



1407 W. North Temple
Salt Lake City, Utah 84116

June 30, 2022

***VIA ELECTRONIC FILING
AND OVERNIGHT DELIVERY***

Public Service Commission of Utah
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City, UT 84114

Attn: Gary Widerburg
Commission Secretary

Re: **Docket 03-035-14 – Quarterly Compliance Filing – 2022.Q1 Avoided Cost Input Changes**
Docket 22-035-36 – 2022.Q1 Avoided Cost Input Changes Quarterly Compliance Filing

PacifiCorp (dba Rocky Mountain Power) hereby respectfully submits its quarterly Schedule 38 compliance filing.

Public Service Commission of Utah (Commission) orders dated October 31, 2005, and February 2, 2006, in Docket 03-035-14 require the Company to keep a record of any changes, including data inputs, made to the Proxy model and the Generation and Regulation Initiative Decision Tool (GRID) model used in calculating avoided costs. The orders further require the Company to notify the Commission and Division of Public Utilities (DPU) of updates made to the models used in the approved Proxy and Partial Displacement Differential Revenue Requirement (PDDRR) avoided cost methodologies. The Commission order dated June 9, 2015, in Docket 14-035-140 requires the Company to identify routine and non-routine updates or modeling changes. Non-routine updates will become effective in three weeks if the update is unchallenged by any party or upon resolution by settlement or Commission action if challenged by any party.

Routine Updates

Appendix A provides a summary of the assumptions used within the GRID model. The Company identifies the following routine updates to its avoided cost inputs since the previous filing:

1. **Official Forward Price Curve (OFPC)** – Update to prices dated March 31, 2022 (2203 OFPC).
2. **2021 IRP Update** – Filed on March 31, 2022.

3. **Qualifying Facility (QF) Queue** – Update of signed contract queue and current potential QFs. The QF queue was revised to include 327 MW nameplate in this filing. The potential queue was 794 MW nameplate in the 2021.Q4 filing.

Additional Details

Additional detail is provided below:

1. **Proxy / Partial Displacement Differential Revenue Requirement (PDDRR) Avoided Cost Methodology** – The proxy resources used in the PDDRR avoided cost methodology are consistent with the Company’s 2021 Integrated Resource Plan (IRP) Update filed with the Commission on March 31, 2022. The 2021 IRP Update preferred portfolio includes cost-effective solar with storage, wind, wind with storage, stand storage and thermal resources. The thermal QF resource partially displaces summer and winter front office transactions (FOTs) during 2022-2032, and the Utah North non-emitting peaking resource in 2031. The tracking solar QF resource partially displaces summer and winter FOTs during 2022-2025 and the Borah solar with storage resource in 2026. The wind QF resource partially displaces summer and winter FOTs during 2022-2025 and a Portland North Coast wind resource in 2026.
2. **Impact to Avoided Cost Prices (\$/MWh)** – Provided as **Appendix B.1** is the \$/MWh impact of the above mentioned updates on avoided costs, compared to the previous compliance filing.
 - a. Avoided costs presented in **Appendix B.1** were calculated assuming a 100 MW 100 percent capacity factor thermal QF resource.
 - b. Avoided costs presented in **Appendix B.2** were calculated assuming an 80 MW 32.2 percent capacity factor single-axis tracking solar QF resource.
 - c. Avoided costs presented in **Appendix B.3** were calculated assuming an 80 MW 29.5 percent capacity factor wind QF resource.
3. **Major Changes from the Prior Study** – Provided as **Appendix C** is a \$/MWh step impact study of the routine updates from the prior study. Also provided in **Appendix C** is the incremental impact of each change from the prior step.

Work Papers

The Company has also provided calculations with additional details on the following:

- Current QF queue and partial displacement adjusted for solar degradation; and
- FOT partial displacement

It is respectfully requested that all formal correspondence and requests regarding this compliance filing be addressed to:

Public Service Commission of Utah

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By E-Mail (preferred): datarequest@pacificorp.com

By Regular Mail: Data Request Response Center
PacifiCorp
825 NE Multnomah Street, Suite 2000
Portland, OR 97232

Informal inquiries may be made to Jana Saba at (801) 220-2823, or Dan MacNeil at (503) 813-5523.

Very truly yours,

A handwritten signature in black ink that reads "Joelle Steward". The signature is written in a cursive style with a large, looped initial "J".

Joelle Steward
Senior Vice President, Regulation

cc: Service List (Docket No. 03-035-14)
Service List (Docket No. 22-035-36)

ROCKY MOUNTAIN POWER
DESCRIPTION OF AVOIDED COST INPUT CHANGES
2022.Q1 – JUNE 2022

Appendix A

PacifiCorp Avoided Cost Partial Displacement Differential Revenue Requirement (“PDDRR”) Model Updates through June 2022 Docket 22-035-36 / Docket 03-035-14

Assumptions that have changed since the 2021.Q4 compliance filing are in **bold and underline**.

GRID Scenario Study Period

- January 1, 2022 through December 31, 2036 - 15-year study.
- Avoided cost prices starting in January 2022.

Official Forward Price Curve (“OFPC”) (Gas and Electric Market Prices)

- **Updated to PacifiCorp’s March 31, 2022 OFPC (“2203 OFPC”)**
- Hourly Market Price Scalars consistent with 2021 Integrated Resource Plan (“IRP”)

Fuel Prices (Coal)

- Average and incremental coal costs consistent with 2021 Integrated Resource Plan (“IRP”).
- Coal burn expense reflects incremental coal costs and coal take or pay minimum burn levels.

IRP Resources

- **2021 IRP Update filed with the Public Service Commission of Utah (“UPSC”) on March 31, 2022.**
- New solar, wind, battery storage, and thermal resources; as well as front office transactions (“FOT”), consistent with **2021 IRP Update**. (Available online at: https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-plan/2021_IRP_Update.pdf)
- Existing plant retirement consistent with **2021 IRP Update**.
- Transmission investment and capacity changes consistent with **2021 IRP Update** (Table 1.2).

REC Ownership:

Consistent with the Commission’s January 23, 2018 order in Docket No. 17-035-37, when a QF defers or avoids a renewable resource, the Company retains the renewable energy credits (“RECs”) on behalf of ratepayers. When a QF’s avoided capacity costs are not based on the costs of a renewable resource, the QF is entitled to the RECs associated with its output.

Hydro Resources

- Hydro forecast prepared April 2021.

- 2020 hydro levels extended thereafter with known and measurable changes.
- Adjust Klamath dispatch to reflect current operating patterns.
- Update Mid-Columbia (“Mid-C”) generation forecast.

Discount Rate

- 6.88 percent discount rate - 2021 IRP
- Discount rate is consistent with the Commission’s order in Docket 11-035-T06.

Inflation Rates

- 2.155% percent inflation rate - 2021 IRP

Levelized Prices (Nominal) at 6.88 percent Discount Rate

- 15 years 2022 through 2036.
- Levelized prices are for illustrative purposes only.

Load Forecast (Retail)

- 20-year load forecast dated August 10, 2021.

Long-Term Contracts

- Long-term contracts which have prices that are indexed to market are consistent with the **2203 OFPC**.
- Contracts are modeled based on 48 months ended December 2021.
- Qualifying Facility (QF) power purchase agreements (PPA) are assumed to terminate and not renew at the end of their current PPA term.
- Incorporates signed PPAs.

Market Capacity

- Capacity set at 48-month average of all short-term firm (“STF”) sales ended **February 2022**.
- Mid-C and Palo Verde (“PV”) markets uncapped.
- Additional heavy load hour (“HLH”) and light load hour (“LLH”) sales limited to historical 48-month average less monthly executed STF contracts as of December 31, 2021.

Potential Environmental Costs

- Potential environmental costs are excluded from fuel cost for net power costs (“NPC”) and plant commitment and dispatch decisions.

Regulating Margin

- Requirements are modeled based on the **2021 IRP Update**.

- The Company’s **2021 IRP Update** included a study of wind and solar integration requirements and costs, and was used to develop a portfolio-specific reserve requirement. The resulting regulation reserve requirements from the 2021 IRP were incorporated in the GRID model. As a result, the cost of reserve requirements is incorporated in the net power cost result.

Contingency Reserve Calculation

- Reserve modeling reflects the North American Electric Reliability Corporation / Western Electricity Coordinating Council reliability standard BAL-002-WECC-2 – contingency reserves set to 3 percent of retail load plus 3 percent of generating resources.
- Hourly retail load reserve calculation through 2022.
- Typical week retail load reserve calculation thereafter.

STF Transactions

- Executed STF contracts as of **February 2022**.

Size of the Avoided Cost Resource

- The avoided cost thermal resource is 100 megawatts (“MW”) with a 100 percent capacity factor and is located in the Utah North transmission bubble.
- The avoided cost tracking solar resource is 80 MW with a 32.2 percent capacity factor and is located in the Utah North transmission bubble.
- The avoided cost wind resource is 80 MW with a 29.5 percent capacity factor and is located in the Utah North transmission bubble.

Thermal Resources

- Thermal resource operating characteristics updated to be consistent with current Company official characteristics.
- Forced outage, planned outage, and heat rate levels based on 48 months ended December 2019.

Wind and Solar Resources

- Existing wind and solar generation profiles modeled using generation shapes derived from 2018 actuals as modeled in the 2021 IRP.^{1,2}
- Wind and solar generation shaped to hourly using generation shapes derived from 2018 actuals as modeled in the 2021 IRP.^{1,2}

¹ Starting in the 2013.Q4 Compliance filing, wind generation has been modeled hourly using actual generation shape. Potential resources were also modeled hourly when data was provided by the project developer. Since the 2016.Q4 compliance filing, all potential wind generation profiles have been shaped to an hourly profile using the hourly shape of nearby wind resources. Shaping does not alter the 12x24 wind generation profile. This change was made to make potential wind modeling more consistent with existing wind modeling. The hourly shaping of solar generation was identified as a non-routine change in the 2018.Q2 compliance filing.

