



Salt Lake City, Utah 84116

January 5, 2022

VIA ELECTRONIC FILING

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 – 2021.Q3 Avoided Cost Input Changes**
Docket 21-035-44 – 2021.Q3 Avoided Cost Input Changes Quarterly Compliance Filing

On December 29, 2021, PacifiCorp filed its 2021 Q3 Avoided Cost Input Changes Quarterly Compliance Filing with the Public Service Commission of Utah. The Division of Public Utilities has informed PacifiCorp that Exhibits A (Appendix B.1 Tab) and B (Appendix B.2 Tab) contain Excel formula reference errors.

PacifiCorp hereby submits the affected workpapers that have been corrected for the formula error. The Company appreciates the Division's review and apologizes for any inconvenience caused by this oversight.

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 blue ink that reads "Joelle Steward". The signature is fluid and cursive.

Joelle Steward
Senior Vice President, Regulation

cc: Service List (Docket No. 03-035-14)
Service List (Docket No. 21-035-44)

ROCKY MOUNTAIN POWER

UPDATE IMPACT – UPDATED AVOIDED COST STUDY

2021.Q3 – January 2022

Appendix B.1
Avoided Cost Prices \$/MWh
Utah 2021.Q3 Sch 38

Year	Thermal	Solar Tracking	Wind	Thermal	Solar Tracking	Wind (Defers UT	Thermal	Solar Tracking	Wind
	UT 2021.Q3 100% CF (2)	UT 2021.Q3 31.1% CF (2)	UT 2021.Q3 29.4% CF (2)	UT 2021.Q2 100% CF (2)	UT 2021.Q2 31.1% CF (2)	UT 2021.Q2 29.4% CF (2)	Difference	Difference	Difference
2022	\$33.35	\$24.60	\$30.86	\$27.92	\$20.86	\$23.30	\$5.43	\$3.74	\$7.56
2023	\$30.36	\$20.95	\$27.12	\$25.61	\$19.19	\$25.75	\$4.74	\$1.76	\$1.37
2024	\$31.58	\$19.42	\$28.66	\$17.91	\$15.62	\$27.04	\$13.66	\$3.80	\$1.63
2025	\$21.21	\$12.23	\$19.41	\$19.01	\$17.77	\$27.31	\$2.20	(\$5.54)	(\$7.90)
2026	\$19.41	\$22.10	\$29.21	\$32.49	\$18.79	\$28.51	(\$13.07)	\$3.31	\$0.70
2027	\$20.04	\$22.87	\$29.72	\$34.24	\$19.49	\$28.94	(\$14.20)	\$3.37	\$0.77
2028	\$21.08	\$23.75	\$30.64	\$37.79	\$21.52	\$30.49	(\$16.71)	\$2.23	\$0.15
2029	\$22.17	\$25.94	\$31.75	\$40.93	\$22.59	\$31.33	(\$18.76)	\$3.36	\$0.42
2030	\$22.33	\$25.97	\$32.21	\$39.34	\$20.86	\$31.92	(\$17.01)	\$5.11	\$0.30
2031	\$21.68	\$26.11	\$32.97	\$41.16	\$22.21	\$33.32	(\$19.48)	\$3.91	(\$0.35)
2032	\$21.90	\$26.53	\$33.86	\$42.30	\$22.98	\$33.98	(\$20.39)	\$3.54	(\$0.11)
2033	\$34.76	\$26.61	\$34.16	\$43.76	\$23.12	\$61.39	(\$9.00)	\$3.49	(\$27.23)
2034	\$35.84	\$26.81	\$35.20	\$44.86	\$24.17	\$62.64	(\$9.02)	\$2.64	(\$27.44)
2035	\$36.76	\$27.51	\$35.72	\$46.20	\$24.99	\$64.75	(\$9.44)	\$2.53	(\$29.03)
2036	\$38.23	\$29.84	\$52.65	\$48.12	\$26.32	\$65.96	(\$9.89)	\$3.52	(\$13.30)

2022-2036	15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)									
	\$/MWh	\$26.85	\$23.18	\$30.94	\$33.67	\$20.65	\$34.65	(\$6.82)	\$2.53	(\$3.71)
								-20%	12%	-11%

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 2021.Q3 - 100.0 MW and 100.0% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	100.0% Capacity Factor \$/MWh	Total Price @
2022	\$0.00	\$33.35	\$33.35	
2023	\$0.00	\$30.36	\$30.36	
2024	\$0.00	\$31.58	\$31.58	
2025	\$0.00	\$21.21	\$21.21	
2026	\$0.00	\$19.41	\$19.41	
2027	\$0.00	\$20.04	\$20.04	
2028	\$0.00	\$21.08	\$21.08	
2029	\$0.00	\$22.17	\$22.17	
2030	\$0.00	\$22.33	\$22.33	
2031	\$0.00	\$21.68	\$21.68	
2032	\$0.00	\$21.90	\$21.90	
2033	\$119.86	\$21.08	\$34.76	
2034	\$122.44	\$21.86	\$35.84	
2035	\$125.09	\$22.48	\$36.76	
2036	\$127.78	\$23.68	\$38.23	
2037	\$130.54	\$25.73	\$40.63	
2038	\$133.34	\$24.62	\$39.84	
2039	\$136.21	\$25.73	\$41.27	
2040	\$139.14	\$27.27	\$43.11	

