

Docket No. 20000-675-EA-24
Witness: Michael G. Wilding

BEFORE THE WYOMING PUBLIC SERVICE
COMMISSION

ROCKY MOUNTAIN POWER

Direct Testimony of Michael G. Wilding

December 2024

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and present position with PacifiCorp d/b/a Rocky Mountain Power (“PacifiCorp” or the “Company”).

A. My name is Michael G. Wilding. My business address is 825 NE Multnomah Street, Suite 2000, Portland, Oregon 97232. My title is Vice President, Energy Supply Management.

Q. Briefly describe your education and business experience.

A. I received a Master of Accounting from Weber State University and a Bachelor of Science degree in accounting from Utah State University. As Vice President, Energy Supply Management (“ESM”), my responsibilities include directing PacifiCorp’s efforts in the western expansion of organized electric markets and PacifiCorp’s front office organization in commercial and trading activities. ESM is responsible for commercially managing PacifiCorp’s diverse generation portfolio. This includes the generation plant dispatch, electric and natural gas hedging, term and day-ahead trading, real-time trading, and system balancing. Prior to assuming my current position in February 2021, I worked on various regulatory projects including general rate cases, the multi-state process, and net power cost filings. I have been employed by PacifiCorp since 2014.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have filed testimony in proceedings before the Wyoming Public Service Commission (“Commission”), and the public utility commissions in California, Idaho, Oregon, Utah, and Washington. I have also submitted testimony to the Federal Energy

1 Regulatory Commission (“FERC”) in support of PacifiCorp’s Extended Day-Ahead
2 Market (“EDAM”)-related tariff amendments.

3 **II. PURPOSE OF TESTIMONY**

4 **Q. What is the purpose of your testimony in this proceeding?**

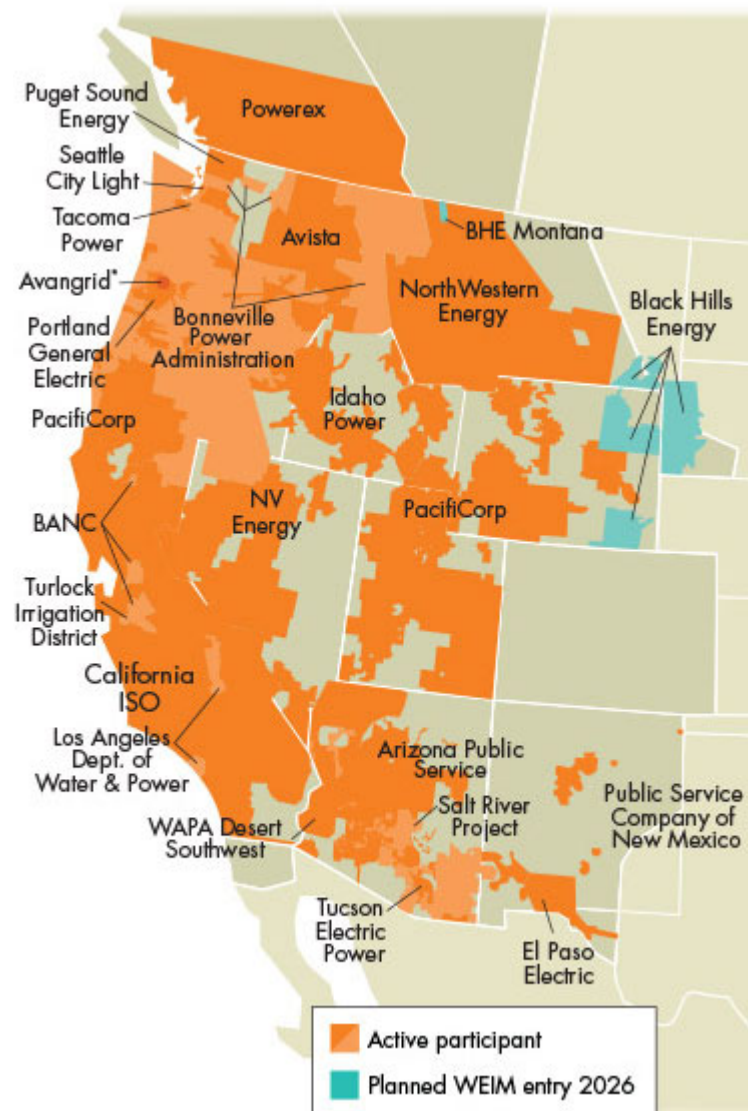
5 A. The purpose of my testimony is to provide a brief summary of the Company’s
6 participation in the Western Energy Imbalance Market (“WEIM”) and explain why the
7 Company has made the decision to enter and participate in the California Independent
8 System Operator’s (“CAISO”) EDAM.

