charges, or alternatively that Commission precedent requiring such protection does not apply to EDAM.<sup>12</sup> Their

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<sup>12</sup> See *generally* CAISO Answer at 37-46, 58-61; PacifiCorp Answer at 15-20.



answers also falsely claim that Powerex demands a “perfect hedge,” which is not provided in other markets.<sup>13</sup> The CAISO and PacifiCorp also argue more generally that providing a financial hedge to customers that purchase firm OATT transmission service would be unworkable.<sup>14</sup>

As detailed below and in the testimony of Dr. David Patton, the CAISO and PacifiCorp’s responses ignore and mis-state long-standing Commission policy, the fundamental nature of OATT transmission rights, and the importance of congestion hedges in day-ahead organized markets.

### **1. The CAISO And PacifiCorp Misstate The Protection From Congestion Inherent In Firm Transmission Service**

PacifiCorp’s Proposal requires all transmission use on its system to be exposed to EDAM congestion charges, while providing financial protection to firm transmission customers only against EDAM congestion charges arising from constraints on its own system. This would leave transmission customers that schedule on PacifiCorp firm transmission service fully exposed to new EDAM congestion charges arising from unavoidable parallel flows affecting constraints on other transmission systems in EDAM. The CAISO and PacifiCorp defend this approach in their answers,<sup>15</sup> but such an approach is wholly without merit. As explained in the testimony of Dr. Patton, “every existing day-ahead organized market recognizes that entities that have firm transmission rights have

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<sup>13</sup> CAISO Answer at 9, 37, 40-46; PacifiCorp Answer at 8, 19-20.

<sup>14</sup> CAISO Answer at 54-57; PacifiCorp Answer at 24-26.

<sup>15</sup> The CAISO claims that firm transmission service under the pro forma OATT “is based on a transmission service model that effectively ignores congestion.” CAISO Answer at 28; PacifiCorp alleges that “firm point-to-point transmission service customers have no reasonable expectations of ‘implicit rights’ that are absent from the language of the pro forma OATT.” PacifiCorp Answer at 28. The CAISO also wrongly claims that Powerex equates OATT transmission service to ownership or property rights. CAISO Answer at 35-36. Powerex has never claimed that transmission service under the OATT provides customers with an ownership interest in the underlying transmission facilities.

economic property rights to congestion based on the source and sink of the rights or the generation and load.”<sup>16</sup> Specifically, “the customers that pay for the transmission system receive property rights that embody the congestion value of the system through financial or physical transmission rights. The consistent application of this principle throughout the industry is no accident or coincidence, it is dictated by equity.”<sup>17</sup>

Since the Commission’s issuance of its landmark Order No. 888 in 1996, firm transmission rights have been understood to confer “protection” against congestion charges, which was later accomplished through financial rights.<sup>18</sup> The Commission has made it clear that “the value of firm rights is measured by the future congestion or redispatch costs that a funding party avoids by holding the firm rights, . . . a customer considering point-to-point service today under the OATT must decide whether to take firm service at a known rate or to take non-firm service and accept the uncertainty that such service entails.”<sup>19</sup>

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<sup>16</sup> Powerex Answer, Attach. 1, Patton Testimony at 11:14-16.

<sup>17</sup> *Id.* at 9:3-7.

<sup>18</sup> See, e.g., *Pennsylvania-New Jersey-Maryland Interconnection*, 81 FERC ¶ 61,257, at 62,241 (1997) (“The fact that FTRs are assigned to all firm service customers based on specific receipt and delivery point reservations does not change the nature of network services under the PJM Transmission Tariff. FTRs serve a limited function of allowing a transmission service customer to protect against incurring transmission congestion costs, and do not transform network service into point-to-point service.”); *FirstEnergy Solutions Corp. et al.*, 151 FERC ¶ 61,205 (2015) (“PJM introduced its competitive auction-based market for fixed transmission rights in 1999 as a financial replacement for physical, firm transmission service to allow market participants to protect against incurring transmission congestion costs.”) (citing *Pennsylvania-New Jersey-Maryland Interconnection*, 81 FERC ¶ 61,257 at 62,241); *N.Y. Indep. Sys. Op., Inc.*, 131 FERC ¶ 61,074, at P 7 n.9 (2010) (“The NYISO OATT includes provisions for TCCs which, like firm transmission rights, are intended to protect the holders from congestion costs when the system is constrained.”); *Cal. Indep. Sys. Op. Corp.*, 116 FERC ¶ 61,274, at P 9 (2006) (“Furthermore, the CAISO will offer monthly, annual, and long-term firm transmission rights to protect customers against a much larger portion of congestion costs.”).

<sup>19</sup> *Entergy Services, Inc.*, 116 FERC ¶ 61,275, at P 127 (2006) (“TDU Intervenors are correct that the value of firm transmission rights is uncertain. However, that uncertainty is not created by Entergy’s proposal, and indeed is largely unrelated to market structure and the independence of the transmission provider. Rather, it is due to the fact that the value of the firm rights is measured by the future congestion or redispatch costs that a funding party avoids by holding the firm rights, and any estimate of such costs is necessarily uncertain. Moreover, the problems that are created by future cost uncertainty are not new. For example, a customer considering point-to-point service today under the OATT must decide whether to take firm service at a known rate or to take non-firm service and accept the uncertainty that such service entails.”)

In fact, the CAISO's own witness in this proceeding, Dr. Scott Harvey, has previously stated, "CRRs were envisioned as a means to provide *the financial equivalent of firm transmission service*, in the sense that they entitle the holder to use of the transmission network without paying congestion charges."<sup>20</sup>

Dr. Patton testifies that "PacifiCorp's proposal is unique because it exposes its firm customers to substantial congestion on all transmission constraints within the EDAM market except those on the PacifiCorp system. I find this to be unambiguously inferior to the *pro forma* OATT or the firm transmission service provided by every other day-ahead market operator."<sup>21</sup>

## **2. The CAISO And PacifiCorp Incorrectly Claim The Congressional And Commission Requirements To Provide A Financial Hedge Do Not Apply**

The CAISO and PacifiCorp claim that the Commission's prior orders requiring ISOs and RTOs to provide a mechanism to return congestion charges to customers that purchase firm transmission service do not apply to EDAM, because EDAM is not a full ISO or RTO market.<sup>22</sup> But the CAISO simultaneously argues that the Commission's prior orders that limit the ability of transmission customers to decline to participate in an organized market *should* apply, even though those orders, too, were in the context of full ISO or RTO markets.<sup>23</sup> The CAISO cannot have it both ways. It seeks for transmission

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<sup>20</sup> Scott M. Harvey, *et al.*, *Opinion on Congestion Revenue Rights Auction Efficiency, Track 1B*, 5 (June 13, 2018), [https://www.caiso.com/Documents/MSCOpiniononCongestionRevenueRightsAuctionEfficiencyTrack1B-June13\\_2018.pdf](https://www.caiso.com/Documents/MSCOpiniononCongestionRevenueRightsAuctionEfficiencyTrack1B-June13_2018.pdf) (emphasis added); see also Scott M. Harvey, *Background on FTR Development*, 4 (August 27, 2014) ("An important goal in implementing FTRs was to allow market participants entering into long-term bilateral contracts to hedge themselves against congestion risk in the much the same way as they did with firm transmission rights.") <https://www.pjm.com/-/media/DotCom/committees-groups/task-forces/ftrstf/20140827/20140827-background-on-ftr-development-presentation.ashx>.

<sup>21</sup> Powerex Answer, Attach. 1, Patton Testimony at 15:3-6.

<sup>22</sup> CAISO Answer at 58; PacifiCorp Answer at 19-20; Portland Answer at 19-20.

<sup>23</sup> CAISO Answer at 34-35.

providers to have the power to force their customers to participate in a day-ahead market of its choosing, but also seeks to escape the requirements in place to protect those customers from an incomplete market design that does not include all of the features and protections adopted in an ISO or RTO.

Conceding that it may not be sufficient to claim EDAM falls short of an ISO or RTO to shield it from Order No. 681's requirements, PacifiCorp alleges that its Proposal nonetheless meets the "spirit" of Order No. 681.<sup>24</sup> But the CAISO and PacifiCorp ignore the clear intent and key principles set out in FPA Section 217 and Order No. 681 to enable load-serving entities to secure firm transmission rights (or equivalent tradable or financial rights) on a long-term basis for long-term power supply arrangements and to provide increased certainty regarding the congestion cost risks of long-term transmission service in organized electricity markets. These requirements apply with equal force to PacifiCorp and its Proposal by virtue of the nature of the market that it is implementing.<sup>25</sup>

Notably, in Order No. 681 the Commission recognized that market structures would evolve over time, and that it fully contemplated Order No. 681 to apply to such markets:

This is not to say that there might not in the future be types of transmission organizations other than ISOs and RTOs approved by the Commission that operate transmission facilities and provide transmission service. The new FPA definition of transmission organization leaves open this possibility. At

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<sup>24</sup> PacifiCorp Answer at 19-20; see also CAISO Answer at 58.

<sup>25</sup> CAISO also mischaracterizes Order No. 681 as purporting to find that a "perfect hedge [is] superior to physical rights. CAISO Answer at 60-61. The cited paragraph from Order No. 681 actually states that "We do not envision full funding as a perfect hedge. Since the transmission organization is revenue neutral, costs associated with the full funding guarantee must be allocated on some basis among market participants. Our guidelines do not establish a subset of load serving entities that would be exempt from such costs[.]" Order No. 681 at P 174. The arrangement that would be "superior to the physical rights" would be one in which a "subset of load serving entities" is exempt from a share of the costs necessary to provide full funding. That is not what Powerex has proposed.

the current time, however, RTOs and ISOs are the only such organizations approved by the Commission.<sup>26</sup>

While the concept of a day-ahead market existing outside of a full ISO/RTO may not have been explicitly contemplated at the time, it is clear that it is the *exposure to day-ahead congestion charges* in an organized market that drives the need for a mechanism to offset the cost and manage the financial risk of those charges, not the mere qualification as an ISO/RTO. The Commission must respect the intent of Congress, even if PacifiCorp, the CAISO, Portland, and BANC do not.<sup>27</sup>

Market and industry experience has demonstrated the importance of the protections and requirements set out in FPA Section 217 and Order No. 681. For instance, the importance of providing a financial hedge against day-ahead congestion charges has also previously been expressed in testimony co-authored by the CAISO's witness, Dr. Scott Harvey: "The second and most important purpose of financial rights such as CRRs is to facilitate long-term contracting by load-serving entities and generators."<sup>28</sup> The critical nature of this function is highlighted by Dr. Patton, who explains that "[e]ffective congestion hedges are necessary to support efficient short-term actions, such as bilateral transactions, as well as long-term investment decisions in new resources needed to serve load. ... This is a major reason why all ISO and RTO markets provide rights to firm transmission customers that are designed to return the hourly congestion charges between the source and sink that are collected by the market operator."<sup>29</sup>

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<sup>26</sup> Order No. 681 at n.26; see *also* PacifiCorp Answer at 19; Portland Answer at 19. PacifiCorp acknowledges the footnote but omits it, whereas Portland's citation fails to acknowledge the footnote.

<sup>27</sup> See Powerex Protest at 28; see *also* Order No. 888 at P 22 (noting that the Congressional intent of EPAct 2005 was to reverse the decline in transmission infrastructure investment); Order No. 681 at n. 26.

<sup>28</sup> Prepared Direct Testimony of Scott M. Harvey and Susan L. Pope on behalf of CAISO, Exhibit No. ISO-2, Docket Nos. ER07-613-004 and ER07-1077-000 (Feb. 9, 2006), at 22.

<sup>29</sup> Powerex Answer, Attach. 1, Patton Testimony at 18:6-9, 14-16.

### 3. The CAISO And PacifiCorp Incorrectly Claim That Powerex Seeks A “Perfect Hedge”

The CAISO and PacifiCorp mischaracterize Powerex’s Protest as demanding that firm transmission customers receive a “perfect hedge”<sup>30</sup> and expend dozens of pages excoriating Powerex for the unreasonableness of making such a demand.<sup>31</sup> This is a strawman argument. Nowhere in Powerex’s Protest is there a demand that PacifiCorp provide a “perfect hedge” against congestion costs.<sup>32</sup> Rather, Powerex argued in its Protest, and continues to argue herein, that PacifiCorp’s Proposal fails to provide firm transmission customers an *adequate* hedge against congestion charges because PacifiCorp proposes to provide no hedge at all for parallel flow congestion.<sup>33</sup>

Powerex protested PacifiCorp’s Proposal to reverse only that portion of congestion charges arising from constraints within a PacifiCorp BAA. This is a structurally incomplete hedge that categorically excludes any protection against congestion charges associated with parallel flow on other transmission systems. Powerex is not aware of any instance in which the Commission has permitted entire categories of constraints to be excluded from the congestion hedging instruments it has required ISO or RTOs to provide. As explained by Dr. Patton, “[t]he problem is *not* that the [PacifiCorp] proposal fails to provide a ‘perfect

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<sup>30</sup> See CAISO Answer at 37; see also PacifiCorp Answer at 8, 17, 19. PacifiCorp faults Powerex for demanding a perfect hedge, PacifiCorp Answer at 17, 19, but also acknowledges that Powerex did not assert that a “perfect hedge” was required. Powerex has not demanded a financial hedge for the full quantity of the firm OATT rights held by a transmission customer. Powerex expressly recognized that there would be circumstances in which a customer with firm transmission rights would not receive an offset or financial hedge for the full quantity of their reserved service. See Powerex Protest at 30-31, Gribik Testimony at 29:7-30:11.

<sup>31</sup> See, e.g., PacifiCorp Answer at 17 (stating that “contrary to attempts of Powerex and others to equate FTRs/CRRs to a perfect hedge, the Commission has been clear that these instruments do not provide total protection from congestion charges”) (citations omitted).

<sup>32</sup> The term “perfect hedge” is only used twice in Powerex’s Protest, once in a footnote describing Order No. 681, and once in testimony describing MISO’s efforts to provide “as close to a perfect hedge as possible.” See Powerex Protest at n. 64, Gardner at 6:17.

<sup>33</sup> See, e.g., Powerex Protest at 6, 17, 12-22.

hedge', which is unrealistic. The problem is that it provides *no hedge* for most of the constraints in the EDAM system. This is simply not consistent with the treatment of firm transmission customers in any other market."<sup>34</sup>

Dr. Patton explains that what the Commission *has* done is require congestion hedges for the full price difference between a defined source and sink, but allow reductions to the *quantity* of congestion hedges provided based on the actual availability of the transmission grid in a given period.<sup>35</sup> The Commission's approval of such mechanisms aligns the total revenue paid to congestion hedges with the congestion revenue actually collected by the market operator, but in no way opens the door to PacifiCorp refusing to provide any hedge at all for congestion charges associated with parallel flows.

Powerex reiterates that it does not and has not taken the position that firm OATT transmission rights must receive a "perfect hedge" against EDAM congestion charges. Powerex is fully aware of the need for, and the precedent supporting, methods to ensure that the rights of transmission customers to receive an offset against EDAM congestion charges are aligned with the actual congestion revenues collected by the market operator. But PacifiCorp's Proposal falls far short of the adequate financial hedge that can and must accompany a day-ahead organized market, and its shortcomings are in no way comparable to the less-than-"perfect" nature of congestion hedges that the Commission has approved.

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<sup>34</sup> Powerex Answer, Attach. 1, Patton Testimony at 20:8-10.

<sup>35</sup> See *Id.* at 19:19-20:2. (emphasis original)

#### **4. Future Stakeholder Processes Do Not Render PacifiCorp's Proposal Just And Reasonable Now**

As part of its answer, the CAISO announced that it will “initiate an expedited stakeholder process” on the congestion revenue cost allocation issue raised by protesters—and either make no changes at all, or make an FPA section 205 filing to implement a transition mechanism.<sup>36</sup> The CAISO announcement is a clear acknowledgement that the deficiencies Powerex identified in PacifiCorp's Proposal with parallel flow congestion charges are real and that changes should be explored, and the CAISO is now considering a transition mechanism<sup>37</sup> and financial rights.<sup>38</sup> While the CAISO's actions imply that it recognizes that the EDAM tariff may require revision,<sup>39</sup> it is also clear that the ultimate result of this new CAISO stakeholder process may be that CAISO does nothing and merely confirms the current approach.<sup>40</sup>

While Powerex supports the CAISO engaging with stakeholders to explore potential changes to the EDAM allocation of congestion revenues, these efforts cannot rehabilitate the PacifiCorp Proposal currently before the Commission. If PacifiCorp's Proposal cannot meet the applicable legal standards on its own merits, it must be rejected; it cannot be accepted on the condition of a nascent stakeholder process reaching an undefined and uncertain end point. The Commission's regulations require

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<sup>36</sup> CAISO Answer at 3, 18.

<sup>37</sup> Compare Powerex Protest at 32 with CAISO Answer at n.17; 18, 92, 95.

<sup>38</sup> Compare Powerex Protest at 30 with CAISO Answer at 97 (“This stakeholder process may also assess the feasibility of implementing financial rights, a design feature specifically excluded from EDAM, as a potential longer-term solution. However, financial rights involve considerations that are much wider-reaching than an adjustment to the calculation of congestion revenue otherwise allocated to a participating balancing area as provided by the CAISO Tariff today.”); CAISO Answer at n. 17 (“This stakeholder process may also assess the feasibility of implementing financial rights, a design feature specifically excluded from EDAM, as a potential longer-term solution.”).

<sup>39</sup> PacifiCorp Answer at 2-3; BANC Answer at 7.

<sup>40</sup> Portland Answer at 4; CAISO Answer at 6, 17, n.17.



the filing party to describe the rate change and the reasons for the rate change when revising existing tariff provisions, and failure to submit materials that are in substantial compliance with these requirements is a basis for rejecting the filing.<sup>41</sup> The Commission should not afford any weight to the CAISO's promised stakeholder process or its speculative outcome when reviewing PacifiCorp's Proposal.