15 Year Starting 2022

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

\$/kW	\$21.98		
\$/MWh		\$24.34	\$26.85

15 Year Starting 2023

\$/kW	\$28.74	\$23.42	\$26.70
\$/MWh			

15 Year Starting 2024

\$/kW	\$36.06	\$22.72	\$26.83
\$/MWh			

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2021.Q3 - 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	33.35	27.04	29.99	28.42	21.08	18.30	24.65	78.34	52.03	37.44	27.04	24.22	30.49
2023	30.36	20.36	24.89	22.93	20.04	18.58	20.55	76.92	44.28	36.36	23.86	23.97	30.33
2024	31.58	31.03	31.88	25.27	22.04	20.78	22.53	47.90	50.11	39.03	26.91	28.00	32.99
2025	21.21	16.56	21.05	17.33	16.07	14.83	16.93	30.92	33.55	25.88	18.75	19.93	22.48
2026	19.41	21.70	23.94	17.83	13.45	10.88	13.85	20.18	23.38	21.86	19.36	20.23	26.45
2027	20.04	23.12	24.74	18.58	13.71	11.25	14.26	20.95	24.18	22.11	19.37	21.35	27.05
2028	21.08	22.05	25.86	19.60	14.28	11.69	15.07	22.26	25.73	23.92	21.07	22.94	28.57
2029	22.17	24.30	26.71	20.90	15.33	12.34	15.60	22.50	27.27	26.78	22.15	22.77	29.62
2030	22.33	24.34	26.90	20.47	14.77	12.01	15.43	23.23	27.38	25.70	22.92	24.10	30.85
2031	21.68	24.51	26.49	20.11	14.98	11.64	15.30	22.33	25.92	24.58	20.87	23.29	30.31
2032	21.90	25.11	26.32	19.44	13.50	11.61	15.32	22.18	26.48	24.32	22.15	24.35	32.00
2033	21.08	24.81	27.58	18.59	12.62	11.02	14.44	21.16	25.08	21.35	21.23	23.87	31.42
2034	21.86	26.18	28.55	20.55	13.60	11.37	14.86	21.12	25.01	22.65	21.94	24.58	32.19
2035	22.48	27.92	29.12	19.60	14.16	11.84	14.97	21.45	28.02	24.48	22.28	23.54	32.59
2036	23.68	28.67	29.64	20.08	14.03	12.31	15.76	23.47	27.17	26.83	25.00	26.63	34.58
2037	25.73	33.68	34.83	23.41	14.06	11.85	16.41	22.54	28.98	29.53	28.90	28.16	36.85
2038	24.62	31.28	33.03	20.62	12.02	10.53	14.61	22.78	28.86	27.92	28.07	28.50	37.53
2039	25.73	33.50	35.01	22.01	12.61	11.55	15.42	23.51	29.24	29.54	29.04	29.43	38.24

**Table 4
Burnertip Natural Gas Price Forecast
Utah 2021.Q3 - 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	\$4.46	\$4.47	\$4.12	\$6.63
2022	\$4.70	\$4.71	\$4.22	\$4.30
2023	\$3.55	\$3.56	\$3.43	\$3.29
2024	\$3.34	\$3.35	\$3.17	\$2.98
2025	\$3.20	\$3.21	\$3.07	\$2.84
2026	\$3.00	\$3.01	\$2.92	\$2.64
2027	\$3.04	\$3.05	\$2.98	\$2.68
2028	\$3.11	\$3.12	\$3.03	\$2.75
2029	\$3.19	\$3.20	\$3.14	\$2.82
2030	\$3.36	\$3.37	\$3.27	\$2.99
2031	\$3.50	\$3.51	\$3.39	\$3.14
2032	\$3.57	\$3.58	\$3.46	\$3.21
2033	\$3.57	\$3.58	\$3.47	\$3.20
2034	\$3.72	\$3.73	\$3.59	\$3.35
2035	\$3.83	\$3.84	\$3.66	\$3.47
2036	\$3.91	\$3.92	\$3.71	\$3.54
2037	\$4.02	\$4.03	\$3.83	\$3.65
2038	\$4.21	\$4.22	\$3.95	\$3.84
2039	\$4.41	\$4.42	\$4.15	\$4.04
2040	\$4.57	\$4.59	\$4.26	\$4.20

Official Forward Price Curve Forecast dated Sep 30, 2021

Table 5

**Utah 2021.Q3 - 100.0 MW and 100.0% CF
January 2022 through December 2036
Nominal Avoided Costs Calculated Monthly**

15 Year Starting 2023	\$ 194,238,255	\$ 27,210,098	\$ 221,448,353	8,294,848	\$26.70
Nominal NPV at 6.88% Discount Rate					
15 Year Starting 2022	\$ 201,869,849	\$ 20,816,512	\$ 222,686,360	8,294,447	\$26.85
15 Year Starting 2024	\$ 188,433,109	\$ 34,150,181	\$ 222,583,290	8,295,276	\$26.83

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	100.0% CF	Dollars	MWH	100.0% CF
Jan-22	2,011,549	-	2,011,549	74,400	27.04
Feb-22	2,015,473	-	2,015,473	67,200	29.99
Mar-22	2,114,225	-	2,114,225	74,400	28.42
Apr-22	1,517,794	-	1,517,794	72,000	21.08
May-22	1,361,307	-	1,361,307	74,400	18.30
Jun-22	1,774,889	-	1,774,889	72,000	24.65
Jul-22	5,828,682	-	5,828,682	74,400	78.34
Aug-22	3,871,146	-	3,871,146	74,400	52.03
Sep-22	2,695,468	-	2,695,468	72,000	37.44
Oct-22	2,011,938	-	2,011,938	74,400	27.04
Nov-22	1,743,658	-	1,743,658	72,000	24.22
Dec-22	2,268,224	-	2,268,224	74,400	30.49