² In the 2021 IRP, wind and solar profiles were aligned with load based on the historical relationship, see 2021 IRP, Vol II, Appendix K: Capacity Contribution.

- Non-PTC wind and solar resources can be curtailed on an economic basis within the GRID model.³
- Resource-specific capacity contribution values are calculated for proxy resources and QFs, based on their expected output and the final loss of load probability results in the 2021 IRP (2021 IRP, Vol II, Appendix K: Capacity Contribution).

Transmission

- Short-term transmission modeled based on 48 months ended December 2020.
- Transmission investment and capacity changes consistent with **2021 IRP Update**.

IRP Partial Displacements (This Filing)

Provided in the table below are the Contracts that have executed a PPA or are actively negotiating for a PPA. Signed resources are new and were not included in the 2021 IRP.

Contracts Queue						
No.	Signed Contracts	Partial Displacement	Name plate	CF	Capacity Contribution	Start Date
1	Kennecott Smelter Non Firm	0.0	31.8	58.2%	0.0%	2022 01 01
2	Kennecott Refinery Non Firm	0.0	6.2	85.0%	0.0%	2022 01 01
3	Tesoro Non Firm	0.0	25.0	85.0%	0.0%	2022 01 01
4	Exxon Mobil	0.0	98.0	75.0%	0.0%	2022 01 01
5	Simplot Phosphates	0.0	13.3	85.0%	0.0%	2022 01 01
6	Sunnyside Solar QF	0.45	4.99	32.08%	9.0%	2023 09 30
Total Signed MW		0.45	179.29			
No.	Potential QF Contracts	Partial Displacement	Name plate	CF	Capacity Contribution	Start Date
1	QF - 655 - OR - Wind	2.63	8.00	37.0%	32.9%	2022 02 01
2	QF - 657 - UT - Solar	10.80	60.00	23.1%	18.0%	2024 12 01
3	QF - 640 - UT - Wind	12.81	79.80	44.2%	16.1%	2024 08 01
Total Potential MW		26.24	147.80			
Total Partial Displacement		26.69	327.09			
4	Utah 2022.Q1	100.00	100.00	100.0%	100.0%	2022 01 01
Partial Displacement after QF		126.69	427.09			

After accounting for the QF queue, the capacity displacement associated with the proxy avoided cost resources in this filing were as follows:

- Thermal: Incremental Thermal QF resource displaces FOTs for 2022-2032 and Utah North non-emitting Peaker resource in **2031**.

³ Wind dispatch was identified as a non-routine change in the 2018.Q2 compliance filing.

- Tracking Solar: **14** nameplate MW of solar resources are displaced by the QF queue. After degradation and accounting for capacity contribution, the incremental solar QF displaces 13 MW of solar with storage resource located in Borah in 2026 from **2021 IRP Update** preferred portfolio, along with associated transmission, specifically the Boardman-to-Hemingway project. The Company retains 100% of the RECs starting in 2026.
- Wind: **38** MW of wind resources are displaced by the QF queue. The wind QF displaces the 2026 wind resource located in Portland North Coast from **2021 IRP Update** preferred portfolio. The Company retains 100% of the RECs starting in 2026.

Year	IRP Additions (Nameplate MW)						Base Case Displacement (Nameplate MW)				
	IRP Thermal	IRP Std Alone Battery	IRP Solar	IRP Wind	IRP FOT Summer	IRP FOT Winter	Thermal	Solar	Wind	FOT Summer	FOT Winter
2022	-	-	-	-	1,545	603	-	-	-	3	3
2023	-	-	-	-	1,428	558	-	-	-	3	3
2024	-	-	-	-	1,745	625	-	-	-	3	3
2025	-	-	-	-	415	-	-	-	-	27	-
2026	-	200	600	545	-	-	-	14	38	-	-
2027	-	200	600	545	-	-	-	14	38	-	-
2028	500	200	683	800	-	-	-	14	38	-	-
2029	500	700	843	1,080	-	-	-	14	38	-	-
2030	500	700	1,320	1,080	-	-	-	14	38	-	-
2031	912	700	1,946	1,080	-	-	-	14	38	-	-
2032	912	700	3,046	1,080	-	-	-	14	38	-	-
2033	912	700	3,046	1,080	-	-	-	14	38	-	-
2034	912	700	3,046	1,080	-	-	-	14	38	-	-
2035	912	700	3,046	1,080	-	-	-	14	38	-	-
2036	912	700	3,046	1,080	-	-	-	14	38	-	-
2037	1,324	700	3,748	1,236	-	-	-	14	38	-	-
2038	2,737	700	3,748	1,686	-	-	-	14	38	-	-
2039	2,737	700	3,748	1,686	-	-	-	14	38	-	-
2040	2,737	700	3,748	1,954	-	418	-	14	38	-	-
2041	2,737	700	3,748	1,954	-	-	-	14	38	-	-

IRP Partial Displacements (Previous Filing)

Total partial displacement was 186 MW in the base case and 286 MW in the avoided cost case as shown in the table below, adjusted for solar degradation:

Contracts Queue						
No.	Signed Contracts	Partial Displacement	Name plate	CF	Capacity Contribution	Start Date
1	Kennecott Smelter Non Firm	0.0	31.8	58.2%	0.0%	2022 01 01
2	Kennecott Refinery Non Firm	0.0	6.2	85.0%	0.0%	2022 01 01
3	Tesoro Non Firm	0.0	25.0	85.0%	0.0%	2022 01 01
4	Exxon Mobil	0.0	98.0	75.0%	0.0%	2022 01 01
5	Simplot Phosphates	0.0	13.3	85.0%	0.0%	2022 01 01
Total Signed MW		0.00	174.30			
No.	Potential QF Contracts	Partial Displacement	Name plate	CF	Capacity Contribution	Start Date
1	QF - 643 - WA - Solar	1.60	80.00	34.2%	2.0%	2023 12 01
2	QF - 645 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
3	QF - 646 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
4	QF - 647 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
5	QF - 648 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
6	QF - 649 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
7	QF - 650 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
8	QF - 651 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
9	QF - 652 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
10	QF - 653 - UT - Solar	12.14	52.50	25.5%	23.1%	2023 12 01
11	QF - 655 - OR - Wind	2.63	8.00	37.0%	32.9%	2022 02 01
12	QF - 657 - UT - Solar	10.80	60.00	26.3%	18.0%	2024 01 01
Total Potential MW		124.29	620.50			
Total Partial Displacement		124.29	794.80			

ROCKY MOUNTAIN POWER

UPDATE IMPACT – UPDATED AVOIDED COST STUDY

2022.Q1 – JUNE 2022

Appendix B.1
Avoided Cost Prices \$/MWh
Utah 2022.Q1 Sch 38

Year	Thermal-Defer 2031			Thermal UT 2021.Q4 100% CF (2)	Solar Tracking UT 2021.Q4 32.25% CF (2)	Wind UT 2021.4 29.5% CF (2)	Thermal Difference	Solar Tracking Difference	Wind Difference	
	NonEmitPeaker UT 2022.Q1 100% CF (2)	Solar Tracking UT 2022.Q1 32.25% CF (2)	Wind UT 2022.Q1 29.5% CF (2)							
2022	\$41.45	\$28.80	\$35.14	\$34.18	\$33.39	\$39.42	\$7.28	(\$4.59)	(\$4.28)	
2023	\$37.59	\$24.50	\$32.60	\$30.23	\$20.97	\$27.04	\$7.36	\$3.54	\$5.56	
2024	\$44.16	\$26.36	\$37.96	\$32.16	\$18.76	\$29.21	\$11.99	\$7.59	\$8.75	
2025	\$29.07	\$16.84	\$25.64	\$27.85	\$14.72	\$24.91	\$1.22	\$2.12	\$0.73	
2026	\$26.84	\$25.92	\$31.22	\$36.21	\$25.27	\$33.47	(\$9.37)	\$0.65	(\$2.25)	
2027	\$28.87	\$27.34	\$32.51	\$37.33	\$25.93	\$34.16	(\$8.46)	\$1.41	(\$1.66)	
2028	\$29.69	\$28.25	\$33.21	\$39.95	\$28.21	\$35.07	(\$10.26)	\$0.04	(\$1.86)	
2029	\$30.47	\$30.48	\$34.00	\$40.67	\$31.83	\$36.62	(\$10.20)	(\$1.36)	(\$2.62)	
2030	\$30.67	\$30.59	\$34.54	\$40.11	\$31.06	\$37.16	(\$9.44)	(\$0.47)	(\$2.62)	
2031	\$41.91	\$31.54	\$36.16	\$36.91	\$30.80	\$37.47	\$5.00	\$0.73	(\$1.31)	
2032	\$40.03	\$26.93	\$34.38	\$36.87	\$31.00	\$38.67	\$3.16	(\$4.07)	(\$4.29)	
2033	\$41.18	\$30.77	\$36.36	\$50.15	\$30.81	\$39.18	(\$8.98)	(\$0.04)	(\$2.82)	
2034	\$42.60	\$31.81	\$37.32	\$52.56	\$30.76	\$41.10	(\$9.96)	\$1.05	(\$3.78)	
2035	\$43.79	\$32.80	\$38.02	\$53.79	\$31.92	\$41.83	(\$10.01)	\$0.88	(\$3.81)	
2036	\$45.09	\$35.19	\$55.24	\$56.71	\$36.29	\$59.00	(\$11.62)	(\$1.11)	(\$3.76)	
15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)										
2022-2036	\$/MWh	\$36.26	\$27.65	\$34.67	\$38.22	\$27.02	\$35.44	(\$1.96)	\$0.63	(\$0.77)
							-5%	2%	-2%	