## **5. The CAISO And PacifiCorp Make Unfounded Criticisms of Powerex's Analysis Of EDAM Potential Congestion Charges**

Powerex's Protest included testimony from Mr. Spires, who used data from the CAISO's own Western EIM as well as past analyses by the CAISO's Department of Market Monitoring ("DMM") to reach two main conclusions:

1. EDAM congestion charges for use of PacifiCorp transmission service can be expected to be driven largely by constraints located outside of the PacifiCorp transmission system; and
2. These charges have the potential to be large and volatile.<sup>42</sup>

While the CAISO and PacifiCorp answers take issue with Mr. Spires' analysis of Western EIM data,<sup>43</sup> these entities also concede the foregoing conclusions in their answers, as evident for two reasons. First, the CAISO's initiation of an expedited stakeholder process confirms that the exposure to parallel flow congestion charges described by Powerex is correct, and that the concerns Powerex raised about firm transmission customers' exposure to those charges are also valid. Second, PacifiCorp's witness, Mr. Tsoukalis of the Brattle Group, testifies that he initially projected the

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<sup>41</sup> In fact, the Commission may "reject filings of proposed changes if the filings are grossly defective in form, 'or so patently a nullity as a matter of substantive law, that administrative efficiency and justice are furthered by obviating any docket at the threshold rather than opening a futile docket.'" *Papago Tribal Util. Auth. v. FERC*, 628 F.2d 235, 237 (D.C. Cir. 1980), *cert. denied* 449 U.S. 1061 (1980) (citing *Mun. Light Bds. v. FPC*, 450 F.2d 1341, 1346 (D.C. Cir. 1971), *cert. denied*, 405 U.S. 989 (1972)).

<sup>42</sup> Powerex Protest, Attach. A, Spires Testimony at 3:9-16:23.

<sup>43</sup> See CAISO Answer at 61-65, Attach. A, Alderete Declaration at 4:7-9:13, Attach. B, Harvey Statement at 1-14; see also *PacifiCorp* Answer at 23-24, Attach. A, Tsoukalis Affidavit at 2:4-7:13. It is also worth noting that the Testimony of Dr. Harvey and the Affidavit of Mr. Tsoukalis are not signed or verified.

magnitude of EDAM congestion charges to be \$2.15 billion per year, and he has now produced yet another Brattle study that projects these charges will be \$1.37 billion per year.<sup>44</sup> These admissions obviate any possible dispute about what the actual future EDAM congestion charges might be. As explained by Dr. Patton, “[i]n my view, that likely magnitude of the charges have very little relevance unless they are able to show with certainty that they will be *de minimis*. ... Further, arguing that a Tariff proposal that is inequitable and unreasonable in its design should be approved because its flaws will not result in large charges is extremely dubious. I would advise that this debate be ignored and recommend that the Commission focus on the reasonableness of PacifiCorp’s proposed tariff.”<sup>45</sup>

Nevertheless, neither stakeholders nor the Commission should be misled by claims that the potential exposure of PacifiCorp transmission customers with firm service to EDAM congestion charges under PacifiCorp’s Proposal will be small, or that the analysis presented by Powerex is not reliable. Powerex therefore responds to the allegations below, and as further detailed in the Supplemental Testimony of Jeff Spires in Attachment 3:

1. Contrary to the CAISO’s and PacifiCorp’s claims that Powerex “cherry-picked” data, Powerex’s analysis included the most recent data available for nine consecutive months and is sufficiently representative of parallel path congestion exposure;<sup>46</sup>
2. PacifiCorp’s new analysis purporting to find little or no *average* congestion in EDAM obscures actual congestion exposure because Mr. Tsoukalis’ analysis wrongly assumes power is delivered in a flat 24-hour block, continuously, for years.<sup>47</sup>

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<sup>44</sup> PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 11:20.

<sup>45</sup> Powerex Answer, Attach. 1, Patton Testimony at 15:10-21.

<sup>46</sup> CAISO Answer Attach. A, Alderete Declaration at 4:7; PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 5:10.

<sup>47</sup> Powerex Answer, Attach. 3, Spires Testimony at 3:3-4:6.

3. The CAISO's argument that it will not enforce a real-time constraint in the day ahead market is not credible because it would cause EDAM to schedule generation in the day-ahead market that is ultimately infeasible in the real-time market, thus requiring last-minute re-dispatch.<sup>48</sup> The CAISO offers no rationale to support the notion that a binding constraint in real time will be unenforced in the day-ahead market.<sup>49</sup>
4. PacifiCorp's claims that new transmission builds in the West will reduce congestion in the CAISO is erroneous because (1) none will reinforce the key transmission corridors within the CAISO, and (2) the transmission projects identified already will be used for increased inter-regional transfers and largely associated with new solar generation being delivered northbound, and growing load being served from northern generation outside the solar hours.<sup>50</sup> These increased transfers can be expected to also *increase the parallel flows on the CAISO grid*, which could make the existing congestion in the CAISO grid worse, rather than alleviating it.
5. PacifiCorp's new analysis still anticipates significant congestion in EDAM of \$1.37 billion and much of that will occur on systems outside of PacifiCorp.<sup>51</sup> As Dr. Patton observes, "Inappropriately allocating even a fraction of that total would produce substantial unreasonable charges for firm transmission customers."<sup>52</sup>

**6. The Issues Raised In Powerex's Protest Related To  
PacifiCorp's Congestion Allocation Proposal Are Properly  
Before The Commission**

The principal legal argument by the CAISO, PacifiCorp, BANC, and Portland is that the various protests raise issues that are out of scope or amount to a collateral attack on the Commission's prior orders approving EDAM.<sup>53</sup> As detailed below, their arguments should be rejected. However, should the Commission nevertheless interpret any part of Powerex's Protest or this answer as a critique of newly revealed flaws in the broader EDAM design, the Commission should view such concerns as relevant in this docket and

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<sup>48</sup> CAISO Answer, Attach. A, Alderete Declaration at 3:5.

<sup>49</sup> Powerex Answer, Attach. 3, Spires Testimony at 5:4-17.

<sup>50</sup> PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 8:14.

<sup>51</sup> *Id.* at P 9:17-11:21.

<sup>52</sup> Powerex Answer, Attach. 1, Patton Testimony at 15:15-17.

<sup>53</sup> PacifiCorp Answer at 12 (emphasis added); see also CAISO Answer at 26-27; Portland Answer at 37; BANC Answer at 4-5.

bearing on its consideration in light of the profound change in circumstances raised by key elements of PacifiCorp's Proposal.

*i. Powerex's Criticisms Of The EDAM Congestion Allocation Scheme Are Not Out of Scope And Do Not Make Collateral Attacks On The EDAM Order*

Powerex's Protest was properly confined to the issues directly before the Commission in this docket. PacifiCorp proposes to make all transmission customers captive to EDAM and its inherent flaws, and it is therefore entirely within the scope of this proceeding to examine whether such forced participation will result in transmission service that is just and reasonable, not unduly discriminatory, and not inconsistent with or superior to the *pro forma* OATT.

Contrary to arguments made by PacifiCorp and the CAISO in this docket, the CAISO's EDAM filing did not present, nor did the EDAM Order review or address, key matters at issue in this docket. For example, in response to arguments that the CAISO hold transmission service customers harmless from EDAM transfer and congestion costs incurred when scheduling their transmission rights in the day-ahead and real-time markets, the Commission explained that "the issue is not pertinent to the Tariff revisions before us, as EDAM transfer and congestion costs and transmission services will be addressed in the OATTs submitted to the Commission by individual EDAM transmission service providers."<sup>54</sup>

The CAISO and PacifiCorp go further and erroneously attempt to limit the Commission's review in this docket. The CAISO posits that it is only "the sub-allocation

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<sup>54</sup> EDAM Order at P 438.

methodology under the PacifiCorp OATT. . . that is at issue here.”<sup>55</sup> In like fashion, PacifiCorp claims that “all the Commission must decide on this issue in this proceeding is whether PacifiCorp’s proposal for sub-allocating the internal congestion revenue it receives under the already-approved CAISO Tariff is just and reasonable.”<sup>56</sup> These arguments seek to block the Commission from considering a more basic inquiry: given the accepted EDAM design, is it just and reasonable and either consistent with or superior to the *pro forma* OATT for PacifiCorp to force all of its customers to participate in EDAM as a condition of transmission service in the first instance? The Commission’s prior orders may have found that EDAM is just and reasonable as a *voluntary* day-ahead organized market, but the CAISO and PacifiCorp insist that those orders also mean that every conceivable application and use of EDAM, including forced participation, has already been declared just and reasonable as well.

Under the EDAM construct, the CAISO will operate EDAM pursuant to its approved tariff, and this tariff governs how the day-ahead market will operate. But PacifiCorp will remain the transmission service provider in its service territory, with the attendant obligation to provide just and reasonable transmission service pursuant to a Commission-

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<sup>55</sup> CAISO Answer at 23. In furtherance of its collateral attack arguments, the CAISO also wrongly conflates Powerex’s arguments regarding the allocation of value of CAISO intertie limits with an argument against the allocation of EDAM congestion revenue. CAISO Answer at 75. As the CAISO was fully aware from the extensive stakeholder workgroups where this issue was repeatedly discussed, Powerex was discussing an entirely different congestion issue to the one raised in this docket, as Powerex objected to the treatment by the CAISO of intertie scheduling limits on transfers into and out of the CAISO BAA, which results in the CAISO being allocated all of this value, whereas analogous inter-BAA value is allocated 50/50 on all BAAs other than the California ISO. The CAISO is well aware that this inter-BAA scheduling constraint congestion topic is an entirely separate topic, with separate tariff provisions from the congestion revenue allocation associated with internal flow-based constraints within a BAA, which is the topic that Powerex and other intervenors discuss in their protests and comments.

<sup>56</sup> PacifiCorp Answer at 8.

approved tariff. PacifiCorp, not the CAISO, bears the burden of demonstrating that its proposed OATT amendments meet the applicable legal standard.

To suggest—as some Answers do—that approval of EDAM necessarily constitutes approval of all potential participating entities’ future proposals regarding whether and how they will force their customers to be exposed to EDAM is plainly unworkable. Customers must have the opportunity to challenge whether the overlay of EDAM on the specific and existing tariff-based transmission rights provided by a given transmission service provider will be just and reasonable. This includes the right to challenge the implementation choices of the new EDAM Entity and how such choices affect the jurisdictional transmission service provided by that entity.

*ii. The CAISO’s Lack Of Candor In The EDAM Process Was Exposed Only After PacifiCorp’s Filing And Subsequent Discussions With Stakeholders*

Both the CAISO and PacifiCorp also attempt to frame the extensive concerns that have been expressed over the design of EDAM as grounded in a misunderstanding by Powerex and other stakeholders.<sup>57</sup> While the CAISO allows that “some commenters believe that the EDAM design stakeholder materials may not have been as clear in some places,”<sup>58</sup> PacifiCorp asserts that “these understandings are simply wrong.”<sup>59</sup> Both of these statements sidestep the CAISO’s failure to clearly and candidly explain that the EDAM was being designed to charge customers that use transmission service on one system for unavoidable parallel flow congestion on a different system. The consistent

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<sup>57</sup> See CAISO Answer at 15; PacifiCorp Answer at 14-15.

<sup>58</sup> CAISO Answer at 92.

<sup>59</sup> PacifiCorp Answer at 14.

avoidance of this issue throughout the more than two-year EDAM development and regulatory approval process is documented in Attachment 2 to this Answer, and includes:

- Throughout the EDAM development process, as well as in the EDAM Final Proposal and in the CAISO's transmittal letter to the Commission, the CAISO did not discuss, and did not present any examples of, internal transmission constraints in one BAA causing an impact on LMPs in a different BAA, despite this being a common occurrence in the Western EIM today.
- Even if the issue had been clearly raised (which it was not), the CAISO's repeated representations that deliveries using firm OATT rights would not be exposed to EDAM congestion charges made the issue largely inconsequential to stakeholders at that time:
  - The CAISO provided at least one numerical example early in the EDAM development process showing how deliveries using firm OATT service would be protected from congestion charges in EDAM, specifically using the term "perfect hedge."
  - The EDAM Final Proposal presented by CAISO management for approval by its Board of Governors and by the Western EIM Governing Body expressly called for reversing congestion charges for deliveries on firm OATT service.
  - After approval of the EDAM Final Proposal, the initial draft tariff language proposed by the CAISO included provisions to reverse and offset EDAM congestion charges for deliveries using firm OATT rights. PacifiCorp provided comments on this draft language supporting this provision.
- It was not until two months before filing its EDAM proposal with the Commission that the CAISO significantly altered the draft tariff language to eliminate any reversal of EDAM congestion charges for deliveries using firm OATT rights. During the stakeholder meeting to discuss this version of the draft tariff language, the importance of this change was not raised by the CAISO.

The CAISO clearly did not fulfill its responsibility to ensure all stakeholders, its Board of Governors, the Western EIM Governing Body, and the Commission had accurate and complete information about the EDAM market design it was pursuing.

Though CAISO has had the opportunity to review and correct the numerous published Brattle analyses of EDAM benefits—in which congestion charges incurred in each participating BAA failed to include charges for parallel flows on external participant

systems—the CAISO still has declined to point out the errors in the Brattle benefit studies, which stakeholders and the Commission have relied upon.<sup>60</sup>

It is unclear why the CAISO, as a sophisticated market operator with extensive knowledge about the design of organized markets, chose to forgo substantive discussions of this significant aspect of the EDAM design with stakeholders, including through numerical examples and quantitative estimates of the value at stake.<sup>61</sup> While Powerex acknowledges that this parallel flow congestion issue is clearly a contentious one, with significant value at stake and the interests of California load-serving entities in conflict with the interests of transmission customers and retail ratepayers outside of California, such contentious issues must not be avoided in an effort to maintain momentum and desired timelines for EDAM.<sup>62</sup>

In sum, the CAISO's repeated lack of candor has avoided the review of an important issue that ultimately surfaced only as a result of PacifiCorp's filing in this docket. The Commission did not and could not have conclusively addressed this issue when it reviewed the CAISO's EDAM tariff proposal, and it remains properly before the Commission in this proceeding.

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<sup>60</sup> CAISO EDAM Benefits Study: Estimating Savings for California and the West Under EDAM Market Scenarios (Nov. 4, 2022) <http://www.caiso.com/Documents/Presentation-CAISO-Extended-Day-Ahead-Market-Benefits-Study.pdf>.

<sup>61</sup> The CAISO's Answer contains multiple inaccurate characterizations of Powerex's positions or statements. The CAISO undoubtedly has the sophistication and technical knowledge to fully understand the issue raised by Powerex, and it is unfortunate that its elected instead to distort the record and impede rather than foster understanding of these issues.

<sup>62</sup> This is also reflected in the CAISO's expedited stakeholder process, where the CAISO—prior to receiving any stakeholder feedback whatsoever—has already pre-determined that the outcome will be either to do nothing, or at most to pursue “surgical” and “transitional” measures.



*iii. New Facts And Evidence Demonstrate That Certain OATT Amendments Addressing The EDAM Congestion Allocation Design May Be Unjust And Unreasonable In Practice*

To the extent that the Commission interprets any part of Powerex's Protest as a critique of the accepted EDAM design, Commission policy permits such evidence—even of a rate or rate design the Commission has accepted—where new facts or evidence are presented showing that the rate design may no longer be just and reasonable.<sup>63</sup> In fact, when presented with evidence that circumstances have changed and a rate design may no longer be just and reasonable, “the Commission *is obligated* to reexamine the existing rates, terms, or conditions of service.”<sup>64</sup>

The EDAM design deliberately left it to each transmission provider to propose how customers purchasing firm transmission service would be protected from EDAM congestion charges. But the critical issue revealed by PacifiCorp's Proposal is that EDAM's method of allocating congestion revenue may leave transmission providers without the revenue necessary to offset EDAM congestion charges for parallel flow on other systems that occurs when a customer uses its PacifiCorp transmission service. As

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<sup>63</sup> *Alamito Co.*, 43 FERC ¶ 61,274, at 61,753 (1988) (“*Alamito*”); *San Diego Gas & Electric Co.*, 86 FERC ¶ 61,253, 61,913 (1999) (“This doctrine generally does not bar litigation of the justness and reasonableness of rates based on new facts (i.e., new economic data) or arguments, as is the case here, tending to show that the rates, even though previously adjudged to be just and reasonable, may no longer be just and reasonable.”); *Old Dominion Electric Coop. and Direct Energy Bus., LLC on Behalf of Itself and Its Affiliate, Direct Energy Bus. Mktg., LLC and Am. Mun. Power, Inc.*, 164 FERC ¶ 61,116, at P 17 (2018) (“*Old Dominion*”). See generally *Am. Electric Power Serv. Corp., et al. v. Sw. Power Pool*, 183 FERC ¶ 61,068, at P 35 (2023) (finding that a complaint's core issue was not raised in another proceeding and therefore collateral attack was permissible); *Electric Power Supply Assn., et al. v. AEP Generation Resources, Inc. and Ohio Power Co.*, 155 FERC ¶ 61,102, at P 56 (2016) (finding that “non-bypassable charges associated with [affiliate power purchase agreements] represent a reportable change in circumstances from the conditions under which the Commission granted waiver” of affiliate restrictions”).

