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Salt Lake City, Utah 84116

June 21, 2017

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 – 2017.Q1 Avoided Cost Input Changes**
Docket 17-035-37 – 2017.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.

No comments were filed challenging the Company's previous compliance filing, which was submitted to the Commission on March 31, 2017.

Routine Updates

The Company identifies the following routine updates to its avoided cost inputs since the previous filing:

1. **IRP Update** – Update GRID to incorporate the preferred portfolio, capacity contribution, and integration costs from 2017 IRP.
2. **Official Forward Price Curve (OFPC)** – Update to the curve dated March 31, 2017 (1703 OFPC).

3. **Load Forecast Update** – Incorporate the incremental demand side management (DSM) selections from the 2017 IRP preferred portfolio into load forecast dated October 4, 2016.
4. **Qualifying Facility (QF) Queue** – Update the QF queue to reflect current signed and potential QFs. Signed QFs in the prior compliance filing are now reflected in 2017 IRP. Since the 2017 IRP was prepared, additional QFs have been signed totaling 415 megawatts (MW) nameplate. The potential queue was also revised to include 4399 MW nameplate in this filing. The QF queue was 3,878 megawatts (MW) nameplate in the 2016.Q4 filing.

Non-Routine Updates

The Company has identified the following non-routine updates in this filing:

1. **REC Ownership** – During the portion of a QF’s contract in which it receives a capacity payment based on the costs of a renewable resource, the Company will be entitled to the renewable energy credits (“RECs”) associated with the QF’s output. The 2017 IRP assumes that RECs associated with new renewable resources will be retained by the Company. Ratepayers are thus entitled to any resulting benefits from those RECs. Beyond the renewable-resource-based capacity payment already identified, no additional compensation will be paid for these RECs.
2. **Post-IRP Resource Expansion Plan Pricing** – Avoided cost pricing beyond the end of the preferred portfolio will be calculated by escalating the final year values at inflation. The GRID model cannot produce accurate avoided costs if capacity sufficient to meet the load and planning reserve margin is not identified and included in the model. The last year of the current preferred portfolio is 2036.

Additional Details

Additional detail is provided below:

1. **GRID Data Updates** – A number of data and modeling assumption updates have occurred in GRID since the previous compliance filing. **Appendix A** provides a summary of those updates.
2. **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 2017 Integrated Resource Plan (IRP) filed with the Commission on April 4, 2017. The 2017 IRP preferred portfolio includes cost-effective solar and wind resources. The proxy thermal QF resource partially displaces summer and winter front office transactions (FOT) since all thermal resources in the 2017 preferred portfolio are fully displaced by the QF queue. The proxy tracking solar QF resource partially displaces summer and winter FOTs during 2017-2034 and the Utah South solar resource from the 2017 IRP preferred portfolio in 2035. The proxy wind QF resource partially displaces summer and winter FOTs during 2017-2035 and the Goshen wind resource in the 2017 IRP preferred portfolio in 2036.

3. **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. The updates reflect a total decrease of approximately \$5.74/MWh.
 - a. Avoided costs presented in **Appendix B.1** were calculated assuming a 100 MW 85 percent capacity factor thermal QF resource.
 - b. Avoided costs presented in **Appendix B.2** were calculated assuming an 80 MW 31.1 percent capacity factor tracking solar QF resource.
 - c. Avoided costs presented in **Appendix B.3** were calculated assuming an 80 MW 31 percent capacity factor wind QF resource.
4. **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

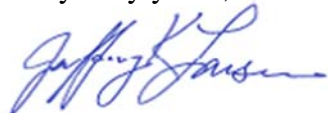
It is respectfully requested that all formal correspondence and requests regarding this compliance filing be addressed to:

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 Bob Lively at (801) 220-4052, or Dan MacNeil at (503) 813-5523.

Very truly yours,



Jeffrey K. Larsen
Vice President, Regulation

cc: Service List (Docket No. 03-035-14)
Service List (Docket No. 17-035-37)

ROCKY MOUNTAIN POWER
DOCKET 03-035-14 AND DOCKET 17-035-37
DESCRIPTION OF AVOIDED COST INPUT CHANGES
2017.Q1 - JUNE 2017

Appendix A

PacifiCorp Avoided Cost (Partial Displacement Differential Revenue Requirement (PDDRR)) Model Updates through June 2017 Docket 03-035-14 / Docket 17-035-37

Assumptions that have changed since the 2016.Q4 compliance filing are in **bold and underline**.