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

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized	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					\$ 21.294			\$ 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			12.46		\$26.92			\$33.78			
2032			\$12.72		\$27.50			\$34.51			
2033	\$1,319.93	\$98.96	\$12.99	\$0.00	\$28.09	\$81.20	\$193.15	\$35.25	\$350.24	\$417.06	\$111.95
2034		\$101.09	\$13.27	\$0.00	\$28.70	\$82.97	\$197.33	\$36.01	\$357.80	\$426.06	\$114.36
2035		\$103.27	\$13.56	\$0.00	\$29.32	\$84.76	\$201.59	\$36.79	\$365.55	\$435.29	\$116.83
2036		\$105.50	\$13.85	\$0.00	\$29.95	\$86.58	\$205.93	\$37.58	\$373.39	\$444.63	\$119.35
2037		\$107.77	\$14.15	\$0.00	\$30.60	\$88.46	\$210.38	\$38.39	\$381.44	\$454.22	\$121.92
2038		\$110.09	\$14.45	\$0.00	\$31.26	\$90.37	\$214.91	\$39.22	\$389.69	\$464.03	\$124.54
2039		\$112.46	\$14.76	\$0.00	\$31.93	\$92.30	\$219.52	\$40.07	\$398.14	\$474.08	\$127.22
2040		\$114.88	\$15.08	\$0.00	\$32.62	\$94.30	\$224.26	\$40.93	\$406.68	\$484.26	\$129.96
2041		\$117.36	\$15.40	\$0.00	\$33.32	\$96.32	\$229.08	\$41.81	\$415.42	\$494.66	\$132.76
2042		\$119.89	\$15.73	\$0.00	\$34.04	\$98.40	\$234.02	\$42.71	\$424.37	\$505.32	\$135.62

Sources, Inputs and Assumptions

Source: (a)(c)(d) Plant Costs - 2019 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 Non Emitting UTN Peaker Resource Costs
Non Emitting - 206 MW- East Side Resource (5,050')

Non Emitting - 206 MW- East Side Resource (5,050')						
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CCCT Statistics	MW	Percent	Cap Cost	Fixed
SCCT Dry "F" - Turbine	206	100.0%	\$1,320	\$0.00
	-	0.0%	\$0	\$0.00
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 - 2019 IRP - Table 7.1 & 7.2		
	206			MW Plant Capacity		
2033 \$	\$1,320			Plant Capacity Cost		
	\$0.00			Fixed O&M & Capitalized O&M		
	\$0.00			Fixed Pipeline		
2020 \$	\$0.00			Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)		
2020 \$	\$ 21.29			Variable O&M Costs & Capitalized Variable O&M (\$/MWh)		
	9,936			Heat Rate in btu/kWh		
	7.497%			Payment Factor		
	33%			Capacity Factor		
		33.0%		Energy Weighted Capacity Factor		
2031\$	12.46	Network Upgr	Utah N, Transmission Integration			
	26.72		Fuel Cost (\$/mmBtu)			

Appendix B.2
Avoided Cost Prices \$/MWh
Utah 2021.Q3 Sch 38

Year	Thermal	Solar Tracking	Wind	Thermal	Solar Tracking	Wind (Defers UT	Thermal	Solar Tracking	Wind
	UT 2021.Q3 100% CF (2)	UT 2021.Q3 31.1% CF (2)	UT 2021.Q3 29.4% CF (2)	UT 2021.Q2 100% CF (2)	UT 2021.Q2 31.1% CF (2)	W) UT 2021.Q2 29.4% CF (2)	Difference	Difference	Difference
2022	\$33.35	\$24.60	\$30.86	\$27.92	\$20.86	\$23.30	\$5.43	\$3.74	\$7.56
2023	\$30.36	\$20.95	\$27.12	\$25.61	\$19.19	\$25.75	\$4.74	\$1.76	\$1.37
2024	\$31.58	\$19.42	\$28.66	\$17.91	\$15.62	\$27.04	\$13.66	\$3.80	\$1.63
2025	\$21.21	\$12.23	\$19.41	\$19.01	\$17.77	\$27.31	\$2.20	(\$5.54)	(\$7.90)
2026	\$19.41	\$22.10	\$29.21	\$32.49	\$18.79	\$28.51	(\$13.07)	\$3.31	\$0.70
2027	\$20.04	\$22.87	\$29.72	\$34.24	\$19.49	\$28.94	(\$14.20)	\$3.37	\$0.77
2028	\$21.08	\$23.75	\$30.64	\$37.79	\$21.52	\$30.49	(\$16.71)	\$2.23	\$0.15
2029	\$22.17	\$25.94	\$31.75	\$40.93	\$22.59	\$31.33	(\$18.76)	\$3.36	\$0.42
2030	\$22.33	\$25.97	\$32.21	\$39.34	\$20.86	\$31.92	(\$17.01)	\$5.11	\$0.30
2031	\$21.68	\$26.11	\$32.97	\$41.16	\$22.21	\$33.32	(\$19.48)	\$3.91	(\$0.35)
2032	\$21.90	\$26.53	\$33.86	\$42.30	\$22.98	\$33.98	(\$20.39)	\$3.54	(\$0.11)
2033	\$34.76	\$26.61	\$34.16	\$43.76	\$23.12	\$61.39	(\$9.00)	\$3.49	(\$27.23)
2034	\$35.84	\$26.81	\$35.20	\$44.86	\$24.17	\$62.64	(\$9.02)	\$2.64	(\$27.44)
2035	\$36.76	\$27.51	\$35.72	\$46.20	\$24.99	\$64.75	(\$9.44)	\$2.53	(\$29.03)
2036	\$38.23	\$29.84	\$52.65	\$48.12	\$26.32	\$65.96	(\$9.89)	\$3.52	(\$13.30)