<sup>64</sup> *Old Dominion*, 164 FERC ¶ 61,116 at P 17 (emphasis added); see 16 U.S.C. § 824e; see also *Renew Northeast, Inc. v. ISO New England Inc. and New England Participating Transmission Owners*, 189 FERC ¶ 61,216, at P 101 (2024) (citing *Old Dominion* and holding that under FPA section 206, “the Commission must replace a rate previously found just and reasonable if, after engaging in reasoned decision making, it makes a finding that the rate is unjust and unreasonable.”).

the first specific application of EDAM's method of allocating congestion revenues, PacifiCorp's filing provides new and material facts and evidence regarding the EDAM design that fully justify rejection of PacifiCorp's Proposal. It may also justify a reexamination of the EDAM design itself. Indeed, even the CAISO now admits that modifications to the congestion allocation mechanisms may be needed.<sup>65</sup> While the CAISO, PacifiCorp, and others repeatedly claim that the Commission approved the EDAM allocation of congestion revenue, the CAISO failed to disclose to the Commission the implications of that allocation. And because stakeholders also had not been provided complete and accurate information on this issue—and in fact had received contrary information in the EDAM development process, which as noted above was changed by the CAISO via a late, little-mentioned modification to the tariff language—stakeholders were not in a position to bring this issue to the Commission's attention. Should the Commission interpret any parts of Powerex's Protest or this answer as "collateral attacks" on the EDAM design, such issues are nevertheless properly before the Commission now in light of the change in circumstances precipitated by PacifiCorp's Proposal, particularly given the importance of the Proposal as a model for subsequent EDAM Entities going forward.

**B. PacifiCorp's New Justifications For Degrading Firm Intra-Day Scheduling Priority Are Meritless And Should Be Rejected**

PacifiCorp, the CAISO, Portland, and BANC dismiss concerns about PacifiCorp's proposed treatment of intra-day scheduling as a collateral attack on the EDAM design.<sup>66</sup>

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<sup>65</sup> CAISO Answer at 18 ("There will be a limited number of participating balancing authorities in the early years of EDAM and, thus, less overall transfer capability and fewer resources available to help mitigate congestion. Thus, transitional measures to mitigate the impacts of congestion revenue allocation may be appropriate."); *see also id.* at 3, 7, 16, 17, 60, 93, 95-97.

<sup>66</sup> PacifiCorp Answer at 30-34; *see also* CAISO Answer at 26-27; Portland Answer at 28-32; BANC Answer at 5-6.

Their new arguments are meritless and would impair customers' use of their PacifiCorp transmission under service agreements that in some cases are tied to transmission upgrades and extend for decades. The Commission expressly reserved judgment of participating entities' implementation of the EDAM design, as Powerex explained in its Protest.<sup>67</sup> The Commission should reject PacifiCorp's suggestion that the "if practicable" qualification applied to firm service scheduled after 10:00 AM under §13.8 of the *pro forma* OATT<sup>68</sup> should be interpreted to authorize PacifiCorp to fail to provide high priority to intra-day firm schedules on the basis that "[t]he market design itself is the manner by which the accommodation of intra-day schedules are made practicable." The approved EDAM Tariff enables PacifiCorp to instruct the CAISO to assign a high priority to intra-day schedules submitted on firm transmission and PacifiCorp has provided no explanation for why it is choosing not to do so. PacifiCorp's suggested "reinterpretation" of § 13.8 is clearly inconsistent with Commission precedent and industry practice, as the testimony of multiple industry experts made clear in Powerex's Protest.<sup>69</sup> PacifiCorp's answer provided no substantive response to that testimony.

**C. PacifiCorp's OATT Amendments Will Block Participation In A Competing FERC-Approved Organized Market - Markets+**

The CAISO and of PacifiCorp both claim that protestors are seeking "an end-run around future seams discussions" between EDAM and Markets+, or that protestors seek "to pre-judge EDAM / Markets+ seams issues."<sup>70</sup> PacifiCorp maintains that "the authorization to 'donate' that capacity to an entirely different market operator" is properly

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<sup>67</sup> Powerex Protest at 40, n.97.

<sup>68</sup> See also *pro forma* OATT § 13.8.

<sup>69</sup> Powerex Protest at 45-47 (relying on the expert testimony of Dillon and Monroe, Gardner, and Wellenius).

<sup>70</sup> PacifiCorp Answer at 28.

the subject of future discussions regarding seams issues between EDAM and Markets+.<sup>71</sup> But PacifiCorp's proposed OATT amendments—which force all transmission customers to participate in EDAM in order to use their transmission rights—preclude any such future discussion, and are properly and squarely before the Commission in this proceeding.

PacifiCorp's OATT amendments would make it effectively unworkable for PacifiCorp transmission service to be used to enable connectivity in the organized market that competes directly with EDAM: Markets+.<sup>72</sup> This unjust and unduly discriminatory outcome (that also conflicts with the Commission's order approving the Markets+ tariff) results from PacifiCorp's requirement that all transmission customers to participate in EDAM and thus be exposed to EDAM congestion charges.<sup>73</sup>

The opposition of PacifiCorp and the CAISO to the use of OATT transmission rights to enable connectivity in Markets+ stands in direct contrast to their extensive use of precisely those types of transmission rights to enable connectivity in the Western EIM today and for the past decade, to the direct benefit of PacifiCorp, the CAISO, and other EIM participants.<sup>74</sup> And even as the CAISO and PacifiCorp seek to block the ability of PacifiCorp's customers to use PacifiCorp transmission rights to connect to Markets+, there continues to be a robust dialogue in the West among entities interested in joining

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<sup>71</sup> PacifiCorp Answer at 29.

<sup>72</sup> See The Brattle Group, Inc., *Extended Day-Ahead Market Participation Benefits Study* at 15 (December 2023) ("We expect benefits would increase if we assumed more BAAs joined the EDAM, as more transmission, generation resources, and load in the market is likely to lead to more market transactions, production cost savings, and congestion and trading revenues."), [www.brattle.com/wp-content/uploads/2024/01/Extended-Day-Ahead-Market-Participation-Benefits-Study.pdf](http://www.brattle.com/wp-content/uploads/2024/01/Extended-Day-Ahead-Market-Participation-Benefits-Study.pdf).

<sup>73</sup> Powerex Protest at 55-56.

<sup>74</sup> In its filing to seek approval of the WEIM tariff, the CAISO stated that "[a] transmission service provider, **customer, or rights holder** within an EIM Entity's BAA may make its transmission rights on interties, **including transmission rights it may have outside of the EIM Entity's BAA**, available for use in the EIM." *Calif. Indep. Sys. Operator Corp.*, ISO Tariff Amendments to Implement an Energy Imbalance Market, at 12, Docket No. ER14-1386-000 (filed Feb. 28, 2014) (emphasis added).

EDAM about how *they* plan to connect to EDAM by using OATT transmission rights over transmission systems that are expected to join Markets+. <sup>75</sup>

Notably, PacifiCorp seeks to achieve through amendments to its OATT what it was unable to achieve through its protest of the Southwest Power Pool Inc.'s ("SPP") Markets+ tariff proposal: a mechanism that prevents its transmission customers from using the firm transmission rights they have paid for in any regional day-ahead market other than the one preferred by PacifiCorp. <sup>76</sup>

It is wholly inappropriate for a transmission provider to seek to "tie" firm customers' transmission service to participation in any particular regional program or regional market, just as it would be inappropriate for a transmission provider to dictate which counterparties a transmission customer may transact with, or for which products, or on what terms. The Commission's three decades of open access precedent began with landmark orders intended specifically to prevent vertically integrated utilities from conditioning transmission service in a manner that frustrates wholesale competition.

The West is at a critical point in its adoption of a robust array of voluntary regional programs and regional markets to address the pressing reliability and affordability challenges it faces. For the first time, a majority of entities are willing to join a day-ahead organized market, and a critical mass of entities is about to move into the binding phase of a regional resource adequacy program (WRAP). This momentum will be jeopardized if market operators, such as the CAISO, and transmission providers, such as PacifiCorp,

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<sup>75</sup> See, e.g., March 13, 2025 presentation by the Brattle Group before the New Mexico Public Regulation Commission, at 12 <https://www.brattle.com/wp-content/uploads/2025/03/Day-Ahead-Market-Participation-Benefits-Studies-for-EPE.pdf> (showing Public Service Company of New Mexico connecting to EDAM using transmission rights to Four Corners and to Palo Verde).

<sup>76</sup> See PacifiCorp, Motion to Intervene and Comments, Docket No. ER24-1658 (filed Apr. 29, 2024).

who have significant power to determine outcomes through their respective tariffs, are permitted to take actions that barricade their “captive” customers from participation in other regional programs or regional markets in an effort to maximize participation in their own preferred programs or markets. And Powerex believes that open access precedent and sound policy require market operators and transmission providers go even further in the current landscape of new Commission-approved regional programs: Powerex believes all western entities should be required to design their respective markets and transmission tariffs to support customer choice and the freedom of transmission customers to participate in the regional programs and markets of their choosing. Absent a clear message from the Commission establishing this expectation, regional programs and regional markets in the West may fail to advance, with consumers ultimately bearing the profound consequences.

Powerex and more than a dozen other stakeholders involved in the development of Markets+ sought to ensure that its design protected the ability of customers to participate in other regional programs and markets. A key goal for the “opt out” provision of the Markets+ tariff was to provide an opportunity for customers of transmission providers participating in Markets+ to be able to use their firm transmission rights for participation in EDAM. PacifiCorp’s attempts to be able to dictate which markets its transmission service can or cannot be used in represent a move to “close down” what would otherwise be an open market choice and, if successful, can be expected to result in other transmission providers across the West taking similar actions, severely limiting the ability to participate in all regional programs and markets, including EDAM, the Western EIM, Markets+ and WRAP.

**D. It Is The Pursuit Of Inappropriate Goals, And Not Powerex, That Is Limiting EDAM's Ability To Move Forward**

The CAISO accuses Powerex of trying to delay or obstruct EDAM.<sup>77</sup> This is simply not true. Powerex has no objection to EDAM moving forward and believes day-ahead organized markets could potentially provide genuine benefits to the entities that participate in them.

What Powerex objects to—and what has led to the widespread resistance in the West to EDAM moving forward under its current design—is the pursuit of unrelated and inappropriate goals through the use of the EDAM design and PacifiCorp's OATT changes. First, the CAISO has pursued an EDAM design that fails to reverse congestion charges arising from parallel flow associated with the normal use of firm transmission rights on another system, inconsistent with every other day-ahead organized market in the nation. This appears to be the goal behind the EDAM congestion revenue allocation approach, but pursuing it necessarily impairs the ability of transmission providers like PacifiCorp to fund a properly designed source-to-sink congestion hedge. Second, the CAISO and PacifiCorp have sought to use a transmission provider's OATT to block participation in a competing day-ahead organized market (*i.e.*, Markets+).<sup>78</sup>

It is entirely possible to design a day-ahead organized market, outside of an ISO or an RTO, in a manner that does not seek to advance these two inappropriate goals. This is clearly evidenced by the mechanisms developed in Markets+, which provide firm transmission rights-holders with meaningful protection against day-ahead congestion

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<sup>77</sup> CAISO Answer at 9.

<sup>78</sup> See PacifiCorp Answer at 27 (failing to respond—and thus conceding—to Powerex's arguments about PacifiCorp attempting to block Markets by simply calling it a "seams" issue that should not be "pre-judged" now); CAISO Answer at 83 (same).

charges (including those from parallel flows), with firm priority through real-time, and with the ability to use these rights outside of Markets+, including specifically to provide connectivity in EDAM.

Powerex is not suggesting that the specific Markets+ mechanisms need to be applied here. Rather, these mechanisms show that solutions exist that have been approved by the Commission, that have received strong support from diverse stakeholders,<sup>79</sup> and that can enable EDAM to move forward if and when the CAISO and PacifiCorp decide to abandon their pursuit of unnecessary and inappropriate objectives as part of EDAM.

**E. Powerex Seeks The Ability To Avoid The Impacts Of The EDAM's Flawed Design, Not An Unlimited Carve Out**

The CAISO alleges that protesters take the position that “PacifiCorp should ... be obligated to provide carve-outs any time a customer requests to remove capacity from the market.”<sup>80</sup> The CAISO then goes on to provide a lengthy explanation of how “carve-outs” have been limited in ISOs and RTOs. This completely misstates both Powerex’s request as well as the reasons why in EDAM—unlike in an ISO or RTO—the default presumption cannot be that all customers will be captive to that market.

First, in its protest, Powerex asked the Commission to require PacifiCorp to provide a way for transmission customers to continue to use their PacifiCorp firm transmission rights without being forced to transact in PacifiCorp’s preferred organized market in order to do so. More specifically, Powerex suggested two mechanisms for customers to

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<sup>79</sup> See *Sw. Power Pool*, Tariff Filing, Transmittal Letter, Docket No. ER24-1658-000 at 68 (filed Mar. 29, 2024) (Noting that the Markets+ Tariff was endorsed by 91.11% of the Markets+ Participants Executive Committee).

<sup>80</sup> CAISO Answer at 69.



schedule the use of firm transmission rights without that use being processed through EDAM: (1) a limited opt-out, such as the Commission approved for Markets+, or (2) allowing firm transmission to be scheduled in advance of the EDAM timelines, as occurs in the WEIM.<sup>81</sup> As explained by Dr. Patton, “[b]y allowing customers to opt out of the EDAM or utilize their firm transmission rights through a physical scheduling process in advance of the EDAM auction, PacifiCorp would ensure their rights are not inferior to its OATT.”<sup>82</sup>

Powerex has never argued that transmission customers must have an unfettered right to remove transmission capacity that they are not actually using from the market. But where the transmission service is, in fact, being used by the transmission customer, it is appropriately unavailable for use by other customers or by EDAM. Hence, enabling the customer to schedule its use of its transmission rights ahead of EDAM does not undermine the efficiency of EDAM and is not “to the detriment of end-use customers benefitting from the EDAM market optimization.”<sup>83</sup>

Transmission customers can schedule the use of their PacifiCorp firm OATT rights today without being required to do so through the Western EIM (*i.e.*, by submitting schedules before the EIM deadline at 57 minutes before the start of each operating hour). This is not alleged to be an inefficient “carve out” or to be to the detriment of the Western EIM. In the same manner, scheduling the use of PacifiCorp firm OATT rights prior to the EDAM market run and then being excluded from EDAM processing and charges also does not raise genuine issues, and is not the equivalent of “removing capacity from the

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<sup>81</sup> Powerex Protest at 59.

<sup>82</sup> Powerex Answer, Attach. 1, Patton Testimony at 22:22-23:2.

<sup>83</sup> CAISO Answer at 69.

market.” As explained by Dr. Patton, “whether the customer’s use of the transmission takes place ‘inside’ or ‘outside’ EDAM does not change how much transmission is available for use.”<sup>84</sup>

Second, the CAISO and PacifiCorp are wrong to presuppose that all transmission customers must be made captive participants in EDAM, with only limited exclusions or “carve-outs” being granted. While such a presumption may have applied in some ISOs and RTOs, the CAISO acknowledges in its answer that EDAM is not an ISO or RTO market. Indeed, as explained by Dr. Patton, “[a]ny day-ahead market that applies LMP pricing to collect transmission congestion, but lacks an FTR mechanism or a comparable means of delivering congestion revenue on to entities with firm transmission rights on source-to-sink basis, is an *incomplete day-ahead market* and lacks fundamental elements that ensure an ISO is workable for a wide range of participants and activity.”<sup>85</sup>

EDAM is, instead, one of several voluntary regional programs and markets that have been developed in the West to provide incremental improvements to the wholesale electricity industry. Each of the regional programs and regional markets that have been approved by the Commission in the West that fall short of a full ISO or RTO enable entities to manage the extent of their participation in that market or program. None of these programs has sought to make all of the activity of all participants involuntarily captive, with no choice but to conduct all of their activity through that market.

The Western EIM, for example, was implemented as a means to efficiently manage and charge for energy imbalances. Every transmission customer has the ability to limit its exposure to financial settlement in the Western EIM by scheduling its activity prior to that

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<sup>84</sup> Powerex Answer, Attach. 1, Patton Testimony at 25:13-14.

<sup>85</sup> *Id.* at 17:15-19.

market's scheduling deadline of 57 minutes prior to the hour. The same principle applies in SPP's Western Energy Imbalance Services market. Markets+ also provides individual entities the ability to conduct their activity entirely outside of that market, though an explicit "opt-out" provision.<sup>86</sup>

Contrary to the voluntary approach that has characterized the evolution toward regional programs and regional markets in the West to date, PacifiCorp's Proposal represents the first effort to make all activity by all entities captive to a market. Powerex's Protest objects to this anomalous approach, and instead seeks to ensure that PacifiCorp transmission customers will be able to manage their exposure to potentially harmful outcomes in EDAM by having the opportunity to conduct their activity outside of EDAM.

**F. Powerex Agrees With WIEC That Retail Customers Should Not Bear The Cost Of Reversing Congestion Charges For Parallel Flows**

Wyoming Industrial Energy Consumers ("WIEC") state in their answer that retail customers should not bear the cost of protecting other transmission customers from inappropriate EDAM congestion charges for parallel flow.<sup>87</sup> Powerex supports WIEC's position.

Powerex believes it should not be a given that PacifiCorp will be permitted to pass through parallel flow congestion charges associated with the use of firm PacifiCorp transmission service by unaffiliated transmission customers to its retail ratepayers. In addition, it should also not be a given that PacifiCorp will be permitted to pass through parallel flow congestion charges associated with *PacifiCorp's own use* of its system to serve its retail customers, including WIEC. If PacifiCorp believes there are strategic

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<sup>86</sup> Notably, this "opt out" provision is being provided despite Markets+ actually having a direct congestion revenue distribution mechanism to firm transmission customers, including parallel flow congestion.

<sup>87</sup> WIEC Answer at 3-4.

benefits to its organization from participating in a voluntary day-ahead market that requires it to fund payments for parallel flow congestion to other transmission providers as part of that participation, or alternatively, if PacifiCorp believes such payments will be small or neutral over time, then PacifiCorp is the appropriate entity to bear the risk and incur the cost of such payments. PacifiCorp should not seek, or perhaps not be permitted by its applicable regulators, to pass those costs through to either its transmission customers or its retail customers.

