

**EXH. KKD-7  
DOCKET UE-210795  
PSE'S CEIP  
WITNESS: KARA K. DURBIN**

**BEFORE THE  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**In the Matter of**

**PUGET SOUND ENERGY**

**Clean Energy Implementation Plan  
Pursuant to WAC 480-100-640**

**Docket UE-210795**

**FIRST EXHIBIT (NONCONFIDENTIAL) TO THE  
PREFILED REBUTTAL TESTIMONY OF**

**KARA K. DURBIN**

**ON BEHALF OF PUGET SOUND ENERGY**

**DECEMBER 12, 2022**

**BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**

**Docket UE-210795  
Puget Sound Energy  
PSE 2021 Clean Energy Implementation Plan**

**PUBLIC COUNSEL DATA Request No. 008:**

**Re: Interim and Specific Targets. PSE's Response to WUTC Data Request No. 8.**

In response to WUTC Data Request No. 8, Puget Sound Energy provided the incremental avoided cost of carbon emissions between its accelerated Final CEIP interim target and its linear 2021 interim IRP target.

- a. Please explain why the accelerated Final CEIP targets results in greater total carbon emissions from 2022 to 2045 when compared to the 2021 IRP linear glidepath as shown in PSE's Response to WUTC Data Request No. 8, Attachment A.
- b. Please provide the full benefit-cost analysis in Excel comparing the benefits and costs of the Final CEIP accelerated interim targets and the linear glidepath target established in the 2021 IRP. Please include any supporting assumptions and sensitivity analyses, such as the discount rate and the cost of acquiring renewable energy resources over time.

**Response:**

- a. The difference in total carbon emissions between the 2021 Clean Energy Implementation Plan ("CEIP") and the 2021 Integrated Resource Plan ("IRP") is due to the variation in the dispatch of resources, including market purchases, within the AURORA model. Many factors influence the dispatch of resources within the AURORA model, but the primary driver behind the increase in emissions over the period 2022-2045 is an increase in market purchases in the late years of the modeling horizon in the CEIP portfolio as compared to IRP portfolio. Market purchases are used extensively to charge stand-alone batteries in hours when wholesale electric prices are low. The CEIP portfolio includes 525 megawatts more stand-alone batteries than the IRP portfolio by 2045 (greater than twice the capacity), resulting in increased market purchases to charge the batteries. Pursuant to RCW 19.405.070, market purchases are modeled with the unspecified electricity emission rate of 0.437 metric tons of carbon dioxide per megawatt-hour. The unspecified electricity emission rate is likely an overly conservative estimate of the actual emission rate in an increasingly clean resource mix across the Western Interconnect. Therefore, Puget Sound Energy

(“PSE”) believes the small difference in emissions between the 2021 CEIP and 2021 IRP preferred portfolios is negligible and within the margin of error of the provided modeling assumptions.

- b. An analysis comparing the benefits and costs of the Final CEIP accelerated interim targets and the linear glidepath target established in the 2021 IRP can be found in Table 1 below. Table 1 compares the Portfolio costs between the CEIP preferred portfolio and the 2021 IRP preferred portfolio. The CEIP preferred portfolio comes from Appendix A-3 – CEIP Output Portfolio Output Summary. The IRP preferred portfolio scenario ‘W’ comes from Appendix H in the 2021 IRP. The associated IRP spreadsheet can be found here: [https://www.pse.com/-/media/PDFs/IRP/2021/appendix/AppH\\_Output\\_Portfolio-Output-Summary.xlsx?sc\\_lang=en&modified=20220307203710&hash=C3583D1D02D14C73FB8A9049DDBA0812](https://www.pse.com/-/media/PDFs/IRP/2021/appendix/AppH_Output_Portfolio-Output-Summary.xlsx?sc_lang=en&modified=20220307203710&hash=C3583D1D02D14C73FB8A9049DDBA0812).

Table 1

Portfolio Costs (B\$)	Suite 6 CEIP Preferred Portfolio	W Preferred Portfolio (BP with Biodiesel)
Total Portfolio Costs 24 Yr Levelized	\$18.79	\$21.00
Revenue Requirement	\$13.66	\$16.10
SCGHG Costs*	\$5.13	\$4.90
Total Portfolio Costs 20 Yr Levelized	\$16.54	\$18.21
Revenue Requirement	\$11.75	\$13.61
SCGHG Costs*	\$4.79	\$4.60

\* The Social Cost of Greenhouse Gases (SCGHG) is calculated using the Social Cost of Carbon as specified by the Interagency Working Group on Social Cost of Greenhouse Gases, see WUTC Docket U-190730. These values will differ from the costs calculated in Attachment A of PSE’s Response to WUTC DR No. 008, which used an estimate of the cost of carbon dioxide emission allowances under the Climate Commitment Act.