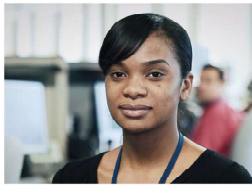


WRA EXHIBIT 1

Post-IRP Draft Errata, Refinements, and
Corrections

2025 Integrated Resource Plan Public Input Meeting January 22-23, 2025



Errata to the IRP Document

Figure 6.7 – West Summer Capacity Position Trend

Corrections:

- Chapter 6, Figure 6.6 – East Summer Capacity Position Trend was pasted in for Chapter 6, Figure 6.7 – West Summer Capacity Position Trend. The corrected Figure 6.7 is displayed on the right.

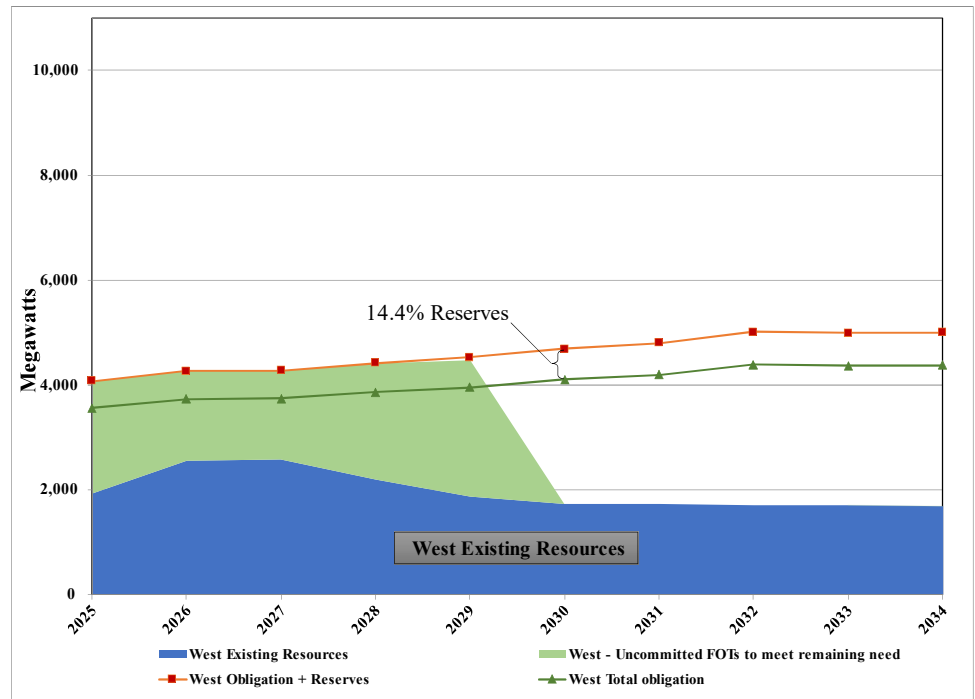
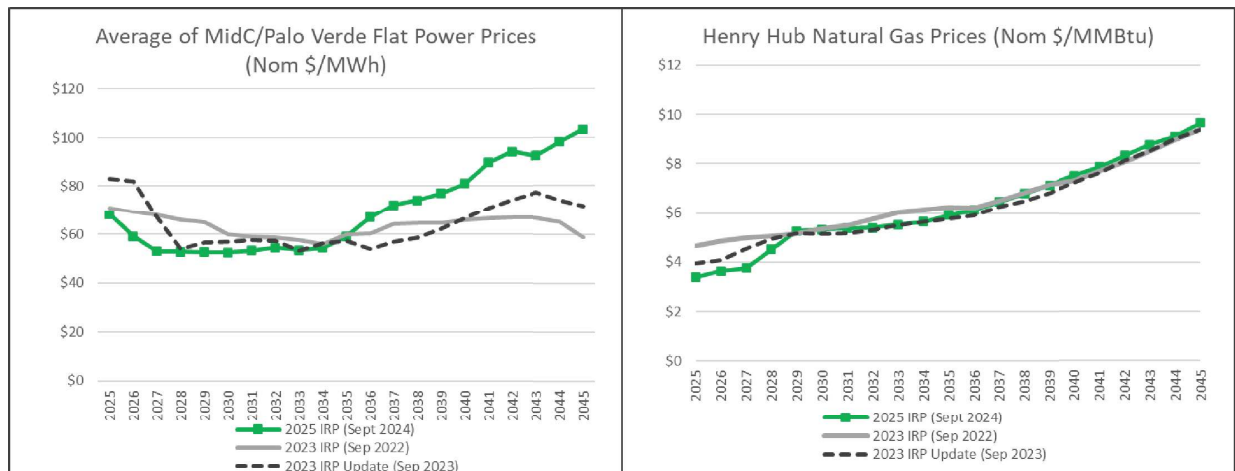