Footnotes:

- (1) Discount Rate - 2021 IRP
- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2022 - 2036, levelized monthly

Table 1
Avoided Cost Prices
Utah 2022.Q1 - 100.0 MW and 100.0% CF

	Total Price @		
Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	100.0% Capacity Factor \$/MWh
2022	\$0.00	\$41.45	\$41.45
2023	\$0.00	\$37.59	\$37.59
2024	\$0.00	\$44.16	\$44.16
2025	\$0.00	\$29.07	\$29.07
2026	\$0.00	\$26.84	\$26.84
2027	\$0.00	\$28.87	\$28.87
2028	\$0.00	\$29.69	\$29.69
2029	\$0.00	\$30.47	\$30.47
2030	\$0.00	\$30.67	\$30.67
2031	\$119.29	\$28.29	\$41.91
2032	\$121.85	\$26.16	\$40.03
2033	\$124.48	\$26.97	\$41.18
2034	\$127.16	\$28.08	\$42.60
2035	\$129.90	\$28.96	\$43.79
2036	\$132.70	\$29.98	\$45.09
2037	\$135.56	\$38.72	\$54.20

15 Year

Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)

\$/kW \$35.89

\$/MWh \$32.17 \$36.26

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Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2022.Q1 - 100.0 MW and 100.0% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2022	41.45	49.59	22.40	22.76	25.41	23.54	29.23	122.17	66.81	40.45	28.27	27.56	36.05
2023	37.59	44.14	30.55	27.21	22.24	19.73	24.97	101.74	52.23	40.49	24.96	26.18	34.77
2024	44.16	57.11	39.32	31.16	23.42	22.37	24.14	102.07	67.42	50.55	29.57	34.90	46.11
2025	29.07	17.88	24.90	21.92	18.97	17.91	20.90	67.19	49.17	33.92	22.05	23.52	29.49
2026	26.84	23.75	32.02	22.99	18.81	13.79	19.87	32.78	40.44	29.62	23.33	28.37	36.45
2027	28.87	33.74	34.88	21.32	18.50	14.05	20.49	34.65	41.64	31.67	25.08	30.64	39.92
2028	29.69	33.48	33.42	23.31	18.69	14.50	21.96	38.05	45.77	34.96	25.72	28.76	37.40
2029	30.47	34.10	34.84	24.31	20.10	15.26	21.69	38.38	45.08	37.75	26.59	29.69	37.85
2030	30.67	35.81	35.33	23.64	19.43	13.99	19.86	39.34	44.91	36.89	26.66	31.66	40.53
2031	28.29	32.37	31.09	22.46	18.00	14.01	19.55	36.95	45.39	31.87	26.72	28.82	32.06
2032	26.16	23.36	26.93	22.13	16.63	12.11	17.68	38.24	46.72	28.65	23.28	26.43	31.35
2033	26.97	28.72	29.21	23.16	17.18	12.48	16.68	36.52	45.71	28.44	23.54	28.14	33.47
2034	28.08	27.15	30.70	24.78	17.28	13.81	18.99	38.08	48.00	30.11	24.30	29.22	34.25
2035	28.96	27.58	30.88	24.69	17.99	13.73	17.97	42.37	49.59	30.83	24.94	30.63	35.85
2036	29.98	28.73	30.59	25.38	18.24	14.75	19.40	41.87	48.83	33.85	28.31	32.68	36.69
2037	38.72	46.60	45.87	30.68	21.83	16.56	21.52	46.74	53.58	44.01	34.52	45.34	57.42
2038	38.45	47.92	43.34	30.71	18.60	14.40	20.49	48.62	54.30	43.49	34.65	45.86	58.68
2039	38.12	49.40	43.48	30.75	18.41	14.95	20.54	45.84	51.30	41.13	35.62	46.68	59.08

Table 3
2021 IRP Update Non Emitting UTN Peaker Resource Costs
Non Emitting - 206 MW- East Side Resource (5,050')

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Network Upgrade	Fixed O&M	Variable O&M	Total O&M at Expected CF	Total Resource Fixed Costs	Fuel Cost	Total Resource Energy Cost	Total Resource Costs	Total Fixed Cost
	\$/kW	\$/kW-yr	\$/kW-yr	\$/kW-yr	\$/MWh	\$/kW-yr	\$/kW-yr	\$/MMBtu	\$/MWh	\$/MWh	\$/kW-yr
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(i)	(j)

Non Emitting - 206 MW- East Side Resource (5,050')

2020					\$21.29			\$ 26.72			
2021					\$21.75			\$27.30			
2022					\$22.22			\$27.89			
2023					\$22.70			\$28.49			
2024					\$23.19			\$29.10			
2025					\$23.69			\$29.73			
2026					\$24.20			\$30.37			
2027					\$24.72			\$31.02			
2028					\$25.25			\$31.69			
2029					\$25.79			\$32.37			
2030					\$26.35			\$33.07			
2031	\$1,319.93	\$98.96	12.46	\$0.00	\$26.92	\$77.82	\$189.24	\$33.78	\$335.64	\$401.10	\$111.42
2032		\$101.09	\$12.72	\$0.00	\$27.50	\$79.50	\$193.31	\$34.51	\$342.89	\$409.76	\$113.81
2033		\$103.27	\$12.99	\$0.00	\$28.09	\$81.20	\$197.46	\$35.25	\$350.24	\$418.55	\$116.26
2034		\$105.50	\$13.27	\$0.00	\$28.70	\$82.97	\$201.74	\$36.01	\$357.80	\$427.59	\$118.77
2035		\$107.77	\$13.56	\$0.00	\$29.32	\$84.76	\$206.09	\$36.79	\$365.55	\$436.84	\$121.33
2036		\$110.09	\$13.85	\$0.00	\$29.95	\$86.58	\$210.52	\$37.58	\$373.39	\$446.21	\$123.94
2037		\$112.46	\$14.15	\$0.00	\$30.60	\$88.46	\$215.07	\$38.39	\$381.44	\$455.84	\$126.61
2038		\$114.88	\$14.45	\$0.00	\$31.26	\$90.37	\$219.70	\$39.22	\$389.69	\$465.69	\$129.33
2039		\$117.36	\$14.76	\$0.00	\$31.93	\$92.30	\$224.42	\$40.07	\$398.14	\$475.77	\$132.12
2040		\$119.89	\$15.08	\$0.00	\$32.62	\$94.30	\$229.27	\$40.93	\$406.68	\$485.99	\$134.97
2041		\$122.47	\$15.40	\$0.00	\$33.32	\$96.32	\$234.19	\$41.81	\$415.42	\$496.43	\$137.87
2042		\$125.11	\$15.73	\$0.00	\$34.04	\$98.40	\$239.24	\$42.71	\$424.37	\$507.13	\$140.84

Sources, Inputs and Assumptions

Source: (a)(c)(d) Plant Costs - 2021 IRP - Table 7.1 & 7.2
 (b) = (a) x 0.0749741404851062
 (f) = (e) x (8.76 x 33.0%) + (d)
 (g) = (b) + (f)
 (h) Table 4 - Burnertip Natural Gas Price Forecast
 (i) = 9,936 MMBtu/MWH x \$/MMBtu
 (i) = (g) / (8.76 x 'Capacity Factor') + (i)

Table 3
2021 IRP Update Non Emitting UTN Peaker Resource Costs
Non Emitting - 206 MW- East Side Resource (5,050')

Non Emitting - 206 MW- East Side Resource (5,050')

CCCT Statistics	MW	Percent	Cap Cost	Fixed
SCCT Dry "F" - Turbine	206	100.0%	\$1,320	\$0.00
	-	0.0%	<u>\$0</u>	<u>\$0.00</u>
Capacity Weighted	206	100.0%	\$1,320	\$0.00

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
SCCT Dry "F" - Turbine	206	33.0%	68.0	100.0%	\$21.29	9,936
	-	0.0%	-	0.0%	-	-
Energy Weighted	206	33.0%	68.0	100.0%	\$21.29	9,936

Rounded

	SCCT	Duct Firing		Plant Costs - 2021 IRP - Table 7.1 & 7.2
				MW Plant Capacity
2031 \$	206			Plant Capacity Cost
	\$1,320			Fixed O&M & Capitalized O&M
	\$0.00			Fixed Pipeline
	<u>\$0.00</u>			Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)
2020 \$	\$0.00			Variable O&M Costs & Capitalized Variable O&M (\$/MWh)
2020 \$	\$			Heat Rate in btu/kWh
	21.29			Payment Factor
	9,936			Capacity Factor
	7.497%			Energy Weighted Capacity Factor
	33%			
		33.0%		
2031\$	12.46		Network Upgr	Utah N, Transmission Integration
	26.72			Fuel Cost (\$/mmBtu)

Table 4
Burnertip Natural Gas Price Forecast
Utah 2022.Q1 - 100.0 MW and 100.0% CF