GRID Scenario Study Period

- January 1, 2018 through December 31, 2032 - 15-year study.
- Avoided cost prices starting in January 2018.

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

- **Updated to PacifiCorp's March 31, 2017 OFPC (1703 OFPC)**
- OFPC reflecting the changes in forecasted prices inclusive of the impact of the United States (U.S.) Environmental Protection Agency's (EPA) Clean Power Plan final rule.

Fuel Prices (Coal)

- Average and incremental coal costs based on forecast dated August 2016.
- Coal burn expense reflects incremental coal costs and coal take or pay minimum burn levels.

Integrated Resource Plan (IRP) Resources

- **2017 IRP Update filed with the Public Service Commission of Utah (UPSC) on April 4, 2017.**
- **Resource additions, including generating resources, and front office transactions (FOT), consistent with 2017 IRP (Table 8.17).**
- **Existing plant retirement consistent with 2017 IRP (Table 5.3).**
- **The GRID topology includes the Aeolus to Bridger/Anticline portion of Gateway West (Energy Gateway sub-segment D2), consistent with the preferred portfolio in the 2017 IRP. The Energy Gateway assumptions are described in more detail in Chapter 4 of the 2017 IRP.**

Hydro Resources

- 2015 hydro forecast prepared September 2016.
- 2015 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

- **6.57 percent discount rate - 2017 IRP**
- Discount rate is consistent with UPSC's order in Docket 11-035-T06.

Inflation Rates

- Company's inflation rate forecast dated **March 2017**.

Levelized Prices (Nominal) @ 6.57 percent Discount Rate

- 15 years 2018 through 2032.
- Levelized prices are for illustrative purposes only.

Load Forecast (Retail)

- 20-year load forecast dated October 2016. **Incorporate the incremental demand side management (DSM) selections from the 2017 IRP preferred portfolio into the load forecast dated October 4, 2016.**

Long-Term Contracts

- Long-term contracts which have prices that are indexed to market are consistent with the **1703 OFPC**.
- Contracts are modeled based on 48 months ended June 2016.
- Qualifying Facility (QF) power purchase agreements (PPA) are assumed to terminate and not renew at the end of their current PPA term.
- **Incorporates Signed QF PPAs.**

Market Capacity

- Capacity set at 48-month average of all short-term firm (STF) sales ended June 2016.
- 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 **January 2017**.

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 Flexible Reserve Study used in the 2017 IRP.**
- **Incremental integration costs for wind and solar resources reflect Flexible Reserve Study results used in the 2017 IRP.**

Incremental Flex Capacity Costs (2016 \$/MWh)

	Regulation Reserve	System Balancing	Total
Wind	0.429	0.145	0.573
Solar	0.458	0.145	0.603

- **Levelized integration costs for 2018-2032 for wind and solar are \$0.68/MWh and \$0.72/MWh, respectively.**

Contingency Reserve Calculation

- Reserve modeling reflects NERC / WECC 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 2019.
- Typical week retail load reserve calculation thereafter.

Short-Term Firm (STF) Transactions

- Executed STF contracts as of January 2017.

Size of the Avoided Cost Resource

- The avoided cost thermal resource is 100 MW with an 85 percent capacity factor and is located in the Utah North transmission bubble.
- **The avoided cost tracking solar resource is 80 MW with a 31.1 percent capacity factor and is located in the Utah North transmission bubble.**
- **The avoided cost wind resource is 80 MW with a 31.0 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 June 2016.

Wind and Solar Resources

- Existing wind generation profiles modeled using 2015 actual generation shape.
- Wind generation shaped to hourly using 2015 actual generation shape¹.
- Solar generation modeled using 12x24 profiles.
- **Capacity contribution values used in this study reflect the values from the 2017 IRP, and are summarized below.**

¹ Starting in the 2013.Q4 Compliance filing, wind and solar 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.

