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August 7, 2017

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street SE, Suite 100
Salem, OR 97301-3398

RE: Docket UM 1788 – PGE’s Revised 2016 Renewable Portfolio Implementation Plan (RPIP)

This letter is to advise the Oregon Public Utility Commission Staff (Staff) that PGE believes we have met the conditions of OPUC Order No. 17-004. This docket arose from a continuation of Docket No. UM 1755. On April 22, 2016, the Commission issued Order No. 16-157 closing UM 1755 with the condition that PGE file a revised¹ RPIP by July 15, 2016 and address the matters set forth in Appendix A of the Order.

As requested, PGE filed a Revised 2016 RPIP (UM 1788) on July 15, 2016 and responded as fully as possible, given that we were also conducting IRP analyses, the results of which support the RPIP analysis.² PGE responded in part to matters set forth in Appendix A of Order No. 16-157. PGE was not able to fully respond³ at that time because we were relying on the results of the analyses, from PGE’s 2016 IRP (LC 66), which was to be filed on November 15, 2016, were not yet available. We responded to 30 data requests (DR) from Staff, 19 DRs from ICNU, and submitted reply comments. Nonetheless, the Commission agreed with Staff that PGE had not fully responded to the matters set forth in Appendix A. In Order No. 17-004, the Commission requested that PGE provide the analysis required by Order No. 16-157 in a manner and timeframe suitable to Parties. A Workshop was convened on January 20, 2017 to determine the “manner and timeframe suitable” to Staff, ICNU, and PGE. The Workshop provided PGE with clarification regarding the questions and with further guidance to assist PGE in its response. PGE sought further clarification from Staff on March 7, 2017 by telephone.

PGE provided Reply Comments in LC 66 on March 31, 2017. Those comments contained our responses to the questions (from Appendix A of Order No. 16-157) that Staff and other Parties have been seeking from PGE.

¹ The revision was required due to the passage of SB 1547 on March 8, 2016.

² PGE’s RPIP must be based on our most recently filed or updated IRP.

³ PGE’s Revised 2016 RPIP on July 15, 2017 and Reply Comments filed November 7, 2016.

Attachment A to this letter explains in further detail how PGE has provided the information requested. PGE is available for any questions or clarification that is needed. We look forward to concluding this matter and directing our attention to AR 610, the RPS Rulemaking.

In closing, PGE looks forward to Staff’s Memo on this docket and to beginning the process for AR 610. PGE appreciates Staff’s flexibility and working together to come to a mutual resolution of the issues in PGE’s Revised 2016 RPIP.

Sincerely,



Patrick G. Hager, III
Manager, Regulatory Affairs

cc: Michael Breish
Franco Albi

Docket UM 1788
PGE's Revised 2016
Renewable Portfolio Implementation Plan (RPIP)

Attachment A

Expectations and Clarifications Regarding PGE’s additional UM 1788 Tasks

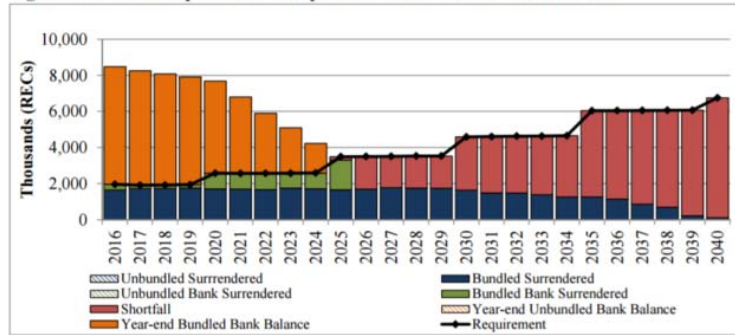
For all questions, please include any work papers used to develop the request calculations and visuals.

Question 1:

- Develop REC bank charts that delineate the following on an annual banked, generated, and retired basis:
 - Unlimited-life RECs (prior to law being signed)
 - Golden-life RECs (from generation 2018 – 2022)
 - 5-year life RECs (generated from existing and future resources)
 - The annual RPS requirement
 - The designated “minimum-REC bank”

- *Example from page 2 of Appendix in PacifiCorp’s UM 1790 Filing*

Figure A-2. PacifiCorp SB 1547 Compliance Position without Procurement



- **For the aforementioned charts, please depict the following scenarios**
 - Preferred Portfolio (2018 175 MWa acquisition)
 - RPS 2021 acquisition (628 MW acquisition – similar to portfolio # 19)
 - Portfolio # 18 (2025 618 MW acquisition)

- *Examples:*

Figure A-3. PacifiCorp Compliance with 2018 Procurement Qualifying for “Golden RECs”