Year	PacifiCorp			
	Delivered IRP - Utah Greenfield Fuel Cost	Delivered Naughton Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2019	\$2.42	\$2.43	\$4.31	\$2.09
2020	\$1.98	\$1.99	\$2.17	\$1.79
2021	\$4.15	\$4.16	\$4.03	\$6.36
2022	\$5.39	\$5.40	\$5.13	\$5.11
2023	\$4.45	\$4.46	\$4.19	\$4.15
2024	\$3.72	\$3.73	\$3.51	\$3.47
2025	\$3.70	\$3.71	\$3.62	\$3.50
2026	\$3.75	\$3.76	\$3.80	\$3.55
2027	\$3.75	\$3.76	\$3.84	\$3.55
2028	\$3.87	\$3.88	\$3.94	\$3.67
2029	\$4.00	\$4.01	\$4.01	\$3.80
2030	\$4.01	\$4.02	\$3.98	\$3.80
2031	\$4.18	\$4.19	\$4.14	\$3.97
2032	\$4.31	\$4.32	\$4.25	\$4.10
2033	\$4.49	\$4.50	\$4.43	\$4.28
2034	\$4.69	\$4.70	\$4.62	\$4.48
2035	\$4.81	\$4.82	\$4.71	\$4.60
2036	\$5.00	\$5.01	\$4.88	\$4.78
2037	\$5.28	\$5.29	\$5.14	\$5.07
2038	\$5.61	\$5.62	\$5.47	\$5.39
2039	\$5.95	\$5.96	\$5.81	\$5.73
2040	\$6.28	\$6.29	\$6.14	\$6.06

Official Forward Price Curve Forecast dated Mar 31, 2022

Table 5

Utah 2022.Q1 - 100.0 MW and 100.0% CF
January 2022 through December 2036
Nominal Avoided Costs Calculated Monthly

Study Name:
Utah 2022.Q1
Resource Capacity
100.0 MW
100.00% CF
Start End 44,562 Jan-22 Dec-36
Discount Rate - 2021 IRP Update
6.88% 0.556%

15 Year 15 Year 15 Year
Starting 2025 Starting 2024 Starting 2023 15 Year
49 37 25 13
228 216 204 192

15 Year
Nominal NPV at 6.88% Discount Rate
\$ 266,796,841 \$ 33,985,259 \$ 300,782,099 8,294,447 \$36.26

Month	Energy		Total	Total	AC Price	
	Avoided \$	Capacity \$ 100.0% CF			Dollars	MWH
Jan-22	3,689,274	-	3,689,274	74,400	49.59	
Feb-22	1,505,153	-	1,505,153	67,200	22.40	
Mar-22	1,893,033	-	1,893,033	74,400	22.76	
Apr-22	1,829,384	-	1,829,384	72,000	25.41	
May-22	1,751,581	-	1,751,581	74,400	23.54	
Jun-22	2,104,235	-	2,104,235	72,000	29.23	
Jul-22	9,089,078	-	9,089,078	74,400	122.17	
Aug-22	4,970,762	-	4,970,762	74,400	66.81	
Sep-22	2,912,085	-	2,912,085	72,000	40.45	
Oct-22	2,103,391	-	2,103,391	74,400	28.27	
Nov-22	1,984,172	-	1,984,172	72,000	27.56	
Dec-22	2,682,383	-	2,682,383	74,400	36.05	
Jan-36	2,137,299	1,105,817	3,243,116	74,400	43.59	
Feb-36	2,128,739	1,105,817	3,234,557	69,600	46.47	
Mar-36	1,888,245	1,105,817	2,994,062	74,400	40.24	
Apr-36	1,313,319	1,105,817	2,419,136	72,000	33.60	
May-36	1,097,126	1,105,817	2,202,944	74,400	29.61	
Jun-36	1,396,470	1,105,817	2,502,288	72,000	34.75	
Jul-36	3,114,851	1,105,817	4,220,668	74,400	56.73	
Aug-36	3,633,218	1,105,817	4,739,035	74,400	63.70	
Sep-36	2,436,944	1,105,817	3,542,761	72,000	49.21	
Oct-36	2,106,203	1,105,817	3,212,020	74,400	43.17	
Nov-36	2,352,682	1,105,817	3,458,500	72,000	48.03	
Dec-36	2,730,091	1,105,817	3,835,908	74,400	51.56	

Offset	Year	Date Test	385	Net Power Cost	Offset	Total	energy	capacity
	1	2022	Jan-22	503	Avoided Cost Resource			
	2	2022	Feb-22			-	878,000	41.45
	3	2022	Mar-22			-	878,000	37.59
	4	2022	Apr-22	2022	36,314,530	-	878,400	44.16
	5	2022	May-22	2023	32,927,739	-	878,400	44.16
	6	2022	Jun-22	2024	38,785,904	-	878,400	44.16
	7	2022	Jul-22	2025	25,466,208	-	876,000	29.07
	8	2022	Aug-22	2026	23,510,719	-	876,000	28.84
	9	2022	Sep-22	2027	25,289,877	-	876,000	28.87
	10	2022	Oct-22	2028	26,077,265	-	878,400	29.69
	11	2022	Nov-22	2029	26,690,656	-	876,000	30.47
	12	2022	Dec-22	2030	26,869,331	-	876,000	30.67
	53	2036	Jan-36					
	54	2036	Feb-36					
	55	2036	Mar-36					
	56	2036	Apr-36					
	57	2036	May-36					
	58	2036	Jun-36					
	59	2036	Jul-36					
	60	2036	Aug-36					
	61	2036	Sep-36					
	62	2036	Oct-36					
	63	2036	Nov-36					
	64	2036	Dec-36					

Appendix B.1
Avoided Cost Prices \$/MWh
Utah 2022.Q1 Sch 38

Year	Thermal-Defer 2031			Thermal UT 2021.Q4 100% CF (2)	Solar Tracking UT 2021.Q4 32.25% CF (2)	Wind UT 2021.4 29.5% CF (2)	Thermal Difference	Solar Tracking Difference	Wind Difference	
	NonEmitPeaker UT 2022.Q1 100% CF (2)	Solar Tracking UT 2022.Q1 32.25% CF (2)	Wind UT 2022.Q1 29.5% CF (2)							
2022	\$41.45	\$28.80	\$35.14	\$34.18	\$33.39	\$39.42	\$7.28	(\$4.59)	(\$4.28)	
2023	\$37.59	\$24.50	\$32.60	\$30.23	\$20.97	\$27.04	\$7.36	\$3.54	\$5.56	
2024	\$44.16	\$26.36	\$37.96	\$32.16	\$18.76	\$29.21	\$11.99	\$7.59	\$8.75	
2025	\$29.07	\$16.84	\$25.64	\$27.85	\$14.72	\$24.91	\$1.22	\$2.12	\$0.73	
2026	\$26.84	\$25.92	\$31.22	\$36.21	\$25.27	\$33.47	(\$9.37)	\$0.65	(\$2.25)	
2027	\$28.87	\$27.34	\$32.51	\$37.33	\$25.93	\$34.16	(\$8.46)	\$1.41	(\$1.66)	
2028	\$29.69	\$28.25	\$33.21	\$39.95	\$28.21	\$35.07	(\$10.26)	\$0.04	(\$1.86)	
2029	\$30.47	\$30.48	\$34.00	\$40.67	\$31.83	\$36.62	(\$10.20)	(\$1.36)	(\$2.62)	
2030	\$30.67	\$30.59	\$34.54	\$40.11	\$31.06	\$37.16	(\$9.44)	(\$0.47)	(\$2.62)	
2031	\$41.91	\$31.54	\$36.16	\$36.91	\$30.80	\$37.47	\$5.00	\$0.73	(\$1.31)	
2032	\$40.03	\$26.93	\$34.38	\$36.87	\$31.00	\$38.67	\$3.16	(\$4.07)	(\$4.29)	
2033	\$41.18	\$30.77	\$36.36	\$50.15	\$30.81	\$39.18	(\$8.98)	(\$0.04)	(\$2.82)	
2034	\$42.60	\$31.81	\$37.32	\$52.56	\$30.76	\$41.10	(\$9.96)	\$1.05	(\$3.78)	
2035	\$43.79	\$32.80	\$38.02	\$53.79	\$31.92	\$41.83	(\$10.01)	\$0.88	(\$3.81)	
2036	\$45.09	\$35.19	\$55.24	\$56.71	\$36.29	\$59.00	(\$11.62)	(\$1.11)	(\$3.76)	
15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)										
2022-2036	\$/MWh	\$36.26	\$27.65	\$34.67	\$38.22	\$27.02	\$35.44	(\$1.96)	\$0.63	(\$0.77)
								-5%	2%	-2%

Footnotes:

- (1) Discount Rate - 2021 IRP
- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2022 - 2036, levelized monthly

Table 1
Avoided Cost Prices
Utah 2022.Q1_Solar - 80.0 MW and 32.2% CF

	Total Price @		
Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	32.2% Capacity Factor \$/MWh
2022	\$0.00	\$28.80	\$28.80
2023	\$0.00	\$24.50	\$24.50
2024	\$0.00	\$26.36	\$26.36
2025	\$0.00	\$16.84	\$16.84
2026	\$39.69	\$11.58	\$25.92
2027	\$40.55	\$12.63	\$27.34
2028	\$41.42	\$13.18	\$28.25
2029	\$42.31	\$14.96	\$30.48
2030	\$43.22	\$14.66	\$30.59
2031	\$44.16	\$15.18	\$31.54
2032	\$45.11	\$10.19	\$26.93
2033	\$46.08	\$13.53	\$30.77
2034	\$47.07	\$14.11	\$31.81
2035	\$48.09	\$14.63	\$32.80
2036	\$49.12	\$16.58	\$35.19
2037	\$50.18	\$18.44	\$37.59

15 Year

Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)