**G. Relief Requested**

Powerex respectfully requests that the Commission reject PacifiCorp's Proposal without prejudice and provide the guidance requested in Powerex's Protest. The Commission should not accept PacifiCorp's Proposal conditioned on completion of the newly-announced CAISO stakeholder process. The CAISO's stakeholder process, as their own answer makes clear, may result in no changes whatsoever. Even if the CAISO stakeholder process results in the CAISO submitting a Section 205 filing to revise portions of the EDAM design, the nature of such changes are unknown at this point. If PacifiCorp believes that any changes to the EDAM design resulting from the CAISO's stakeholder process warrant a different decision of the PacifiCorp Proposal, it will have the opportunity to re-file tariff amendments if and when the market design is remedied.

**III. MOTION FOR LEAVE TO ANSWER**

The Commission's rules do not typically allow answers to answers.<sup>88</sup> However, the Commission accepts answers for good cause shown. Good cause exists where the answer assisted the Commission in understanding the issues presented, provided

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<sup>88</sup> 18 C.F.R. § 385.213(a)(2).

additional information for the Commission's decision-making process, and may help to ensure a complete and accurate record.<sup>89</sup> Such circumstances exist here, as Powerex's answer provides important additional context on the considerations relevant to this proceeding, including establishing the correct legal standard and correcting the misstatements of PacifiCorp, the CAISO, and others in their respective answers. Consideration of this Answer will result in a more accurate and complete record, contribute to an understanding of the issues, and assist the Commission in its decision-making process. Accordingly, Powerex moves for leave to answer and respectfully requests that the Commission admit this Answer into the record of this proceeding.

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<sup>89</sup> See, e.g., *N.Y. Indep. Sys. Operator, Inc.*, 133 FERC ¶ 61,178, at P 11 (2010) (allowing answers to answers and protests "because they have provided information that assisted [the Commission] in [its] decision-making process"); *Morgan Stanley Cap. Grp., Inc. v. N.Y. Indep. Sys. Operator, Inc.*, 93 FERC ¶ 61,017, at ¶ 61,036 (2000) (accepting an answer that was "helpful in the development of the record"); *Cent. Hudson Gas & Elec. Corp.*, 88 FERC ¶ 61,138, at ¶ 61,381 (1999) (accepting otherwise prohibited pleadings because they helped to clarify complex issues).

#### IV. CONCLUSION

For the foregoing reasons, Powerex respectfully requests that the Commission reject the Proposal, without prejudice, and direct PacificCorp to make revisions consistent with the guidance outlined above.

Respectfully submitted,

/s/ Deanna E. King

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*On behalf of Powerex Corp.*

Dated: March 28, 2025

#### Attachments:

1. Attachment 1 – Testimony of Dr. David Patton
2. Attachment 2 – Summary of CAISO's Misdirection on the Allocation of Congestion from Parallel Flows
3. Attachment 3 – Supplemental Testimony of Jeffery Spires

**ATTACHMENT 1**

**TESTIMONY**  
**OF DR. DAVID B. PATTON**

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

**PacifiCorp**

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)  
)

**Docket No. ER25-951-000**

**TESTIMONY  
OF  
DAVID B. PATTON, Ph.D.**

**ON BEHALF OF  
POWEREX CORP**

**MARCH 28, 2025**



**TESTIMONY OF DAVID B. PATTON, Ph.D.**

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**TESTIMONY OF**  
**DAVID B. PATTON, Ph.D.**

**I. INTRODUCTION AND EXPERIENCE**

**Q. PLEASE STATE YOUR NAME AND BUSINESS AFFILIATION.**

A. My name is David B. Patton. I am an economist and the President of Potomac Economics Ltd. Our offices are located at 10560 Arrowhead Dr., Suite 400, Fairfax, VA 22030.

**Q. PLEASE DESCRIBE POTOMAC ECONOMICS.**

Potomac Economics is a firm specializing in expert economic analysis and monitoring of wholesale electricity markets. Potomac Economics has served as the Independent Market Monitor ("IMM") for Midcontinent Independent System Operator, Inc. ("MISO") since 2002. Potomac Economics serves in a substantially similar role for the New York Independent System Operator, Inc. ("NYISO"), ISO New England, Inc. ("ISO-NE"), and the Electric Reliability Council of Texas ("ERCOT").

**Q. PLEASE DESCRIBE YOUR WORK EXPERIENCE AND EDUCATIONAL BACKGROUND.**

A. I have worked as an energy economist for 34 years, focusing primarily on the electric utility and natural gas industries. I have provided strategic advice, analysis, and expert testimony in the areas of electric power industry restructuring, pricing, mergers, and market power. I have also advised Regional Transmission Organizations on transmission pricing, market design, and congestion

1 management issues. With regard to competitive analysis, I have provided expert  
2 testimony and analysis regarding market power issues in a number of mergers and  
3 market-based pricing cases before the Federal Energy Regulatory Commission  
4 (“the Commission”), state regulatory commissions, and the U.S. Department of  
5 Justice.

6 Prior to my experience as a consultant, I served as a Senior Economist in the  
7 Office of Economic Policy at the Commission, advocating on a variety of policy  
8 issues including transmission pricing and open-access policies, market design  
9 issues, and electric utility mergers. As a member of the Commission’s advisory  
10 staff, I worked on policies reflected in Order No. 888, particularly on issues related  
11 to power pool restructuring, independent system operators (“ISOs”), and functional  
12 unbundling. I also analyzed alternative transmission pricing and electricity auctions  
13 proposed by ISOs.

14 Before joining the Commission, I worked as an economist for the U.S. Department  
15 of Energy. During this time, I helped to develop and analyze policies related to  
16 investment in oil and gas exploration, electric utility demand side management,  
17 residential and commercial energy efficiency, and the deployment of new energy  
18 technologies. I have a Ph.D. in Economics and a M.A. in Economics from George  
19 Mason University, and a B.A. in Economics with a minor in Mathematics from New  
20 Mexico State University.

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

22 A. I have been asked by Powerex to provide my opinion, based on my experience  
23 monitoring and making recommendations on the design of day-ahead and real-

1 time organized markets elsewhere in the United States, about certain aspects of  
2 the California ISO's Extended Day Ahead Market ("EDAM") and the modifications  
3 that PacifiCorp has proposed to its Open Access Transmission Tariff ("OATT") to  
4 enable its participation in EDAM. EDAM will be a day-ahead organized market  
5 that provides security-constrained economic dispatch of resources to serve  
6 demand in the participating footprint. In doing so, EDAM will calculate locational  
7 marginal prices ("LMPs") at each location in that footprint. LMPs can vary across  
8 different locations as a result of transmission losses or as a result of transmission  
9 congestion.

10 **Q. WHAT ARE YOUR PRINCIPAL CONCLUSIONS?**

11 A. To accommodate EDAM, PacifiCorp has proposed an unprecedented and  
12 ultimately unreasonable treatment of its firm transmission service and the  
13 customers that have purchased it. In summary, the PacifiCorp proposal:

- 14 • Requires firm transmission customers to participate in EDAM and precludes  
15 them from the opportunity to participant in other markets or to schedule their  
16 firm transmission rights outside of EDAM to deliver power physically from  
17 their generation to their load. The latter is a right they currently enjoy under  
18 the pro forma OATT to use firm service to deliver electricity with little risk of  
19 curtailment;
- 20 • Fails to provide an equivalent financial transmission right that would provide  
21 an adequate congestion hedge in exchange for requiring EDAM  
22 participation for the use of transmission by the firm transmission customers.

1 In particular, PacifiCorp's proposal returns congestion costs in a manner  
2 that substantially departs from all other ISO/RTO day-ahead markets:

- 3 ○ All other organized markets provide financial transmission rights that  
4 correspond to *all* of the constraints that are priced in the markets'  
5 LMPs, which is the basis for the congestion costs charged to  
6 customers.
- 7 ○ In sharp contrast, PacifiCorp proposes to only provide a hedge for  
8 congestion associated with constraints on PacifiCorp's system, and  
9 no hedge for congestion costs associated with all other constraints  
10 in EDAM.
- 11 ○ The concern is not that PacifiCorp is providing an *imperfect* hedge,  
12 which is the characteristic of financial transmission rights provided  
13 by other day-ahead market operators, it is that PacifiCorp is providing  
14 *no hedge* for congestion arising on most of the constraints within the  
15 EDAM system.
- 16 ○ This misalignment between the constraints included in the  
17 congestion settlements and the constraints included in the  
18 congestion hedge provided to firm transmission customers makes  
19 the firm service provided by PacifiCorp to be substantially inferior to  
20 the treatment of firm transmission customers by either other RTO  
21 and ISO day-ahead markets or by individual TSPs under the *pro*  
22 *forma* OATT.

- PacifiCorp’s proposal eliminates much of the protection against the effects of congestion that customers in other day-ahead markets or in non-market areas receive by procuring firm transmission service.

While EDAM is similar to the day-ahead markets operating elsewhere in the United States, it differs substantially in its approach of returning congestion revenue<sup>1</sup> collected by the market back to participating transmission providers rather than to load-serving entities and other customers that have paid for firm transmission service. This departs from widely-accepted day-ahead market design norms, and would make it difficult for participating transmission service providers—such as PacifiCorp—to provide a reasonable congestion hedge to its firm transmission customers without accepting substantial financial risk. This risk of providing a more complete hedge would arise because CAISO will not allocate the congestion revenues associated with non-PacifiCorp constraints, which PacifiCorp would need in order to fund such a hedge.

However, while the questionable congestion allocation methodology approved for EDAM would make it difficult for PacifiCorp to provide a more complete congestion hedge to its firm transmission customers, it does *not* justify the PacifiCorp proposal. Accepting the EDAM congestion allocation methodology, PacifiCorp has the option of offering firm transmission service to its customers that would be reasonable and much more in line with the rights that all other firm transmission customers enjoy.

This can easily be accomplished by:

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<sup>1</sup> The EDAM design accounts for congestion using two categories. “Transfer Revenue” is associated with congestion at an interface between two participating BAAs and “Congestion Revenue” is associated with congestion on a constraint that is modeled inside a participating BAA. The issues discussed herein relate to the allocation of Congestion Revenue.

- 1           • Allowing customers to opt out of the EDAM and utilize their firm  
2           transmission rights through a physical scheduling process in advance of  
3           the EDAM auction.
- 4           • This would ensure that firm customers' rights are not inferior to its OATT  
5           by providing them protection against uncertain new congestion charges by  
6           allowing them to retain a physical option that is comparable to the physical  
7           hedge under the OATT.
- 8           • This would also foster the development of competitive organized markets  
9           in the West by providing firm transmission customers the freedom to opt-in  
10          to the market that promises the largest benefits for them. I see little benefit  
11          in making firm customers captive to the market in which their respective  
12          TSPs elect to participate.

13          In conclusion, I find PacifiCorp's proposal unjust and unreasonable, and clearly  
14          inferior to both the financial transmission rights RTOs and ISOs provide their firm  
15          transmission customers and to the physical scheduling rights firm transmission  
16          customers in non-market areas receive under the *pro forma* OATT. Therefore, I  
17          would recommend that the Commission reject PacifiCorp's proposal and  
18          encourage it to develop firm transmission rights comparable to the alternative I  
19          describe in this testimony.

20   **Q.   WHAT IS YOUR INTEREST IN THIS PROCEEDING?**

21   A.   I have devoted my professional career to the advancement of organized electricity  
22          wholesale markets. When designed and operated well, markets improve reliability,  
23          encourage efficient investment in new generation and transmission projects, and

1 minimize costs to consumers. I am encouraged by the significant momentum to  
2 embrace organized markets in the West, where organized markets have previously  
3 not gained traction, and I want those markets to be as successful as possible. But  
4 I have also seen the problems that can occur when markets are poorly designed.  
5 By highlighting the flaws with the EDAM design and the significant harm that would  
6 result from PacifiCorp's proposal to compel its firm transmission customers to  
7 participate in this market, I hope that these problems can be addressed. Allowing  
8 firm transmission customers the freedom to utilize their firm transmission rights as  
9 they choose will discipline the development of emerging electricity markets in the  
10 West and ultimately ensure customers are able to realize the benefits that  
11 organized electricity markets promise.

12 **II. FIRM TRANSMISSION RIGHTS HAVE ALWAYS ENTITLED CUSTOMERS TO**  
13 **THE VALUE OF OR A HEDGE FROM TRANSMISSION CONGESTION**

14 **Q. WHAT RIGHTS DO ALL OTHER MARKETS OR TRANSMISSION SERVICE**  
15 **PROVIDERS (TSPs) PROVIDE TO ITS FIRM TRANSMISSION CUSTOMERS?**

16 A. Customers that pay for the capital costs of the transmission system have  
17 historically always received the economic property rights to congestion on the  
18 transmission system, both in centralized markets and in non-market areas alike.  
19 Although the manner in which firm transmission customers receive these rights  
20 varies in centralized markets versus areas without markets, the rights are  
21 comparable.



1   **Q.    CAN YOU COMPARE AND CONTRAST THE PROPERTY RIGHTS THAT FIRM**  
2       **TRANSMISSION CUSTOMERS RECEIVE IN MARKET AND NON-MARKET**  
3       **AREAS?**

4    A.   Yes. In both cases, firm transmission customers receive rights that entitle them to  
5       the value of congestion. In centralized ISO or RTO Markets, firm transmission  
6       customers receive financial transmission rights (“FTRs”) that entitle the holder to  
7       receive the congestion price difference between the source and sink of the FTR or,  
8       alternatively, to the revenues from the sale of these FTRs. This provides the firm  
9       transmission customers the economic value of the transmission system as  
10      reflected by the transmission congestion. These rights also provide a hedge for  
11      firm transmission customers against their exposure to congestion costs associated  
12      with serving load in the market.

13      Firm transmission customers in non-market areas are similarly hedged from the  
14      effects of transmission congestion by receiving a high curtailment priority. When  
15      constraints arise on the TSP’s system or a neighboring system associated with the  
16      delivery of power with a firm transmission right, the customer’s scheduled  
17      transactions will be subject to curtailment only after all non-firm uses of the system  
18      have been curtailed. This can occur under the use of transmission line-loading  
19      relief procedures (“TLR”) in which firm uses of the system are the last to be  
20      curtailed to resolve congestion on a transmission constraint after all non-firm relief  
21      of the constraint has been utilized.

1   **Q.    IS THERE A COMMON PRINCIPLE THAT GOVERNS FIRM TRANSMISSION**  
2       **CUSTOMERS' TREATMENT IN MARKET AND NON-MARKET AREAS?**

3    A.    Yes. In both centralized markets and in non-market areas, *the customers that pay*  
4       *for the transmission system receive property rights that embody the congestion*  
5       *value of the system* through financial or physical transmission rights. The  
6       consistent application of this principle throughout the industry is no accident or  
7       coincidence, it is dictated by equity.

8   **Q.    IS PACIFICORP'S PROPOSAL CONSISTENT WITH THIS PRINCIPLE?**

9    A.    No. By neither granting a financial congestion hedge consistent with the firm  
10       transmission rights held on its system nor providing a physical right to schedule  
11       outside of the EDAM to avoid the congestion, PacifiCorp's proposal violates this  
12       principle. This is a fundamental and, in my opinion, completely unreasonable  
13       departure from provisions that govern the rights that firm transmission customers  
14       receive in both ISO and RTO markets and from TSPs in non-market areas.

15       The fact that PacifiCorp's proposal violates this fundamental principle has been  
16       obscured in this proceeding by the focus of parties on the topic of "parallel flow."  
17       As I explain below, whether congestion is caused by parallel flows or by direct  
18       flows is not relevant to the rights that firm transmission customers should be  
19       entitled to receive.

20   **Q.    WHAT IS "PARALLEL FLOW" AND WHY IS IT RELEVANT TO THIS**  
21       **PROCEEDING?**

22    A.    When generation is delivered to load within a centralized market or in a non-market  
23       area, the electricity will flow from where it is generated to where it is consumed

1 following the path of least resistance. Some of these flows will be on a neighboring  
2 system and are referred to as “parallel flow.” Parallel flow has been well  
3 understood for a long time. It is ubiquitous and largely unavoidable in an  
4 interconnected electric grid. However, as I explain below, firm transmission  
5 customers have generally not been exposed to the congestion effects associated  
6 with parallel flows in both centralized markets and in non-market areas  
7 administered by a TSP.

8 **Q. HOW IS PARALLEL FLOW MANAGED BY TSPs IN NON-MARKET AREAS?**

9 A. The industry has long recognized that transmission service—even though it may  
10 be described as being on a single path “from point A to point B” on the applicable  
11 transmission system—will often cause some level of parallel flow on neighboring  
12 systems. The parallel flows are recognized as an inherent component of the  
13 transmission service provided by a TSP, and neither the customer nor the TSP  
14 bear responsibility to other TSPs for the cost of managing unavoidable parallel flow  
15 on these neighboring systems. Each TSP is responsible for managing parallel  
16 flows on its system caused by the normal use of neighboring systems, just as  
17 neighboring systems bear the cost of accommodating parallel flows resulting from  
18 the TSP’s use of its own system.

19 This principle is applied consistently under various market structures. It has been  
20 recognized under the Commission’s open access principles, going back to Order  
21 No. 888 in 1996. Two forms of transmission service were established in Order No.  
22 888—network integration service and point-to-point service—neither of which

1 includes charges for parallel flows that are created over neighboring systems. This  
2 is the service that PacifiCorp has sold, and will continue to sell, under its OATT.

3 **Q. HOW IS PARALLEL FLOW BETWEEN TRANSMISSION OWNERS' SYSTEMS**  
4 **MANAGED *WITHIN* ORGANIZED MARKETS?**

5 A. When two or more transmission owners join the same organized market, all  
6 electrical flows within the combined market footprint are modeled by the market  
7 software, including parallel flows on one transmission owner's facilities arising from  
8 the dispatch of generation and load located within another transmission owner's  
9 system in the same organized market. LMPs at two locations in the same  
10 transmission owner's system can separate due to congestion on a transmission  
11 constraint in a different transmission owner's system in the same organized market.  
12 The impact of parallel flow is therefore embedded in the LMPs in the organized  
13 market.