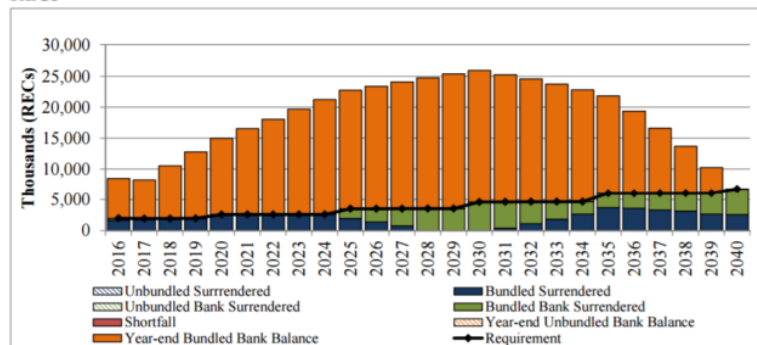
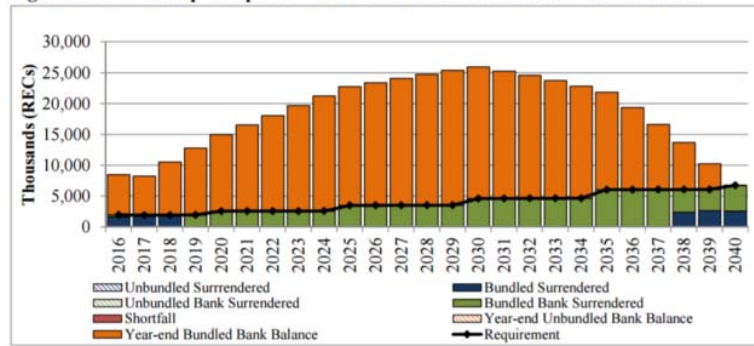


Figure A-4. PacifiCorp Compliance with 2018 Procurement without “Golden RECs”



Additional characteristics of responses to Question 1:

- Timeline is through 2040
- Minimum REC Bank levels
 - IRP Designated (729.5 MWa banked by 2040)
 - 50% of IRP designation
 - 25% of IRP designation
 - 0 banked RECs by 2040.

PGE RESPONSE to Question 1:

Scenarios depicted in charts in PGE’s Reply Comments dated March 31, 2017:

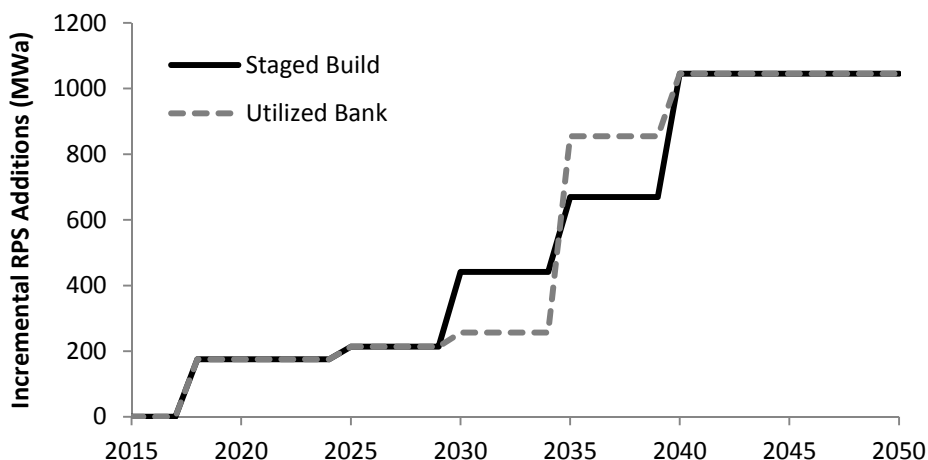
1. Early Acquisition (2020)
2. 2029 Acquisition

REC Bank Levels modeled:

1. IRP designated
2. Dynamic REC Bank approx. 35-40%
3. Zero banked RECs in 2040

Question 2:

- Update the table found on the bottom of page 5 to include the following:
 - Create two separate charts for staged build and utilized bank
 - For all charts, show REC balances for each year (RECs surrendered, RECs banked, RPS requirement)
 - Include minimum REC bank targets
 - Include IRP target, 50%, 25%, and 0
 - Show adjusted resource addition milestones to accommodate the adjusted minimum REC bank targets



PGE RESPONSE to Question 2:

See Attachment B of Reply Comments dated March 31, 2017.

Question 3:

Expectation is that PGE will provide NPVRR for identified portfolios with specific sensitivities relating to forecasted costs of resources. This in turn will demonstrate the trade-offs for just-in-time (JIT) resource acquisitions, i.e., a resource that meets a forecasted *system* need versus an early action at any point in the horizon that meets a *regulatory* need and occurs prior to a forecasted system need.

