



**Portland General Electric Company**

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**Erin E. Apperson**

Assistant General Counsel

November 14, 2019

Public Utility Commission of Oregon  
Attention: Filing Center  
P.O. Box 1088  
Salem, OR 97308-1088

Re: LC 73 – Portland General Electric Company’s 2019 Integrated Resource Plan (IRP)

Dear Filing Center:

Enclosed for filing today in the above-referenced docket is Portland General Electric Company’s (“PGE”) Errata to PGE’s Reply Comments.

Upon further review of PGE’s Reply Comments dated November 5, 2019, PGE discovered that Table 4 on page 35 and Table 8 on page 52 included incorrect references which have since been updated. Specifically, the values for the Delay Renewables portfolio were incorrectly entered in each sensitivity, which also affect the difference between them and those from the Mixed Full Clean portfolio. These updates do not impact the analysis and conclusions from PGE’s Reply Comments, which referenced the correct information. The final updated Tables 4 and 8 are attached.

Please direct any questions regarding this filing to Seth Wiggins at [seth.wiggins@pgn.com](mailto:seth.wiggins@pgn.com) or (503) 464-2366.

Thank you in advance for your assistance.

Sincerely,

Erin E. Apperson  
Assistant General Counsel

EEA:al

futures in scoring would only affect the traditional metrics of variability and severity, as both metrics rely on the distribution of NPVRR estimates across each of the 810 futures. Neither the cost metric nor any non-traditional metric is changed by a different weighting of these futures, as these metrics rely on single futures, either the reference or one of specific interest.

PGE believes the reference trajectory of the price, need, and technology cost futures is the most likely. To test whether in optimization a focus on the Reference Case would make tangible changes, a sensitivity of the Mixed Full Clean and Delay Renewables was created. Here the Reference Case price, need, and technology cost futures were given 100 percent probabilities in portfolio optimization. The results of this sensitivity are presented below in **Table 4**, and demonstrate that ROSE-E does not make tangible differences in cost or risk in either portfolio when optimizing on the most likely scenario.

*Table 4: Preferred and Delay Renewables portfolios optimized on Reference Case*

Cost, millions \$	Base Case – Optimized with Equal Weights Across Futures	Sensitivity – Optimized for the Reference Case
Mixed Full Clean	25,740	25,739
Delay Renewables	26,625	26,625
Difference	-885	-886
<b>Variability, millions \$</b>		
Mixed Full Clean	3,614	3,621
Delay Renewables	3,835	<u>3,841</u> <del>3,835</del>
Difference	-220	<u>-220</u> <del>-213</del>
<b>Severity, millions \$</b>		
Mixed Full Clean	31,004	31,012
Delay Renewables	32,065	<u>32,047</u> <del>32,065</del>
Difference	-1,061	<u>-1,035</u> <del>-1,053</del>

In considering Staff's concern about the likelihood of specific futures, PGE notes that it is not evident that the two futures that Staff mentions point to any clear direction of likelihood. In the former, Staff highlights natural gas, a globally traded commodity. There could be much larger drivers of natural gas prices that could counteract any regional influence, and that could push prices in the opposite direction than Staff supposes. For the latter, while carbon prices are forecasted to impact California, Oregon, and Washington, the WECC-wide renewable build-out covers many more states. Accordingly, it is plausible that even in a future of higher carbon prices, the WECC, as a whole, does not see the scale of renewable build-out envisioned in that future. It is also possible that high renewable buildout across the West is driven by policies or market factors other than carbon pricing.

These examples are raised to highlight that there are few clear sets of futures to which all stakeholders would agree. Throughout the IRP process, PGE has worked with Staff and stakeholders to develop appropriate bounds of future estimates. PGE will continue to do so to determine whether any potential sensitivities could be useful for furthering our understanding of portfolio performance.

