

# Staff Remarks on NW Natural's 2022 IRP

**Rose Anderson**

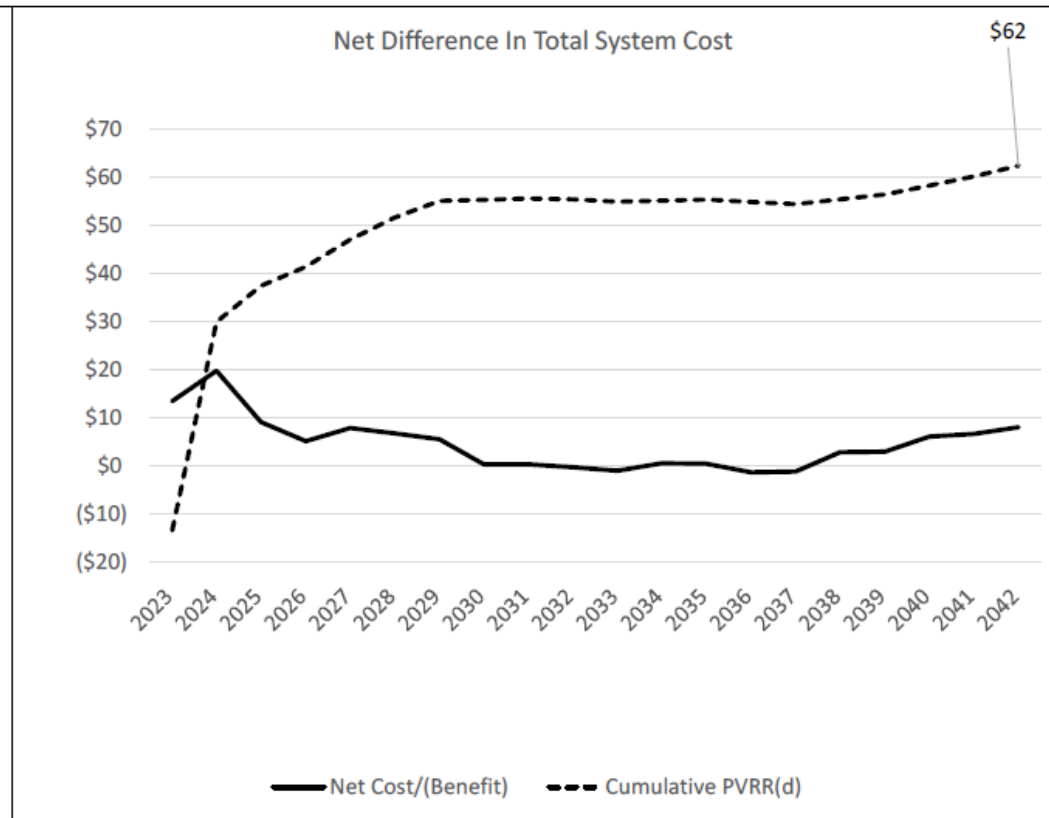
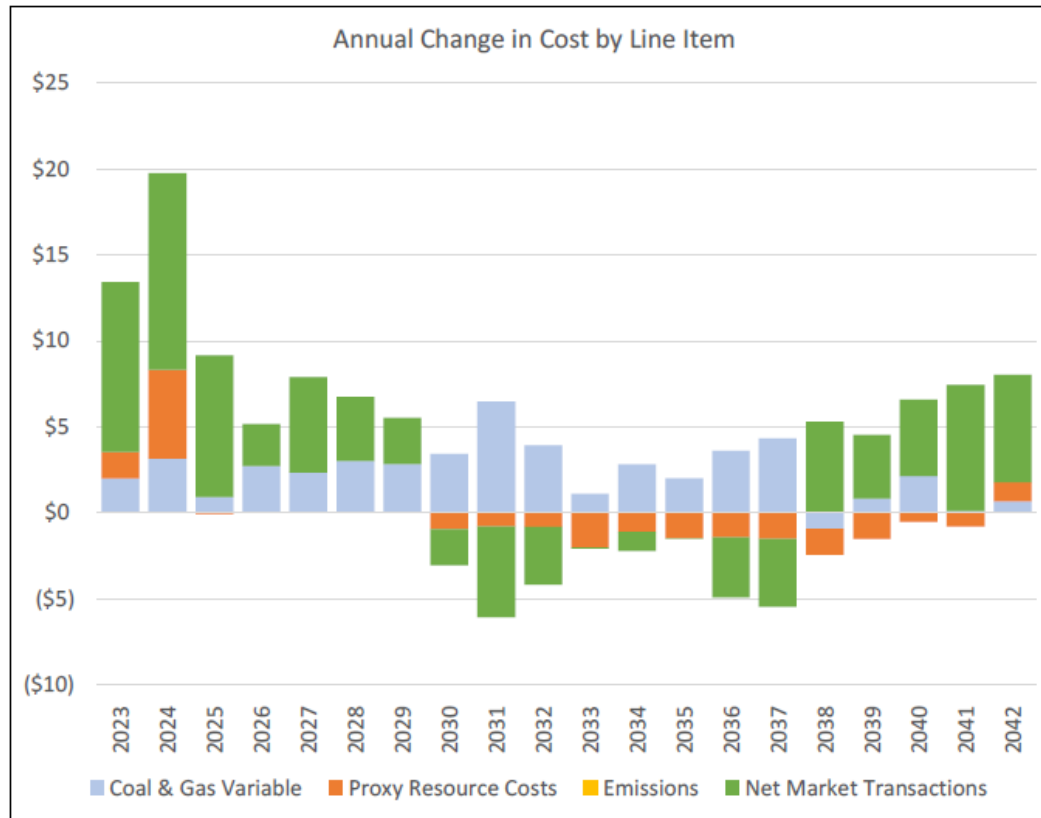
**06/01/2023**