2022-2036	15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)									
	\$/MWh	\$26.85	\$23.18	\$30.94	\$33.67	\$20.65	\$34.65	(\$6.82)	\$2.53	(\$3.71)
								-20%	12%	-11%

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 2021.Q3_Solar - 80.0 MW and 32.1% CF

Total Price @			
Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	32.1% Capacity Factor \$/MWh
2022	\$0.00	\$24.60	\$24.60
2023	\$0.00	\$20.95	\$20.95
2024	\$0.00	\$19.42	\$19.42
2025	\$0.00	\$12.23	\$12.23
2026	\$39.69	\$7.69	\$22.10
2027	\$40.58	\$8.06	\$22.87
2028	\$41.49	\$8.58	\$23.75
2029	\$42.40	\$10.32	\$25.94
2030	\$43.33	\$9.92	\$25.97
2031	\$44.28	\$9.63	\$26.11
2032	\$45.25	\$9.64	\$26.53
2033	\$46.24	\$9.22	\$26.61
2034	\$47.26	\$8.96	\$26.81
2035	\$48.29	\$9.18	\$27.51
2036	\$49.34	\$11.06	\$29.84
2037	\$50.43	\$12.12	\$31.46
2038	\$51.53	\$11.19	\$31.05
2039	\$52.66	\$11.92	\$32.32
2040	\$53.81	\$12.89	\$33.78

15 Year Starting 2022

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

\$/kW \$28.33

\$/MWh \$13.10 \$23.18

15 Year Starting 2023

\$/kW \$32.53 \$11.77 \$23.34

\$/MWh

15 Year Starting 2024

\$/kW \$37.09 \$10.71 \$23.90

\$/MWh

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2021.Q3_Solar - 80.0 MW and 32.1% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2022	24.60	30.07	18.28	19.76	16.57	15.82	20.02	46.51	37.98	25.24	18.00	16.60	19.32
2023	20.95	16.17	15.98	17.00	15.30	15.75	17.30	40.60	28.22	21.93	16.50	16.41	19.23
2024	19.42	17.02	16.02	16.64	15.15	15.19	16.80	29.95	27.15	20.53	16.21	17.07	19.87
2025	12.23	8.81	9.45	8.75	7.94	9.56	12.03	19.37	19.33	12.76	8.43	11.86	13.84
2026	7.69	8.40	5.22	6.54	3.60	4.12	7.12	11.08	12.46	7.73	6.34	8.91	12.54
2027	8.06	9.67	5.92	7.36	4.01	4.27	7.09	11.03	12.79	8.29	6.81	9.65	12.26
2028	8.58	8.33	5.87	8.10	4.06	4.27	7.42	12.18	13.99	9.38	7.11	10.52	13.86
2029	10.32	12.73	8.83	9.54	5.74	5.08	8.52	12.84	15.33	11.85	9.55	12.33	16.19
2030	9.92	12.49	8.56	9.37	5.14	4.44	7.95	12.44	14.88	10.86	9.68	13.11	15.43
2031	9.63	9.86	8.44	10.18	5.40	3.71	7.56	12.26	14.44	10.91	9.24	12.42	16.57
2032	9.64	11.46	9.77	9.42	3.94	3.42	7.54	12.29	14.55	10.04	10.07	13.47	17.06
2033	9.22	10.57	9.97	9.47	3.38	2.62	6.92	11.92	14.02	9.19	10.31	13.67	16.50
2034	8.96	12.32	9.97	9.37	3.72	1.97	6.72	11.07	13.55	8.92	9.27	12.79	17.11
2035	9.18	11.86	10.03	8.81	3.76	2.05	5.97	12.66	14.09	9.03	9.23	13.96	18.01
2036	11.06	13.34	11.31	10.02	4.62	2.83	7.15	14.00	15.85	13.64	13.87	15.95	19.57
2037	12.12	16.29	14.04	13.23	5.73	3.47	8.91	13.60	15.16	14.78	15.08	16.43	20.11
2038	11.19	13.84	11.64	10.57	4.54	2.95	7.07	13.25	14.98	14.38	14.49	16.75	20.76
2039	11.92	13.68	12.29	11.75	4.59	3.18	8.28	14.16	17.03	15.51	15.28	16.21	20.72

Table 4
Burnertip Natural Gas Price Forecast
Utah 2021.Q3_Solar - 80.0 MW and 32.1% 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	\$4.46	\$4.47	\$4.12	\$6.63
2022	\$4.70	\$4.71	\$4.22	\$4.30
2023	\$3.55	\$3.56	\$3.43	\$3.29
2024	\$3.34	\$3.35	\$3.17	\$2.98
2025	\$3.20	\$3.21	\$3.07	\$2.84
2026	\$3.00	\$3.01	\$2.92	\$2.64
2027	\$3.04	\$3.05	\$2.98	\$2.68
2028	\$3.11	\$3.12	\$3.03	\$2.75
2029	\$3.19	\$3.20	\$3.14	\$2.82
2030	\$3.36	\$3.37	\$3.27	\$2.99
2031	\$3.50	\$3.51	\$3.39	\$3.14
2032	\$3.57	\$3.58	\$3.46	\$3.21
2033	\$3.57	\$3.58	\$3.47	\$3.20
2034	\$3.72	\$3.73	\$3.59	\$3.35
2035	\$3.83	\$3.84	\$3.66	\$3.47
2036	\$3.91	\$3.92	\$3.71	\$3.54
2037	\$4.02	\$4.03	\$3.83	\$3.65
2038	\$4.21	\$4.22	\$3.95	\$3.84
2039	\$4.41	\$4.42	\$4.15	\$4.04
2040	\$4.57	\$4.59	\$4.26	\$4.20