Renewable Type	Capacity Contribution - Percent of Nameplate	
	EAST	West
Wind	15.8%	11.8%
Solar – Fixed Mount	37.9%	53.9%
Solar –Tracking	59.7%	64.8%

Transmission

- Short-term transmission modeled based on 48 months ended June 2016.
- **The GRID topology includes the Aeolus to Bridger/Anticline portion of Gateway West (Energy Gateway sub-segment D2), consistent with the preferred portfolio in the 2017 IRP. The Energy Gateway assumptions are described in more detail in Chapter 4 of the 2017 IRP.**
- Wyoming Central -> Wyoming Northeast transmission link included.

IRP Partial Displacements (This Filing)

Provided in the table below are the QFs that have executed a PPA or are actively negotiating for a PPA. Signed resources are new and were not included in the 2017 IRP.

QF Queue						
No.	QF	Partial Displacement	Name plate	CF	Capacity Contribution	Start Date
1	Boswell Springs I Wind	12.64	80.00	40.7%	15.800%	2018 12 31
2	Boswell Springs II Wind	12.64	80.00	40.7%	15.800%	2018 12 31
3	Boswell Springs III Wind	12.64	80.00	40.7%	15.800%	2018 12 31
4	Boswell Springs IV Wind	12.64	80.00	40.7%	15.800%	2018 12 31
5	Glen Canyon A Solar QF	44.16	74.00	32.2%	59.700%	2019 09 29
6	Glen Canyon B Solar QF	12.53	21.00	34.9%	59.700%	2019 11 01
Total Signed MW		107.25	415.00			
1	QF - 245 - WY - Wind	12.64	80.00	44.9%	15.800%	2018 11 01
2	QF - 246 - WY - Wind	12.64	80.00	42.0%	15.800%	2018 11 01
3	QF - 247 - WY - Wind	12.64	80.00	37.4%	15.800%	2018 11 01
4	QF - 249 - OR - Solar	25.92	40.00	29.1%	64.800%	2017 12 31
5	QF - 279 - OR - Solar	25.92	40.00	31.0%	64.800%	2018 06 30
6	QF - 280 - OR - Solar	25.92	40.00	27.9%	64.800%	2018 12 01
7	QF - 281 - OR - Solar	25.92	40.00	24.5%	64.800%	2018 12 01
8	QF - 289 - UT - Solar	47.74	80.00	31.2%	59.700%	2018 12 01
9	QF - 290 - UT - Solar	47.74	80.00	31.5%	59.700%	2018 12 01
10	QF - 291 - UT - Solar	47.74	80.00	31.9%	59.700%	2018 12 01
11	QF - 308 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 01 01
12	QF - 309 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 01 01
13	QF - 310 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 01 01
14	QF - 311 - WY - Wind	6.32	40.00	46.6%	15.800%	2020 01 01
15	QF - 284 - OR - Solar	11.65	17.97	26.0%	64.800%	2018 01 01
16	QF - 313 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
17	QF - 315 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
18	QF - 317 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01