\$/kW \$28.26

\$/MWh \$17.64 \$27.65

-

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2022.Q1_Solar - 80.0 MW and 32.2% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2022	28.80	34.96	15.66	17.74	19.15	18.76	23.06	62.48	48.56	27.25	19.00	17.62	20.99
2023	24.50	33.18	18.42	19.31	17.08	16.17	19.30	50.87	32.62	23.48	16.70	16.93	20.68
2024	26.36	35.39	19.50	19.30	17.15	16.92	18.69	51.84	38.78	27.83	18.33	19.80	25.51
2025	16.84	10.96	12.42	10.74	9.10	12.44	15.10	35.74	27.46	16.82	10.99	11.55	16.69
2026	11.58	13.16	10.05	8.18	6.55	6.47	11.70	15.89	17.38	12.22	10.32	11.15	18.52
2027	12.63	17.36	12.50	9.57	7.78	6.77	11.61	16.71	17.17	12.82	12.07	13.26	19.55
2028	13.18	16.19	12.58	10.50	6.76	6.96	11.83	19.01	21.41	14.52	10.93	11.72	17.52
2029	14.96	19.21	14.27	11.87	9.26	7.85	12.83	20.06	22.15	17.32	13.46	15.13	20.02
2030	14.66	18.92	14.41	12.10	9.33	6.59	11.60	19.39	21.34	17.25	14.16	15.78	21.11
2031	15.18	20.33	15.80	12.30	9.22	6.31	11.62	18.49	22.82	18.07	15.85	17.04	22.52
2032	10.19	10.12	10.12	8.65	5.18	2.63	7.12	16.31	18.81	9.35	10.02	11.11	17.16
2033	13.53	18.48	14.37	12.03	7.68	3.97	8.51	18.60	22.17	14.61	13.82	15.76	21.10
2034	14.11	16.52	15.87	13.03	7.71	4.71	10.21	18.78	22.83	15.54	13.98	16.88	21.00
2035	14.63	16.19	15.68	12.41	7.95	4.76	9.93	20.00	22.81	15.62	15.24	19.69	25.41
2036	16.58	17.64	16.15	13.91	9.13	5.85	10.72	20.73	25.07	20.50	19.66	21.95	28.65
2037	18.44	25.12	17.81	16.06	7.84	5.72	12.09	23.76	27.25	21.74	21.28	25.12	32.62
2038	17.74	25.69	16.76	14.96	6.47	4.66	10.95	22.80	25.97	20.86	20.79	26.24	34.71
2039	17.53	25.13	16.66	14.73	5.33	5.75	9.84	22.47	25.54	19.05	22.14	27.71	34.57

Table 3
2021 IRP Update Borah Solar with Storage
28% Capacity Factor

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized Rate	Fixed O&M	Network Upgrade	Fixed Costs	Variable O&M	Total Resource Cost	Total Resource Costs	Total Fixed Cost
	\$/kW	\$/kW-yr	\$/kW-yr	\$/kW-yr	\$/MWh	\$/MWh	\$/MWh	\$/kW-yr	\$/kW-yr
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)

2021 IRP Update Borah Solar with Storage - 28% Capacity Factor

2016									
2017									
2018									\$0.00
2019									\$0.00
2020									\$0.00
2021									\$0.00
2022									\$0.00
2023									\$0.00
2024									\$0.00
2025									\$0.00
2026	\$2,696	\$146.08	\$37.57		\$75.14		\$75.14	\$183.64	\$183.64
2027		\$149.23	\$38.38		\$76.76		\$76.76	\$187.61	\$187.61
2028		\$152.45	\$39.21		\$78.42		\$78.42	\$191.66	\$191.66
2029		\$155.74	\$40.05		\$80.11		\$80.11	\$195.79	\$195.79
2030		\$159.10	\$40.91		\$81.84		\$81.84	\$200.01	\$200.01
2031		\$162.53	\$41.79		\$83.60		\$83.60	\$204.32	\$204.32
2032		\$166.03	\$42.69		\$85.40		\$85.40	\$208.72	\$208.72
2033		\$169.61	\$43.61		\$87.24		\$87.24	\$213.22	\$213.22
2034		\$173.27	\$44.55		\$89.12		\$89.12	\$217.82	\$217.82
2035		\$177.00	\$45.51		\$91.04		\$91.04	\$222.51	\$222.51
2036		\$180.81	\$46.49		\$93.00		\$93.00	\$227.30	\$227.30
2037		\$184.71	\$47.49		\$95.01		\$95.01	\$232.20	\$232.20
2038		\$188.69	\$48.51		\$97.05		\$97.05	\$237.20	\$237.20
2039		\$192.76	\$49.56		\$99.15		\$99.15	\$242.32	\$242.32
2040		\$196.91	\$50.63		\$101.28		\$101.28	\$247.54	\$247.54
2041		\$201.15	\$51.72		\$103.46		\$103.46	\$252.87	\$252.87
2042		\$205.48	\$52.83		\$105.69		\$105.69	\$258.31	\$258.31
2043		\$209.91	\$53.97		\$107.97		\$107.97	\$263.88	\$263.88

Sources, Inputs and Assumptions

Source:	(c)(f)	Plant Costs - 2021 IRP Update - Table 7.1 & 7.2
	(a)	Plant capacity cost
	(b)	= (a) x 0.0541878056575824
	(d)	= ((b) + (c)) / (8.76 x 27.9%)
	(g)	= (e) + (f)
	(h)	Plant Costs - 2021 IRP Update - Table 7.1 & 7.2

2021 IRP Update Borah Solar with Storage - 28% Capacity Factor	
Wind	Cost and Input Assumptions

2020 \$		Plant capacity cost	
2020 \$		Fixed O&M, plus on-going capital cost	
2020 \$		Wheeling (\$ MWh)	
		Variable O&M	
		Tax Credit \$/MWh	First Year real levelized
2026\$	54.44	Network Upgrade (\$/kw-yr)	B2H Borah - to - Hemingway, Expansion
	5.419%	Payment Factor	
	27.9%	Capacity Factor	

COD
600.0 MW

Table 4
Burnertip Natural Gas Price Forecast
Utah 2022.Q1_Solar - 80.0 MW and 32.2% CF

Year	PacifiCorp			
	Delivered IRP - Utah Greenfield Fuel Cost	Delivered Naughton Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2019	\$2.42	\$2.43	\$4.31	\$2.09
2020	\$1.98	\$1.99	\$2.17	\$1.79
2021	\$4.15	\$4.16	\$4.03	\$6.36
2022	\$5.39	\$5.40	\$5.13	\$5.11
2023	\$4.45	\$4.46	\$4.19	\$4.15
2024	\$3.72	\$3.73	\$3.51	\$3.47
2025	\$3.70	\$3.71	\$3.62	\$3.50
2026	\$3.75	\$3.76	\$3.80	\$3.55
2027	\$3.75	\$3.76	\$3.84	\$3.55
2028	\$3.87	\$3.88	\$3.94	\$3.67
2029	\$4.00	\$4.01	\$4.01	\$3.80
2030	\$4.01	\$4.02	\$3.98	\$3.80
2031	\$4.18	\$4.19	\$4.14	\$3.97
2032	\$4.31	\$4.32	\$4.25	\$4.10
2033	\$4.49	\$4.50	\$4.43	\$4.28
2034	\$4.69	\$4.70	\$4.62	\$4.48
2035	\$4.81	\$4.82	\$4.71	\$4.60
2036	\$5.00	\$5.01	\$4.88	\$4.78
2037	\$5.28	\$5.29	\$5.14	\$5.07
2038	\$5.61	\$5.62	\$5.47	\$5.39
2039	\$5.95	\$5.96	\$5.81	\$5.73
2040	\$6.28	\$6.29	\$6.14	\$6.06

Official Forward Price Curve Forecast dated Mar 31, 2022

Table 5

Utah 2022.Q1_Solar - 80.0 MW and 32.2% CF
 January 2022 through December 2036
 Nominal Avoided Costs Calculated Monthly

Study Name:

Utah 2022.Q1_Solar
 Resource Capacity
 80.0 MW
 32.25% CF

15 Year Starting 2025 15 Year Starting 2024 15 Year Starting 2023 15 Year
 49 37 25 13
 228 216 204 192

Start 44,562
 End Jan-22 Dec-36

Discount Rate - 2021 IRP Update
 6.88% 0.556%

Nominal NPV at 6.88% Discount Rate
 \$ 36,695,006 \$ 20,809,557 \$ 57,504,564 2,079,766 \$27.65

15 Year

Month	Energy	Capacity	Total	Total	AC Price
	Avoided \$	31.8% CF			
Jan-22	435,336	-	435,336	12,454	34.96
Feb-22	190,229	-	190,229	12,147	15.66
Mar-22	302,147	-	302,147	17,034	17.74
Apr-22	384,458	-	384,458	20,073	19.15
May-22	515,210	-	515,210	27,470	18.76
Jun-22	580,337	-	580,337	25,167	23.06
Jul-22	1,603,876	-	1,603,876	25,671	62.48
Aug-22	1,118,865	-	1,118,865	23,041	48.56
Sep-22	599,105	-	599,105	21,985	27.25
Oct-22	349,026	-	349,026	18,370	19.00
Nov-22	228,716	-	228,716	12,983	17.62
Dec-22	201,257	-	201,257	9,588	20.99
Jan-36	204,760	327,484	532,244	11,610	45.84
Feb-36	192,239	327,484	519,723	11,901	43.67
Mar-36	220,849	327,484	548,333	15,879	34.53
Apr-36	170,763	327,484	498,247	18,713	26.63
May-36	149,920	327,484	477,404	25,608	18.64
Jun-36	251,411	327,484	578,895	23,462	24.67
Jul-36	496,075	327,484	823,559	23,931	34.41
Aug-36	538,598	327,484	866,082	21,480	40.32
Sep-36	420,150	327,484	747,635	20,495	36.48
Oct-36	336,625	327,484	664,109	17,125	38.78
Nov-36	265,621	327,484	593,105	12,103	49.01
Dec-36	266,111	327,484	593,595	8,938	65.29