14 However, every existing day-ahead organized market recognizes that entities that  
15 have firm transmission rights have economic property rights to congestion based  
16 on the source and sink of the rights or the generation and load. None of these  
17 markets distinguish the rights of firm transmission customers based on where the  
18 constraint is located within the RTO system. All rights are based solely on the  
19 source and sink.

20 The mechanism used to provide the economic property rights to the congestion  
21 revenue is source-to-sink financial transmission rights (or an alternative method  
22 that also delivers a source-to-sink congestion revenue allocation). A source-to-  
23 sink financial transmission right is modeled as an injection of energy at the source

1 location and a withdrawal of energy at the sink location, with the customer  
2 receiving a hedge in proportion to the rights it holds across each of the constraints  
3 that contributes to price separation between those locations. Just as in non-market  
4 areas, customers that purchase and use firm transmission service on one  
5 transmission system are thus either not charged for parallel flow on other systems,  
6 or if they are charged, they receive source-to-sink congestion revenues to offset  
7 and hedge against such charges.

8 **Q. HOW IS PARALLEL FLOW MANAGED *BETWEEN* ORGANIZED MARKETS?**

9 A. The same principle has been applied when dealing with parallel flows *between*  
10 organized markets. The RTOs in the Eastern Interconnection that cause  
11 substantial parallel flows on each other's systems generally have developed joint  
12 operating agreements that explicitly account for parallel flows. Specifically, these  
13 agreements include the following elements:

- 14 • Parallel flow effects on external constraints are explicitly included in each of  
15 the organized markets' software and priced in the LMPs.
- 16 • Firm flow entitlements are created that allow the firm transmission use in  
17 one organized market to place parallel flow on the neighboring system  
18 without paying for congestion.
- 19 • Although firm customers settle at LMPs that would cause them to pay for  
20 the external congestion they contribute to on the neighboring system, the  
21 customers receive financial transmission rights that provide a hedge for that  
22 congestion.

Hence, there is alignment for firm transmission customers between their exposure to congestion costs, whether internal to the organized markets or in neighboring markets, and the economic property rights to congestion revenues that would serve as an effective hedge. This alignment is comparable to the hedge firm customers receive within an organized market.

**Q. DOES PACIFICORP'S PROPOSAL DEPART FROM THESE HISTORICAL TREATMENTS OF FIRM TRANSMISSION CUSTOMERS?**

A. Yes. PacifiCorp's proposal represents a substantial departure from the rights and entitlements firm transmission customers receive in the organized markets and non-market areas. The historical treatment of firm transmission customers in the various contexts described above are entirely consistent with foundational principles of equity. Historically, firm transmission customers that pay for firm transmission rights from a source location to a sink location receive property rights to the value of the transmission system from that source to that sink. This value has historically been provided through one of two alternatives: (1) the right to schedule power physically between the locations and not be subject to curtailment until and unless all non-firm flows have been curtailed, or (2) the right to receive congestion revenues that would hedge the congestion costs between the two locations. The PacifiCorp proposal provides neither alternative.

The problem fundamentally is that PacifiCorp's congestion charges embedded in the LMPs will be misaligned with the congestion rights they provide to their firm transmission customers. Rather than providing rights that reflect the value of all congestion embedded in the LMPs at the source and sink of the firm transmission

1 service, PacifiCorp will provide rights only to constraints that are located on the  
2 PacifiCorp system rather than all constraints in the EDAM that are included in the  
3 LMPs on the PacifiCorp system.

4 Based on our experience in market and non-market areas over the past 25 years,  
5 this differentiates the PacifiCorp proposal from the treatment of firm transmission  
6 customers in every other context. Rather than providing rights that reflect the value  
7 of all congestion embodied in the LMPs at the source and sink of the firm  
8 transmission service, PacifiCorp is selectively providing rights to only the portion  
9 of the congestion in its LMPs that are associated with constraints on its own system.  
10 I believe this is both unprecedented and unreasonable.

11 **Q. IN YOUR OPINION, IS PACIFICORP'S PROPOSAL CONSISTENT WITH OR**  
12 **SUPERIOR TO THE *PRO FORMA* OATT?**

13 A. No. As explained earlier, a customer that purchases and uses firm transmission  
14 service from PacifiCorp will be charged for congestion on all constraints throughout  
15 the EDAM footprint, but receive a rebate of congestion revenue on only those  
16 constraints located on the PacifiCorp system.

17 Under Order No. 888 and the *pro forma* OATT, neither the TSP (PacifiCorp, in this  
18 case) or customers using its transmission service are charged any costs related to  
19 parallel flow on other systems. For this reason alone, PacifiCorp's proposed  
20 amendments are inferior to the *pro forma* OATT.

21 In all other day-ahead markets, firm transmission customers receive financial  
22 transmission rights that provide a hedge against congestion caused by parallel

1 flows on other systems within the market. This ensures that these transmission  
2 providers are providing service that is not inferior to the *pro forma* OATT.

3 PacifiCorp's proposal is unique because it exposes firm customers to congestion  
4 on all constraints within the EDAM market except those on the PacifiCorp system.  
5 I find this to be unambiguously inferior to the *pro forma* OATT or the firm  
6 transmission service provided by every other day-ahead market operator.

7 **Q. PACIFICORP AND CAISO HAVE DISPUTED THE LIKELY MAGNITUDE OF**  
8 **THE CHARGES FOR PARALLEL FLOW CONGESTION. HOW IS THIS**  
9 **RELEVANT?**

10 A. In my view, the likely magnitude of the charges has very little relevance unless  
11 they are able to show with certainty that they will be *de minimis*. In our experience,  
12 congestion patterns tend to be volatile and uncertain so making such a showing  
13 with any credibility is likely impossible. This is underscored by PacifiCorp's own  
14 estimate (in its Answer in this proceeding) suggesting that there will be over \$1.3  
15 billion of congestion charges in EDAM every year. Inappropriately allocating even  
16 a fraction of that total would produce substantial unreasonable charges for firm  
17 transmission customers.

18 Further, arguing that a tariff proposal that is inequitable and unreasonable in its  
19 design should be approved because its flaws will not result in large charges is  
20 extremely dubious. I would advise that this debate be ignored and recommend  
21 that the Commission focus on the reasonableness of PacifiCorp's proposed tariff.



1     **III.     EDAM IS AN ABERRATION FROM OTHER DAY-AHEAD MARKETS BUT**  
2                   **DOES NOT JUSTIFY THE PACIFICORP PROPOSAL**

3     **Q.     PACIFICORP’S PROPOSAL IS INTENDED TO ENABLE ITS PARTICIPATION**  
4           **IN EDAM. WHAT IS YOUR UNDERSTANDING OF EDAM?**

5     A.     EDAM is a day-ahead organized market to be operated by the CAISO. It is  
6           intended to schedule generation resources to meet demand at the lowest cost  
7           given available transmission capability to deliver the electricity to load. It will  
8           establish LMPs at each location reflecting the marginal cost of producing and  
9           delivering the electricity. This is a standard approach used in all other modern  
10          electricity markets, and is sometimes referred to as “security-constrained  
11          economic dispatch.”

12    **Q.     IS EDAM SIMILAR TO THE ISO/RTO MARKETS THAT YOU MONITOR?**

13    A.     No. My understanding is that there has not yet been broad support in the West to  
14          transition to a full ISO or RTO type of framework, but there has been strong support  
15          for a day-ahead organized market, which is one of the elements of an ISO or RTO.  
16          Other elements common to ISO and RTOs include consolidation of balancing  
17          authorities, consolidation of transmission service providers, and a common  
18          resource adequacy requirement. EDAM does not include any of these features of  
19          a full ISO or RTO.

20    **Q.     IS THE DESIGN OF EDAM SIMILAR TO THAT OF OTHER DAY-AHEAD**  
21          **ORGANIZED MARKETS?**

22    A.     No. While EDAM will apply LMP pricing to generation and load in largely the same  
23          way as most day-ahead organized markets, the design of EDAM substantially

1 deviates from the design of other day-ahead markets in how congestion costs are  
2 collected and distributed back to the EDAM participants.

3 Day-ahead markets operated by ISOs or RTOs typically achieve this through the  
4 use of financial transmission rights ("FTRs"), which entitle the holder to receive the  
5 congestion price difference between the source and sink of the FTR. The market  
6 operator collects congestion revenue from the settlement of generation and load  
7 at different LMPs and uses this congestion revenue to fund the payments under  
8 the FTRs. This is an extremely important feature because market participants face  
9 congestion charges that can be unpredictable. Holding an FTR that offsets those  
10 charges hedges this significant financial risk. In general, load-serving entities and  
11 other participants that hold firm transmission rights are allocated FTRs or the  
12 auction revenues from the sale of the FTRs. As described above, this is  
13 fundamentally equitable since firm transmission customers are responsible for the  
14 capital costs of the transmission system.

15 Any day-ahead market that applies LMP pricing to collect transmission congestion,  
16 but lacks an FTR mechanism or a comparable means of delivering congestion  
17 revenue to entities with firm transmission rights on a source-to-sink basis, is an  
18 *incomplete day-ahead market* and lacks fundamental elements that ensure an ISO  
19 is workable for a wide range of participants and activity.

20 **Q. WHY IS IT CRITICAL FOR MARKET PARTICIPANTS TO BE ABLE TO**  
21 **MANAGE THE COST AND RISK OF CONGESTION CHARGES?**

22 A. Any market participant scheduling power between locations on the transmission  
23 system can face substantial locational risks associated with congestion. This

1 includes load-serving entities using their generation to serve their load.  
2 Congestion can cause a load-serving entity to receive a much lower locational  
3 price for its generation than the locational price it is charged for its load. These net  
4 congestion costs can be volatile and uncertain. A properly constructed source-to-  
5 sink congestion revenue offset that provides a substantial hedge against such  
6 charges is essential for facilitating efficient market activity. Effective congestion  
7 hedges are necessary to support efficient short-term actions, such as bilateral  
8 transactions, as well as long-term investment decisions in new resources needed  
9 to serve load. Without effective congestion hedges, the long-term nature of  
10 resource investment decisions – 30 years or more – would carry substantial  
11 locational risk that will inhibit investments by risk averse market participants. This  
12 is problematic because such investment is necessary to maintain reliability over  
13 time.

14 This is a major reason why all ISO and RTO markets provide rights to firm  
15 transmission customers that are designed to return the hourly congestion charges  
16 between the source and sink that are collected by the market operator.

17 **Q. DOES EDAM INCLUDE A MECHANISM TO RETURN SOURCE-TO-SINK**  
18 **CONGESTION CHARGES TO FIRM TRANSMISSION CUSTOMERS?**

19 **A.** No. Under the EDAM design, the market operator will collect congestion revenue  
20 through the settlements of generation and load at their respective LMPs. But this  
21 congestion revenue will not be allocated to participants that have obtained firm  
22 transmission rights. Instead, congestion revenue will be allocated to participating  
23 TSPs based on the location of the transmission constraints that created price

1 separation in the day-ahead market. Each TSP will receive the congestion  
2 revenue associated with constrained transmission facilities on its own system, but  
3 the revenue collected associated with parallel flows on constraints on other TSPs'  
4 systems will be allocated to those neighboring TSPs. While each TSP is  
5 responsible for allocating the congestion revenue it receives from the market  
6 operator among its individual transmission customers, it will not receive the  
7 revenue needed to offset charges for parallel flow congestion on other systems.

8 **Q. ISN'T IT THE CASE THAT EVEN ISOS AND RTOS WITH FULL FINANCIAL**  
9 **TRANSMISSION RIGHTS DO NOT PROVIDE A 'PERFECT HEDGE'?**

10 A. Yes. For a variety of reasons, FTRs do not always provide a perfect hedge. First,  
11 ISO and RTOs that administer FTRs do not always collect sufficient revenues to  
12 fully fund the FTRs. This primarily occurs when outages or other things reduce the  
13 capability of the system below the capability included in the FTRs. This causes  
14 FTRs to be "under-funded", but most FTRs have been fully funded in the markets  
15 we monitor and when under-funding does occur, it is generally a very small  
16 percentage of the FTRs' value. Second, transmission capability may not always  
17 be sufficient to deliver all of a participant's generation to its load, which can result  
18 in a customer receiving less FTRs than would be necessary to be perfectly hedged.  
19 However, there is an enormous difference between a proportional reduction in the  
20 *quantity or value* of transmission rights that firm customers receive between the  
21 specific source and sink of the transmission right, and the mechanism proposed  
22 by PacifiCorp. Under its proposal, the transmission rights receive the congestion  
23 revenue offset for only a subset of the transmission constraints between the

1 applicable source and sink, while remaining completely unhedged and exposed to  
2 the congestion on all other remaining transmission constraints.

3 In all ISOs and RTOs, FTRs defined between a source location and a sink location  
4 are entitled to the congestion associated with every constraint that is priced in the  
5 LMPs at the source and sink. This is fundamentally different and vastly superior  
6 to the PacifiCorp proposal.

7 Hence, the problem is *not* that the PacifiCorp proposal fails to provide a “perfect  
8 hedge”, which is unrealistic. The problem is that it provides *no hedge* for most of  
9 the constraints in the EDAM system. This is simply not consistent with the  
10 treatment of firm transmission customers in any other market.

11 **Q. ARE YOU CONCERNED ABOUT THE ALLOCATION OF CONGESTION**  
12 **REVENUE UNDER THE CURRENT EDAM DESIGN?**

13 A. Yes. It is highly problematic and somewhat misguided to allocate congestion  
14 revenue based on where the transmission facility is located rather than based on  
15 the sources and sinks where the congestion revenues are actually collected. This  
16 misalignment creates a number of problems, including:

- 17 • Generating windfalls for some of the transmission systems, at the expense  
18 of others.
- 19 • Creating disincentives to pursue upgrades that would alleviate these  
20 constraints.
- 21 • Penalizing transmission systems (and their ratepayers) that do make the  
22 necessary investments to expand their systems, since they will incur the

1 cost of those investments but the value in EDAM will be allocated to under-  
2 built systems that are most affected by parallel flows.

- 3 • Making it more difficult for firm transmission customers of a TSP in the  
4 EDAM to receive rights that are comparable to those received in other  
5 markets or under the OATT framework.

6 Each of these results are contrary to the existing OATT framework and contrary to  
7 the design of other day-ahead markets, which recognize that transmission service  
8 includes an entitlement to cause parallel flow on other systems when that  
9 transmission service is used.

10 **Q. DOES THE POOR CONGESTION REVENUE ALLOCATION UNDER EDAM**  
11 **NECESSITATE OR OTHERWISE JUSTIFY THE PACIFICORP PROPOSAL?**

12 A. No. Under EDAM, the participating TSP will not receive the congestion revenues  
13 necessary to provide its firm transmission customers with a hedge for the full  
14 congestion price difference between the source and sink of their transmission  
15 service. Nonetheless, this does not justify providing firm transmission customers  
16 only a partial hedge against the EDAM congestion, which is clearly inferior to their  
17 current transmission service, service under the *pro forma* OATT, or the rights  
18 provided by all other organized markets.

1 **Q. GIVEN THAT THE EDAM CONGESTION REVENUE ALLOCATION METHOD**  
 2 **HAS BEEN APPROVED, IS IT POSSIBLE FOR PACIFICORP TO PROVIDE**  
 3 **REASONABLE FIRM SERVICE THAT IS CONSISTENT WITH OR SUPERIOR**  
 4 **TO THE *PRO FORMA* OATT?**

5 A. Absolutely. PacifiCorp may be limited in its ability to offer a congestion hedge (e.g.,  
 6 a conventional FTR) that is comparable to those offered in RTO markets without  
 7 accepting substantial funding risk itself. This is because the congestion allocation  
 8 misalignment described above under EDAM will remove any assurance that  
 9 PacifiCorp will receive sufficient congestion revenues from the market operator to  
 10 fund a congestion hedge comparable to an FTR. However, PacifiCorp has other  
 11 options that would be much more reasonable than simply stripping its firm  
 12 transmission customers of their congestion hedge associated with all transmission  
 13 constraints outside of the PacifiCorp system. I discuss these options in the next  
 14 section.

15 **IV. ENABLING THE USE OF FIRM TRANSMISSION RIGHTS AHEAD OF EDAM**  
 16 **WOULD ALLOW PACIFICORP TO PARTICIPATE IN EDAM WITHOUT**  
 17 **SUBSTANTIALLY HARMING ITS FIRM CUSTOMERS**

18 **Q. GIVEN THAT EDAM HAS BEEN APPROVED, WHAT OPTIONS ARE**  
 19 **AVAILABLE FOR PACIFICORP TO PARTICIPATE IN EDAM WHILE**  
 20 **PROVIDING JUST AND REASONABLE TRANSMISSION SERVICE?**

21 A. The simplest option is to modify PacifiCorp's Tariff to enable firm transmission  
 22 customers to participate in EDAM on a voluntary basis. By allowing customers to  
 23 opt out of the EDAM and utilize their firm transmission rights through a physical

1 scheduling process in advance of the EDAM auction, PacifiCorp would ensure their  
2 rights are not inferior to its OATT.

3 This would provide firm transmission customers with protection against uncertain  
4 new congestion charges that is comparable to the physical hedge under the OATT  
5 and the financial hedge available through FTRs in ISO and RTO markets.  
6 Importantly, if the benefits of EDAM are large for customers, the congestion  
7 caused by parallel flows are limited, or CAISO modifies its congestion revenue  
8 allocation methodology as it has promised to consider, PacifiCorp's customers will  
9 have the option to opt in to EDAM. This would ensure they are held harmless  
10 under the EDAM's anomalous and questionable congestion allocation  
11 methodology.