9 **III. BACKGROUND**

10 **Q. Please explain the Western Energy Imbalance Market.**

11 A. The WEIM is a 15-minute and 5-minute real-time imbalance market that was
12 developed by the CAISO. WEIM optimizes the real-time imbalances using available
13 transmission and generation from participants. The Company has participated in the
14 WEIM since its inception in November 2014, which has provided significant benefits
15 to PacifiCorp and Wyoming customers. Since its inception, the WEIM participation has
16 grown into a diverse footprint that currently has approximately 80 percent of the
17 Western Electricity Coordinating Council (“WECC”) load participating as shown in
18 Figure 1.

1

Figure 1. Participants in the Western Energy Imbalance Market

2 **Q. Has participation in the WEIM provided benefits to PacifiCorp customers?**

3 A. Yes. The WEIM has provided significant economic benefits to the participants that are
 4 valued at \$6.25 billion through the third quarter of 2024 and PacifiCorp has achieved
 5 approximately \$891.5 million in savings, which has benefitted customers through
 6 reduced net power costs (“NPC”).

7 **Q. Please explain PacifiCorp’s experience with the WEIM.**

8 A. PacifiCorp and its customers have greatly benefitted from participation in the WEIM.

1 The WEIM has enhanced energy sharing and cost savings, facilitated significant market
2 benefits by improving efficiencies on the Western transmission system, and expanded
3 the pool of available resources. The WEIM has also improved system reliability,
4 management of transmission congestion, coordination of operations across the region,
5 and reduced emissions by facilitating more renewables on the system and avoiding
6 curtailments. PacifiCorp was the first entity to join the WEIM, and that leadership was
7 the catalyst for the West-wide support of, and participation in, the WEIM. As WEIM
8 has grown, the benefits for all participants have continued to grow exponentially.

9 **Q. Has the WEIM provided for the development of a day-ahead market?**

10 A. Yes. The successful WEIM has laid the groundwork for development of the EDAM and
11 the CAISO has been working on its development since October 2019. I have led
12 PacifiCorp's participation in the CAISO's extended day-ahead market initiative since
13 the WEIM has proven to be beneficial to customers.

14 **IV. EXTENDED DAY-AHEAD MARKET**

15 **Q. Please explain the EDAM.**

16 A. The EDAM is simply the extension of the WEIM to the day-ahead timeframe. The
17 WEIM optimizes generating resources in the real-time window to effectively manage
18 any fluctuations in real-time demands across the WEIM footprint. The EDAM expands
19 that basic framework to the day-ahead timeframe. While the WEIM is limited to dealing
20 with true "imbalances," or the differences between expected day-ahead schedules and
21 real-time demands, the EDAM by contrast actually provides a day-ahead unit
22 commitment schedule based on time-tested security-constrained economic dispatch
23 principles. The EDAM will provide economically optimal and least-cost, resource

1 schedules and other core functions integral to organized markets. Through the EDAM,
2 the Company will optimally schedule and dispatch its generation units using the
3 CAISO's state-of-the-art unit commitment and economic dispatch models, similar to
4 WEIM but larger in scope to implement a day-ahead market.

5 **Q. How is the EDAM related to the WEIM?**

6 A. As described above, the WEIM is a regional expansion of the CAISO real-time market.
7 The EDAM is similar in concept but larger in scope and applies to the day-ahead
8 timeframe. The WEIM manages deploys economic dispatch for real-time imbalances
9 only - i.e. the minor fluctuations between expected and actual demands and flows. By
10 contrast, the EDAM provides unit commitment schedules across the EDAM area in the
11 day-ahead timeframe as an initial matter. Put simply, the EDAM identifies which
12 generating resources can best serve the load across the EDAM footprint one day ahead,
13 and deploys a market for that purpose. WEIM participation is required for EDAM
14 participation. Because EDAM participants also participate in the WEIM, the day-ahead
15 and real-time efficiencies merge, in order to maximize customer savings across the
16 combined day-ahead to real-time windows.

17 **Q. Why did PacifiCorp decide to join the EDAM?**

18 A. The most important driver of the Company's decision is the ability to achieve additional
19 savings for customers and enhance reliability as the West continues to integrate variable
20 energy resources at a high rate. PacifiCorp has had a very positive experience with the
21 CAISO's WEIM and has concluded that the expansion of that market success to the
22 day-ahead timeframe is in the best interest of our customers. The EDAM is the best
23 option for an inclusive market in the West that will leverage the greatest possible

1 transmission connectivity and load and resource diversity to provide cost savings to our
2 customers, increase reliability, and reduce emissions utilizing zero-fuel cost resources
3 available in the market.

