

Appendix 5

2020-2021
Cost-effectiveness Memo

Pacific Power

June 1, 2022



MEMORANDUM

To: Alesha Mander, PacifiCorp
From: Eli Morris, Andy Hudson, Dylan Royalty, AEG
Date: May 9, 2022
Re: PacifiCorp Washington Portfolio Level Cost-Effectiveness Results: 2020–2021 Biennium

AEG estimated the cost-effectiveness of PacifiCorp’s overall energy efficiency portfolio in the state of Washington based on 2020-2021 biennial costs and savings¹ provided by PacifiCorp. This memo provides cost-effectiveness results for the biennial period at the portfolio level. The portfolio passes the following cost effectiveness tests: Total Resource Cost Test (TRC), the PacifiCorp Total Resource Cost Test (PTRC), the Utility Cost Test (UCT), and the Participant Cost Test (PCT).

This memo provides analysis inputs and results in the following tables:

Table 1: Cost-Effectiveness Analysis Inputs

Table 2: PY2020 - PY2021 Benefit/Cost Ratios by Portfolio Type

Table 3: PY2020 - PY2021 Total Portfolio Cost-Effectiveness Results (Including NEIs)

Table 4: PY2020 - PY2021 Total Portfolio Cost-Effectiveness Results (Including NEEA & NEIs)

The following assumptions were utilized in the analysis:

- **Avoided Costs:** developed from a draft run of Portfolio “P-18 v06292019” in PacifiCorp’s 2019 Integrated Resource Plan IRP), converted into annual values using load shapes from the same IRP. These avoided costs are the same used to assess cost-effectiveness for PacifiCorp’s 2020-2021 Biennial Conservation Plan.
- **Modeling Inputs:** measure savings, costs, non-energy impacts (NEIs), measure lives, incentive levels, program delivery, and portfolio costs were based on estimates provided by PacifiCorp.
- **Net-to-Gross (NTG):** ratios are assumed to be 1.0, consistent with condition (8)(a) to Order 01 in Docket UE-152072.
- **Retail Rates:** 2018 rates provided by PacifiCorp and escalated by inflation for future years.

¹ The commercial line loss factor was used for all Wattsmart Business savings; commercial sector savings represent approximately 75% of total program savings.



Table 1: Cost-Effectiveness Analysis Inputs

Parameter	PY2020 - PY2021
Discount Rate ²	6.92%
Residential Line Loss	7.68%
Commercial Line Loss	7.60% ³
Residential Energy Rate (\$/kWh)	\$0.084
Commercial Energy Rate (\$/kWh)	\$0.072
Industrial Energy Rate (\$/kWh)	\$0.089
Irrigation Energy Rate (\$/kWh)	\$0.133
Inflation Rate	2.28%

Table 2: PY2020 - PY2021 Benefit/Cost Ratios by Portfolio Type

Program	PTRC	TRC	UCT	PCT	RIM
Total Portfolio with NEIs	1.93	1.75	2.18	3.43	0.77
Total Portfolio (Including NEIs and NEEA ⁴)	2.28	2.07	2.54	4.14	0.82

Table 3: PY2020 - PY2021 Total Portfolio Cost-Effectiveness Results (Including NEIs)

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0572	\$24,624,432	\$47,441,914	\$22,817,482	1.93
Total Resource Cost Test (TRC) No Adder	\$0.0572	\$24,624,432	\$43,188,178	\$18,563,746	1.75
Utility Cost Test (UCT)	\$0.0453	\$19,530,615	\$42,537,364	\$23,006,748	2.18
Participant Cost Test (PCT)		\$12,902,384	\$44,253,397	\$31,351,013	3.43
Rate Impact Test (RIM)		\$55,324,631	\$42,537,364	(\$12,787,267)	0.77
Lifecycle Revenue Impacts (\$/kWh)					\$0.0009863
Discounted Participant Payback (years)					2.47

² Consistent with PacifiCorp's 2019 Integrated Resource Plan.

³ Consistent with Section 480-109-100 (10) (b) of the Washington Administrative Code, the Low-Income Weatherization program is excluded from portfolio-level cost-effectiveness analysis.

⁴ NEEA savings are adjusted to exclude C&S outside CPA potential consistent with PY2020 and PY2021 Business Plan.



Table 4: PY2020 - PY2021 Total Portfolio Cost-Effectiveness Results (Including NEEA & NEIs)

Cost-Effectiveness Test	Levelized \$/kWh	NPV Costs	NPV Benefits	Net Benefits	Benefit/Cost Ratio
Total Resource Cost Test (PTRC) + Conservation Adder	\$0.0501	\$26,367,889	\$60,012,776	\$33,644,887	2.28
Total Resource Cost Test (TRC) No Adder	\$0.0501	\$26,367,889	\$54,616,234	\$28,248,345	2.07
Utility Cost Test (UCT)	\$0.0404	\$21,274,072	\$53,965,419	\$32,691,347	2.54
Participant Cost Test (PCT)		\$12,902,384	\$53,370,136	\$40,467,752	4.14
Rate Impact Test (RIM)		\$66,184,826	\$53,965,419	(\$12,219,407)	0.82
Lifecycle Revenue Impacts (\$/kWh)					\$0.0011799
Discounted Participant Payback (years)					2.26