Official Forward Price Curve Forecast dated Sep 30, 2021

Table 5

**Utah 2021.Q3_Solar - 80.0 MW and 32.1% CF
January 2022 through December 2036
Nominal Avoided Costs Calculated Monthly**

15 Year Starting 2023	\$ 24,225,709	\$ 23,829,213	\$ 48,054,922	2,059,127	\$23.34
Nominal NPV at 6.88% Discount Rate					
15 Year Starting 2022	\$ 27,103,315	\$ 20,860,728	\$ 47,964,043	2,069,367	\$23.18
15 Year Starting 2024	\$ 21,943,933	\$ 27,035,498	\$ 48,979,431	2,048,945	\$23.90

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	31.7% CF	Dollars	MWH	31.7% CF
Jan-22	372,647	-	372,647	12,392	30.07
Feb-22	220,894	-	220,894	12,086	18.28
Mar-22	334,954	-	334,954	16,948	19.76
Apr-22	330,897	-	330,897	19,973	16.57
May-22	432,291	-	432,291	27,333	15.82
Jun-22	501,300	-	501,300	25,042	20.02
Jul-22	1,187,924	-	1,187,924	25,543	46.51
Aug-22	870,760	-	870,760	22,926	37.98
Sep-22	552,125	-	552,125	21,875	25.24
Oct-22	329,023	-	329,023	18,278	18.00
Nov-22	214,370	-	214,370	12,918	16.60
Dec-22	184,343	-	184,343	9,540	19.32

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

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

2021 IRP 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 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	

Appendix B.3

**Avoided Cost Prices \$/MWh
Utah 2021.Q3 Sch 38**

Year	Thermal	Solar Tracking	Wind	Thermal	Solar Tracking	Wind (Defers UT	Thermal	Solar Tracking	Wind
	UT 2021.Q3 100% CF (2)	UT 2021.Q3 31.1% CF (2)	UT 2021.Q3 29.4% CF (2)	UT 2021.Q2 100% CF (2)	UT 2021.Q2 31.1% CF (2)	W) UT 2021.Q2 29.4% CF (2)	Difference	Difference	Difference
2022	\$33.35	\$24.60	\$30.86	\$27.92	\$20.86	\$23.30	\$5.43	\$3.74	\$7.56
2023	\$30.36	\$20.95	\$27.12	\$25.61	\$19.19	\$25.75	\$4.74	\$1.76	\$1.37
2024	\$31.58	\$19.42	\$28.66	\$17.91	\$15.62	\$27.04	\$13.66	\$3.80	\$1.63
2025	\$21.21	\$12.23	\$19.41	\$19.01	\$17.77	\$27.31	\$2.20	(\$5.54)	(\$7.90)
2026	\$19.41	\$22.10	\$29.21	\$32.49	\$18.79	\$28.51	(\$13.07)	\$3.31	\$0.70
2027	\$20.04	\$22.87	\$29.72	\$34.24	\$19.49	\$28.94	(\$14.20)	\$3.37	\$0.77
2028	\$21.08	\$23.75	\$30.64	\$37.79	\$21.52	\$30.49	(\$16.71)	\$2.23	\$0.15
2029	\$22.17	\$25.94	\$31.75	\$40.93	\$22.59	\$31.33	(\$18.76)	\$3.36	\$0.42
2030	\$22.33	\$25.97	\$32.21	\$39.34	\$20.86	\$31.92	(\$17.01)	\$5.11	\$0.30
2031	\$21.68	\$26.11	\$32.97	\$41.16	\$22.21	\$33.32	(\$19.48)	\$3.91	(\$0.35)
2032	\$21.90	\$26.53	\$33.86	\$42.30	\$22.98	\$33.98	(\$20.39)	\$3.54	(\$0.11)
2033	\$34.76	\$26.61	\$34.16	\$43.76	\$23.12	\$61.39	(\$9.00)	\$3.49	(\$27.23)
2034	\$35.84	\$26.81	\$35.20	\$44.86	\$24.17	\$62.64	(\$9.02)	\$2.64	(\$27.44)
2035	\$36.76	\$27.51	\$35.72	\$46.20	\$24.99	\$64.75	(\$9.44)	\$2.53	(\$29.03)
2036	\$38.23	\$29.84	\$52.65	\$48.12	\$26.32	\$65.96	(\$9.89)	\$3.52	(\$13.30)

2022-2036	15-Year Levelized Prices (Nominal) @ 6.88% Discount Rate (1) (3)									
	\$/MWh	\$26.85	\$23.18	\$30.94	\$33.67	\$20.65	\$34.65	(\$6.82)	\$2.53	(\$3.71)
								-20%	12%	-11%

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 2021.Q3_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	\$30.86	\$30.86
2023	\$0.00	\$27.12	\$27.12
2024	\$0.00	\$28.66	\$28.66
2025	\$0.00	\$19.41	\$19.41
2026	\$87.98	(\$4.89)	\$29.21
2027	\$89.88	(\$5.12)	\$29.72
2028	\$91.81	(\$4.84)	\$30.64
2029	\$93.80	(\$4.60)	\$31.75
2030	\$95.82	(\$4.92)	\$32.21
2031	\$97.88	(\$4.96)	\$32.97
2032	\$99.99	(\$4.77)	\$33.86
2033	\$102.14	(\$5.43)	\$34.16
2034	\$104.35	(\$5.24)	\$35.20
2035	\$106.59	(\$5.59)	\$35.72
2036	\$108.89	\$10.58	\$52.65
2037	\$111.23	\$11.63	\$54.74
2038	\$113.63	\$11.06	\$55.09
2039	\$116.08	\$11.66	\$56.65
2040	\$118.58	\$12.61	\$58.43