12 **Q. PACIFICORP AND CAISO ARGUE THAT THERE HAVE BEEN STRICT LIMITS**  
13 **ON 'CARVE OUTS' IN SEVERAL ISOS AND RTOS. IS THIS COMPARISON**  
14 **VALID?**

15 A. No. As I said earlier, EDAM is not a ISO or RTO market; it is an incomplete day-  
16 ahead market. Further, it will be operating in a geographic area with a substantial  
17 quantity of load and generation that is not participating in EDAM. In reality, a large  
18 quantity of generation and load that will affect transmission flows over facilities  
19 within the EDAM systems will be scheduled by SPP under the Markets+ market or  
20 may not participate in any market. Therefore, CAISO must be prepared to  
21 accommodate the flows caused by non-participating load and generation. In other  
22 words, it must operate the EDAM recognizing that only a portion of the  
23 transmission capability associated with facilities in participating areas will be



1 available to the EDAM. Whether the non-participating load and generation is  
2 located on the transmission system of a participating TSP, such as PacifiCorp, or  
3 on a neighboring system is immaterial. In both cases, the requirement on EDAM  
4 would be the same, to optimize the available transmission capability given the  
5 flows caused by firm load and generation that is not participating in EDAM.

6 In fact, CAISO itself appears prepared to implement the election of firm  
7 transmission customers within its system to not participate in EDAM. It is only  
8 PacifiCorp that has proposed to deny customers this flexibility. The CAISO EDAM  
9 tariff states:

10 Transmission Not Available in the Day-Ahead Market. If the CAISO is  
11 informed through the prospective EDAM Entity implementation process or  
12 by the EDAM Entity Scheduling Coordinator for the EDAM Transmission  
13 Service Provider that accommodation of incremental intra-day schedules  
14 in the Real-Time Market should be unavailable in the Day-Ahead Market  
15 according to the EDAM Transmission Service Provider tariff, the CAISO  
16 will accept a notification from the EDAM Entity Scheduling Coordinator  
17 associated with the EDAM Transmission Service Provider and will adjust  
18 Day-Ahead Market availability of the impacted transmission elements and  
19 the associated transmission service rights.<sup>2</sup>

20 Hence, while the EDAM may be sufficiently beneficial to facilitate the choice by  
21 firm transmission customers to participant, I find no legitimate reason to compel  
22 these customers to participate in EDAM. I believe transmission customers should  
23 have an opportunity to schedule the use of their firm PacifiCorp transmission  
24 service ahead of EDAM, with EDAM optimizing the use of generation and  
25 transmission that has not already been scheduled. This is analogous to the ability  
26 that customers have today to schedule the use of their transmission rights ahead

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<sup>2</sup> California Independent System Operator Corp., FERC Docket No. ER23-2686, Transmittal Letter, Attachment A-2, Tariff § 33.18.3.3 (Aug. 23, 2023).

1 of the Western EIM or ahead of SPP's Western Energy Imbalance Services market.  
2 This is not equivalent to a "carve out" in the context of ISOs or RTOs.

3 **Q. PACIFICORP AND CAISO ALSO CLAIM THAT CUSTOMERS MUST BE**  
4 **REQUIRED TO PARTICIPATE IN EDAM TO PREVENT WITHHOLDING OR**  
5 **UNDERUTILIZATION OF TRANSMISSION. ARE THESE VALID CONCERNS?**

6 A. No. Withholding transmission or underutilizing transmission are concerns that  
7 arise when valuable transmission capability is unused. If the option I describe  
8 above were implemented, it would raise no risk that the capability would not be  
9 fully utilized. Scheduling the use of firm transmission rights ahead of EDAM would  
10 utilize the capability. Only unscheduled transmission rights would potentially result  
11 in underutilization of the transmission system, but this is impossible because  
12 EDAM would be entitled to use all of the unscheduled transmission capability. In  
13 other words, whether the customer's use of the transmission takes place "inside"  
14 or "outside" EDAM does not change how much transmission is available for use.

15 **Q. WHAT HARMFUL OUTCOMES OF PACIFICORP'S PROPOSAL WOULD BE**  
16 **AVOIDED BY ACCEPTING THE ALTERNATIVE YOU SUGGEST?**

17 A. If PacifiCorp's proposal to make all of its firm transmission customers captive to  
18 EDAM is accepted and subject to substantial unhedged congestion charges, I  
19 believe it would generate a number of adverse outcomes and incentives, including:

- 20 • Existing contracts by load-serving entities that source generation needed to  
21 meet their load obligations will now be subject to uncertain congestion costs  
22 that may make these existing contracts uneconomic or put them in financial  
23 distress.

- 1           • Long-term investment incentives would be substantially affected by the  
2           unhedged congestion risk that the PacifiCorp proposal would create. Most  
3           participants, including LSEs, are risk averse so unhedged risk would likely  
4           discourage efficient investment or motivate developers to build in less  
5           economic locations that may be exposed to less congestion risk.
- 6           • The demand to purchase firm transmission service from PacifiCorp may  
7           decline, since this service would become less valuable as firm customers  
8           are exposed to new congestion charges they currently do not pay. Any  
9           reduction in PacifiCorp's sale of transmission service will likely need to be  
10          recovered from its native load customers through higher rates.
- 11          • Finally, the incentives to upgrade and expand the transmission system in  
12          the West will be weakened, as previously described.

13          Each of these adverse outcomes would be mitigated by the alternative option  
14          described in this section because this would provide added protection from  
15          uncertain congestion charges for the firm customers and increase the value of  
16          PacifiCorp's firm transmission service.

17   **Q: ARE THERE OTHER HARMFUL CONSEQUENCES OF REQUIRING EDAM**  
18   **PARTICIPATION AS A CONDITION OF TRANSMISSION SERVICE?**

19   **A:** Yes. Under open access principles, transmission providers do not dictate how a  
20   transmission customer uses its firm transmission service. PacifiCorp's proposal  
21   would violate this principle, not only by its requirement that transmission customers  
22   use their rights by participating in EDAM, but by its apparent opposition to  
23   transmission customers using their rights to participate in Markets+. Provided that

adequate communications protocols are in place—which will likely be necessary regardless—there is no reason why a customer should not be able to schedule the delivery of a market-optimized quantity of energy determined through Markets+. Allowing deliberate efforts to block participation in other markets—or even simply failing to enable participation in other markets—may undermine the development of competitive and efficient markets in the West.

**V. CONCLUSIONS AND RECOMMENDATIONS**

**Q. WHAT RECOMMENDATION WOULD YOU PROVIDE THE COMMISSION AS IT CONSIDERS PACIFICORP'S PROPOSAL?**

A. Based on my evaluation of the proposal described in this testimony, I respectfully recommend that the Commission reject the proposal. Compelling firm transmission customers to transact and settle through EDAM without providing an effective hedge against the new congestion costs they will be exposed to is plainly inferior to the *pro forma* OATT. It is also clearly inferior to the treatment of firm transmission customers in all other organized day-ahead markets with LMP-based settlements. Hence, it is likely to produce outcomes that are not just and reasonable in many cases.

**Q. WHAT DO YOU RECOMMEND AS A PATH FORWARD TO ENABLE PACIFICORP'S PARTICIPATION IN EDAM?**

I believe that PacifiCorp could meet the requirement for transmission service that is consistent with or superior to the *pro forma* OATT, despite the incomplete nature of the current EDAM design. This could be accomplished by submitting a revised tariff that preserves PacifiCorp customers' ability to schedule the use of their firm

1 transmission service ahead of EDAM, just as they are currently able to schedule  
2 their transmission ahead of the Western EIM. Several parties in this proceeding  
3 have provided more detail on a mechanism that would meet this need. Such a  
4 solution would not raise concerns about withholding or underutilization of  
5 transmission since any remaining unscheduled transmission capability could be  
6 utilized by the EDAM

7 The more durable solution, in my view, requires changes to the EDAM tariff so that  
8 the allocation of congestion revenue reflects firm transmission rights. This would  
9 ensure that firm transmission customers that participate in EDAM receive a  
10 congestion hedge comparable to the FTRs provided by all other day-ahead  
11 markets. This is equitable because such customers are largely responsible for  
12 covering the capital costs of the transmission system. This solution is also efficient  
13 because such rights facilitate efficient bilateral contracting, as well as long-term  
14 investment decisions. These insights are well-understood in established RTO and  
15 ISO markets. Hence, I encourage CAISO to consider improving its congestion  
16 revenue allocation rules for EDAM, which would allow its participating transmission  
17 providers to provide these types of transmission rights or congestion hedges.

18 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

19 **A.** Yes.

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

**PacifiCorp**

)  
)  
)

**Docket No. ER25-951**

**VERIFICATION**

I, David B. Patton, verify under penalty of perjury that I have read the testimony, know the contents thereof, and that the facts and representations set forth therein are true to the best of my knowledge, information, and belief.

  
\_\_\_\_\_  
David B. Patton

Dated: March 28, 2025

## **ATTACHMENT 2**

### **SUMMARY OF CAISO'S MISDIRECTION ON THE ALLOCATION OF CONGESTION FROM PARALLEL FLOWS**

## ATTACHMENT 2

### PART A

#### SELECTED MATERIALS WHERE THE CAISO OBSCURED THAT CUSTOMERS SCHEDULING ON FIRM TRANSMISSION RIGHTS WOULD BE EXPOSED TO PARALLEL FLOW CONGESTION CHARGES IN EDAM

##### EDAM Policy Development

###### March 2022

As part of its [presentation](#) during its March 17, 2022 meeting of EDAM Working Group 2, it was CAISO that described its approach as a “perfect hedge”:

##### EDAM Internal BAA Contract Settlement

- The self-schedules from G1, G2, and L under the CRN clear IFM with a high scheduling priority
- LMPs
  - BAA 1 MEC: \$20;
  - G1 LMP: \$15/MWh; G2 LMP: \$15/MWh, and L LMP: \$25/MWh
- Settlement
  - SC1 is paid \$1,125 for G1; Collect \$375 Congestion
  - SC2 is paid \$375 for G2; Collect \$125 Congestion
  - SC3 is charged \$2,500 for L; Collect \$500 Congestion
  - The SCs in aggregate receive financial rights under the CRN
    - CRN will receive the perfect hedge for \$1,000;
  - BAA1 is neutral

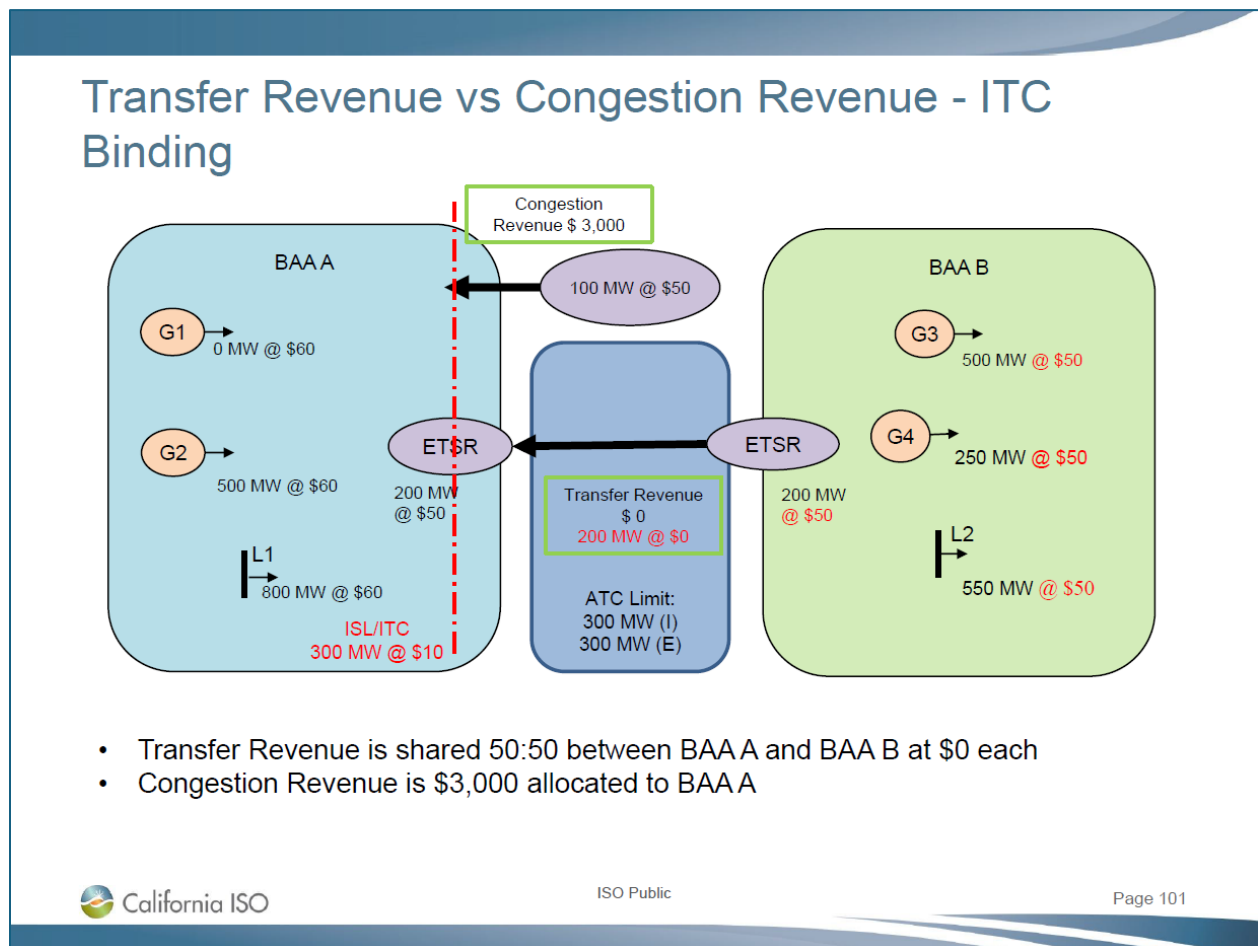
###### September 2022

On September 14, 2022, the CAISO held a stakeholder workshop including hypothetical examples of internal constraints and associated settlement of congestion revenues. The [CAISO slides](#) from that presentation are included as Attachment D to the CAISO’s March 7, 2025



Answer, which it describes as “a clear example during a technical workshop in the stakeholder process that showed the calculation and distribution of congestion revenue and illustrated how congestion revenue, separate from transfer revenue, would be allocated to the balancing area where the constraint is located.”

The example constructed by the CAISO shows that a binding internal constraint (“ITC”) in BAA A *does not* result in any congestion price differences in BAA B (*i.e.*, all prices in BAA B are identical). This example avoids consideration of any parallel flows on BAAA as a result of generation and load within BAA B:



Slide 103 provides a further example in which the internal constraint in BAA A is binding, but causes no congestion price differences in BAA B (*i.e.*, also assumes zero parallel flow).

## **Draft EDAM Final Proposal**

### **October 2022**

In CAISO's October 31, 2022 [Draft EDAM Final Proposal](#), CAISO explained on page 41 its design approach as it relates to congestion charges:

The draft final proposal is for the EDAM transmission provider to hold all firm point to point and NTIS customers, including the firm point to point customers that exercise their firm transmission rights after 10:00 a.m. day ahead, harmless from EDAM transfer and congestion costs to the extent feasible by offsetting such potential costs with EDAM transfer and congestion revenues. Shortfalls or excesses of these offsets should be allocated to measured demand which is largely the case for WEIM entities under their OATTs today. This is consistent with the treatment of late schedule submissions under the OATT where the transmission customer is not subject to additional charges for exercising its firm transmission rights to the extent the transmission provider can accommodate the schedule. However, as indicated above, the transmission

### **November 2022**

In its comments on CAISO's October 31, 2022 Draft EDAM Final Proposal, [PacifiCorp expressed](#) that it recognized and supported this design approach:

## Contact

Nadia (Nadia.Wer@PacifiCorp.com)

#### **4. TRANSMISSION AVAILABILITY: Please provide your organization's comments on the overall design for how transmission is made available to the market under the transmission "buckets" framework and the different underlying pathways for how transmission customer exercise their transmission rights or otherwise make transmission available to the market as described in section II.B.1 of the draft final proposal:**

PacifiCorp acknowledges the CAISO's work on continuing to refine the treatment of transmission rights through the "buckets" and "pathways" model. We appreciate the CAISO's responsiveness to stakeholder questions and concerns considering the challenges inherent in making a full day-ahead market co-exist with the OATT in this manner.

The Draft Final Proposal clarifies that "ETC/TOR" treatment is available to all existing transmission rights under the OATT, including both NITS customers and point-to-point customers. As we understand the Draft Final Proposal, this treatment will permit those existing OATT customers to use self-schedule functionality to direct its resources to its loads, which would exempt such customers from any congestion charges associated with its transmission usage. We further understand, however, that the EDAM will still clear such self-schedules through the market and an OATT customer will still pay, and be paid, the locational marginal price notwithstanding the use of a self-schedule. Stated another way, giving OATT customers ETC/TOR treatment for self-schedules associated with their OATT rights will exempt them from congestion charges (and congestion revenues) but will not take them entirely out of the market. In general, PacifiCorp believes the CAISO should offer this ETC/TOR treatment for OATT rights, at least in the initial roll-out of EDAM. In the long run, PacifiCorp is concerned that overuse of self-schedules may degrade the quality of

## **EDAM Final Proposal**

### **December 2022**

CAISO's December 2022 [EDAM Final Proposal](#) that was approved by its Board included multiple reference to the proposal to hold all firm point to point and network transmission customers harmless from EDAM transfer and EDAM congestion costs:

### **Pages 15-16:**

Base schedules are inappropriate in the day-ahead market, however, because they can cause undue cost-shifting to other market participants. In addition, they are unnecessary because self-scheduling and the exercise of existing transmission rights can achieve a similar result to base scheduling.

The EDAM will permit an end result similar to base scheduling through self-scheduling of supply and the exercise of existing transmission rights, but the resources will be directly settled through the market with the ISO. A self-schedule in the market indicates the resource does not have an economic offer expressing a willingness for the market to optimize and commit it. Self-scheduled resources are price-takers that want their output to flow irrespective of market prices. As discussed below, transmission customers can also utilize their transmission rights and pair their transmission rights with a self-schedule. This reflects that the participant submitting a generation self-schedule wants the resource's output to flow and that it has existing

transmission rights – whether under the OATT or legacy arrangements – to deliver that generation. This pairing of existing transmission rights and a self-schedule ensures through settlements that the participant exercising these rights is not charged for transmission and is held harmless for the congestion component between source and sink.