Figure 8.5 – Nominal Wholesale Electricity and Natural Gas Price Scenarios

Corrections:

- Chapter 8, Figure 8.5 – Nominal Wholesale Electricity and Natural Gas Price Scenarios did not get updated from the 2023 IRP version. The 2025 IRP version is presented below.



Supply-Side Resources

Corrections:

- Table 7.6 – 7.8 2025 IRP Thermal Supply-Side Resources, Additional Attributes and Fixed O&M capacity factors were incorrect for natural gas, nuclear, and geothermal resource options. This impacts total cost columns in these tables, along with tables 7.9-7.11 2025 IRP Storage Supply-Side Resources, Variable O&M, Total Cost and Credits. This correction has no impact on modeled Plexos inputs.
- Table 7.9-7.11 2025 IRP Thermal Supply-Side Resources, Variable O&M, Total Cost and Credits tax credits were erroneous or missing for CCS, hydrogen peaker (electrolyzer), nuclear, geothermal, offshore wind and all advanced cases. Production tax credit, investment tax credit, and 45Q CCS tax credits were all corrected for these resource options, as necessary. All tax credits presented in Tables 7.9-7.11 now appropriately reflect what was modeled in Plexos for all resource options.
- Table 7.3 2025 Non-Thermal Supply-Side Resource, Characteristics and Costs 100-hour Iron-Air storage availability year and commercial operation year were incorrectly input as 2030 and 2032. Availability year and commercial operation year for the 100-hour Iron-Air storage have been corrected to 2028 and 2030. This commercial operation year was already being modeled in Plexos.
- A new row was added in Table 7.6 2025 IRP Thermal Supply-Side Resources, Additional Attributes and Fixed O&M to represent the hydrogen peaker with CCCT Dry "H", 2X1, DF and electrolyzer resource being modeled in Plexos. This is not a new resource option but combines the costs and characteristics of the CCCT Dry "H", 2X1, DF, with SCR + Δ for Hydrogen storage, tanks, 500 bar, 24-hour resource and the Electrolyzer, Proton Exchange Membrane (PEM), 50,000 kg/day resource already presented in Table 7.6 to align with what was modeled in Plexos.
- Tables 7.8 2025 IRP Thermal Supply-Side Resources, Additional Attributes and Fixed O&M and 7.11 2025 IRP Thermal Supply-Side Resources, Variable O&M, Total Cost and Credits both show a second version of the Li-Ion, 4-hour, 200 MW storage resource without modifiers for co-location applied. Co-location costs were assumed for all Lithium-ion storage options, so this resource option was removed.

Supply-Side Resources



Table 7.6 – 2025 IRP Thermal Supply-Side Resources, Additional Attributes and Fixed O&M

