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July 21, 2016

Public Utility Commission of Oregon
201 High St SE, Suite 100
Salem, Oregon 97301

The Citizens' Utility Board of Oregon files herewith three corrections to its originally submitted UE 307 Opening Testimony on July 8, 2016.

1. Exhibit 107 is the incorrect data response. CUB has attached the correct version of Exhibit 107 for this filing.
2. On page 10, line 8, the number cited for the Company's 2017 benefit forecast should be \$13.9 million, not \$6.4 million. CUB is attaching a corrected page 10.
3. On page 22, footnote 46 contains an incorrect citation. The correct citation is "UE 307/PAC 102/Dickman/3. CUB is attaching a corrected page 22.

CUB apologizes for the errors and for the inconvenience this may cause. CUB requests that the errors be amended.

Please contact me if you have any questions with this filing.

Sincerely,

A handwritten signature in black ink that reads "Sarah Ryan-Knox". The signature is written in a cursive, flowing style.

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1 **B. EIM Costs/Benefits**

2 **i. INTRA-REGIONAL BENEFITS**

3 The Company forecasts 2017 EIM benefits to its customers at a much lower
4 level than what the CAISO reports for 2015 or 2016. This is confusing, especially
5 given the entrance of new participants into the EIM, which bring benefits, and
6 the expectation of more entrants, including PGE. CUB asked the Company to
7 clarify this apparent mismatch, and to reconcile the Company's 2017 benefit
8 forecast of \$13.9 million²⁵, against CAISO's estimate of \$33.26 million²⁶ in PAC
9 benefits for the most recently available four quarters. The Company responds by
10 stating that CAISO's calculation of benefits includes three categories of benefits:

- 11 1. Inter-regional dispatch;
- 12 2. Intra-regional dispatch; and
- 13 3. Flexibility reserves.²⁷

14 The Company goes on to state that PAC does not include category 2
15 (intra-regional benefits), and does not feel inclusion is appropriate because the
16 intra-regional benefit is a benefit that is generated from "more optimal dispatch"
17 of the Company's own resources, relative to its pre-EIM "more manual dispatch
18 process" used in actual operations.²⁸

19 CUB understands this argument—that prior to EIM investments, and the
20 subsequent more automated dispatch, the Company forecasted efficiencies
21 and benefits in GRID that did not actually exist. If CAISO calculations are
22 approximately accurate, these intra-regional benefits are approximately \$28

²⁵ UE 307/PAC 100/Dickman/26.

²⁶ See CUB exhibit 107.

²⁷ See CUB exhibit 107.

²⁸ See CUB exhibit 107.

1 In fact, not a single one of the projects forecast for 2016 has come online.⁴⁴ The
2 only solar QFs that were providing power to PAC customers were the ones that
3 had gone into service the year before. In 2016, from a MW point of view, the
4 Company over-forecasted by 12 times the actual power.⁴⁵ The actual power
5 that PAC procured from QFs was 8 percent of what was forecasted. The
6 Company may argue that all the 1000 MW of power will come online from the
7 QFs by the end of the year. This does not resolve the issue, because, according
8 to Exhibit 102⁴⁶, the Company forecasts the entire fleet of QFs available and
9 serving customers from January 1, which means customers will pay the higher
10 rates starting January 1, for resources that were not used and useful.

11 This inappropriate inclusion of QF priced power in NVPC is harmful to
12 customers in a very direct way. QF power displaces lower cost market purchases
13 which are declining in price. If it is forecast into rates, customers pay above
14 market rates for that forecasted power. Then, when the QF power does not
15 come online, the Company replaces that unmet need with either in house
16 generation, or market purchases, both which are below QF prices. The
17 Company is allowed to pocket the difference, and the customers are left
18 overpaying for QF power they never received.

19 CUB recognizes that there are several issues at play and is concerned that
20 the problem will continue to grow. The Company must sign any QF contract
21 presented to it, at avoided cost rates. Once signed, the QF has three years to
22 actually bring the power online. In that three year time lapse, the QF

⁴⁴ See CUB CONF Exhibit 110.

⁴⁵ See CUB CONF Exhibit 110.

⁴⁶ UE 307/PAC/102/Dickman/3.

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Please reconcile Dickman/Table 2:

PAC/100
 Dickman/26

Table 2
Total-Company EIM-Related Benefits and Costs

<i>\$ millions</i>	2016 TAM	2017 TAM
Inter-regional dispatch	\$8.4	\$11.3
Flexibility Reserves	\$1.7	\$2.6
Test-period EIM benefits	\$10.1	\$13.9
Test-period EIM costs	\$5.1	\$6.4

with the California ISO reports on Quantifying EIM Benefits¹, which estimate PacifiCorp specific benefits to be \$33.26 million for the four most recent quarters:

Period	\$ Benefit to PAC in millions
Q2 2015	\$7.72
Q3 2015	\$8.52
Q4 2015	\$6.17
Q1 2016	\$10.85
total	\$33.26

Response to CUB Data Request 45

The California Independent System Operator (CAISO) reports include three energy imbalance market (EIM) related benefits:

- Inter-regional dispatch,
- Intra-regional dispatch, and
- Flexibility Reserves.

Table 2 only includes two EIM-related benefits: (1) inter-regional dispatch, and (2) flexibility reserves. Intra-regional dispatch benefits result from more optimal dispatch of the Company's resources to meet its own requirements within each hour. The intra-regional benefit is relative to the Company's more manual dispatch process used in actual operations prior to participation in the EIM. However, the Generation and Regulation Initiative Decision Tool (GRID) employs a linear program optimization—i.e., optimal dispatch—constrained by: transmission capacity, thermal discretionary availability, purchases and sales market caps, and net load requirements. As a result, GRID has

¹ http://www.caiso.com/Documents/PacifiCorp_ISO_EIMBenefitsReportQ2_2015.pdf
http://www.caiso.com/Documents/PacifiCorp_ISO_EIMBenefitsReportQ3_2015.pdf
http://www.caiso.com/Documents/ISO_EIMBenefitsReportQ4_2015.pdf
http://www.caiso.com/Documents/ISO_EIM_BenefitsReportQ1_2016.pdf

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always assumed perfectly optimized hourly dispatch of PacifiCorp's generating units. EIM does not relieve constraints in the GRID linear program optimization (i.e., transmission capacity, thermal discretionary availability, purchases and sales market caps, and net load requirements). Consequently, the EIM does not create additional intra-regional dispatch benefits relative to GRID. Please also refer to page 12 and 13 of the Direct Testimony of Company witness, Brian S. Dickman in Docket UE-296.

The Company does not have a specific breakout of the intra-regional benefits reflected in the total benefits reported by the CAISO.

For more details on the historical results supporting the values in Dickman Table 2, please refer to TAM Support Set 2, specifically the confidential file entitled "ORTAM17w_EIM Benefits ORTAM17 (Jan15-Jan16) CONF.xlsx".