15 Year Starting 2022

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

\$/kW	\$60.69		
\$/MWh		\$7.41	\$30.94

15 Year Starting 2023

\$/kW	\$69.31	\$5.04	\$31.90
\$/MWh			

15 Year Starting 2024

\$/kW	\$78.62	\$2.88	\$33.35
\$/MWh			

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2021.Q3_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	30.86	35.94	28.23	27.18	20.33	17.33	22.75	76.10	51.81	34.43	26.95	23.97	33.20
2023	27.12	20.85	23.85	22.20	19.39	17.63	19.42	74.66	47.29	32.65	23.21	23.25	32.34
2024	28.66	32.62	30.91	23.33	20.23	19.55	20.63	45.87	47.19	36.25	26.42	26.22	34.38
2025	19.41	17.99	20.68	16.71	13.91	14.29	15.45	32.07	30.45	24.30	18.27	18.71	23.38
2026	(4.89)	9.12	6.27	(0.64)	(5.62)	(8.75)	(15.23)	(26.76)	(32.37)	(12.50)	(0.94)	(0.08)	4.00
2027	(5.12)	9.92	6.74	(0.65)	(5.88)	(8.91)	(15.76)	(27.89)	(33.17)	(13.27)	(1.60)	(0.64)	3.73
2028	(4.84)	9.53	6.95	(0.14)	(5.97)	(8.87)	(15.75)	(27.95)	(32.06)	(14.05)	(0.56)	(0.07)	4.76
2029	(4.60)	10.70	7.54	1.03	(5.10)	(8.99)	(14.75)	(29.30)	(32.66)	(14.25)	(0.94)	(0.23)	4.31
2030	(4.92)	10.81	7.92	(0.13)	(6.07)	(9.53)	(15.47)	(30.08)	(33.55)	(14.92)	(1.07)	0.28	5.35
2031	(4.96)	10.60	8.37	0.41	(6.40)	(9.61)	(15.84)	(29.37)	(34.11)	(14.00)	(1.08)	(0.71)	4.62
2032	(4.77)	11.14	7.33	(0.33)	(6.63)	(9.59)	(15.25)	(29.15)	(33.82)	(14.48)	(0.08)	0.87	5.52
2033	(5.43)	10.37	9.02	(1.27)	(7.15)	(10.18)	(16.63)	(29.47)	(35.44)	(16.26)	(1.07)	0.54	4.73
2034	(5.24)	11.08	9.17	(0.78)	(6.91)	(10.19)	(17.04)	(29.29)	(34.40)	(16.53)	(1.04)	0.37	4.97
2035	(5.59)	12.43	8.60	(1.02)	(7.01)	(10.51)	(16.77)	(30.82)	(36.55)	(16.45)	(2.14)	(0.39)	4.39
2036	10.58	21.16	18.84	11.11	6.39	6.70	4.87	(0.45)	(6.40)	6.01	13.76	13.10	18.56
2037	11.63	24.48	23.08	12.69	6.07	6.20	5.44	(2.56)	(6.65)	6.37	16.15	14.62	18.21
2038	11.06	23.04	22.54	10.74	4.97	5.23	4.26	(1.53)	(8.01)	6.02	15.94	15.51	20.07
2039	11.66	24.57	23.71	12.04	5.91	5.68	4.38	(1.39)	(6.60)	5.00	16.10	15.06	20.60

Table 4
Burnertip Natural Gas Price Forecast
Utah 2021.Q3_Wind - 80.0 MW and 29.5% 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	\$4.46	\$4.47	\$4.12	\$6.63
2022	\$4.70	\$4.71	\$4.22	\$4.30
2023	\$3.55	\$3.56	\$3.43	\$3.29
2024	\$3.34	\$3.35	\$3.17	\$2.98
2025	\$3.20	\$3.21	\$3.07	\$2.84
2026	\$3.00	\$3.01	\$2.92	\$2.64
2027	\$3.04	\$3.05	\$2.98	\$2.68
2028	\$3.11	\$3.12	\$3.03	\$2.75
2029	\$3.19	\$3.20	\$3.14	\$2.82
2030	\$3.36	\$3.37	\$3.27	\$2.99
2031	\$3.50	\$3.51	\$3.39	\$3.14
2032	\$3.57	\$3.58	\$3.46	\$3.21
2033	\$3.57	\$3.58	\$3.47	\$3.20
2034	\$3.72	\$3.73	\$3.59	\$3.35
2035	\$3.83	\$3.84	\$3.66	\$3.47
2036	\$3.91	\$3.92	\$3.71	\$3.54
2037	\$4.02	\$4.03	\$3.83	\$3.65
2038	\$4.21	\$4.22	\$3.95	\$3.84
2039	\$4.41	\$4.42	\$4.15	\$4.04
2040	\$4.57	\$4.59	\$4.26	\$4.20

Official Forward Price Curve Forecast dated Sep 30, 2021

Table 5

**Utah 2021.Q3_Wind - 80.0 MW and 29.5% CF
January 2022 through December 2036
Nominal Avoided Costs Calculated Monthly**

15 Year Starting 2023	\$ 9,874,482	\$ 52,683,873	\$ 62,558,355	1,961,163	\$31.90
Nominal NPV at 6.88% Discount Rate					
15 Year Starting 2022	\$ 14,537,790	\$ 46,128,030	\$ 60,665,820	1,961,058	\$30.94
15 Year Starting 2024	\$ 5,651,124	\$ 59,763,646	\$ 65,414,771	1,961,274	\$33.35