Offset	Year	Date Test	385	Net Power Cost	Offset	Total	energy	capacity
1	2022	Jan-22	385	Net Power Cost				
2	2022	Feb-22	503	CF - Sch38 - UT - Solar T				
3	2022	Mar-22						
4	2022	Apr-22	2022	6,508,562	-	225,984	28.80	28.80
5	2022	May-22	2023	5,509,940	-	224,854	24.50	24.50
6	2022	Jun-22	2024	5,913,152	-	224,342	26.36	26.36
7	2022	Jul-22	2025	3,749,625	-	222,611	16.84	16.84
8	2022	Aug-22	2026	2,565,881	3,175,164	221,498	25.92	11.58
9	2022	Sep-22	2027	2,782,611	3,243,657	220,390	27.34	12.63
10	2022	Oct-22	2028	2,898,534	3,313,672	219,889	28.25	13.18
11	2022	Nov-22	2029	3,264,684	3,385,020	218,192	30.48	14.96
12	2022	Dec-22	2030	3,182,546	3,457,970	217,101	30.59	14.66
53	2036	Jan-36						
54	2036	Feb-36						
55	2036	Mar-36						
56	2036	Apr-36						
57	2036	May-36						
58	2036	Jun-36						
59	2036	Jul-36						
60	2036	Aug-36						
61	2036	Sep-36						
62	2036	Oct-36						
63	2036	Nov-36						
64	2036	Dec-36						

Appendix B.3
Avoided Cost Prices \$/MWh
Utah 2022.Q1 Sch 38

Year	Thermal-Defer 2031			Thermal UT 2021.Q4 100% CF (2)	Solar Tracking UT 2021.Q4 32.25% CF (2)	Wind UT 2021.4 29.5% CF (2)	Thermal Difference	Solar Tracking Difference	Wind Difference	
	NonEmitPeaker UT 2022.Q1 100% CF (2)	Solar Tracking UT 2022.Q1 32.25% CF (2)	Wind UT 2022.Q1 29.5% CF (2)							
2022	\$41.45	\$28.80	\$35.14	\$34.18	\$33.39	\$39.42	\$7.28	(\$4.59)	(\$4.28)	
2023	\$37.59	\$24.50	\$32.60	\$30.23	\$20.97	\$27.04	\$7.36	\$3.54	\$5.56	
2024	\$44.16	\$26.36	\$37.96	\$32.16	\$18.76	\$29.21	\$11.99	\$7.59	\$8.75	
2025	\$29.07	\$16.84	\$25.64	\$27.85	\$14.72	\$24.91	\$1.22	\$2.12	\$0.73	
2026	\$26.84	\$25.92	\$31.22	\$36.21	\$25.27	\$33.47	(\$9.37)	\$0.65	(\$2.25)	
2027	\$28.87	\$27.34	\$32.51	\$37.33	\$25.93	\$34.16	(\$8.46)	\$1.41	(\$1.66)	
2028	\$29.69	\$28.25	\$33.21	\$39.95	\$28.21	\$35.07	(\$10.26)	\$0.04	(\$1.86)	
2029	\$30.47	\$30.48	\$34.00	\$40.67	\$31.83	\$36.62	(\$10.20)	(\$1.36)	(\$2.62)	
2030	\$30.67	\$30.59	\$34.54	\$40.11	\$31.06	\$37.16	(\$9.44)	(\$0.47)	(\$2.62)	
2031	\$41.91	\$31.54	\$36.16	\$36.91	\$30.80	\$37.47	\$5.00	\$0.73	(\$1.31)	
2032	\$40.03	\$26.93	\$34.38	\$36.87	\$31.00	\$38.67	\$3.16	(\$4.07)	(\$4.29)	
2033	\$41.18	\$30.77	\$36.36	\$50.15	\$30.81	\$39.18	(\$8.98)	(\$0.04)	(\$2.82)	
2034	\$42.60	\$31.81	\$37.32	\$52.56	\$30.76	\$41.10	(\$9.96)	\$1.05	(\$3.78)	
2035	\$43.79	\$32.80	\$38.02	\$53.79	\$31.92	\$41.83	(\$10.01)	\$0.88	(\$3.81)	
2036	\$45.09	\$35.19	\$55.24	\$56.71	\$36.29	\$59.00	(\$11.62)	(\$1.11)	(\$3.76)	
15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)										
2022-2036	\$/MWh	\$36.26	\$27.65	\$34.67	\$38.22	\$27.02	\$35.44	(\$1.96)	\$0.63	(\$0.77)
							-5%	2%	-2%	

Footnotes:

- (1) Discount Rate - 2021 IRP
- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2022 - 2036, levelized monthly

Table 1
Avoided Cost Prices
Utah 2022.Q1_Wind - 80.0 MW and 29.5% CF

	Total Price @		
Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	29.5% Capacity Factor \$/MWh
2022	\$0.00	\$35.14	\$35.14
2023	\$0.00	\$32.60	\$32.60
2024	\$0.00	\$37.96	\$37.96
2025	\$0.00	\$25.64	\$25.64
2026	\$87.98	(\$2.88)	\$31.22
2027	\$89.88	(\$2.33)	\$32.51
2028	\$91.81	(\$2.26)	\$33.21
2029	\$93.80	(\$2.35)	\$34.00
2030	\$95.82	(\$2.59)	\$34.54
2031	\$97.88	(\$1.78)	\$36.16
2032	\$99.99	(\$4.25)	\$34.38
2033	\$102.14	(\$3.22)	\$36.36
2034	\$104.35	(\$3.12)	\$37.32
2035	\$106.59	(\$3.29)	\$38.02
2036	\$108.89	\$13.17	\$55.24
2037	\$111.23	\$15.62	\$58.73

15 Year

Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)

\$/kW \$60.69

\$/MWh \$11.15 \$34.67

-

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2022.Q1_Wind - 80.0 MW and 29.5% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2022	35.14	38.32	21.65	22.07	24.24	22.02	27.16	115.72	66.85	37.30	28.40	26.64	40.30
2023	32.60	35.32	28.72	26.17	21.59	18.40	22.77	97.02	55.02	35.57	24.07	24.95	37.97
2024	37.96	47.62	37.43	28.31	21.79	20.90	22.24	96.30	63.35	47.35	29.28	32.03	48.14
2025	25.64	19.87	24.35	21.04	16.11	17.33	19.11	66.70	44.37	32.03	21.97	21.54	31.89
2026	(2.88)	12.25	12.14	2.24	(4.61)	(8.56)	(15.17)	(29.08)	(35.87)	(10.62)	1.15	4.14	8.75
2027	(2.33)	18.16	14.16	1.15	(4.11)	(9.07)	(15.79)	(30.97)	(38.84)	(11.28)	1.54	4.31	11.33
2028	(2.26)	18.50	12.55	1.94	(4.36)	(8.61)	(15.98)	(31.13)	(35.78)	(12.47)	2.31	3.11	11.29
2029	(2.35)	19.12	12.48	3.08	(4.20)	(8.94)	(16.23)	(32.37)	(35.40)	(13.44)	1.79	3.71	10.14
2030	(2.59)	20.48	13.25	1.38	(4.94)	(9.29)	(16.58)	(32.81)	(38.74)	(13.52)	1.07	3.81	11.96
2031	(1.78)	21.73	14.90	2.36	(4.76)	(9.45)	(16.67)	(31.24)	(37.78)	(11.76)	3.15	4.85	10.84
2032	(4.25)	14.14	10.03	0.66	(6.12)	(11.37)	(17.65)	(32.32)	(40.97)	(13.73)	0.91	3.76	9.97
2033	(3.22)	17.67	13.90	1.30	(5.38)	(11.31)	(18.18)	(31.34)	(41.97)	(14.08)	0.66	5.18	12.07
2034	(3.12)	16.15	14.43	1.86	(5.17)	(10.49)	(17.77)	(32.16)	(40.52)	(14.99)	0.82	5.53	12.01
2035	(3.29)	17.00	13.91	1.67	(5.65)	(11.19)	(18.25)	(34.43)	(42.35)	(14.39)	(0.23)	6.76	14.16
2036	13.17	26.78	23.05	14.54	8.80	6.50	3.82	(3.79)	(11.17)	9.03	16.13	19.32	27.12
2037	15.62	32.88	29.61	16.98	10.56	7.61	6.50	(4.61)	(12.07)	8.35	17.99	23.62	28.31
2038	15.68	34.80	28.64	16.22	9.28	6.32	5.59	(2.33)	(14.74)	9.04	18.80	24.68	30.86
2039	16.35	35.41	29.82	17.57	8.89	7.02	5.97	(0.43)	(7.88)	7.63	18.89	24.63	29.69