Resource Description	Additional Attributes									Fixed O&M						Total Fixed Cost (\$/MWh)
	Modeled IRP	Elevation (AFSL)	Total Capital Cost	Demolition Cost	Payment Factor	Annual Payment (\$/kW-Yr)	Capacity Factor	Storage Efficiency		O&M (\$/kW-Yr)	Capitalized Premium	O&M Capitalized (\$/kW-Yr)	Gas Transport (\$/kW-Yr)	Total Fixed O&M (\$/kW-Yr)	Total Fixed Cost (\$/kW-Yr)	
Hydrogen peaker with CCCT Dry 'H', 2X1, DF and electrolyzer	Yes	0	\$ 2,858.50	\$ 44.94	4.170%	\$121.07	98.00%	0%		\$60.95	0.00%	\$0.00	\$0.00	\$60.95	\$182.03	\$21.20
Electrolyzer, Proton Exchange Membrane (PEM), 50,000 kg/day	No	0	\$ 560.99	\$ 32.46	4.170%	\$24.75	97.00%	0%		\$10.28	0.00%	\$0.00	\$0.00	\$10.28	\$35.03	\$4.12
Δ CCS Dave Johnston 4 (costs on post retrofit basis)	No	5,541	\$ 3,500.78	\$ 53.20	6.447%	\$229.12	85.00%	0%		\$277.68	5.54%	\$15.38	\$0.00	\$293.06	\$522.19	\$70.13
Δ CCS Hunter 1-3 (costs on post retrofit basis)	No	6,429	\$ 2,951.20	\$ 53.20	6.451%	\$193.81	85.00%	0%		\$235.36	5.54%	\$13.04	\$0.00	\$248.39	\$442.21	\$59.39
Δ CCS Huntington 1&2 (costs on post retrofit basis)	No	6,933	\$ 2,951.40	\$ 53.20	6.451%	\$193.83	85.00%	0%		\$242.12	5.54%	\$13.41	\$0.00	\$255.53	\$449.36	\$60.35
Δ CCS Jim Bridger 3&4 (costs on post retrofit basis)	No	7,513	\$ 2,598.38	\$ 53.20	6.454%	\$171.13	85.00%	0%		\$254.91	5.54%	\$14.12	\$0.00	\$269.03	\$440.16	\$59.11
Δ CCS Wyodak (costs on post retrofit basis)	No	4,448	\$ 3,504.25	\$ 53.20	6.447%	\$229.35	85.00%	0%		\$309.51	5.54%	\$17.15	\$0.00	\$326.65	\$556.00	\$74.67
Small Modular Reactor or Advanced Reactor, Moderate Technology Case	Yes	N/A	\$ 9,662.09	\$ 17.00	3.919%	\$379.32	93.00%	0%		\$97.42	9.42%	\$9.18	\$0.00	\$106.60	\$485.92	\$59.65
Grochon	Yes	2,814	\$ 8,844.11	\$ 17.00	3.910%	\$366.90	93.00%	0%		\$97.42	9.42%	\$9.18	\$0.00	\$106.60	\$491.40	\$60.48
Wasatch Front	Yes	4,225	\$ 9,855.33	\$ 17.00	3.545%	\$349.97	93.00%	0%		\$97.42	9.42%	\$9.18	\$0.00	\$106.60	\$456.57	\$56.04
Wyoming East	Yes	6,130	\$ 9,565.47	\$ 17.00	3.545%	\$339.70	93.00%	0%		\$97.42	9.42%	\$9.18	\$0.00	\$106.60	\$446.30	\$54.78
Small Modular Reactor or Advanced Reactor, Advanced Technology Case	No	N/A	\$ 6,368.23	\$ 12.00	3.545%	\$226.18	93.00%	0%		\$84.53	9.42%	\$7.97	\$0.00	\$92.49	\$318.67	\$39.12
Small Modular Reactor or Advanced Reactor, Moderate Technology Case + Δ for nuclear integrated thermal storage	No	N/A	\$ 10,628.30	\$ 17.00	3.919%	\$417.19	93.00%	0%		\$107.16	9.42%	\$10.10	\$0.00	\$117.26	\$534.45	\$65.60
Small Modular Reactor or Advanced Reactor, Advanced Technology Case + Δ for nuclear integrated thermal storage	No	N/A	\$ 7,004.04	\$ 12.00	3.444%	\$248.74	93.00%	0%		\$92.98	9.42%	\$8.76	\$0.00	\$101.74	\$340.49	\$43.02
Large Light Water Reactor, Moderate Technology Case	No	N/A	\$ 7,562.87	\$ 10.00	3.919%	\$296.78	93.00%	0%		\$125.36	9.42%	\$11.81	\$0.00	\$137.17	\$433.95	\$53.27
Large Light Water Reactor, Advanced Technology Case	No	N/A	\$ 6,265.25	\$ 9.00	3.545%	\$222.42	93.00%	0%		\$90.26	9.42%	\$8.51	\$0.00	\$98.76	\$321.18	\$39.42
Near Field Enhanced Geothermal System (NF-EGS) Binary	Yes	N/A	\$ 7,593.06	\$ 125.09	5.178%	\$399.65	80.00%	0%		\$194.00	0.00%	\$0.00	\$0.00	\$194.00	\$593.65	\$84.71
Southern OR	Yes	497	\$ 8,883.88	\$ 125.09	5.178%	\$466.48	80.00%	0%		\$194.00	0.00%	\$0.00	\$0.00	\$194.00	\$660.48	\$94.25
Wasatch Front	Yes	4,225	\$ 7,493.06	\$ 125.09	4.817%	\$371.78	80.00%	0%		\$194.00	0.87%	\$1.69	\$0.00	\$195.69	\$467.47	\$80.98