4 As discussed above, since its inception, the WEIM has delivered \$891.5 million
5 in savings to PacifiCorp customers and the EDAM participation benefit analysis
6 conducted in 2024 estimates that PacifiCorp's customers are expected to benefit from
7 \$359 million in annual savings in addition to an estimated nine terawatt-hours of
8 reduced renewable energy curtailment across the study footprint in 2032.¹ These
9 estimated benefits are incremental to the benefits from the WEIM, all of which
10 contribute to offsetting the increasing price pressure on our retail customers. Similar to
11 the WEIM, it should be expected for market benefits to grow commensurate with
12 market participation.

13 **Q. Please describe the EDAM benefit studies in which PacifiCorp participated.**

14 A. Included with my testimony are three exhibits containing studies that were produced
15 by the Brattle Group explaining the potential benefits of the EDAM. Exhibit 2.1 is an
16 April 2023 Brattle Group report on PacifiCorp's EDAM participation that was
17 presented to the Wyoming Public Service Commission on May 2, 2023. Exhibit 2.2 is
18 a December 2023 EDAM Benefits Study, which was prepared for a group of potential
19 EDAM participants including PacifiCorp. Finally, Exhibit 2.3 is a "refreshed"
20 PacifiCorp-specific analysis that updated the benefits analysis to reflect changes in
21 PacifiCorp's generation portfolio as reflected in its Integrated Resource Plan. The

¹ Actual EDAM benefits will be driven by transmission connectivity and load and generation resource diversity. The estimated benefits are based on the September 2024 EDAM benefits study, Exhibit 2.3, which studies a market footprint including CAISO, PacifiCorp, Idaho Power, NV Energy, LADWP, BANC, PGE and Seattle City and Light, and is based on loads, generation resources, and transmission expected to be in service in 2032.

1 Brattle Group undertook the refreshed analysis to account for updates to PacifiCorp's
2 supply portfolio. The refreshed analysis looked at several drivers of savings for each of
3 the two PacifiCorp balancing authority areas ("BAAs") separately. Under this most
4 recent study, both PacifiCorp BAAs saw demonstrable savings in production costs
5 under the EDAM participation model. This updated Brattle Study of PacifiCorp's
6 EDAM benefits also revealed significantly more benefits as other additional utilities
7 that have signaled an intention to join the EDAM become part of the EDAM footprint.
8 While these studies are natural projections of benefits, these analyses and the
9 robustness of the results provide PacifiCorp a high level of confidence that the positive
10 customer-benefits experience in the WEIM is likely to be replicated in the EDAM, and
11 likely to a higher degree.

12 **Q. How did PacifiCorp evaluate the risks of being a first participant in this market?**

13 A. Aside from the confidence we gained from our WEIM experience, one of the primary
14 factors in the decision to commit to joining the EDAM is the incremental nature of the
15 decision. PacifiCorp was the first utility to join the WEIM, which was a completely
16 new market with many elements left for PacifiCorp and the CAISO to figure out. While
17 undertaking such an effort as a first mover is by definition somewhat experimental, one
18 of the key risk mitigating factors was that PacifiCorp was always protected by the
19 ability to exit the WEIM on little notice and with zero exit fees if the market did not
20 meet our expectations or realize benefits for our customers. The EDAM provides the
21 same opportunity to expand PacifiCorp's market participation while maintaining the
22 important ability to exit the market with minimal notice and zero exit fees if it does not
23 meet our expectations. This stands in contrast to joining a regional transmission

1 organization (“RTO”) as a full member, which would entail additional long-term
2 commitments and significant exit fees.

3 **Q. Did PacifiCorp participate in the development of the EDAM design?**

4 A. Yes. I led a team of PacifiCorp employees and contractors exploring various aspects of
5 the EDAM design from the start. The CAISO stakeholder process was extensive, and
6 our team actively participated at every stage.

7 **Q. Did the development of the EDAM market design include the participation of**
8 **other regional stakeholders?**

9 A. Yes. In addition to participating in the CAISO’s formal stakeholder process, which was
10 heavily attended by a wide range of WEIM members and other stakeholders,
11 PacifiCorp often engaged with other Western stakeholders who were committed to
12 exploring the possibility of expanding the WEIM design to the day-ahead timeframe.
13 This collaboration included funding and contracting for various benefit studies
14 (mentioned previously) with a group that included various investor-owned utilities and
15 a number of public power entities that currently participate in the WEIM.

16 **Q. Did you participate in other regional market development efforts?**

17 A. I did. A number of current WEIM participants tracked the development of the
18 Southwest Power Pool’s “Markets-Plus” day-head offering as well.