**Table 3
2021 IRP Update Portland North Coast Wind Resource
37% Capacity Factor**

Year	Estimated Capital Cost \$/kW (a)	Fixed Capital Cost at Real Levelized Rate \$/kW-yr (b)	Fixed O&M \$/kW-yr (c)	Network Upgrade \$/kW-yr (d)	Fixed Costs \$/MWh (e)	Variable O&M \$/MWh (f)	60% PTC \$/MWh (g)	Total Resource Cost \$/MWh (h)	Total Resource Costs \$/kW-yr (i)	Total Fixed Cost \$/kW-yr (i)
2016										
2017										
2018										
2019										
2020										
2021										
2022										
2023										
2024										
2025										
2026	\$1,418	\$98.97	\$67.89	24.74	\$59.03	\$0.00	(\$22.28)	\$36.75	\$119.29	\$191.59
2027		\$101.10	\$69.35	\$25.27	\$60.30	\$0.00	(\$23.07)	\$37.23	\$120.84	\$195.72
2028		\$103.28	\$70.84	\$25.81	\$61.60	\$0.00	(\$23.07)	\$38.53	\$125.05	\$199.93
2029		\$105.51	\$72.37	\$26.37	\$62.93	\$0.00	(\$23.87)	\$39.06	\$126.78	\$204.25
2030		\$107.78	\$73.93	\$26.94	\$64.29	\$0.00	(\$24.67)	\$39.62	\$128.59	\$208.65
2031		\$110.10	\$75.52	\$27.52	\$65.67	\$0.00	(\$24.67)	\$41.00	\$133.08	\$213.14
2032		\$112.47	\$77.15	\$28.11	\$67.09	\$0.00	(\$25.46)	\$41.63	\$135.10	\$217.73
2033		\$114.89	\$78.81	\$28.72	\$68.53	\$0.00	(\$26.26)	\$42.27	\$137.20	\$222.42
2034		\$117.37	\$80.51	\$29.34	\$70.01	\$0.00	(\$26.26)	\$43.75	\$142.00	\$227.22
2035		\$119.90	\$82.24	\$29.97	\$71.52	\$0.00	(\$27.05)	\$44.46	\$144.30	\$232.11
2036		\$122.48	\$84.01	\$30.62	\$73.06	\$0.00	\$0.00	\$73.06	\$237.11	\$237.11
2037		\$125.12	\$85.82	\$31.28	\$74.63	\$0.00	\$0.00	\$74.63	\$242.22	\$242.22
2038		\$127.82	\$87.67	\$31.95	\$76.24	\$0.00	\$0.00	\$76.24	\$247.44	\$247.44
2039		\$130.57	\$89.56	\$32.64	\$77.88	\$0.00	\$0.00	\$77.88	\$252.77	\$252.77
2040		\$133.38	\$91.49	\$33.34	\$79.56	\$0.00	\$0.00	\$79.56	\$258.21	\$258.21
2041		\$136.25	\$93.46	\$34.06	\$81.27	\$0.00	\$0.00	\$81.27	\$263.77	\$263.77
2042		\$139.19	\$95.47	\$34.79	\$83.02	\$0.00	\$0.00	\$83.02	\$269.45	\$269.45
2043		\$142.19	\$97.53	\$35.54	\$84.81	\$0.00	\$0.00	\$84.81	\$275.26	\$275.26

Sources, Inputs and Assumptions

Source:	(c)(f)	Plant Costs - 2021 IRP Update - Table 7.1 & 7.2
	(a)	Plant capacity cost
	(b)	= (a) x 0.0697927885163824
	(e)	= ((b) + (c)) / (8.76 x 37.0%)
	(h)	= (e) + (f) + (g)
	(i)	Plant Costs - 2021 IRP Update - Table 7.1 & 7.2

2021 IRP Update Portland North Coast Wind Resource - 37% Capacity Factor		
Wind Cost and Input Assumptions		

2026\$	\$1,418	Plant capacity cost	
2026\$	\$67.89	Fixed O&M, plus on-going capital cost	
		Wheeling (\$ MWh)	
		Variable O&M	
		Tax Credit \$/MWh	First Year real levelized
2026\$	24.74	Network Upgrade (\$/kW-yr)	Portland NC, Transmission Integration
	6.979%	Payment Factor	
	37.0%	Capacity Factor	

Table 4
Burnertip Natural Gas Price Forecast
Utah 2022.Q1_Wind - 80.0 MW and 29.5% CF

Year	PacifiCorp			
	Delivered #NAME? Fuel Cost	Delivered Naughton Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2019	\$2.42	\$2.43	\$4.31	\$2.09
2020	\$1.98	\$1.99	\$2.17	\$1.79
2021	\$4.15	\$4.16	\$4.03	\$6.36
2022	\$5.39	\$5.40	\$5.13	\$5.11
2023	\$4.45	\$4.46	\$4.19	\$4.15
2024	\$3.72	\$3.73	\$3.51	\$3.47
2025	\$3.70	\$3.71	\$3.62	\$3.50
2026	\$3.75	\$3.76	\$3.80	\$3.55
2027	\$3.75	\$3.76	\$3.84	\$3.55
2028	\$3.87	\$3.88	\$3.94	\$3.67
2029	\$4.00	\$4.01	\$4.01	\$3.80
2030	\$4.01	\$4.02	\$3.98	\$3.80
2031	\$4.18	\$4.19	\$4.14	\$3.97
2032	\$4.31	\$4.32	\$4.25	\$4.10
2033	\$4.49	\$4.50	\$4.43	\$4.28
2034	\$4.69	\$4.70	\$4.62	\$4.48
2035	\$4.81	\$4.82	\$4.71	\$4.60
2036	\$5.00	\$5.01	\$4.88	\$4.78
2037	\$5.28	\$5.29	\$5.14	\$5.07
2038	\$5.61	\$5.62	\$5.47	\$5.39
2039	\$5.95	\$5.96	\$5.81	\$5.73
2040	\$6.28	\$6.29	\$6.14	\$6.06

Official Forward Price Curve Forecast dated Mar 31, 2022

Table 5

Utah 2022.Q1_Wind - 80.0 MW and 29.5% CF
 January 2022 through December 2036
 Nominal Avoided Costs Calculated Monthly

Study Name:

Utah 2022.Q1_Wind
 Resource Capacity 80.0 MW
 29.45% CF

15 Year Starting 2025 49 228
 15 Year Starting 2024 37 216
 15 Year Starting 2023 25 204
 15 Year 13 192

Start 44,562
 End Dec-36

Discount Rate - 2021 IRP Update
 6.88% 0.556%

Nominal NPV at 6.88% Discount Rate
 \$ 21,869,411 \$ 46,128,030 \$ 67,997,442 1,961,058 \$34.67

15 Year

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	29.5% CF	Dollars	MWh	29.5% CF
Jan-22	801,116	-	801,116	20,908	38.32
Feb-22	430,124	-	430,124	19,864	21.65
Mar-22	557,559	-	557,559	25,269	22.07
Apr-22	494,841	-	494,841	20,415	24.24
May-22	452,421	-	452,421	20,545	22.02
Jun-22	452,333	-	452,333	16,657	27.16
Jul-22	1,416,068	-	1,416,068	12,238	115.72
Aug-22	656,316	-	656,316	9,818	66.85
Sep-22	472,343	-	472,343	12,664	37.30
Oct-22	497,262	-	497,262	17,510	28.40
Nov-22	405,892	-	405,892	15,239	26.64
Dec-22	616,351	-	616,351	15,292	40.30
Jan-36	560,018	725,914	1,285,932	20,908	61.50
Feb-36	472,320	725,914	1,198,234	20,490	58.48
Mar-36	367,435	725,914	1,093,349	25,269	43.27
Apr-36	179,666	725,914	905,580	20,415	44.36
May-36	133,544	725,914	859,458	20,545	41.83
Jun-36	63,697	725,914	789,611	16,657	47.40
Jul-36	(68,945)	725,914	656,969	12,238	53.53
Aug-36	(109,683)	725,914	616,231	9,818	62.77
Sep-36	114,393	725,914	840,307	12,664	66.35
Oct-36	282,512	725,914	1,008,426	17,510	57.59
Nov-36	294,489	725,914	1,020,403	15,239	66.96
Dec-36	414,697	725,914	1,140,611	15,292	74.59

Offset	Year	Date Test	385	Net Power Cost	Offset
1	2022	Jan-22	385	Net Power Cost	
2	2022	Feb-22	503	CF - Sch38 - UT - Wind	
3	2022	Mar-22			
4	2022	Apr-22	2022	7,252,627	-
5	2022	May-22	2023	6,728,507	-
6	2022	Jun-22	2024	7,859,707	-
7	2022	Jul-22	2025	5,292,217	-
8	2022	Aug-22	2026	(594,252)	7,038,704
9	2022	Sep-22	2027	(468,681)	7,190,379
10	2022	Oct-22	2028	(468,855)	7,345,046
11	2022	Nov-22	2029	(485,208)	7,503,755
12	2022	Dec-22	2030	(534,936)	7,665,402
53	2036	Jan-36			206,420
54	2036	Feb-36			35.14
55	2036	Mar-36			32.60
56	2036	Apr-36			37.96
57	2036	May-36			25.64
58	2036	Jun-36			31.22
59	2036	Jul-36			(2.88)
60	2036	Aug-36			34.10
61	2036	Sep-36			(2.33)
62	2036	Oct-36			34.83
63	2036	Nov-36			(2.26)
64	2036	Dec-36			35.48

Total	energy	capacity
206,420	35.14	35.14
206,420	32.60	32.60
207,045	37.96	37.96
206,420	25.64	25.64
206,420	31.22	(2.88)
206,420	32.51	(2.33)
207,045	33.21	(2.26)
206,420	34.00	(2.35)
206,420	34.54	(2.59)