* Δ for CCS installation on existing coal units is for CCS costs and operating characteristics only, not the operation of the existing coal resource.

Supply-Side Resources

Table 7.9 – 2025 IRP Thermal Supply-Side Resources, Variable O&M, Total Cost and Credits

Resource Description	Variable O&M				Total Resource Cost (\$/MWh)	Credits		
	Levelized Fuel (\$/MWh)	O&M (\$/MWh)	Capitalized Premium	O&M Capitalized (\$/MWh)		Tax Credits (\$/MWh)	Total Resource Cost with PTC / ITC Credits (\$/MWh)	Total Fixed Cost with Tax Credit (\$/kW-yr)
Hydrogen peaker with CCCT Dry "H", 2X1, DF and electrolyzer	\$ -	\$0.00	0.00%	\$0.00	\$21.20	\$ (4.85)	\$16.35	\$140.35
Electrolyzer, Proton Exchange Membrane (PEM), 50,000 kg/day	\$ -	\$23.91	0.00%	\$0.00	\$28.03	\$ (0.96)	\$27.07	\$33.83
CCS Dave Johnston 4 (costs on post retrofit basis)	\$ -	\$11.40	11.52%	\$1.31	\$82.84	\$ (160.13)	-\$77.29	-\$487.20
CCS Hunter 1-3 (costs on post retrofit basis)	\$ -	\$9.73	11.52%	\$1.12	\$70.24	\$ (160.13)	-\$89.89	-\$565.96
CCS Huntington 1&2 (costs on post retrofit basis)	\$ -	\$9.63	11.52%	\$1.11	\$71.09	\$ (160.13)	-\$89.04	-\$562.82
CCS Jim Bridger 3&4 (costs on post retrofit basis)	\$ -	\$10.57	11.52%	\$1.22	\$70.90	\$ (160.13)	-\$89.23	-\$554.00
CCS Wyodak (costs on post retrofit basis)	\$ -	\$11.69	11.52%	\$1.35	\$87.70	\$ (160.13)	-\$72.43	-\$459.16
Small Modular Reactor or Advanced Reactor, Moderate Technology Case	\$ -	\$9.74	0.00%	\$0.00	\$69.39	\$ (20.29)	\$49.10	\$343.85
Goshen	\$ -	\$9.74	0.00%	\$0.00	\$70.32	\$ (20.29)	\$50.03	\$351.12
Wasatch Front	\$ -	\$9.74	0.00%	\$0.00	\$65.79	\$ (22.29)	\$43.50	\$301.91
Wyoming East	\$ -	\$9.74	0.00%	\$0.00	\$64.52	\$ (22.29)	\$42.24	\$292.16
Small Modular Reactor or Advanced Reactor, Advanced Technology Case	\$ -	\$8.74	0.00%	\$0.00	\$47.86	\$ (22.29)	\$25.57	\$170.27
Small Modular Reactor or Advanced Reactor, Moderate Technology Case + Δ for nuclear integrated thermal storage	\$ -	\$10.72	0.00%	\$0.00	\$76.32	\$ (20.29)	\$56.03	\$392.38
Small Modular Reactor or Advanced Reactor, Advanced Technology Case + Δ for nuclear integrated thermal storage	\$ -	\$9.61	0.00%	\$0.00	\$52.64	\$ (22.29)	\$30.35	\$202.10
Large Light Water Reactor, Moderate Technology Case	\$ -	\$9.38	0.00%	\$0.00	\$62.65	\$ (20.29)	\$42.36	\$293.43
Large Light Water Reactor, Advanced Technology Case	\$ -	\$7.88	0.00%	\$0.00	\$47.30	\$ (22.29)	\$25.02	\$169.87
Near Field Enhanced Geothermal System (NF-EGS) Binary	\$ -	\$0.00	0.00%	\$0.00	\$84.71	\$ (23.46)	\$61.25	\$429.24
Southern OR	\$ -	\$0.00	0.00%	\$0.00	\$94.25	\$ (23.46)	\$70.79	\$496.08
Wasatch Front	\$ -	\$0.00	0.00%	\$0.00	\$80.98	\$ (25.77)	\$55.21	\$386.88

* Δ for CCS installation on existing coal units is for CCS costs and operating characteristics only, not the operation of the existing coal resource.

Other Clarifications

- The discount rate value used in the 2025 IRP is not 6.69 percent as was presented on page 189 of the 2025 IRP Draft document. The correct value for the 2025 IRP is 6.38 percent. 6.69 percent was the value used in the 2023 IRP Update. The discount rate is correct in modeling and will be corrected in the final 2025 IRP filing.
- Long Duration Storage selected in the preferred portfolio and any portfolio variants (e.g. Table 9.25) includes 8-hour batteries and 100-hour iron air batteries
 - If either hydrogen storage + peaker or pumped hydro storage had been selected, those resources would also appear as Long Duration Storage
- Table 9.10 missing CCS that should have been aligned with jurisdictional portfolios

Corrections to Inputs

Post-Draft Corrections

- The following resources had inaccurate inputs in PLEXOS that were corrected after the draft:
 - Incorrect levelized capital carrying rates: pumped hydro storage, nuclear, geothermal
 - Incorrect FOM cost for hydrogen peaker
- The overhaul and maintenance outages for some thermal resources were incomplete.
- The hourly solar generation profiles for proxy resources used in the model were not updated to use data based on coordinated historical weather conditions and location-specific characteristics.

Note for Utah Stakeholders: Due to the UPSC directives pertaining to the 2025 IRP (Docket No. 23-035-10, Sept. 24, 2024), the final 2025 IRP filed in Utah will not contain any of the corrections and updates listed on this slide.

Refinements

Refinements for Final IRP

Methodology

- Process for addressing jurisdictional shortfalls such as a need for additional Western Resource Adequacy Program (WRAP) capacity
- Report stochastic risk adjustment

Assumptions

- Load forecast update removes loads that fall outside of the traditional IRP planning process
- Incorporate final CPA results and updated stochastic risk credits.
- Small-scale resources limited to 5% of local load in PACE and 50% in PACW
- Natrium demonstration project COD shifted out to 2032
- Update forced outages for thermal units to be consistent with full range of historical data
- Earliest resource availability may be updated to reflect realistic CODs
- FOT limits begin in 2028
- Updated regulation reserves
- The final IRP will also incorporate stakeholder feedback to the fullest extent possible
- CO2-E reporting will be updated to reflect current carbon factors for NOx and CH4

Note for Utah Stakeholders: Due to the UPSC directives pertaining to the 2025 IRP (Docket No. 23-035-10, Sept. 24, 2024), the final 2025 IRP filed in Utah will not contain any of the corrections and updates listed on this slide.