19 **Q. Please explain PacifiCorp’s decision to join the EDAM over Markets-Plus.**

20 A. PacifiCorp decided that the EDAM was a superior option for its customers based on
21 several factors. First, the success we have enjoyed with the WEIM was highly
22 persuasive and the ability to incrementally expand that success was attractive. Second,
23 the topography of the PacifiCorp service territories makes it very important to achieve

1 as many synergies as possible with the California market. PacifiCorp's service territory
2 is adjacent to the CAISO BAA at various points. Third, the EDAM will build on an
3 existing set of technology and the market operator's deep experience in operating a
4 day-ahead market, recognizing that the EDAM would adapt and extend the CAISO's
5 existing day-head market design, rules, and supporting technological platform. Given
6 the larger potential financial impact of the EDAM on PacifiCorp, we considered
7 building on top of a known and working market to be less risky than creating a
8 "greenfield" market. Finally, joining any other competing day-ahead platform would
9 have required withdrawing from the WEIM, which has produced significant customer
10 benefits.

11 **Q. What if the Company chose not to participate in the EDAM?**

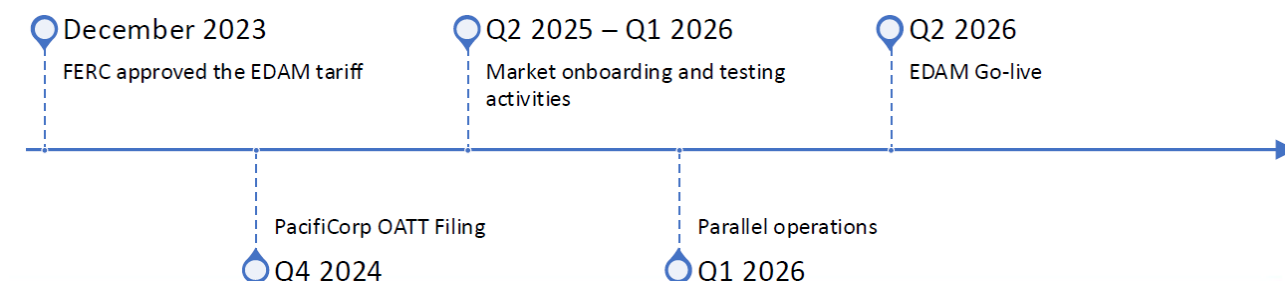
12 A. If the Company decided not to participate in the EDAM, I believe we would be doing
13 a disservice to our customers. As I explained above, participation in the WEIM has
14 shown great benefits to all of PacifiCorp's customers and we believe the EDAM will
15 provide even more benefits by expanding from the existing intra-hour market to the
16 day-ahead market. In the future, if the EDAM is not operating as expected and/or not
17 providing the expected benefits to customers, the Company will evaluate if exiting the
18 EDAM is the better option than continued participation.

19 **Q. What is the status of PacifiCorp's entry into and participation in the EDAM?**

20 A. Recent and future milestones are shown in Figure 2 below. The FERC has approved
21 the CAISO's EDAM tariff and PacifiCorp just recently filed to modify its open access
22 transmission tariff ("OATT") with the FERC. The modifications to the OATT are

1 required in order to participate in the EDAM. The Company is on track to meet the
2 expected go-live date for the second quarter of 2026.

3 **Figure 2. Milestones for PacifiCorp Participation in the EDAM.**



4 **Q. Does this conclude your direct testimony?**

5 **A. Yes.**

BEFORE THE WYOMING PUBLIC SERVICE COMMISSION

AFFIDAVIT, OATH AND VERIFICATION

Michael G. Wilding, (Affiant) being of lawful age and being first duly sworn, hereby deposes and says that:


Affiant is the Vice President of Energy Supply Management for PacifiCorp, which is a party in this matter.

Affiant prepared and caused to be filed the foregoing testimony. Affiant has, by all necessary action, been duly authorized to file this testimony and make this Oath and Verification.

Affiant hereby verifies that, based on Affiant's knowledge, all statements and information contained within the testimony and all of its associated attachments are true and complete and constitute the recommendations of the Affiant in their official capacity as Vice President, Energy Supply Management.

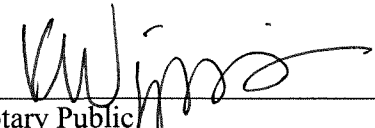
Further Affiant Sayeth Not.

Dated this 19 day of December, 2024


Michael Wilding
Vice President, Energy Supply Management

STATE OF OREGON)
) SS:
COUNTY OF MULTNOMAH)

The foregoing was acknowledged before me by Michael G. Wilding on this 19th day of December, 2024. Witness my hand and official seal.


Notary Public

My Commission Expires:

