

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND)
TRANSPORTATION COMMISSION,)
)
Complainant,)
)
v.) DOCKET NOS. UE-140762 and
) UE-140617 (*consolidated*)
PACIFICORP D/B/A PACIFIC POWER &)
LIGHT COMPANY,)
)
Respondent.)
_____)
)
In the Matter of the Petition of)
)
PACIFIC POWER & LIGHT) DOCKET NO. UE-131384
COMPANY,) (*consolidated*)
)
For an Order Approving Deferral of)
Costs Related to Colstrip Outage)
_____)
)
In the Matter of the Petition of)
)
PACIFIC POWER & LIGHT) DOCKET NO. UE-140094
COMPANY,) (*consolidated*)
)
For an Order Approving Deferral of)
Costs Related to Declining Hydro)
Generation _____))

EXHIBIT NO.____(BGM-6)

**PACIFICORP APPLICATION FOR DEFERRED ACCOUNTING
AND PRUDENCE DETERMINATION ASSOCIATED WITH
THE ENERGY IMBALANCE MARKET
AND DIRECT TESTIMONY OF STEFAN A. BIRD**

October 10, 2014

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM _____

In the Matter of

PACIFICORP d/b/a PACIFIC POWER

Application for Approval of Deferred
Accounting and Prudence Determination
Associated with the Energy Imbalance Market.

**APPLICATION FOR DEFERRED
ACCOUNTING AND PRUDENCE
DETERMINATION**

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I. INTRODUCTION

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In February 2013, PacifiCorp d/b/a Pacific Power (PacifiCorp or Company) and the California Independent System Operator Corporation (CAISO) announced a partnership to enhance coordination of the electric transmission grid in the West through a new Energy Imbalance Market (EIM). The EIM is the culmination of several years of effort to develop a viable energy imbalance market in the West and is a significant achievement. In the EIM, resources will be economically dispatched in real-time (every five minutes) across PacifiCorp's and the CAISO's balancing authority areas (BAAs) to ensure that supply matches demand. The EIM is expected to provide benefits for PacifiCorp's customers by reducing intra-hour balancing and reserve costs. To participate in the EIM and achieve the expected customer benefits, PacifiCorp will incur EIM-related costs. These costs include one-time capital and operation and maintenance (O&M) costs to implement the EIM (start-up costs), annual O&M costs, and variable O&M costs. The target date for operation of the EIM to begin is October 1, 2014.

Recognizing the unique and transformative nature of the EIM, PacifiCorp requests that the Public Utility Commission of Oregon (Commission) review PacifiCorp's decision to participate in the EIM, contemporaneously with EIM implementation. Through this

1 application, PacifiCorp requests an order under ORS 757.259(2)(e) and OAR 860-027-0300
2 authorizing the Company to defer start-up costs and annual O&M costs from the date of this
3 application until these costs are incorporated in base rates in PacifiCorp's next general rate
4 case and a determination that the Company's decision to participate in the EIM is prudent.
5 This application is supported by the testimony of Mr. Stefan A. Bird, who discusses the
6 Company's decision to participate in the EIM and sponsors the Company's economic
7 analysis.

8 Concurrently with this docket, the Company will convene a collaborative process
9 with Oregon stakeholders to explore the development of a balancing account to reflect the
10 variable cost and benefits of EIM in rates, including the variable O&M costs. The Company
11 plans to make a separate filing to address these issues no later than thirty days after the
12 Federal Energy Regulatory Commission (FERC) issues an order authorizing revisions to the
13 Company's Open Access Transmission Tariff (OATT) and the CAISO's tariff implementing
14 the EIM in a manner that does not adversely affect the benefits for the Company's customers.
15 The Company requested an order from FERC by June 20, 2014.¹

16 II. NOTICE

17 Communications regarding this application should be addressed to:

PacifiCorp Oregon Dockets
825 NE Multnomah Street, Suite 2000
Portland, OR 97232
oregondockets@pacificorp.com

Sarah K. Wallace
Assistant General Counsel
825 NE Multnomah Street, Suite 1800
Portland, OR 97232
sarah.wallace@pacificorp.com

Katherine A. McDowell
McDowell, Rackner & Gibson PC
419 SW 11th Avenue, Suite 400
Portland, OR 97204
katherine@mcd-law.com

¹ *PacifiCorp's Filing for Revisions to OATT to Implement the Energy Imbalance Market*, FERC Docket No. ER14-1578 (March 25, 2014).

1 In addition, the Company requests that all data requests regarding this application be
2 sent to the following:

3 By email (preferred): datarequest@pacificorp.com
4 By regular mail: Data Request Response Center
5 PacifiCorp
6 825 NE Multnomah Street, Suite 2000
7 Portland, OR 97232

8 Informal questions may be directed to R. Bryce Dalley, Vice President, Regulation, at
9 503-813-6389.

10 III. BACKGROUND

11 The EIM is a five-minute market administered by a single market operator, the
12 CAISO. The EIM uses an economic dispatch model to issue instructions to participating
13 generating resources to meet the load for the entire EIM footprint, which will initially be
14 comprised of PacifiCorp's and the CAISO's BAAs. Market participants voluntarily bid their
15 resources into the EIM. The market operator, in addition to providing dispatch instructions,
16 generates locational marginal prices to be used for settlement of the energy imbalances. A
17 locational marginal price is the marginal cost of supplying the next increment of electricity at
18 a specific geographic location on the grid. Energy imbalance is the difference between the
19 forecast load or generation and interchange and the actual load or generation and interchange.
20 The benefits of an EIM include (1) the economic efficiency of an automated dispatch,
21 (2) savings due to diversity of loads and variable resources in the expanded footprint, and
22 (3) reduced operational risk from enhanced system reliability.

23 Industry leaders in the West have explored and promoted the energy imbalance
24 market concept for the last several years. The Western Electricity Coordinating Council
25 launched a major initiative and study effort in 2010. Late in 2011, commissioners from
26 12 western state commissions formed a group (PUC-EIM Group) to explore issues related to

1 an energy imbalance market in the West. Also, the Northwest Power Pool, through its
2 Market Assessment and Coordination Committee Initiative (NWPP MC), has been actively
3 working to advance an understanding of an energy imbalance market and other long-term
4 market improvement initiatives. PacifiCorp has provided longstanding support for these and
5 other West-wide market efforts. Throughout these various processes, PacifiCorp's goal has
6 remained the timely implementation of market improvements that provide benefits to
7 customers.

8 In spring 2012, the CAISO publicly provided an EIM framework concept based on its
9 existing real-time market to provide a low-cost, low-risk, voluntary market to allow parties to
10 capture benefits associated with an energy imbalance market. The proposal prompted
11 PacifiCorp's interest in participating in the EIM with the CAISO.

12 PacifiCorp decided it was reasonable to move forward with the CAISO to participate
13 in the EIM for a variety of reasons. By developing the EIM using the CAISO's existing real-
14 time market, PacifiCorp would be able to take advantage of the CAISO's existing systems to
15 timely achieve customer benefits associated with the EIM. It is more cost-effective, more
16 efficient, and involves less risk to expand these existing systems to include PacifiCorp's
17 transmission facilities and resources than it would have been to create a new platform. As
18 described in more detail below, the EIM is expected to enhance reliability, more efficiently
19 integrate renewable resources, and reduce costs for customers.

20 By participating in the EIM, PacifiCorp expands the CAISO's security-constrained,
21 least-cost dispatch for most of California to include PacifiCorp's six-state platform, including
22 additional portions of California, as well as Idaho, Oregon, Utah, Washington, and
23 Wyoming.

1 **IV. PROPOSED SCHEDULE**

2 The EIM is targeted to begin operation on October 1, 2014. Accordingly, PacifiCorp
3 requests an order on this application by September 1, 2014. To facilitate this schedule,
4 PacifiCorp respectfully requests that a prehearing conference be held as soon as possible.

5 **V. DEFERRAL OF COSTS**

6 PacifiCorp respectfully requests authorization to defer the start-up costs and annual
7 O&M costs related to EIM for future recovery in rates. PacifiCorp's deferral application
8 relies on ORS 757.259(2)(e), which allows deferral of identifiable utility expenses or
9 revenues to match appropriately the costs borne by and benefits received by customers. The
10 deferral will allow the Company to recover in its next general rate case the prudently
11 incurred costs to implement and participate in the EIM. As required by OAR 860-027-
12 0300(3), PacifiCorp provides the following:

13 **A. Description of Utility Expense**

14 The Company is requesting to defer two general categories of costs related to the
15 EIM: start-up costs and annual O&M costs.

16 **1. Start-Up Costs**

17 Start-up costs are expected to be approximately \$20 million on a total-company basis,
18 or approximately \$5 million on an Oregon-allocated basis, and include (1) approximately
19 \$16 million in capital costs on a total-company basis (approximately \$4 million Oregon-
20 allocated), and (2) approximately \$4 million in O&M costs on a total-company basis
21 (approximately \$1 million Oregon-allocated). These costs include the following:

- 22 • **Upgrading real-time and settlement metering and telecommunication**
23 **equipment.** PacifiCorp must upgrade its metering and telecommunication
24 equipment to participate in the EIM. Specifically, PacifiCorp must replace,
25 reprogram, and install additional meters to comply with CAISO's operating

1 procedures, to facilitate participation in the EIM and generate settlement
 2 statements within the CAISO market. PacifiCorp must also upgrade some of its
 3 telecommunications equipment to support EIM participation.

4 • **Upgrading systems that are necessary to support efficient market operations.**

5 PacifiCorp must expand, modify, or upgrade its systems to ensure the reliable and
 6 efficient operation of the EIM. Specifically, PacifiCorp will refine its network
 7 model, network management systems, load forecasting tools, generation controls,
 8 outage management system, interval meter data collection and management
 9 systems, settlement systems, and reporting systems. To accommodate the new
 10 settlement procedures for EIM, PacifiCorp upgraded its settlement software and
 11 increased staffing levels to process the EIM settlement data received from the
 12 CAISO.

13 • **Implementation costs paid to the CAISO to participate in EIM.** PacifiCorp
 14 will pay an implementation fee to the CAISO to develop the functionality for
 15 PacifiCorp to participate in the EIM, including base schedule aggregation services
 16 for its customers.²

17 • **Support of EIM development and implementation.** PacifiCorp has incurred
 18 and will incur additional expenses for staffing and contracted support to design,
 19 develop, and implement the EIM.

20 **2. Annual O&M Costs**

21 Starting in 2015, the annual O&M costs are expected to be approximately

22 \$1.7 million on a total-company basis, or approximately \$425,000 on an Oregon-allocated
 23 basis. The Company's annual O&M costs will fund additional employees and information
 24 technology systems and support necessary to participate in the EIM. The Company proposes
 25 to include the start-up costs and annual O&M costs in the deferred account until later
 26 incorporated in base rates.

² On April 30, 2013, PacifiCorp and the CAISO entered into an Implementation Agreement (IA) for an EIM to be implemented effective October 1, 2014. The IA sets forth the terms under which the CAISO will modify and extend its existing real-time energy market systems to provide energy imbalance market service to PacifiCorp, including transmission customers taking transmission service under PacifiCorp's OATT. On June 28, 2013, the FERC unconditionally accepted the IA, effective July 1, 2013, as requested. *Cal. Indep. Sys. Operator Corp.*, 143 FERC ¶ 61,298 (2013). Subsequently, on February 21, 2014, the CAISO filed a mutually agreed-to amendment to the IA with FERC to account for \$462,800 in additional costs incurred by the CAISO on behalf of PacifiCorp to enable PacifiCorp and its customers to take advantage of existing CAISO systems to aggregate supply and load forecasts into the balanced EIM base schedule required by the EIM design. This filing was accepted by FERC, effective April 23, 2014. *Letter Order Accepting CAISO Filing of Amendment to Implementation Agreement*, Docket No. ER14-1350 (Apr. 8, 2014).

1 **B. Reasons for Deferral**

2 The EIM is expected to become operational and the Company's investment will be
3 used and useful for Oregon customers by October 1, 2014. The revenue requirement
4 associated with the EIM would not ordinarily be reflected in rates until the Company's next
5 general rate case. Under the Commission-approved stipulation in PacifiCorp's 2013 general
6 rate case, docket UE 263, PacifiCorp may not file its next rate case until 2015 for rates
7 effective in 2016.³ In the interim, deferred accounting will allow the Company to match the
8 benefits that customers will receive from the EIM with the costs to the Company of
9 providing those benefits.

10 **C. Proposed Accounting**

11 Beginning on the date of this application, PacifiCorp proposes to account for start-up
12 costs and annual O&M costs in the following manner: (1) for costs ordinarily charged to
13 FERC O&M accounts (500 to 935), the Company will credit the appropriate O&M
14 account(s) and debit FERC Account 182.3, Regulatory Assets; and (2) for capital
15 investments, the Company proposes to defer both the return on and return of by crediting
16 Oregon retail revenue accounts (Accounts 440 to 444) and debiting FERC Account 182.3.

17 **D. Estimate of Amounts**

18 As noted above, the Company estimates that the start-up costs to implement the EIM
19 will be approximately \$20 million on a total-company basis (approximately \$5 million
20 Oregon-allocated). This amount consists of approximately \$16 million in capital costs
21 (approximately \$4 million Oregon-allocated) and approximately \$4 million in O&M costs

³ *In the Matter of PacifiCorp d/b/a Pacific Power Request for a General Rate Revision*, Docket No. UE 263, Order No. 13-474, Appendix A at 5-6 (Dec. 18, 2013).

1 (approximately \$1 million Oregon-allocated). The Company estimates total-company annual
2 O&M costs of \$1.7 million, or approximately \$425,000 Oregon-allocated.

3 **E. Notice**

4 A copy of the Notice of Application and a list of persons served with the notice are
5 attached as Exhibit A to this application.

6 **VI. EIM COLLABORATIVE PROCESS**

7 As discussed above, the Company requests that the deferred account include only
8 those start-up costs associated with EIM implementation, along with annual O&M costs. For
9 ongoing benefits and costs, including variable O&M costs, the Company will convene a
10 collaborative process with Oregon stakeholders to explore development of a balancing
11 account to reflect these amounts in rates.

12 The Company proposes to address the benefits and costs of the EIM through this
13 deferral application and proposed collaborative process, rather than in the Company's 2015
14 Transition Adjustment Mechanism (TAM). The uniqueness and complexity of the EIM and
15 the limited scope of the TAM support this approach. Additionally, because the EIM is new,
16 its costs and benefits are not yet sufficiently known and measurable to include in the TAM.
17 The date for commencement of the EIM remains a target date, which is contingent on FERC
18 approval of amendments to the CAISO's tariff⁴ and PacifiCorp's OATT and the successful
19 completion of EIM market simulation and testing. Finally, as described in Mr. Bird's
20 testimony, the forecast benefits of the EIM are informed by the amount of transfer capability
21 available for EIM use on the California-Oregon Intertie (COI). Efforts among PacifiCorp,
22 the Bonneville Power Administration (BPA), and the CAISO to clarify operational

⁴ The CAISO Operating Agreement and Tariff, dated March 31, 1997, as modified. The CAISO filed amendments to this tariff to implement the EIM on February 28, 2014 (FERC Docket No. ER14-1386).

1 procedures associated with PacifiCorp’s use of its existing transmission rights across the COI
2 are ongoing. These factors demonstrate the need for more flexibility in Oregon’s EIM
3 regulatory review process than the TAM allows.

4 **VII. REQUEST FOR PRUDENCE DETERMINATION**

5 In addition to authorizing deferred accounting, the Company requests that the
6 Commission determine that the Company’s decision to participate in EIM is prudent. This
7 request is supported by the testimony and exhibits of Mr. Bird filed with this application.

8 Although the Commission does not generally provide prudence determinations before
9 a utility requests the inclusion of a resource in rates, the Commission does “recognize that
10 under unique conditions some advance Commission expression regarding certain activities
11 might be helpful and therefore leave that option open.”⁵ The Commission has used its
12 discretion to provide approval of certain utility investments when unique circumstances so
13 require.

14 For example, in 2011, the Commission pre-approved a gas reserve contract and
15 approved the utility’s requested ratemaking treatment for the contract costs.⁶ In that case,
16 Northwest Natural Gas Company (NW Natural) requested an order finding that the utility’s
17 decision to enter into a gas reserve contract was prudent. NW Natural also requested
18 authorization to implement deferred accounting to track expenses related to the contract from
19 the date the contract was effective until the time the expenses were included in rates. The
20 Commission approved both requests, which allowed NW Natural to proceed with the
21 contract.

⁵ *In re Requirements of Section 712 of the 1992 Energy Policy Act*, Docket No. UM 573, Order No. 93-1491 at 4 (October 15, 1993).

⁶ *In re Northwest Natural Gas Co.*, Docket Nos. UM 1520 & UG 204, Order No. 11-140 (Apr. 28, 2011) (affirmed by Order No. 11-176).

1 In docket UE 219, the Commission approved the Company’s surcharges related to the
2 removal of dams within the Klamath Hydroelectric Project. As part of the approval, the
3 Commission reviewed the Klamath Hydroelectric Settlement Agreement (KHSA) and
4 concluded that the KHSA is “in the best interest of customers[.]”⁷ Although the expedited
5 review of the KHSA was required by Senate Bill 76, this case demonstrates that Commission
6 review of prudence in advance of a major, unprecedented utility project is feasible and
7 represents good public policy.

8 In addition to pre-approval of utility resource decisions, the Commission has also
9 examined the prudence of a utility resource decision in an issue-specific docket, rather than
10 in a general rate case. In docket UE 248, Idaho Power Company filed to increase rates to
11 include the costs associated with its Langley Gulch gas-fired generating plant. The
12 Commission approved a stipulation in which the parties agreed that Idaho Power’s
13 investment was prudent and supported the proposed rate increase.⁸

14 The Company is requesting a prudence determination even though the Company is
15 not concurrently requesting that the costs of the EIM be included in rates. In this case, the
16 uniqueness of the EIM supports the Commission’s determination of prudence at this stage of
17 the implementation process. As described above, the EIM is the culmination of a lengthy
18 regional effort to develop a more efficient energy market to provide customer benefits,
19 including more efficient integration of renewable resources. The EIM is a significant
20 undertaking, and PacifiCorp’s decision to participate in the EIM is the first of its kind for a
21 utility in the West. In light of the significance of the EIM, it is reasonable for the

⁷ *Re PacifiCorp*, Docket No. UE 219, Order No. 10-364 at 13 (Sept. 16, 2010).

⁸ *In re Idaho Power Co.*, Docket No. UE 248, Order No. 12-358 (Sept. 20, 2012).

1 Commission to examine the prudence of PacifiCorp’s decision to participate in the EIM now,
2 rather than when the Company seeks to include the costs and benefits of the EIM in rates.

3 **1. Quantitative Benefits**

4 To attempt to quantify the benefits of the EIM, PacifiCorp and the CAISO
5 collaborated with Energy and Environmental Economics, Inc. (E3) to study the EIM. In a
6 report dated March 13, 2013 (E3 Report), E3 identified a range of *joint* benefits, based on
7 model year 2017, of between \$21 million and \$129 million annually, and identified a range
8 of customer benefits for PacifiCorp of between \$10.5 million and \$54.4 million annually.⁹ In
9 summary, the E3 Report found that the EIM would allow both PacifiCorp and CAISO “to
10 improve dispatch efficiency and take advantage of the diversity in loads and generation
11 resources between the two systems,” which will reduce production costs, reserve
12 requirements, and renewable generation curtailment.¹⁰ The benefits identified by E3 include:

- 13 • **Interregional dispatch savings** by realizing the efficiency of combined five-
14 minute dispatch, which would reduce “transactional friction” (*e.g.*, transmission
15 charges) and alleviate structural impediments currently preventing trade between
16 the two systems;
- 17 • **Intraregional dispatch savings** by enabling PacifiCorp’s generators to be
18 dispatched more efficiently through the CAISO’s automated system (nodal
19 dispatch software), including benefits from more efficient transmission
20 utilization;
- 21 • **Reduced flexibility reserves** by aggregating the two systems’ load, wind, and
22 solar variability and forecast errors; and
- 23 • **Reduced renewable energy curtailment** by allowing balancing authorities to
24 export or reduce imports of renewable generation when it would otherwise need
25 to be curtailed.

26 Following the E3 Report, PacifiCorp conducted its own cost-benefit analysis, described in
27 Mr. Bird’s direct testimony, which confirmed the expected net benefits of the EIM.

⁹ The E3 Report is included with Mr. Bird’s direct testimony as Exhibit PAC/104.

¹⁰ E3 Report at 6.

1 **2. Qualitative Benefits**

2 In addition to the quantitative benefits presented in the E3 Report, the EIM is also
3 expected to provide qualitative benefits on a region-wide basis, particularly related to
4 reliability. Under the EIM, the CAISO can manage the combined system using economic
5 five-minute dispatch, and the pool of resources available to respond to events is expanded,
6 thereby increasing the diversity of resources available to provide imbalance energy. The
7 EIM will improve situational awareness across the EIM footprint by giving PacifiCorp and
8 the CAISO access to a wider view of system operations in real-time and forward-looking
9 operational intervals. Transmission operators will have an enhanced system representation
10 and monitoring capability through the EIM. By automating and coordinating five-minute
11 dispatch across the footprint, the EIM generates a single security-constrained economic
12 dispatch solution. Currently, Balancing Authority Areas (BAAs) each create individual
13 solutions that typically are coordinated only within the BAA or with minimal external
14 counterparties. This can lead to inefficient results and potentially contradictory adjustments
15 to the interconnected system. In addition, the EIM manages flows within transmission limits
16 during dispatch, which will lead to improved congestion management in advance of the
17 operating intervals. All customers benefit from this increased reliability in both the adequacy
18 and diversity of supply.

19 The EIM also responds to the Commission’s interest in reducing integration costs
20 of renewable resources by capturing diversity benefits through the wider geographic
21 footprint.¹¹ For example, there is potential for significant weather differences throughout

¹¹ See, e.g., *In the Matter of PacifiCorp 2011 IRP*, Docket No. LC 42, Order No. 08-232 (Apr. 24, 2008) (acknowledging PacifiCorp IRP with action item to pursue transmission facilities or contracts to cost-effectively integrate renewable resources); *In re PacifiCorp*, Docket No. UM 1667, Order No. 13-382 at 2 (Oct. 18, 2013) (PacifiCorp’s next smart grid plan should address PacifiCorp’s work integrating renewable resources).

1 the expansive EIM geographic area. This geographic diversity mitigates the intermittency
2 inherent in many renewable resources.

3 In addition, the EIM provides the potential for renewable resources to be used more
4 efficiently. Wind may be blowing in an area far from load, but with a wider EIM footprint
5 that expands beyond the individual BAA, that wind generation can be used to serve energy
6 imbalances instead of having to be curtailed as oversupply. Finally, different peak periods
7 within the EIM footprint will allow better utilization of renewable resources to meet peak
8 loads.

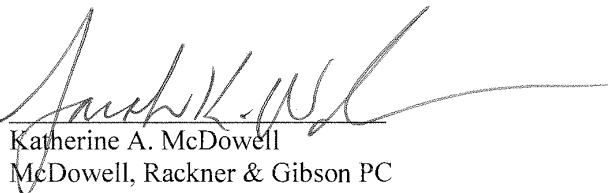
9 VIII. CONCLUSION

10 PacifiCorp respectfully requests that the Commission issue the following orders:

- 11 (1) In accordance with ORS 757.259(2)(e), authorizing the Company to defer the
12 costs described in this application; and
13 (2) Determining that the Company's decision to participate in the EIM is prudent.

Respectfully submitted this 18th day of April, 2014.

By:



Katherine A. McDowell
McDowell, Rackner & Gibson PC

Sarah K. Wallace
Assistant General Counsel
PacifiCorp d/b/a Pacific Power

Attorneys for PacifiCorp d/b/a Pacific Power

ATTACHMENT A
NOTICE
BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON

UM _____

In the Matter of

PACIFICORP d/b/a PACIFIC POWER

Application for Approval of Deferred
Accounting and Prudence Determination
Associated with the Energy Imbalance Market.

**APPLICATION FOR DEFERRED
ACCOUNTING AND PRUDENCE
DETERMINATION**

On April 18, 2014, PacifiCorp d/b/a Pacific Power filed an application with the Public Utility Commission of Oregon (Commission) for an order under ORS 757.259(2)(e) and OAR 860-027-0300 authorizing the Company to defer the costs to implement and participate in the Energy Imbalance Market (EIM) with the California Independent System Operator Corporation from the date of the application until these costs are incorporated in base rates in PacifiCorp's next general rate case. The granting of the Company's request will not authorize a change in rates, but will allow the Commission to consider allowing the deferred amounts in rates in a later proceeding.

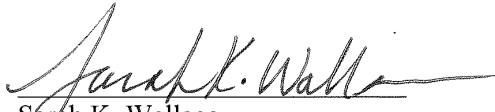
In addition, the Company's requests a Commission determination that the Company's decision to participate in the EIM is prudent. To obtain a copy the application, contact the following:

Oregon Dockets
825 NE Multnomah Street, Suite 2000
Portland, OR 97232
E-mail: oregondockets@pacificcorp.com

Any person may submit written comments to the Commission regarding the application by May 15, 2014.

A copy of this notice will be served on the parties to PacifiCorp's last general rate case in Oregon, docket UE 263.

ISSUED: April 18, 2014.

By: 
Sarah K. Wallace
Assistant General Counsel
PacifiCorp d/b/a Pacific Power

REDACTED

Docket No. UM-_____

Exhibit PAC/100

Witness: Stefan A. Bird

**BEFORE THE PUBLIC UTILITY COMMISSION
OF THE STATE OF OREGON**

PACIFICORP

Direct Testimony of Stefan A. Bird

April 2014

PAC/100

Bird/1

1 **Q. Please state your name, business address, and present position with**
2 **PacifiCorp d/b/a Pacific Power (PacifiCorp or Company).**

3 A. My name is Stefan A. Bird. My business address is 825 NE Multnomah Street,
4 Suite 600, Portland, Oregon 97232. I am Senior Vice President, Commercial and
5 Trading, for PacifiCorp Energy, a division of PacifiCorp.

6 **QUALIFICATIONS**

7 **Q. Briefly describe your education and professional experience.**

8 A. I hold a B.S. in mechanical engineering from Kansas State University. I joined
9 PacifiCorp Energy and assumed my current position in January 2007. From 2003
10 to 2006, I served as president of CalEnergy Generation U.S., an owner and
11 operator of Qualifying Facility and merchant generation assets, including
12 geothermal and natural-gas-fired cogeneration projects across the United States.
13 From 1999 to 2003, I was vice president of acquisitions and development for
14 MidAmerican Energy Holdings Company (MEHC). From 1989 to 1997, I held
15 various positions at Koch Industries, Inc., including energy marketing, financial
16 services, corporate acquisitions and project management in the United States,
17 Mexico, South America, and Europe.

18 In my current position, I oversee the Company's Commercial and Trading
19 organization, which is responsible for dispatch of the Company's owned and
20 contracted generation resources and procurement of natural gas and electricity and
21 wholesale sales to balance the Company's load and resources. I am also
22 responsible for the Company's integrated resource plan, acquisition of generation
23 resources, load forecasting, and net power costs modeling.

PAC/100

Bird/2

1

PURPOSE AND SUMMARY OF TESTIMONY2 **Q. What is the purpose of your testimony in this proceeding?**

3 A. The purpose of my testimony is to provide information in support of PacifiCorp's
4 application for deferred accounting and a prudence determination associated with
5 the Company's decision to participate in the energy imbalance market (EIM) with
6 the California Independent System Operator Corporation (CAISO).

7 **Q. Please summarize your testimony.**

8 A. I provide background on PacifiCorp's decision to participate in the EIM and
9 outline the current EIM implementation process. I explain that the Company is
10 seeking a separate prudence determination now to allow the parties an opportunity
11 to review the EIM closer in time to when the Company is making key EIM
12 decisions and because of the unique and potentially transformative qualities of the
13 EIM. I demonstrate the prudence of the Company's decision to participate in the
14 EIM by highlighting its many advantages and by sponsoring the Company's cost-
15 benefit analyses.

16

EIM BACKGROUND AND IMPLEMENTATION17 **Q. Please describe the EIM.**

18 A. The EIM is administered by a single market operator, the CAISO, using an
19 economic dispatch model to issue instructions to participating generating
20 resources to meet the load for the entire footprint of the EIM, which will initially
21 be comprised of the CAISO and PacifiCorp footprints. Market participants
22 voluntarily bid their resources into the EIM. The CAISO, in addition to providing
23 dispatch instructions, generates locational marginal prices to be used for

PAC/100
Bird/3

1 settlement of energy imbalances. Energy imbalance is the difference between the
2 forecast load, interchange, or generation and the actual load, interchange, or
3 generation. The EIM market simulation and testing is targeted to begin July 8,
4 2014. The EIM is targeted to become operational on October 1, 2014.

5 **Q. Please explain the need for the EIM.**

6 A. The electric grid in the western United States is managed by 38 separate
7 balancing authorities (BAs), each responsible for keeping energy supply and
8 demand in balance at all times within their defined balancing authority areas
9 (BAAs). Outside California, system operations rely on bilateral energy
10 transactions and holding additional reserves to ensure power supply matches
11 demand. The dramatic growth in weather-dependent wind and photovoltaic solar
12 generation means that significant variations can occur within an hour. The
13 resulting need to support intermittent renewable resources with flexible reserves
14 can strain current systems. System management can be improved if operators can
15 call on a broader array of flexible resources from a diversity of BAAs. Even
16 without the more dramatic influence of high renewable resource penetration,
17 dispatch of resources can be optimized in an energy imbalance market,
18 particularly across large systems with diverse resources and congestion, such as
19 exists across the PacifiCorp and CAISO footprints. The large regional outages
20 that have occurred in the West have also heightened the need for improved
21 situational awareness and responsiveness to improve reliability, which an energy
22 imbalance market delivers.

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1 **Q. How will the EIM benefit Oregon customers?**

2 A. The Company's Oregon customers will benefit from the economic efficiency of
3 automated dispatch, savings due to diversity of loads and variable resources in the
4 expanded footprint, more efficient integration of renewable resources, and
5 enhanced system visibility and responsiveness that improve reliability.

6 **Q. How did the EIM come about?**

7 A. Industry stakeholders in the West have recognized the potential customer benefits
8 of an energy imbalance market for several years. In 2010, the Western Electricity
9 Coordinating Council studied the benefits of a potential energy imbalance market.
10 In late 2011, commissioners from 12 western state regulatory commissions
11 formed a group (the PUC-EIM Group) to explore issues related to an energy
12 imbalance market in the West. In response to a PUC-EIM Group request, the
13 CAISO and Southwest Power Pool, Inc. provided conceptual proposals for an
14 energy imbalance market in March 2012. CAISO's proposal explained that, by
15 leveraging its existing market platform, it could offer an energy imbalance market
16 in the western United States with low up-front risk, low incremental costs
17 compared to a new infrastructure, and no exit fee. Importantly, CAISO's proposal
18 also provided the ability for individual BAs to join the EIM in stages. This allows
19 the EIM to grow incrementally, rather than requiring a critical mass of
20 participants to develop a new market with greater cost and risk.

21 Additionally, the Northwest Power Pool Market Assessment and
22 Coordination Committee (NWPP MC) has been exploring an energy imbalance
23 market and other long-term market-improvement initiatives. PacifiCorp has

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1 actively engaged in and provided support for these efforts. The NWPP MC is
2 currently proceeding to Phase 3, which includes further consideration of an
3 energy imbalance market.

4 **Q. Please describe the documents PacifiCorp negotiated with the CAISO to**
5 **facilitate implementation of the EIM.**

6 A. The Company entered into a Memorandum of Understanding (MOU) with the
7 CAISO on February 12, 2013, which outlined 12 core principles and a high-level
8 milestone schedule that incorporated a stakeholder process. A copy of the MOU
9 is attached as Exhibit PAC/101.

10 The Company entered into Implementation Agreement dated April 30,
11 2013, with the CAISO, which was accepted by the Federal Energy Regulatory
12 Commission (FERC) effective July 1, 2013.¹ A copy of the Implementation
13 Agreement is attached at Exhibit PAC/102. The Implementation Agreement sets
14 forth the terms under which the CAISO will modify and extend its existing real-
15 time energy market systems to provide energy imbalance market service to
16 PacifiCorp and its customers, including transmission customers taking service
17 under PacifiCorp's Open Access Transmission Tariff (OATT). Under the
18 Implementation Agreement, PacifiCorp agreed to compensate the CAISO
19 \$2.1 million for its share of the costs of these system changes, software licenses,
20 and other configuration activities subject to completion of five milestones.

21 The CAISO filed a mutually agreed-to Amendment to the Implementation
22 Agreement (Amendment) with the FERC February 21, 2014, and the Amendment

¹ *Cal. Indep. Sys. Operator Corp.*, 143 FERC ¶ 61,298 (2013).

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1 was accepted by FERC and made effective April 23, 2014, as requested.² Under
2 the Amendment, PacifiCorp will pay an additional \$462,800 for the CAISO to
3 expand its existing systems to facilitate PacifiCorp’s aggregation of customer
4 generation and load forecasts required by the EIM. A copy of the Amendment is
5 attached as Exhibit PAC/103.

6 **Q. Does PacifiCorp’s decision to move forward with the CAISO to develop the**
7 **EIM bind PacifiCorp to participate in the EIM?**

8 A. No. Providing ease of entry with no exit fee was a hallmark of the CAISO EIM
9 conceptual proposal in March 2012, and this is reflected in the Implementation
10 Agreement and Amendment. Under Section 2, PacifiCorp has the unilateral right
11 to terminate its participation in the EIM upon notice of termination to the CAISO.
12 There is no exit fee. After the EIM goes into operation, termination provisions
13 will be governed by the CAISO’s tariff, which does not include an exit fee.
14 Specifically, in the CAISO’s FERC filing letter, the CAISO indicated that “the
15 principles and supporting market rules allow for easy entry and exit from the
16 Energy Imbalance Market with minimal risk if the expected benefits do not
17 materialize for participants.”³

18 **Q. Has the Company engaged its customers, regulators, and other stakeholders**
19 **in its decision to participate in the EIM?**

20 A. Yes. In April 2013, PacifiCorp began its EIM stakeholder process. PacifiCorp
21 held webinars to identify the issues affecting its customers, requested feedback
22 from stakeholders, and provided responses to written comments received.

² *Letter Order Accepting CAISO Filing of Amendment to Implementation Agreement*, Docket No. ER14-1350 (Apr. 8, 2014).

³ *CAISO EIM Filing*, Docket ER 14-1386 at 13 (Feb. 28, 2014).

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1 PacifiCorp also held an EIM workshop on July 30, 2013, which was widely
2 attended by transmission customers, representatives from state public utility
3 commissions, and industry trade groups. PacifiCorp published two versions of its
4 draft EIM entity proposal and solicited comments from stakeholders. On
5 November 27, 2013, PacifiCorp transitioned to an EIM tariff stakeholder process,
6 which offered the opportunity for stakeholders to provide multiple rounds of
7 written comments. Additionally, PacifiCorp held a stakeholder meeting on
8 January 21, 2014, to review the proposed revisions to its OATT, and posted
9 several versions of its OATT for comment before filing with FERC on March 25,
10 2014.

11 **Q. What other outreach efforts has PacifiCorp made in support of EIM?**

12 A. PacifiCorp's management and regulatory department met with the staff and
13 commissioners of PacifiCorp's state public utility commissions. PacifiCorp has
14 met with other utilities interested in PacifiCorp's EIM implementation experience
15 and has sent representatives to numerous regional conferences to present on the
16 EIM. PacifiCorp has also been actively involved in the stakeholder processes
17 initiated by the CAISO and Bonneville Power Administration (BPA), respectively.

18 **Q. Has the Company filed testimony in other venues regarding the costs and**
19 **benefits of its decision to pursue the EIM?**

20 A. Yes. On March 25, 2014, PacifiCorp filed revisions to its OATT at FERC to
21 implement the EIM, including supporting testimony from Ms. Natalie L. Hocken,
22 PacifiCorp's Senior Vice President, Transmission and System Operations.⁴

⁴ *PacifiCorp's Filing for Revisions to OATT to Implement the Energy Imbalance Market*, FERC Docket No. ER14-1578, Exh. No. PAC-1, Testimony of Natalie L. Hocken (March 25, 2014).

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1 Ms. Hocken's testimony describes PacifiCorp's transmission system, an overview
2 of PacifiCorp's efforts to expand market opportunities in the West, the basis for
3 PacifiCorp's decision to pursue development of the EIM with the CAISO, the
4 anticipated quantitative and qualitative benefits of the EIM, and the actions
5 PacifiCorp has taken to maintain reliability and protect customers through the
6 development and implementation of the EIM.

7 **PRUDENCE OF THE COMPANY'S DECISION**
8 **TO PARTICIPATE IN THE EIM**

9 **Q. Please describe the prudence determination the Company is seeking.**

10 A. The Company requests that the Commission find that the Company's decision to
11 participate in the EIM is prudent. The Company seeks a prudence determination
12 now because of the unique circumstances associated with the EIM. The EIM has
13 the potential to transform western power markets and provide significant benefits
14 to customers. Given the importance of the EIM undertaking, PacifiCorp seeks a
15 prudence review now, closer in time to when the Company is making key EIM
16 decisions than the Company's next general rate case. This is especially true
17 because, under the terms of the stipulation in docket UE 263, PacifiCorp will not
18 file another general rate case in Oregon until 2015 at the earliest. A separate
19 prudence review process will allow parties to review the EIM in a timely, focused,
20 and in-depth manner.

21 **Q. How did the Company assess the potential benefits of participating in the**
22 **EIM?**

23 A. The potential benefits of the EIM were analyzed by Energy and Environmental
24 Economics, Inc. (E3 Report) in a report dated March 13, 2013. A copy of this

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1 report is attached as Exhibit PAC/104. The E3 Report concluded that the creation
2 of a PacifiCorp-ISO EIM would yield the following four principal benefits:

- 3 • *Interregional dispatch savings* by realizing the efficiency of combined
4 five-minute dispatch, which would reduce “transactional friction”
5 (e.g., transmission charges) and alleviate structural impediments
6 currently preventing trade between the two systems;
- 7 • *Intraregional dispatch savings* by enabling PacifiCorp generators to be
8 dispatched more efficiently through the CAISO’s automated system
9 (nodal dispatch software), including benefits from more efficient
10 transmission utilization;
- 11 • *Reduced flexibility reserves* by aggregating the two systems’ load,
12 wind, and solar variability and forecast errors; and
- 13 • *Reduced renewable energy curtailment* by allowing BAs to export or
14 reduce imports of renewable generation when it would otherwise need
15 to be curtailed.

16 Additionally, the E3 Report identified joint customer benefits for CAISO
17 and PacifiCorp, based on model year 2017, totaling between \$21 million and \$129
18 million annually, and identified a range of customer benefits for PacifiCorp of
19 between \$10.5 million and \$54.4 million annually.

20 These benefits are indicative but not exhaustive. A February 26, 2013
21 FERC staff paper outlines other reliability benefits, including enhanced situational
22 awareness, security constrained dispatch, faster delivery of replacement
23 generation after the end of contingency reserve sharing assistance, and enhanced
24 integration of renewable resources.⁵

⁵ A copy of the FERC staff paper is available at
<http://www.westgov.org/PUCeim/meetings/2013sprg/briefing/03-08-13FERC-EIMrbqa.pdf>

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1 **Q. Did the Company rely upon the E3 Report in deciding to execute the**
2 **Implementation Agreement in April 2013?**

3 A. Yes. Given the low preliminary estimated start-up costs and permissive
4 termination provisions, the risk of executing the Implementation Agreement was
5 low compared to the potential benefits forecast by the E3 Report. The Company
6 continued to review and refine its estimates of the costs of EIM participation,
7 however, for purposes of conducting its own, more granular cost-benefit analysis.

8 **Q. How did the Company incorporate the E3 Report into its cost-benefit**
9 **evaluations in May and July 2013?**

10 A. The Company used the E3 high-level cost estimates as the starting place for
11 analyzing EIM costs and benefits. Preparing this analysis was challenging
12 because the EIM was being created and designed concurrently with the
13 Company's efforts to quantify the EIM's costs and benefits. In the Company's
14 confidential May 2013 business case, the range of estimates included different
15 market structure assumptions. The Company's May 2013 analysis is attached as
16 Confidential Exhibit PAC/105. Once the EIM was structured using a scheduling-
17 coordinator-metered-entity option, this streamlined the Company's cost estimates
18 for its July 2013 analysis.

19 The July 2013 analysis calculated a range of present value revenue
20 requirement (PVRR) savings for projected EIM operation from October 1, 2014,
21 through 2023. The PVRR savings in 2013 dollars ranged from [REDACTED] million,
22 based on the assumption of low transfer capability and low benefits, to
23 [REDACTED] million, based on the assumption of high transfer capability and high

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1 benefits. The analysis assumes that benefits will begin October 1, 2014, but for
2 the first quarter of operations, benefits are reflected at half of the full level to
3 allow an adequate ramp-in period. The full level of benefits was assumed to
4 begin in January 2015. The Company's July 2013 cost-benefit analysis
5 supporting its decision to pursue the EIM is attached as Confidential Exhibit
6 PAC/106.

7 **Q. Why is the range of projected customer savings so wide?**

8 A. The projected PVRR savings vary primarily because of the wide range of
9 potential benefits, which is largely driven by the extent to which PacifiCorp will
10 be able to use its existing transmission rights between PacifiCorp and the CAISO
11 for the EIM. This transfer capability will capture the benefit of load and resource
12 diversity across the wide EIM footprint and co-optimize dispatch across that wide
13 area. The potential transfer range was unknown at the time the Company made
14 the decision to pursue the EIM and remains uncertain as of this stage in the
15 development process. The outcome will be influenced, in part, by the ongoing
16 efforts among PacifiCorp, BPA, and the CAISO to clarify operational procedures
17 associated with PacifiCorp's use of its existing transmission rights across the
18 California-Oregon Intertie. The Company currently has long-term contract
19 wheeling rights of 331 MW northbound and 432 MW southbound with PacifiCorp
20 Transmission and 71 MW northbound and 93 MW southbound with BPA. On
21 February 14, 2014, PacifiCorp, the CAISO, and BPA entered into a memorandum
22 of understanding to achieve operating procedures by key milestone dates. A copy
23 is attached as Exhibit PAC/107.

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1 **Q. Do the projected benefits outweigh the estimated costs even at the low end of**
2 **projected annual benefits?**

3 A. Yes.

4 **Q. Do the projected benefits grow if more BAs participate in the EIM?**

5 A. Yes. The E3 Report and numerous energy imbalance market studies that have
6 been produced over the past several years all demonstrate that the larger the
7 energy imbalance footprint and transfer capability within the energy imbalance
8 market footprint, the greater the diversity and therefore the greater customer
9 savings that may be realized from an energy imbalance market.

10 **Q. Have other entities expressed interest in participating in the EIM?**

11 A. Yes. The CAISO and PacifiCorp EIM stakeholder processes both realized robust
12 participation from a variety of entities across the West. Nevada Power Company
13 d/b/a NV Energy and Sierra Pacific Power Company d/b/a NV Energy
14 (collectively referred to as NV Energy) entered into an EIM implementation
15 agreement with the CAISO, which CAISO filed with the FERC on April 16, 2014.
16 Also on April 16, NV Energy filed an application for approval to participate in the
17 EIM with the Public Utilities Commission of Nevada. With approval from the
18 FERC and the Nevada commission, NV Energy will target beginning its
19 participation in October 2015. No other entities have made similar commitments
20 at this time.

21 **Q. Please describe the cost assumptions in the Company's evaluations.**

22 A. In general, there are two categories of costs: start-up costs and ongoing costs
23 (annual O&M costs and variable O&M costs). Start-up costs include both capital

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1 and operation and maintenance (“O&M”) expense. Start-up costs include:
2 (1) upgrading real-time and settlement metering and telecommunication
3 equipment; (2) upgrading systems that are necessary to support efficient market
4 operations; (3) support of EIM development and implementation; and (4)
5 implementation costs paid to the CAISO to participate in EIM.⁶

6 **Q. Please describe the Company’s estimated Start-Up Costs.**

7 A. The Company’s July 2013 analysis estimated that it will spend approximately
8 \$20 million on a total-company basis (approximately \$5 million on an Oregon-
9 allocated basis) to develop and implement the EIM by October 1, 2014. Start-up
10 costs include approximately \$16 million in capital costs on a total-company basis
11 (approximately \$4 million Oregon-allocated) for upgrading the settlement
12 metering and telecommunication equipment, upgrading systems for efficient
13 market operations and processing EIM settlements, as well as approximately
14 \$4 million in O&M on a total-company basis (approximately \$1 million Oregon-
15 allocated) for support of EIM development and implementation.

16 The Amendment to the Implementation Agreement adds \$462,800 to the
17 start-up cost estimate prepared in July 2013, associated with a base schedule
18 aggregation fee. The July 2013 analysis included a contingency, which absorbed
19 this cost, so there was no change to the overall project cost estimate. The CAISO
20 provided the following description of this service in its FERC filing letter seeking
21 approval of the Amendment:

⁶ The cost components associated with the one-time implementation fee are described in further detail in the declarations of Mr. Michael K. Epstein that were provided with the CAISO filings with FERC for approval of the Implementation Agreement and the Amendment in Docket No. ER13-1372 and Docket No. ER14-1350, respectively.

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1 The additional functionality was included in the design at the
2 request of stakeholders as an option for a participating
3 balancing authority to submit base schedules to the [CA]ISO.
4 PacifiCorp desires to take advantage of this design feature with
5 respect to its incorporation into the EIM and has requested the
6 [CA]ISO configure its systems accordingly. This functionality
7 will provide an overall benefit to PacifiCorp and its customers
8 by leveraging the [CA]ISO's existing technologies and
9 expertise and reducing costs for PacifiCorp if it were required
10 to design, configure and implement this functionality on its
11 own. The [CA]ISO and PacifiCorp have mutually agreed to
12 this rate increase, and the [CA]ISO requests that the
13 Commission accept the Amendment as filed.⁷

14 **Q. What are the Company's annual O&M costs and variable O&M costs?**

15 A. Starting in 2015, the annual O&M costs are expected to be approximately
16 \$1.7 million on a total-company basis (approximately \$425,000 on an Oregon-
17 allocated basis), related to additional staff and IT systems and support. The
18 variable O&M costs are expected to be approximately \$1.3 million on a total-
19 company basis (approximately \$325,000 Oregon-allocated) and include the EIM
20 Administrative Charge and other variable fees paid to the CAISO to participate in
21 EIM. As discussed above, the Company proposes to include only the annual
22 O&M costs in the deferred account.

23 **Q. How did the Company use the results of its May and July 2013 cost-benefit
24 analyses?**

25 A. The Company used the analyses to confirm its decision to participate in the EIM.
26 While the E3 Report lacked the benefit of a final EIM market design and actual
27 operating history, it did provide indicative results that show customer benefits will
28 exceed costs, potentially by a significant amount.

⁷ CAISO Application for Approval of the Amendment at 4, FERC Docket No. ER14-1350 (Feb. 21, 2014).

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1 **Q. In addition to the projected quantitative benefits, are there any other**
2 **qualitative benefits resulting from the EIM?**

3 A. Yes. In addition to the quantitative benefits presented in the E3 Report, the EIM
4 is also expected to provide qualitative benefits on a region-wide basis, particularly
5 related to reliability. Under the EIM, the CAISO can manage the combined
6 system using economic five-minute dispatch, and the pool of resources available
7 to respond to events is expanded, thereby increasing the diversity of resources
8 available to provide imbalance energy. The EIM will improve situational
9 awareness across the EIM footprint by giving PacifiCorp and the CAISO access
10 to a wider view of system operations in real-time and forward-looking operational
11 intervals. Transmission operators will have an enhanced system representation
12 and monitoring capability through the EIM. By automating and coordinating
13 five-minute dispatch across the footprint, the EIM generates a single security-
14 constrained economic dispatch solution. Currently, BAAs each create individual
15 solutions that typically are coordinated only within the BAA or with minimal
16 external counterparties. This can lead to inefficient results and potentially
17 contradictory adjustments to the interconnected system. In addition, the EIM
18 manages flows within transmission limits during dispatch, which will lead to
19 improved congestion management in advance of the operating intervals. All
20 customers benefit from this increased reliability in both the adequacy and
21 diversity of supply.

22 The EIM also reduces the cost to integrate renewable resources by
23 capturing diversity benefits through the wider geographic footprint. For example,

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1 there is potential for significant weather differences throughout the expansive
2 EIM geographic area. This geographic diversity mitigates the intermittency
3 inherent in many renewable resources.

4 In addition, the EIM provides the potential for renewable resources to be
5 used more efficiently. Wind may be blowing in an area far from load, but with a
6 wider EIM footprint that expands beyond the individual BAA, that wind
7 generation can be used to serve energy imbalances instead of having to be
8 curtailed as oversupply. Finally, different peak periods within the EIM footprint
9 will allow better utilization of renewable resources to meet peak loads.

10 **RECOMMENDATION**

11 **Q. What is your recommendation for this Commission?**

12 A. The Company's decision to participate in the EIM was prudent based on the
13 evidence available at the time it made this decision. This conclusion is based on
14 the E3 Report and the Company's own cost-benefit analysis. As previously noted,
15 the Company has the ability to exit the EIM with no exit fee if participation in the
16 EIM is no longer in the best interest of PacifiCorp's customers. I recommend the
17 Commission find that the Company acted prudently in deciding to participate in
18 the EIM.

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

20 A. Yes.