# PacifiCorp 2023 IRP Stochastics: Comparing Mean Results to 95<sup>th</sup> Percentile



## 2023 IRP Preferred Portfolio



# Transparent Resource Characteristics: PacifiCorp IRP



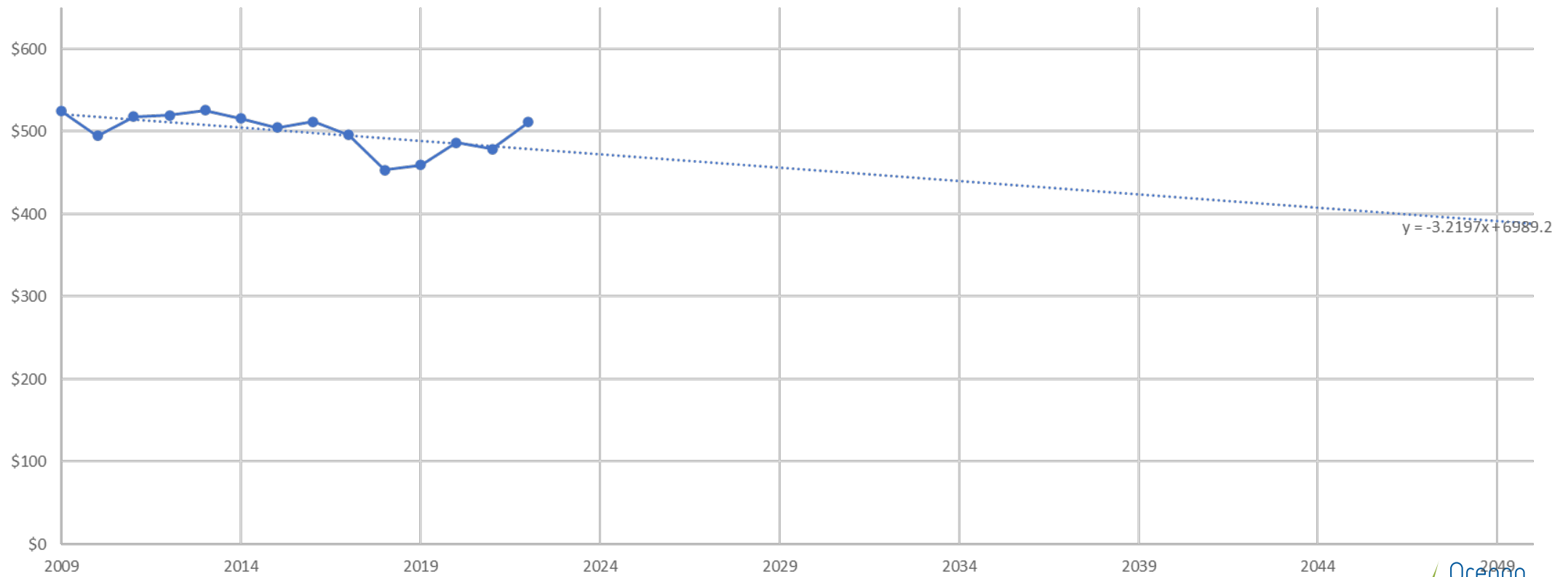
**Table 7.1 – 2023 Supply-Side Resource Table (2022S) (Continued)**

Description		Resource Characteristics				Costs				Operating Characteristics			
Fuel	Resource	Net				Base Capital (\$/KW)	Demolition Cost (\$/kW)	Var O&M (\$/MWh)	Fixed O&M (\$/KW-yr)	Average Full Load			Water Consumed (Gal/MWh)
		Elevation (AFSL)	Capacity (MW)	Commercial Operation Year	Design Life (yrs)					Heat Rate (HHV Btu/KWh)/Efficiency	EFOR (%)	POR (%)	
Storage	Adiabatic CAES, RESC, 125 MW, 3000 MWh	6500	125	2027	30	\$ 2,854	\$ 49	\$ 1.05	\$ 17.23	n/a	0.0	0.0	n/a
Storage	Adiabatic CAES, RESC, 125 MW, 6000 MWh	6500	125	2029	30	\$ 3,867	\$ 49	\$ 1.05	\$ 17.71	n/a	0.0	0.0	n/a
Storage	Adiabatic CAES, RESC, 250 MW, 4000 MWh	6500	250	2028	30	\$ 2,440	\$ 49	\$ 1.05	\$ 12.65	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 250 MW, 6000 MWh	6500	250	2029	30	\$ 2,734	\$ 49	\$ 1.05	\$ 12.81	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 250 MW, 12000 MWh	6500	250	2032	30	\$ 3,660	\$ 49	\$ 1.05	\$ 13.29	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 4000 MWh	6500	500	2028	30	\$ 2,013	\$ 49	\$ 1.05	\$ 10.28	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 5000 MWh	6500	500	2028	30	\$ 2,027	\$ 49	\$ 1.05	\$ 10.32	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 6000 MWh	6500	500	2029	30	\$ 2,169	\$ 49	\$ 1.05	\$ 10.36	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 8000 MWh	6500	500	2030	30	\$ 2,315	\$ 49	\$ 1.05	\$ 10.44	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 12000 MWh	6500	500	2032	30	\$ 2,631	\$ 49	\$ 1.05	\$ 10.60	n/a	0.011	0.0	n/a
Storage	Adiabatic CAES, RESC, 500 MW, 24000 MWh	6500	500	2035	30	\$ 3,629	\$ 49	\$ 1.05	\$ 11.08	n/a	0.011	0.0	n/a
Storage	Pumped Hydro, Southern OR	N/A	400	2028	100	\$ 4,303	\$ 485	\$ 0.51	\$ 18.00	1	2	4.0	n/a
Storage	Pumped Hydro, Portland North Coast	N/A	400	2028	100	\$ 4,303	\$ 485	\$ 0.51	\$ 18.00	1	2	4.0	n/a
Storage	Pumped Hydro, Central WY	N/A	400	2028	100	\$ 4,303	\$ 485	\$ 0.51	\$ 18.00	1	2	4.0	n/a
Storage	Pumped Hydro, Eastern WY	N/A	400	2028	100	\$ 4,303	\$ 485	\$ 0.51	\$ 18.00	1	2	4.0	n/a
Storage	Pumped Hydro, Central UT	N/A	400	2028	100	\$ 4,303	\$ 485	\$ 0.51	\$ 18.00	1	2	4.0	n/a
Solar	Idaho Falls, ID, 20 MW, 26.1% CF	4,700	20	2025	25	\$ 1,427	\$ 29	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar	Lakeview, OR, 20 MW, 27.6% CF	4,800	20	2023	25	\$ 1,527	\$ 32	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar	Milford, UT, 20 MW, 30.2% CF	5,000	20	2023	25	\$ 1,412	\$ 29	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar	Milford, UT, 200 MW, 30.2% CF	5,000	200	2023	25	\$ 1,140	\$ 29	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar	Rock Springs, WY, 200 MW, 27.9% CF	6,400	200	2023	25	\$ 1,187	\$ 30	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar	Yakima, WA, 200 MW, 24.2% CF	1,000	200	2025	25	\$ 1,211	\$ 31	-	\$ 20.87	n/a	included with CI	0.0	n/a
Solar + Storage	Idaho Falls, ID, 200 MW, 26.1% CF + BESS: 100% pwr, 4 hours	4,700	200	2025	25	\$ 2,879	\$ 54	-	\$ 63.19	1	included with CI	0.0	n/a
Solar + Storage	Lakeview, OR, 200 MW, 27.6% CF + BESS: 100% pwr, 4 hours	4,800	200	2025	25	\$ 2,864	\$ 56	-	\$ 63.19	1	included with CI	0.0	n/a

# Non-Commodity, Per-customer Cost Estimate in NW Natural's 2022 IRP Rate Impact Analysis



Trend in Non-Commodity Annual Revenue Requirement per Residential Customer



# Questions?



Thank you.

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