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	29.5% CF	Dollars	MWH	29.5% CF
Jan-22	751,517	-	751,517	20,908	35.94
Feb-22	560,838	-	560,838	19,864	28.23
Mar-22	686,851	-	686,851	25,269	27.18
Apr-22	415,076	-	415,076	20,415	20.33
May-22	355,986	-	355,986	20,545	17.33
Jun-22	378,946	-	378,946	16,657	22.75
Jul-22	931,223	-	931,223	12,238	76.10
Aug-22	508,623	-	508,623	9,818	51.81
Sep-22	436,031	-	436,031	12,664	34.43
Oct-22	471,965	-	471,965	17,510	26.95
Nov-22	365,208	-	365,208	15,239	23.97
Dec-22	507,766	-	507,766	15,292	33.20

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

Year	Estimated Capital Cost \$/kW	Fixed Capital Cost at Real Levelized Rate \$/kW-yr	Fixed O&M \$/kW-yr	Network Upgrade \$/kW-yr	Fixed Costs \$/MWh	Variable O&M \$/MWh	60% PTC \$/MWh	Total Resource Cost \$/MWh	Total Resource Costs \$/kW-yr	Total Fixed Cost \$/kW-yr
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(i)

2021 IRP Portland North Coast Wind Resource - 37% Capacity Factor

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

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

ROCKY MOUNTAIN POWER

STEP STUDY BETWEEN PRIOR FILING AND CURRENT FILING

2021.Q3 – JANUARY 2022

Nominal Levelized Payment at 6.880% Discount Rate

	2022 - 2036	2023 - 2037	2024 - 2038
2021.Q2 As Filed	\$33.72	\$35.02	\$36.69
OFPC	-\$1.59	-\$2.37	-\$3.15
Queue	\$0.61	\$0.67	\$0.75
2021 IRP	-\$5.85	-\$6.58	-\$7.42
2021.Q3 As Filed	\$26.89	\$26.74	\$26.87

Appendix C

Utah Quarterly Compliance Filing Step Study between 2021.Q3 and 2021.Q2 Compliance Filing Avoided Cost Impact of Changing Assumptions \$/MWH (1)

Year	OFPC (2)	Queue	2021 IRP	Total Impact
2022	\$ 3.66	-	\$ 1.77	\$ 5.44
2023	\$ 2.88	-	\$ 1.87	\$ 4.74
2024	\$ 1.44	\$ 1.18	\$ 11.05	\$ 13.67
2025	\$ 0.96	\$ 1.00	\$ 0.24	\$ 2.20
2026	\$ (1.42)	\$ 0.66	\$ (12.32)	\$ (13.08)
2027	\$ (1.90)	\$ 0.62	\$ (12.92)	\$ (14.20)
2028	\$ (3.13)	\$ 0.65	\$ (14.24)	\$ (16.71)
2029	\$ (4.30)	\$ 0.68	\$ (15.13)	\$ (18.76)
2030	\$ (4.03)	\$ 0.69	\$ (13.67)	\$ (17.01)
2031	\$ (4.28)	\$ 0.66	\$ (15.86)	\$ (19.48)
2032	\$ (4.60)	\$ 0.71	\$ (16.51)	\$ (20.39)
2033	\$ (5.44)	\$ 0.67	\$ (4.23)	\$ (9.00)
2034	\$ (5.28)	\$ 0.68	\$ (4.42)	\$ (9.02)
2035	\$ (5.41)	\$ 0.67	\$ (4.69)	\$ (9.44)
2036	\$ (5.91)	\$ 0.61	\$ (4.59)	\$ (9.89)
2037	\$ (6.91)	\$ 0.71	\$ (3.52)	\$ (9.71)
2038	\$ (7.56)	\$ 0.67	\$ (4.49)	\$ (11.38)

Nominal Levelized Payment at 6.880% Discount Rate (3)

2022 - 2036	\$ (1.59)	\$ 0.61	\$ (5.85)	\$ (6.83)
2023 - 2037	\$ (2.37)	\$ 0.67	\$ (6.58)	\$ (8.28)
2024 - 2038	\$ (3.15)	\$ 0.75	\$ (7.42)	\$ (9.82)

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

Appendix C

Utah Quarterly Compliance Filing Step Study between 2021.Q3 and 2021.Q2 Compliance Filing Total Avoided Cost Prices \$/MWH (1) (4)

Year	2021.Q2 As Filed	OFPC	Queue	2021 IRP (2)
2022	\$27.92	\$31.58	\$31.58	\$33.35
2023	\$25.61	\$28.49	\$28.49	\$30.36
2024	\$17.91	\$19.36	\$20.53	\$31.58
2025	\$19.01	\$19.97	\$20.97	\$21.21
2026	\$32.49	\$31.07	\$31.73	\$19.41
2027	\$34.24	\$32.34	\$32.96	\$20.04
2028	\$37.79	\$34.66	\$35.32	\$21.08
2029	\$40.93	\$36.63	\$37.31	\$22.17
2030	\$39.34	\$35.31	\$36.00	\$22.33
2031	\$41.16	\$36.88	\$37.54	\$21.68
2032	\$42.30	\$37.70	\$38.41	\$21.90
2033	\$43.76	\$38.32	\$38.99	\$34.76
2034	\$44.86	\$39.57	\$40.26	\$35.84
2035	\$46.20	\$40.78	\$41.45	\$36.76
2036	\$48.12	\$42.21	\$42.82	\$38.23
2037	\$50.35	\$43.44	\$44.15	\$40.63
2038	\$51.23	\$43.67	\$44.33	\$39.84

Nominal Levelized Payment at 6.880% Discount Rate (3)

2022 - 2036	\$33.72	\$32.13	\$32.74	\$26.89
2023 - 2037	\$35.02	\$32.65	\$33.32	\$26.74
2024 - 2038	\$36.69	\$33.54	\$34.29	\$26.87

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated September 2021
- (3) Discount Rate - 2021 IRP - Calculated Annually
- (4) Capacity costs are allocated based on assumed 100% capacity factor.