ROCKY MOUNTAIN POWER

STEP STUDY BETWEEN PRIOR FILING AND CURRENT FILING

2022.Q1 – JUNE 2022

Nominal Levelized Payment at 6.880% Discount Rate

	2022 - 2036	2023 - 2037	2024 - 2038
2021.Q4 As Filed	\$38.32	\$39.78	\$41.73
OFPC	-\$5.54	-\$6.82	-\$8.11
21IRPU	\$2.67	\$2.57	\$2.43
Queue	\$0.86	\$0.94	\$1.01
2022.Q1 As Filed	\$36.31	\$36.47	\$37.06

Appendix C

Utah Quarterly Compliance Filing Step Study between 2022.Q1 and 2021.Q4 Compliance Filing Avoided Cost Impact of Changing Assumptions \$/MWH (1)

Year	OFPC (2)	21IRPU	Queue	Total Impact
2022	\$ 3.95	\$ 3.33	-	\$ 7.28
2023	\$ 3.52	\$ 3.72	\$ 0.13	\$ 7.36
2024	\$ 3.32	\$ 5.28	\$ 3.39	\$ 11.99
2025	\$ (2.41)	\$ 0.47	\$ 3.16	\$ 1.22
2026	\$ (10.84)	\$ 0.99	\$ 0.48	\$ (9.37)
2027	\$ (9.85)	\$ 0.93	\$ 0.46	\$ (8.46)
2028	\$ (10.98)	\$ 0.29	\$ 0.43	\$ (10.26)
2029	\$ (10.70)	\$ 0.05	\$ 0.45	\$ (10.20)
2030	\$ (10.76)	\$ 0.87	\$ 0.45	\$ (9.44)
2031	\$ (7.59)	\$ 12.17	\$ 0.42	\$ 5.00
2032	\$ (8.89)	\$ 11.55	\$ 0.50	\$ 3.16
2033	\$ (9.28)	\$ (0.17)	\$ 0.47	\$ (8.98)
2034	\$ (10.49)	\$ 0.09	\$ 0.43	\$ (9.96)
2035	\$ (10.26)	\$ (0.20)	\$ 0.45	\$ (10.01)
2036	\$ (11.27)	\$ (0.69)	\$ 0.34	\$ (11.62)
2037	\$ (12.02)	\$ 1.98	\$ 0.59	\$ (9.44)
2038	\$ (10.70)	\$ 2.18	\$ 0.42	\$ (8.11)

Nominal Levelized Payment at 6.880% Discount Rate (3)

2022 - 2036	\$ (5.54)	\$ 2.67	\$ 0.86	\$ (2.01)
2023 - 2037	\$ (6.82)	\$ 2.57	\$ 0.94	\$ (3.31)
2024 - 2038	\$ (8.11)	\$ 2.43	\$ 1.01	\$ (4.67)

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated March 2022
- (3) Discount Rate - 2021 IRP Update - Calculated Annually
- (4) Capacity costs are allocated based on assumed 100% capacity factor.
- (5) Avoided Capacity costs are based on Partial Displacement of non-emitting Peaker in 2031 from 2021 IRP Update Preferred Portfolio.

Appendix C

**Utah Quarterly Compliance Filing
Step Study between 2022.Q1 and 2021.Q4 Compliance Filing
Total Avoided Cost Prices \$/MWH (1) (4)**

Year	2021.Q4 As Filed	OFPC (2)	21IRPU	Queue (5)
2022	\$34.18	\$38.12	\$41.46	\$41.46
2023	\$30.23	\$33.75	\$37.46	\$37.59
2024	\$32.17	\$35.49	\$40.76	\$44.16
2025	\$27.85	\$25.44	\$25.91	\$29.07
2026	\$36.21	\$25.37	\$26.36	\$26.84
2027	\$37.33	\$27.49	\$28.41	\$28.87
2028	\$39.95	\$28.97	\$29.26	\$29.69
2029	\$40.67	\$29.97	\$30.02	\$30.47
2030	\$40.11	\$29.35	\$30.22	\$30.67
2031	\$36.91	\$29.32	\$41.49	\$41.91
2032	\$36.87	\$27.98	\$39.53	\$40.03
2033	\$50.15	\$40.88	\$40.71	\$41.18
2034	\$52.56	\$42.07	\$42.16	\$42.60
2035	\$53.79	\$43.53	\$43.33	\$43.79
2036	\$56.71	\$45.44	\$44.75	\$45.09
2037	\$63.64	\$51.62	\$53.61	\$54.20
2038	\$62.36	\$51.66	\$53.84	\$54.26

Nominal Levelized Payment at 6.880% Discount Rate (3)

2022 - 2036	\$38.32	\$32.78	\$35.45	\$36.31
2023 - 2037	\$39.78	\$32.96	\$35.53	\$36.47
2024 - 2038	\$41.73	\$33.62	\$36.05	\$37.06

- (1) Studies are sequential. The order of the studies would affect the price impact.
 - (2) Official Forward Price Curve Dated March 2022
 - (3) Discount Rate - 2021 IRP Update - Calculated Annually
 - (4) Capacity costs are allocated based on assumed 100% capacity factor.
 - (5) Avoided Capacity costs are based on Partial Displacement of non-emitting Peaker in 2031 from 2021 IRP Update Preferred Portfolio.
- Discount Rate - 2021 IRP Update

Appendix C

Utah Quarterly Compliance Filing Step Study between 2022.Q1 and 2021.Q4 Compliance Filing GRID Calculated Energy Avoided Cost Prices \$/MWH (1)

Year	2021.Q4 As Filed	OFPC (2)	21IRPU	Queue (4)
2022	\$34.18	\$38.12	\$41.46	\$41.46
2023	\$30.23	\$33.75	\$37.46	\$37.59
2024	\$32.17	\$35.49	\$40.76	\$44.16
2025	\$27.85	\$25.44	\$25.91	\$29.07
2026	\$36.21	\$25.37	\$26.36	\$26.84
2027	\$37.33	\$27.49	\$28.41	\$28.87
2028	\$39.95	\$28.97	\$29.26	\$29.69
2029	\$40.67	\$29.97	\$30.02	\$30.47
2030	\$40.11	\$29.35	\$30.22	\$30.67
2031	\$36.91	\$29.32	\$27.87	\$28.29
2032	\$36.87	\$27.98	\$25.66	\$26.16
2033	\$36.47	\$27.20	\$26.50	\$26.97
2034	\$38.58	\$28.10	\$27.65	\$28.08
2035	\$39.52	\$29.25	\$28.50	\$28.96
2036	\$42.16	\$30.89	\$29.64	\$29.98
2037	\$48.74	\$36.72	\$38.13	\$38.72
2038	\$47.14	\$36.44	\$38.03	\$38.45

Nominal Levelized Payment at 6.88% Discount Rate (3)

2022 - 2036	\$35.81	\$30.27	\$31.36	\$32.22
2023 - 2037	\$36.50	\$29.68	\$30.53	\$31.47
2024 - 2038	\$37.62	\$29.50	\$30.08	\$31.09

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated March 2022
- (3) Discount Rate - 2021 IRP Update - Calculated Annually

Appendix C
Utah Quarterly Compliance Filing
Step Study between 2022.Q1 and 2021.Q4 Compliance Filing
Capacity Avoided Cost Prices

Year	\$/kW-Year				\$/MWH (1)			
	2021.Q4	OFPC	21IRPU	2022.Q1	2021.Q4	OFPC	21IRPU	2022.Q1
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-	-
2031	-	-	\$ 119.29	\$ 119.29	-	-	\$ 13.62	\$ 13.62
2032	-	-	\$ 121.85	\$ 121.85	-	-	\$ 13.87	\$ 13.87
2033	\$ 119.86	\$ 119.86	\$ 124.48	\$ 124.48	\$ 13.68	\$ 13.68	\$ 14.21	\$ 14.21
2034	\$ 122.44	\$ 122.44	\$ 127.16	\$ 127.16	\$ 13.98	\$ 13.98	\$ 14.52	\$ 14.52
2035	\$ 125.09	\$ 125.09	\$ 129.90	\$ 129.90	\$ 14.28	\$ 14.28	\$ 14.83	\$ 14.83
2036	\$ 127.78	\$ 127.78	\$ 132.70	\$ 132.70	\$ 14.55	\$ 14.55	\$ 15.11	\$ 15.11
2037	\$ 130.54	\$ 130.54	\$ 135.56	\$ 135.56	\$ 14.90	\$ 14.90	\$ 15.47	\$ 15.47
2038	\$ 133.34	\$ 133.34	\$ 138.47	\$ 138.47	\$ 15.22	\$ 15.22	\$ 15.81	\$ 15.81

Nominal Levelized Payment at 6.880% Discount Rate (2)

2022 - 2036	\$22.00	\$22.00	\$35.91	\$35.91	\$2.51	\$2.51	\$4.10	\$4.10
2023 - 2037	\$28.75	\$28.75	\$43.83	\$43.83	\$3.28	\$3.28	\$5.00	\$5.00
2024 - 2038	\$36.09	\$36.09	\$52.40	\$52.40	\$4.12	\$4.12	\$5.98	\$5.98

- (1) Capacity costs are allocated based on assumed 100% capacity factor.
- (2) Discount Rate - 2021 IRP
- (3) No Capacity costs - No deferrable thermal resources

CERTIFICATE OF SERVICE

Docket No. 22-035-36/ Docket No. 03-035-14

I hereby certify that on June 30, 2022, a true and correct copy of the foregoing was served by electronic mail to the following:

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Michele Beck mbeck@utah.gov
ocs@utah.gov

Division of Public Utilities

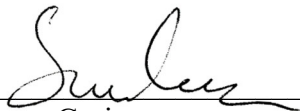
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