#### Page 34:

indicates self-commitment. Self-schedules associated with transmission rights may also have a higher scheduling priority compared to other self-schedules not associated with transmission rights. Self-schedules supported by transmission rights may be afforded a hedge against marginal congestion differences between the network locations of their sources (supply) and their sinks (demand), which would mitigate potential exposure to congestion price differences, either positive or negative, between the source and the sink. Through this framework, the EDAM will optimize resource commitment in the day-ahead market while respecting the exercise of transmission rights.

In addition to legacy (pre-OATT) contract rights and third party transmission ownership rights, firm OATT transmission rights held by customers within an EDAM BAA that do not support transfers between EDAM BAAs<sup>27</sup> will be afforded scheduling and settlement similar to firm transmission rights between EDAM BAAs and that the accrued internal congestion revenues will be settled with the EDAM entity. To receive this treatment, which the ISO has referred to as "ETC/TOR treatment," internal firm OATT transmission service customers must follow the same scheduling timelines associated with pathway 1, described further below, *i.e.*, they should schedule these transmission rights in the day-ahead market by 10:00 a.m. or ultimately exercising them at a later time. Legacy (pre-OATT) contract rights and third party transmission

#### Page 42:

The proposal is for the EDAM transmission provider to hold all firm point to point and NTIS customers, including the firm point to point customers that exercise their firm transmission rights after 10:00 a.m. day ahead, harmless from EDAM transfer and congestion costs to the extent feasible by offsetting such potential costs with EDAM transfer and congestion revenues. This element should be a standardized requirement across the participating EDAM balancing areas under their OATTs. However, disposition of shortfalls or excesses of these offsets do not have

Pages 57 – 58:

An important design component of the transmission framework is to allow transmission customers to exercise their transmission rights, **whether under the OATT** or as legacy (pre-OATT) transmission arrangements. In the ISO market today, the market recognizes the exercise of legacy contracts through functionality known as the exercise of “ETCs/TORs.”<sup>48</sup> An entity holding a legacy transmission contract or a transmission ownership right exercises these rights by submitting a self-schedule that is paired with the ETC/TOR. This indicates to the market the exercise of transmission rights that is not subject to a transmission charge, receives a congestion hedge between the source and the sink, and has a high scheduling priority. The permissible parameters of ETC/TOR rights are defined by instructions provided to the ISO by the transmission owner - the ISO does not interpret existing contracts or define ownership rights.

Throughout the discussion of the transmission commitment design, the proposal has alluded to the exercise of ETC/TOR functionality to enable the transmission customer to exercise its OATT (or legacy) transmission rights and also obtain the hedge on the congestion. The congestion hedge not only precludes the accrual of congestion costs, it also precludes the accrual of congestion revenues. Functionality and procedures are necessary to support the exercise of existing transmission rights, including registration of the transmission rights so they are known

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<sup>48</sup> ETC/TOR functionality refers to the **mechanism** for exercising existing transmission contracts and transmission ownership rights. It is used in this context to reference the functionality, **not the rights**.



Transmission rights in EDAM afforded ETC/TOR like treatment must be registered in the ISO master file following coordination between the transmission customer or transmission owner who holds the transmission rights and the EDAM entity (*i.e.*, the transmission owner or transmission service provider) that will validate the transmission rights. The entities would then coordinate with the ISO regarding the submission of transmission rights and transmission curtailment (TRTC) instructions that define the nature and scope of transmission rights. Once the TRTC instructions are finalized and registration in the master file is established, the transmission rights will be assigned a contract reference number (CRN) that identifies them. This unique number, which could correspond to the numerology used by the transmission owner if it is compatible with the ISO's systems, must be utilized when self-scheduling the use of such eligible transmission. The CRN also provides an indication to settlements not to assess transmission charges with the exercise of these rights, and the assigned scheduling priority in the market.<sup>50</sup> One stakeholder commented that the registration process for transmission contracts may be overly burdensome, especially with sizable volumes of transmission contracts that may be prevalent across transmission providers and balancing area. The ISO recognizes these concerns and is open to working with individual EDAM entities to find ways to ease this burden, including the potential aggregation of transmission rights that may not require registration of individual transmission contracts.

Because the EDAM entity transmission provider will continue to sell short term firm transmission under its OATT, it will also be necessary to design a system or mechanism where monthly, weekly and daily firm transmission reservations in particular can be exercised, released, or otherwise made available to the market. The transmission customer would register, in coordination with the EDAM entity not only transmission rights across interfaces between EDAM BAAs, but also point-to-point transmission rights that are internal to the system that they plan to exercise.

Page 117:

Scheduling Coordinators who self-schedule energy in the IFM using their ETC/TOR rights will settle at the LMP in a manner similar to all other day ahead schedules. However, the balanced portion of ETC/TOR schedules is eligible for mitigation against congestion. The ISO will facilitate this mitigation by reversing the marginal cost of congestion component of the LMP difference between the balanced source day ahead schedule and sink day ahead schedule. The ISO will include these congestion costs in the calculation of Day Ahead Congestion revenue. In addition, long-term contracts with special marginal losses provision will have a similar settlement mechanism apply to the marginal cost of losses component of LMP.

## **Development of EDAM Tariff Language**

March 2023

Consistent with the approved EDAM Final Proposal, the CAISO posted initial [proposed tariff language](#) for Section 33 (EDAM) on March 30, 2023 stating that day-ahead balanced self-schedules would be eligible for mitigation against congestion:

### **33.11.3.8 EDAM Legacy Contracts, EDAM Ownership Rights, and Day-Ahead Schedules**

Scheduling Coordinators who Self-Schedule Energy in the IFM using their qualified and registered EDAM Transmission Service Provider rights will settle at the LMP in a manner similar to all other Day-Ahead awards, except the balanced portion of the Schedule is eligible for mitigation against Congestion. The CAISO will facilitate this mitigation by reversing the Marginal Cost of Congestion component of the LMP difference between the balanced source Day-Ahead Schedule and sink Day-Ahead Schedule. The CAISO will include these Congestion costs in the calculation of Day-Ahead Congestion revenue. In addition, long-term contracts with special marginal losses provisions will have a similar Settlement mechanism apply to the Marginal Cost of Losses component of the LMP.

#### **33.11.3.9.3 Marginal Congestion Offset**

The CAISO will calculate an hourly Day-Ahead marginal Congestion offset revenue for each EDAM Entity Balancing Authority Area. The hourly Day-Ahead marginal Congestion offset revenue will equal the sum of the product of Day-Ahead Energy Schedules, including Schedules for Virtual Awards and Energy transfer Schedules, and the Marginal Cost of Congestion contribution for each EDAM Entity Balancing Authority Area at its relevant pricing location and considering relevant intertie Transmission Constraints. The hourly Day-Ahead Congestion revenue amount will also include any EDAM Legacy Contracts, EDAM Transmission Ownership Rights, and Self-Schedules submitted in accordance with Section 33.18.2.2.1 marginal Congestion reversal amounts. The CAISO will allocate the hourly Day-Ahead marginal Congestion revenue amount to each EDAM Entity and the hourly Day-Ahead marginal Congestion revenue amount allocated to the CAISO Balancing Authority Area will be distributed first to CRRs and then to any surplus allocated to Measured Demand per the CAISO Tariff.

### **April 2023**

PacifiCorp's [April 28, 2023 comments](#) on the draft tariff language proposed additional tariff provisions specifically for physical transmission rights under the open access transmission tariff of an EDAM transmission service provider, and that the CAISO will reverse congestion charges for balanced self-schedules on such rights:

### 33.X EDAM ETCs

#### 33.X.1 Eligibility

The CAISO will honor physical transmission rights under the open access transmission tariff of an

EDAM Transmission Service Provider by treating them as EDAM ETCs, subject to the requirements of this section 33.X.1.

#### 33.X.4 Reversal of Congestion Charges

The CAISO will reverse Congestion charges for the balanced portion of a Self-Schedule using EDAM ETCs in the manner described in Section [33.11.3.8].

**Commented [A85]:** This new section is necessary because OATT rights don't fit the definition of legacy contracts or TORs.

Define new term: EDAM ETCs: Physical transmission rights under the open access transmission tariff of an EDAM Transmission Service Provider, whether granted before or after commencement of participation in the Extended Day-Ahead Market by the relevant EDAM Transmission Service Provider.

### May 2023

The CAISO posted [updated draft tariff language of Section 33](#) on May 17, 2023, which did not include any changes to the language of Section 33.11.3.8 or 33.11.9.3. The recordings of stakeholder meetings on [May 15, 2023](#) and [May 19, 2023](#) do not include any discussion of these provisions.

### June 2023

The CAISO posted [revised draft tariff language of Section 33](#) on June 8, 2023. This revision limited the language of Section 33.11.3.8 to EDAM Legacy Contracts and EDAM Transmission Ownership Rights:

#### **33.11.3.8 EDAM Legacy Contracts, EDAM Ownership Rights, and Day-Ahead Schedules**

Scheduling Coordinators who Self-Schedule Energy in the IFM using their qualified and registered EDAM Transmission Service Provider rights will settle at the LMP in a manner similar to all other Day-Ahead awards, except the balanced portion of ~~the~~ Schedule [associated with an EDAM Legacy Contract or an EDAM Transmission Ownership Right](#) is eligible for mitigation against Congestion. The CAISO will facilitate this mitigation by reversing the Marginal Cost of Congestion component of the LMP difference between the balanced source Day-Ahead Schedule and sink Day-Ahead Schedule. The CAISO will include these Congestion costs in the calculation of Day-Ahead Congestion revenue. In addition, long-term contracts with special marginal losses provisions will have a similar Settlement mechanism apply to the Marginal Cost of Losses component of the LMP.



This version retained the prior language that referred to a reversal of congestion charges in Section 33.11.3.9.3.

July 2023

PacifiCorp provided [redline comments](#) to Section 33 on July 6, 2023, including a specific comment on Section 33.11.3.8 in which it appears to indicate direct discussions with “CAISO leadership that it plans not to use this approach[.]”

**33.11.3.8 EDAM Legacy Contracts, EDAM Ownership Rights, and Day-Ahead**

**Schedules**

Scheduling Coordinators who Self-Schedule Energy in the IFM using their qualified and registered EDAM Transmission Service Provider rights will settle at the LMP in a manner similar

*ISO Public  
Posted June 8, 2023*

to all other Day-Ahead awards, except the balanced portion of ~~the~~ Schedule [associated with an EDAM Legacy Contract or an EDAM Transmission Ownership Right](#) [is eligible for mitigation](#)

[against Congestion](#) [will have Congestion costs mitigated in the manner described in this section](#)

**33.11.3.8.** The CAISO will facilitate this mitigation by reversing the Marginal Cost of Congestion component of the LMP difference between the balanced source Day-Ahead Schedule and sink Day-Ahead Schedule. The CAISO will include these Congestion costs in the calculation of Day-Ahead Congestion revenue. In addition, long-term contracts with special marginal losses provisions will have a similar Settlement mechanism apply to the Marginal Cost of Losses component of the LMP.

Authority Area within the GHG boundary as defined by a state jurisdiction that has priced greenhouse gas emissions as part of a state carbon reduction law or regulation.

**Commented [A57]:** PAC – this does not reflect our understanding of the current state of play on this issue. We understand from CAISO leadership that it plans not to use this approach for internal transmission rights. Comments on the text are offered in case this makes it to the filing.

July 2023

The CAISO posted on July 25, 2023 the last iteration of the draft tariff language of Section 33. This version included significant revisions to Sections 33.11.3.8 and 33.11.3.9.3:

**33.11.3.8 EDAM Legacy Contracts, EDAM Ownership Rights, and Day-Ahead**

**Schedules**

Scheduling Coordinators who Self-Schedule Energy in the IFM using their qualified and registered EDAM Transmission Service Provider rights will settle at the LMP in a manner similar to all other Day-Ahead awards. Scheduling Coordinators who Self-Schedule Energy in the IFM using their qualified and registered EDAM Legacy Contract Rights or EDAM Transmission Ownership Rights will settle at the LMP in a manner similar to all other Day-Ahead awards, except the balanced portion of a Schedule associated with an EDAM Legacy Contract or an EDAM Transmission Ownership Right will be eligible for mitigation against Congestion costs in accordance with Section 33.16 and Section 33.17, and be settled as described in this Section 33.11.3.8. The CAISO will facilitate this mitigation by reversing the Marginal Cost of Congestion component of the LMP difference between the balanced source Day-Ahead Schedule and sink Day-Ahead Schedule. The CAISO will include these Congestion costs in the calculation of Day-Ahead Congestion revenue. In addition, long-term contracts with special marginal losses provisions will have a similar Settlement mechanism apply to the Marginal Cost of Losses component of the LMP.

**Commented [A47]:** Clarifies separation between transmission customers and legacy and ownership rights holders.

**Commented [A48]:** Clarifies how the eligibility for congestion mitigation is established and confirms settlement will be in accordance with this section.

**33.11.3.9.3 Marginal Congestion Offset**

The CAISO will calculate an hourly Day-Ahead marginal Congestion offset revenue for each EDAM Entity Balancing Authority Area. The hourly Day-Ahead marginal Congestion offset revenue will equal the sum of the product of Day-Ahead Energy Schedules, including Schedules for Virtual Awards and Energy transfer Schedules, and the Marginal Cost of Congestion contribution for each EDAM Entity Balancing Authority Area at its relevant pricing location and considering relevant intertie Transmission Constraints. The hourly Day-Ahead Congestion revenue amount will also account for any EDAM Legacy Contracts and EDAM Transmission Ownership Rights marginal Congestion adjustment amounts. The CAISO will allocate the hourly Day-Ahead marginal Congestion revenue amount to each EDAM Entity and the hourly Day-Ahead marginal Congestion revenue amount allocated to the CAISO Balancing Authority Area will be distributed first to CRRs and then to any surplus allocated to Measured Demand per the CAISO Tariff.

**Commented [A49]:** Clarifies the statement.

**Commented [A50]:** Transmission customer rights will not receive this reversal.

**Commented [A51]:** Terminology should match.

This version was posted one day before the last stakeholder conference on the tariff language. The [recording](#) of that meeting does not indicate any substantive discussion that these revisions result in OATT transmission service no longer being “eligible for mitigation against congestion.” The CAISO did not invite stakeholder comments on this final set of revisions to the tariff language.

## **EDAM Tariff Filing at FERC**

August 2023

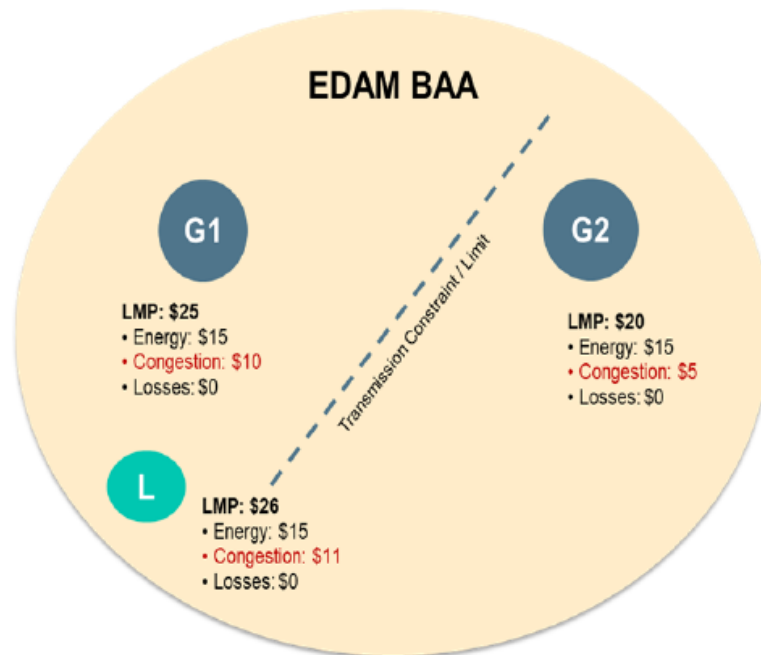
In the CAISO's August 2023 transmittal letter in its EDAM/DAME filing, the CAISO described how it would award congestion revenues to TSPs, and defer to each TSP on how to allocate the CAISO congestion revenues it receives (page 5):

The CAISO will use its existing post-market settlements timelines and procedures with a few modifications to account for unique features of the extended day-ahead market settlement requiring additional provision. In particular, congestion revenue will be allocated to the balancing area where the constraint is modeled. Transfer revenue, similar to congestion revenue at an interface between two balancing areas, will be allocated equally between the two balancing authorities that made the transmission available or to the transmission customer. This ensures congestion revenue is allocated based on the location of the constraint and that transfer revenue is allocated to the market participant that made the transmission available to the market. The allocation of congestion and transfer revenue to the balancing authority will enable each transmission service provider to determine the most appropriate distribution of costs and benefits from participation in the day-ahead market.

The CAISO transmittal letter described protecting Firm transmission rights from EDAM congestion charges as a “preference” of “some stakeholders,” rather than a design principle embedded in the approved EDAM Final Proposal:

During the EDAM stakeholder process, consideration was given to whether it would be appropriate for the CAISO tariff to include applicable cost allocation principles. Some stakeholders would prefer the CAISO tariff included requirements to hold transmission customers harmless from congestion costs to the extent practicable, while others preferred to defer to the EDAM transmission service provider tariff and associated approval process. In the end, the CAISO concluded that establishing criteria for the cost allocation determinations of other balancing areas participating in EDAM was not its proper role. Accordingly, the EDAM framework defers to the EDAM transmission service provider tariff for this determination, as it does with respect to other transmission service provider functional responsibilities.