Appendix C

Utah Quarterly Compliance Filing Step Study between 2021.Q3 and 2021.Q2 Compliance Filing GRID Calculated Energy Avoided Cost Prices \$/MWH (1)

Year	2021.Q2 As Filed	OFPC	Queue	2021 IRP (2)
2022	\$27.92	\$31.58	\$31.58	\$33.35
2023	\$25.61	\$28.49	\$28.49	\$30.36
2024	\$17.91	\$19.36	\$20.53	\$31.58
2025	\$19.01	\$19.97	\$20.97	\$21.21
2026	\$19.31	\$17.89	\$18.55	\$19.41
2027	\$20.75	\$18.85	\$19.47	\$20.04
2028	\$24.03	\$20.91	\$21.56	\$21.08
2029	\$26.80	\$22.50	\$23.18	\$22.17
2030	\$24.88	\$20.85	\$21.54	\$22.33
2031	\$26.37	\$22.09	\$22.75	\$21.68
2032	\$27.21	\$22.61	\$23.32	\$21.90
2033	\$28.29	\$22.85	\$23.52	\$21.08
2034	\$29.03	\$23.74	\$24.43	\$21.86
2035	\$30.00	\$24.59	\$25.26	\$22.48
2036	\$31.60	\$25.69	\$26.30	\$23.68
2037	\$33.40	\$26.49	\$27.20	\$25.73
2038	\$33.89	\$26.33	\$27.00	\$24.62

Nominal Levelized Payment at 6.88% Discount Rate (3)

2022 - 2036	\$24.53	\$22.95	\$23.55	\$24.38
2023 - 2037	\$24.52	\$22.15	\$22.82	\$23.46
2024 - 2038	\$24.77	\$21.62	\$22.37	\$22.75

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

Appendix C
Utah Quarterly Compliance Filing
Step Study between 2021.Q3 and 2021.Q2 Compliance Filing
Capacity Avoided Cost Prices

Year	\$/kW-Year				\$/MWH (1)			
	2021.Q2	OFPC	Queue	2021.Q3	2021.Q2	OFPC	Queue	2021.Q3
2022	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-
2026	\$ 115.47	\$ 115.47	\$ 115.47	-	\$ 13.18	\$ 13.18	\$ 13.18	-
2027	\$ 118.12	\$ 118.12	\$ 118.12	-	\$ 13.48	\$ 13.48	\$ 13.48	-
2028	\$ 120.86	\$ 120.86	\$ 120.86	-	\$ 13.76	\$ 13.76	\$ 13.76	-
2029	\$ 123.76	\$ 123.76	\$ 123.76	-	\$ 14.13	\$ 14.13	\$ 14.13	-
2030	\$ 126.63	\$ 126.63	\$ 126.63	-	\$ 14.46	\$ 14.46	\$ 14.46	-
2031	\$ 129.53	\$ 129.53	\$ 129.53	-	\$ 14.79	\$ 14.79	\$ 14.79	-
2032	\$ 132.52	\$ 132.52	\$ 132.52	-	\$ 15.09	\$ 15.09	\$ 15.09	-
2033	\$ 135.54	\$ 135.54	\$ 135.54	\$ 119.86	\$ 15.47	\$ 15.47	\$ 15.47	\$ 13.68
2034	\$ 138.67	\$ 138.67	\$ 138.67	\$ 122.44	\$ 15.83	\$ 15.83	\$ 15.83	\$ 13.98
2035	\$ 141.83	\$ 141.83	\$ 141.83	\$ 125.09	\$ 16.19	\$ 16.19	\$ 16.19	\$ 14.28
2036	\$ 145.11	\$ 145.11	\$ 145.11	\$ 127.78	\$ 16.52	\$ 16.52	\$ 16.52	\$ 14.55
2037	\$ 148.47	\$ 148.47	\$ 148.47	\$ 130.54	\$ 16.95	\$ 16.95	\$ 16.95	\$ 14.90
2038	\$ 151.88	\$ 151.88	\$ 151.88	\$ 133.34	\$ 17.34	\$ 17.34	\$ 17.34	\$ 15.22

Nominal Levelized Payment at 6.880% Discount Rate (2)

2022 - 2036	\$80.55	\$80.55	\$80.55	\$22.00	\$9.19	\$9.19	\$9.19	\$2.51
2023 - 2037	\$92.05	\$92.05	\$92.05	\$28.75	\$10.50	\$10.50	\$10.50	\$3.28
2024 - 2038	\$104.49	\$104.49	\$104.49	\$36.09	\$11.92	\$11.92	\$11.92	\$4.12

- (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 Nos. 21-035-44/03-035-14

I hereby certify that a true and correct copy of the foregoing **2021.Q3 Avoided Cost Input Changes Quarterly Compliance Filing** was served upon the following by email on January 5, 2022.

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