Please see [PacifiCorp’s Appendix](#) in UM 1790 starting at page 5 that demonstrates Staff’s desired approach.

Staff’s understanding is that a) this would not constitute an IRP-equivalent analysis and b) that this could potentially be confidential material due to the unreleased public model used in UM 1773.

Staff is asking for the following analyses:

1. NPVRR for each sensitivity **Provided in PGE Reply Comments dated March 31, 2017.**
2. Incremental cost for sensitivity **This calculation is done in the RPIP, not the IRP.**

The cost sensitivities are:

1. IRP price forecasts for wind and solar through 2040
2. Wind costs decline 40% by 2040 in 2015 real dollars ([See LBNL report](#))¹
3. Wind costs decline 25% by 2040 in 2015 real dollars (“”)
4. Solar costs decline 40% by 2040 in 2015 real dollars (“”)

¹ Berkeley Lab, Electricity Markets and Policy Group, Forecasting Wind Energy Costs and Cost Drivers: Under the median scenario, experts anticipate 24%–30% reductions by 2030 and 35%–41% reductions by 2050 across the three wind applications studied.

1. See PGE’s Reply Comments dated March 31, 2017.
2. PGE’s sensitivities in LC 66 (PGE’s IRP) for #2 and #3 modeled stricter cost declines. See PGE’s Reply Comments dated March 31, 2017.
3. See (2) above.
4. PGE did not develop a cost sensitivity in LC 66 for solar costs declining 40%. To develop this cost sensitivity would require a large amount of time for PGE to complete and PGE questions the value of the result. PGE would like to come to a mutual agreement on the requested analysis and asks Staff if they would consider eliminating this cost sensitivity request.

In addition, for each sensitivity, identify when it’s more cost-effective to procure bundled energy rather than unbundled RECs at the following unbundled REC prices (all in 2015 real dollars):

1. \$5.00 **The 2016 IRP demonstrated that unbundled REC purchases at \$0/MWh were not lower cost than the proposed RPS strategy. It is therefore, not cost effective at \$5, \$15, and \$30. PGE would like to come to a mutual agreement on the requested analysis and asks Staff if they would consider eliminating this cost sensitivity for RECs.**
2. \$15.00
3. \$30.00

PGE contends there is no unbundled REC price which will impact early action. However, unbundled RECs could bid into a subsequent RFP for renewables, as requested in LC 66.

The portfolios are:

1. PGE’s 2016 IRP preferred Portfolio (175 MWa gorge wind addition) **Early Action 2020 – 175MWa**
2. RPS 2021 acquisition (628 MW acquisition – similar to portfolio # 19) **PGE did not develop a mid-point action for wind. PGE would like to come to a mutual agreement on the requested analysis and asks Staff if they would consider eliminating this portfolio request.**
3. Portfolio # 18 (2025 618 MW acquisition) **Delay 2029 (478 MWa by 2030)**

Question 4:

The expectations for question four are that PGE calculate the following based on certain sensitivities:

1. NPVRR for each sensitivity **NPVRR presented in Reply Comments for LC 66 portfolios.**
2. Incremental cost **PGE does not calculate incremental cost in LC 66.**
3. Aggregate capacity of additional RPS-qualifying resources needed over the 2040 horizon **See Reply Comments dated March 31, 2017, Attachment B.**

The sensitivities are:

1. No load growth over the 2040 horizon. **Shown for at least one portfolio**

- 2. Average annual growth rate of -0.4 % (as identified in the IRP) **PGE did not develop this sensitivity**
 - 3. Average annual growth rate of -1.6% (as identified in the IRP – the +2 standard deviation) **PGE did not develop this sensitivity**
 - 4. Wholesale market prices +10% of IRP forecast
 - 5. Wholesale market prices -10% of IRP forecast
 - 6. Wholesale market prices of -20% of IRP forecast
 - 7. Stable gas price (prices remain at 2015 real dollars) → **Low gas future**
 - 8. Minimum REC bank of 50% of IRP designation
 - 9. Minimum REC bank of 25% of IRP designation
 - 10. Minimum REC bank of zero by 2040
- PGE modeled nine gas/CO2 futures**
resulting in nine distinct market price
futures with wide variation
IRP designated, 35-40%, and zero by 2040

The portfolios are:

- 1. PGE’s 2016 IRP preferred Portfolio (175 MWa gorge wind addition)
 - 2. RPS 2021 acquisition (628 MW acquisition – similar to portfolio # 19)
 - 3. Portfolio # 18 (2025 618 MW acquisition)
- 1. Early Action 2020 – 175MWa**
 - 2. PGE did not develop a mid-point action for wind in LC 66**
 - 3. Delay 2029 (478 MWa by 2030)**