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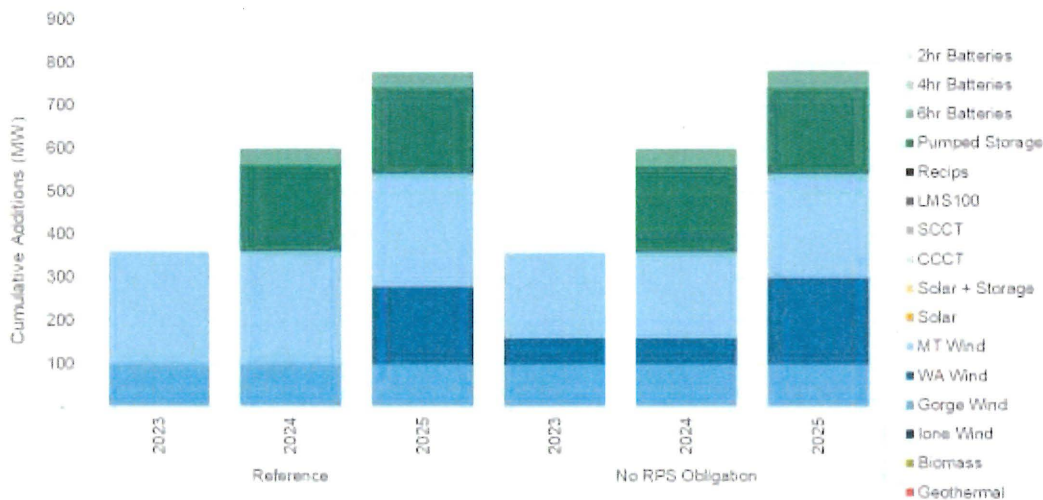
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Figure 11: Composition of Preferred Portfolio with no RPS obligation



**Table 8** displays the performance of the preferred and Delay Renewables portfolio. Under this scenario, the preferred portfolio with a near-term Renewable Action far outperforms the Delay Renewables portfolio in both cost and risk metrics.

Table 8: Portfolio cost and risk with no RPS obligation

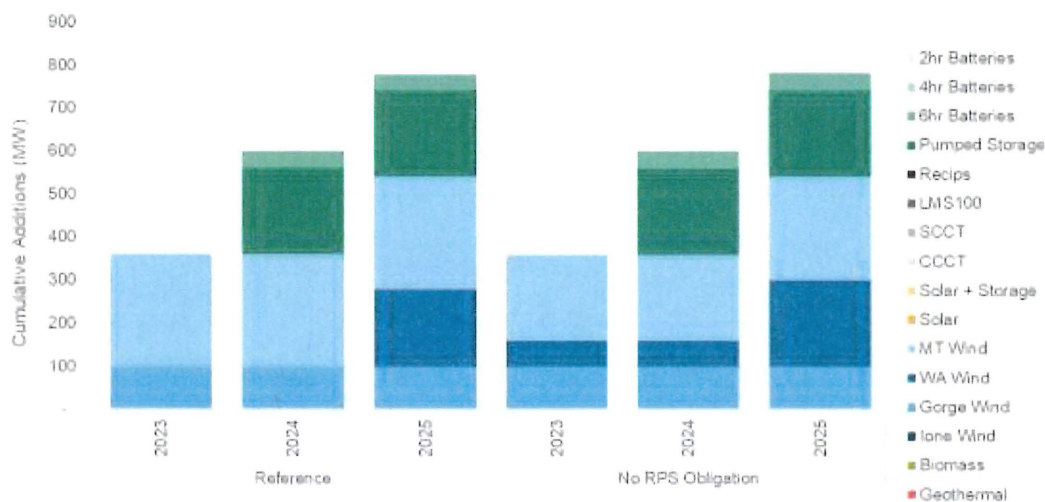
Cost, millions \$	Base Case	RPS Sensitivity B
Mixed Full Clean	25,740	25,744
Delay Renewables	26,625	<del>26,625</del> 27,051
Difference	-885	<del>-881</del> -1,308
Variability, millions \$		
Mixed Full Clean	3,614	3,700
Delay Renewables	3,835	<del>3,896</del> 4,126
Difference	-220	<del>-196</del> -427
Severity, millions \$		
Mixed Full Clean	31,004	30,968
Delay Renewables	32,065	<del>32,021</del> 32,734
Difference	-1,061	<del>-1,054</del> -1,766

In aggregate, these results show that RPS compliance is not driving early procurement of renewable resources and that PGE's findings with respect to the value of the near-term Renewable Action from the perspective of both cost and risk are unaffected by the assumptions that PGE made regarding banked and unbundled RECs.

PGE disagrees with AWE's opinion that Wheatridge RECs generated prior to 2025 should be included in the forecast of RECs available for RPS compliance. In Order No. 18-044, the Commission directed PGE to return the value associated with these RECs to customers.<sup>134</sup> In alignment with this order, the

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