In its discussion of the congestion charges (against which customers with firm OATT rights would not receive a financial hedge from the market operator) the CAISO's illustration was limited to a scenario in which congestion price differences within a BAA are the result of a transmission constraint within that same BAA:



- Congestion revenue is the difference in congestion price between Generation and Load across a binding internal constraint.
- The congestion revenue is \$1 for every MWh delivered from G1 and \$6 from G2 to serve Load.
- Congestion revenue is allocated to the EDAM entity where the constraint materialized.

## ATTACHMENT 2

### PART B

#### **RESPONSES TO SELECTED MISSTATEMENTS AND INACCURACIES IN THE ANSWERS**

The CAISO's answer contains multiple inaccurate characterizations of Powerex's positions or statements and Commission precedent. The CAISO undoubtedly has the sophistication and technical knowledge to fully understand the issues raised by Powerex, and it is unfortunate that CAISO elected instead to distort the record rather than foster understanding of these issues. To ensure an accurate record, below Powerex identifies and corrects select instances in which the CAISO answer inaccurately describes Powerex's arguments or positions, though by omitting other CAISO misstatements or mischaracterizations, Powerex does not concede such omitted statements were accurate.

| <b>CAISO Statement</b>  | <b>Powerex Response</b>   |
|---|---|
| <p>"Although Powerex chose not to cite or even mention the Powerex Paper in its sizeable protest, there is significant overlap between the arguments in both. Other commenters are more explicit in citing the Powerex Paper to expressly support their arguments that the EDAM design is flawed. They also make arguments clearly influenced by the Powerex Paper without citing it." (internal citations omitted) (pg. 21)</p> <p>See <i>also</i>, footnotes 24 and 25, where CAISO dissects statements in other protests and compares them to statements in Powerex's public paper, noting, among other things that "some capitalized text in these quotations put into lower-case text" (fn. 25).</p> | <p>It is misleading and false to insinuate there was anything secretive about Powerex's efforts to inform stakeholders about an important aspect of the EDAM design. Powerex's paper was posted publicly on Powerex's website, and available to everyone, including the CAISO and PacifiCorp. Powerex's Protest was appropriately limited to PacifiCorp's proposal, and Powerex did not include or reference its public paper since it addresses fundamental EDAM design issues that may have been viewed as beyond the scope of this proceeding.</p> |
| <p>"Powerex repeatedly refers to itself and other firm point-to-point transmission customers as 'investing' in transmission service. It claims this investment provides firm OATT customers with a form of ownership in the underlying transmission facilities, including the right to choose to withdraw capacity from the terms and conditions of wholesale markets adopted by their transmission service providers." (internal citation omitted) (pg. 35)</p>  | <p>The CAISO answer incorrectly claims that Powerex equates OATT transmission service with ownership rights. Powerex has never claimed that transmission service under the OATT provides customers with any type of ownership interest in the underlying transmission facilities.</p>   |

|   |   |
|---|---|
| <p>“Conferring the “ownership” rights sought by Powerex ...” (pg. 36)</p> <p>“Powerex and some other commenters seek to retain all the attributes of physical transmission rights under the pro forma OATT, and also obtain financial transmission rights that provide a congestion “perfect hedge” for the full capacity of those physical rights reservations[.]” (pg. 54)</p> <p>“as part of MISO’s transition the Commission rejected the arguments of a group of transmission-dependent utilities seeking the types of full congestion hedge rights sought by Powerex and others herein[.]” (pg. 56)</p> <p>Quoting from a Commission order explaining that “[W]e do not agree with Midwest TDUs that it is necessary to guarantee that an exact amount of FTRs[.]” and “the megawatts covered by financial hedges (FTRs) do not need to be in one-to-one correspondence to the megawatts covered in physical contracts for transmission service for there to be a full financial hedge.” (pg. 56)</p> | <p>The CAISO answer incorrectly claims that Powerex demands that firm customers receive a financial hedge for the full quantity of the OATT rights they hold. Powerex has not demanded a financial hedge for the full quantity of the firm OATT rights held by a transmission customer. Powerex expressly recognized that there would be circumstances in which a customer with firm transmission rights would not receive an offset or financial hedge for the full quantity of their reserved service (Powerex Protest at 30-31; Gribik at 29:7-30:11).</p>   |
| <p>“The Commission explained in Order No. 681 that it did not envision financial transmission rights, which apply in energy markets, to offer load-serving entities a “perfect hedge.”<sup>94</sup> (pg. 44; <i>see also</i> pg 60-61)</p> <p>FN94: <i>Id.</i> (citing Long-Term Firm Transmission Rights in Organized Elec. Mkts., Order No. 681, 116 FERC ¶ 61,077, at P 174 (Order No. 681), reh’g denied, Order No. 681-A, 117 FERC ¶ 61,201 (2006) (Order No. 681-A), reh’g denied, Order No. 681-B, 126 FERC ¶ 61,254 (2009) (Order No. 681-B)).</p>  | <p>The CAISO Answer misstates Order No. 681 regarding requests for a “perfect hedge.” The cited paragraph from Order No. 681 actually states that “We do not envision full funding as a perfect hedge. Since the transmission organization is revenue neutral, costs associated with the full funding guarantee must be allocated on some basis among market participants. Our guidelines do not establish a subset of load serving entities that would be exempt from such costs[.]”</p> <p>Powerex has never demanded that firm OATT transmission rights be afforded a ‘perfect hedge,’ as claimed in the CAISO Answer. The arrangement that would be “superior to the physical rights” would be one in which a “subset of load serving entities” is exempt from a share of the costs necessary to provide full funding. That is not what Powerex has proposed.</p> |

|  |  |
|--|--|
| <p>“The Commission also agreed with the CAISO it is necessary under the EDAM design to separate the revenue stream of inter-balancing area congestion revenue, which represents the cost to serve demand across just the internal balancing area transmission system, from the revenue stream of inter-balancing area transfer revenue, which represents the cost of serving demand across balancing areas. In making those findings, the Commission expressly rejected Powerex’s argument that the methodology for allocating congestion revenue within the balancing area where the internal constraint arises favors California interests.” (internal citations omitted) (pg. 75)</p> | <p>The CAISO Answer incorrectly conflates Powerex’s arguments regarding the allocation of value of CAISO intertie limits with an argument against the allocation of EDAM congestion revenue.</p> <p>As the CAISO was fully aware from the extensive stakeholder workgroups where this issue was repeatedly discussed, Powerex was discussing an entirely different congestion issue to the one raised in this docket, as Powerex objected to the treatment by the CAISO of intertie scheduling limits on transfers into and out of the CAISO BAA, which results in the CAISO being allocated all of this value, whereas analogous inter-BAA value is allocated 50/50 on all BAAs other than the CAISO. The CAISO also is well aware that this <i>inter-BAA scheduling constraint</i> congestion topic is an entirely separate topic, with separate tariff provisions from the congestion revenue allocation associated with internal flow-based constraints <i>within</i> a BAA, which is the topic that Powerex and other intervenors discuss in their protests and comments.</p> |
| <p>“Powerex protested, inter alia, that the T-57 timeline violated the pro forma OATT as set forth in Order No. 888 and later revised in Order No. 764.51” This instance is cited in support of the contention that “These orders recognize changes in transmission service under the pro forma OATT will be required to capture the benefits of LMP-based markets like EDAM for customers.” (pg. 30-31)</p>   | <p>The CAISO Answer misapplies arguments raised by Powerex in the WEIM docket. Powerex’s protest in the WEIM docket highlighted that the earlier deadline would expand the set of transactions defined to be “imbalances” and subject to Schedule 4 and Schedule 9 of the pro forma OATT. The Commission found only that the earlier timeline was not barred by Order No. 764, and was warranted due to the time needed for the CAISO to run its market software.</p>  |

**ATTACHMENT 3**

**TESTIMONY**  
**OF MR. JEFF SPIRES**



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

**PacifiCorp**

)  
)  
)

**Docket No. ER25-951-000**

**SUPPLEMENTAL TESTIMONY  
OF  
JEFF SPIRES**

**ON BEHALF OF  
POWEREX CORP**

**MARCH 28, 2025**

**SUPPLEMENTAL TESTIMONY OF**  
**JEFF SPIRES**

**I. INTRODUCTION**

**Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A. My name is Jeffrey Spires, and my business address is 1300-666 Burrard St.,  
Vancouver, BC V6C 2X8.

**Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?**

A. I am employed by Powerex Corp ("Powerex") as Director, Power.

**Q. DID YOU PREVIOUSLY PROVIDE TESTIMONY IN THIS PROCEEDING?**

A. Yes. I provided testimony in support of Powerex's Protest filed in this proceeding  
on February 18, 2025. My testimony was Attachment A to that protest.

**Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL TESTIMONY?**

A. This supplemental testimony responds to certain claims made in the Affidavit of  
John Tsoukalis on behalf of PacifiCorp, submitted as Attachment A of PacifiCorp's  
March 11, 2025 answer in this proceeding and certain claims made in the  
Declaration of Guillermo Bautista Alderete on behalf of the CAISO, submitted as  
Attachment A of the CAISO's March 7, 2025 Answer.

**II. THE DATA USED IN POWEREX'S ANALYSIS IS REPRESENTATIVE**

**Q. WHAT ARE THE CLAIMS MADE BY MR. TSOUKALIS AND DR. ALDERETE  
THAT YOU RESPOND TO HERE?**

A. Mr. Tsoukalis presented a table of quarterly average congestion prices between  
certain locations in the PacifiCorp West and PacifiCorp East balancing authority

1 areas (BAAs) from 2019 through 2024. These quarterly averages appear as Figure  
2 1 in his testimony. From these quarterly averages, Mr. Tsoukalis claims that (1)  
3 data from 2024 Q1 is an “extreme outlier”; and (2) the average congestion risk for  
4 PacifiCorp transmission customers is “relatively small.”<sup>1</sup>

5 Similarly, Dr. Alderete criticizes Powerex’s protest because “Q1 2024 congestion  
6 data is far from being a typical or representative reference[.]”<sup>2</sup> Mr. Tsoukalis also  
7 claims that Q1 2024 is “the only period PWX relies upon.”<sup>3</sup>

8 **Q. WHAT IS YOUR RESPONSE TO THESE CLAIMS THAT YOUR EARLIER**  
9 **ANALYSIS WAS INAPPROPRIATELY LIMITED?**

10 **A.** These claims wrongly suggest that Powerex’s analysis was limited to Q1 2024. As  
11 is plainly evident from my earlier testimony, I examined data beyond Q1 2024. In  
12 fact, I was explicitly asked, “Did Powerex evaluate any periods other than Q1  
13 2024?”<sup>4</sup> In response, I presented an analysis of hourly average internal congestion  
14 prices for each month from January through September 2024 (corresponding to  
15 the most recent available DMM quarterly report at the time of Powerex’s filing).<sup>5</sup>  
16 Furthermore, I discussed the impact of the January 2024 winter weather event, as  
17 well as pointing out “that a similar pattern of significant congestion during midday  
18 hours continued for multiple months.”<sup>6</sup>

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<sup>1</sup> PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 5:10 and 13:23.

<sup>2</sup> CAISO Answer Attach. A, Alderete Declaration at 4:7.

<sup>3</sup> PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 5:10.

<sup>4</sup> Powerex Protest, Attach. A, Spires Testimony 14:12.

<sup>5</sup> *Id.* at 14:13-16:14.

<sup>6</sup> *Id.* at 16:5-6.

1   **Q.   WHAT IS THE PROBLEM WITH MR. TSOUKALIS'S CALCULATIONS**  
2   **PRESENTED IN FIGURE 1 OF HIS AFFIDAVIT?**

3   A.   Mr. Tsoukalis calculated the average congestion charges between certain  
4       locations in PacifiCorp East and PacifiCorp West for each quarter going back to  
5       2019. Mr. Tsoukalis argues that "if a transmission customer had rights on one of  
6       these POR-POD pairs and scheduled *the same number of MWs in each hour over*  
7       *the five years*, they would have been exposed to very little congestion cost on a  
8       \$/MWh basis."<sup>7</sup>

9       Mr. Tsoukalis's statement illustrates the fatal flaw in his conclusion. Scheduled  
10      deliveries will incur the congestion charges that apply during the specific hours that  
11      energy is actually delivered. For example, a transmission customer that uses its  
12      firm transmission service to deliver solar output to load will only make those  
13      deliveries in the hours that the solar facility is producing output. Whether  
14      congestion patterns happen to reverse in other hours when deliveries are not being  
15      made is irrelevant, and in no way "offsets" those costs.

16      More generally, transmission service enables energy to be delivered to the  
17      locations that it is most valued on the grid. Any valid assessment of the potential  
18      exposure to congestion charges in EDAM must consider that the pattern of  
19      scheduled energy deliveries will reflect system conditions and market  
20      fundamentals. For example, the prevailing pattern of congestion between  
21      PacifiCorp East and PacifiCorp West often changes dramatically throughout the  
22      day and during different parts of the year. During the solar producing hours (*e.g.*,

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<sup>7</sup> PacifiCorp Answer, Attach. A, Tsoukalis Affidavit at 5:10 (emphasis added).

1 from 8:00 a.m. to 5:00 p.m.), congestion is often in the South-to-North direction—  
2 that is, *from* PacifiCorp East *to* PacifiCorp West. Outside of the solar hours, the  
3 direction of congestion often reverses, and is in the North-to-South direction—from  
4 PacifiCorp West to PacifiCorp East. This variability is masked by Mr. Tsoukalis’s  
5 presentation of around-the-clock average values and in no way demonstrates that  
6 congestion is “relatively small” as claimed by Mr. Tsoukalis.

7 **Q. WHAT DO YOU CONCLUDE FROM MR. TSOUKALIS’S ANALYSIS?**

8 A. The simple average of congestion charges across all hours over five years is not  
9 a relevant indicator of the magnitude of congestion charges that actually apply to  
10 the deliveries using transmission service and cannot support the conclusions Mr.  
11 Tsoukalis attempts to draw from his calculations.

12 III. **THE CAISO’S ARGUMENT THAT IT WILL NOT ENFORCE A REAL-TIME**  
13 **CONSTRAINT IN THE DAY AHEAD MARKET IS NOT CREDIBLE**

14 **Q. WHAT ARE THE CLAIMS MADE BY DR. ALDERETE THAT YOU RESPOND**  
15 **TO HERE?**

16 A. The CAISO’s witness Dr. Alderete discusses one of the constraints identified in the  
17 DMM quarterly reports as responsible for substantial flow-based congestion in  
18 other balancing areas. Specifically, Dr. Alderete testifies that the “6110\_COI\_S\_N”  
19 constraint “is applied only in real-time to help manage parallel flows in the CAISO  
20 system caused by transactions scheduled outside the CAISO system,” and  
21 therefore “does not represent the potential impacts in EDAM.”<sup>8</sup> Dr. Alderete’s

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<sup>8</sup> CAISO Answer, Attach. A, Alderete Declaration at 3:5.

1 testimony is referenced by the CAISO's other witness, Dr. Harvey,<sup>9</sup> as well as by  
2 PacifiCorp and its witness, Mr. Tsoukalis.<sup>10</sup>

3 **Q. WHAT IS YOUR OPINION OF THIS CLAIM?**

4 A. The notion that the CAISO would enforce a flow-based constraint in its real-time  
5 optimization of the multi-state Western EIM, but that a similar constraint would be  
6 completely absent from its multi-state day-ahead market, once launched, lacks  
7 credibility. This would expose EDAM to scheduling generation in the day-ahead  
8 market that turns out to not be feasible in the real-time market, requiring last-  
9 minute re-dispatch.

10 **Q. WHY IS THAT THE CASE?**

11 A. It is well established that organized markets endeavor to minimize or eliminate  
12 systematic differences in the representation of the transmission network between  
13 the day-ahead and real-time markets, since failure to do so can lead to systemic  
14 divergence of market outcomes and undue uplift costs for consumers.<sup>11</sup> Yet the  
15 CAISO offers no rationale for believing that it will choose to not enforce a  
16 transmission limitation in the future multi-state day-ahead market that is known to  
17 be both enforced and significant in the current multi-state real-time market.

18 **Q. WOULD THE CAISO'S EXPLANATION, IF TRUE, CHANGE YOUR**  
19 **CONCLUSIONS?**

20 A. No. DMM's quarterly reports show that during the first nine months of 2024, there  
21 were 43 unique constraints located in the CAISO BAA that affected congestion

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<sup>9</sup> CAISO Answer, Attach. B, Harvey Statement at 13.

<sup>10</sup> PacifiCorp Answer at 23, Attach. A, Tsoukalis Affidavit at 7 n. 8.

<sup>11</sup> See, e.g., FERC, *Staff Analysis of Uplift in RTO and ISO Markets*, Docket No. AD14-14, at 13-15, 17-18 (2014) (detailing the impact of day-ahead and real-time price spreads on uplift costs).

1 prices in the PacifiCorp BAAs. Even if the CAISO did choose not to enforce this  
2 one particular constraint in the day-ahead timeframe, it does not change the  
3 fundamental conclusions of Powerex's analysis: flow-based congestion caused  
4 large average price differences between PacifiCorp-East and PacifiCorp-West in  
5 many hours of each month, and most of those congestion price differences were  
6 associated with various constraints located in the CAISO BAA.

7 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?**

8 **A.** Yes.

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

**PacifiCorp**

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)

**Docket No. ER25-951-000**

**VERIFICATION**

I, Jeff Spires, verify under penalty of perjury that I have read the testimony, know the contents thereof, and that the facts and representations set forth therein are true to the best of my knowledge, information, and belief.

/s/ Jeff Spires  
Jeff Spires

Dated: March 28, 2025



### **CERTIFICATE OF SERVICE**

Pursuant to Rule 2010 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.2010, I hereby certify that I have this day served a copy of the foregoing on all persons designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, District of Columbia, this 28th day of March, 2025.

/s/ Josh R. Robichaud

Josh R. Robichaud  
Bracewell LLP