19	QF - 319 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
20	QF - 321 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
21	QF - 323 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
22	QF - 325 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
23	QF - 328 - OR - Solar	29.81	46.00	28.7%	64.800%	2018 12 01
24	QF - 336 - UT - Solar	34.61	58.00	33.89%	59.700%	2018 07 01
25	QF - 340 - WY - Solar	47.74	80.00	27.4%	59.700%	2019 06 01
26	QF - 342 - UT - Solar	47.74	80.00	28.9%	59.700%	2018 12 01
27	QF - 348 - WY - Solar	47.74	80.00	27.3%	59.700%	2019 12 01
28	QF - 349 - WY - Solar	47.74	80.00	27.0%	59.700%	2019 12 01
29	QF - 350 - UT - Solar	3.58	59.00	34.9%	6.100%	2019 12 01
30	QF - 351 - OR - Solar	35.64	55.00	28.0%	64.800%	2019 01 01
31	QF - 357 - UT - Solar	47.74	80.00	27.9%	59.700%	2020 04 01
32	QF - 358 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
33	QF - 359 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
34	QF - 360 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
35	QF - 361 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
36	QF - 362 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
37	QF - 363 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
38	QF - 364 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
39	QF - 254 - OR - Solar	35.64	55.00	24.6%	64.800%	2020 12 31
40	QF - 372 - WY - Solar	23.87	40.00	27.4%	59.700%	2019 06 30
41	QF - 380 - OR - Solar	32.40	50.00	25.8%	64.800%	2019 01 01
42	QF - 381 - OR - Solar	51.84	80.00	29.3%	64.800%	2021 01 01
43	QF - 397 - OR - Solar	12.96	20.00	29.3%	64.800%	2021 01 01
44	QF - 382 - UT - Solar	47.74	80.00	31.5%	59.700%	2020 06 01
45	QF - 383 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
46	QF - 384 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
47	QF - 385 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
48	QF - 386 - UT - Solar	47.74	80.00	30.8%	59.700%	2020 06 30
49	QF - 387 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
50	QF - 388 - UT - Solar	61.35	80.00	27.8%	76.700%	2019 11 01
51	QF - 389 - WY - Wind	12.55	79.40	41.6%	15.800%	2019 01 01
52	QF - 390 - WY - Solar	11.93	20.00	26.9%	59.700%	2018 12 01
53	QF - 391 - WY - Solar	11.93	20.00	27.7%	59.700%	2018 12 01
54	QF - 277 - WY - Solar	11.93	20.00	28.2%	59.700%	2019 10 01
55	QF - 278 - WY - Solar	11.93	20.00	28.2%	59.700%	2019 10 01
56	QF - 282 - WY - Solar	44.69	74.90	30.6%	59.700%	2018 03 01
57	QF - 302 - WY - Solar	9.55	16.00	29.3%	59.700%	2019 10 01
58	QF - 337 - WY - Solar	7.95	13.33	26.7%	59.600%	2018 08 01
59	QF - 393 - OR - Solar	32.40	50.00	28.7%	64.800%	2018 12 01
60	QF - 394 - WY - Wind	12.64	80.00	52.1%	15.800%	2020 01 01
61	QF - 365 - UT - Wind	12.64	80.00	31.4%	15.800%	2020 06 30
62	QF - 339 - WY - Wind	11.99	75.90	46.9%	15.800%	2019 01 01
63	QF - 304 - WY - Solar	17.90	30.00	27.4%	59.700%	2020 01 01
64	QF - 305 - WY - Solar	47.74	80.00	27.4%	59.700%	2020 01 01
65	QF - 395 - UT - Solar	47.62	79.80	28.3%	59.700%	2019 10 01
66	QF - 292 - OR - Solar	25.92	40.00	28.3%	64.800%	2019 12 31
67	QF - 293 - OR - Solar	32.40	50.00	26.7%	64.800%	2019 12 31
68	QF - 396 - OR - Solar	18.53	28.60	28.9%	64.800%	2019 08 01
Total Potential MW		2250.45	4338.90			
Total Partial Displacement		2357.70	4753.90			

Project “QF - 350 - UT - Solar” is located in an area that PacifiCorp energy supply management (ESM), in its merchant capacity, is aware has significant transmission constraints. The existing transmission constraint conditions could lead to curtailment of this potential project under certain circumstances, in accordance with the amended Network Operating Agreement between PacifiCorp ESM and PacifiCorp Transmission approved by the Federal Energy Regulatory Commission (FERC) on May 21, 2015.² As a result of the transmission constraint conditions, PacifiCorp provided this potential project indicative avoided cost pricing that reflected certain transmission constraint-related adjustments. For example, the pricing reflected only projected delivered output from the potential project, as well as a preliminary projected level of curtailment of that output, subject to further analysis. The project’s capacity deferral was also restricted based on the constraint conditions.

The table below provides the partial displacement of the base case, adjusted for solar degradation. After accounting for the QF queue, the capacity displacement associated with the proxy avoided cost resources in this filing were as follows:

- Thermal: All 1,313 MW of thermal resources are displaced by the QF queue. The thermal proxy defers FOTs for entire term.
- Tracking Solar: 787 MW of solar resources are displaced by the QF queue. After degradation, the solar proxy displaces 73 MW of Utah South tracking solar resources in 2035.
- Wind: Displaces 436 MW of wind resources are displaced by the QF queue. The wind proxy displaces 80 MW of Goshen wind resources in 2036.

Year	2017 IRP Preferred Portfolio (Nameplate MW)						Base Case Displacement (Deferred MW)					
	IRP Thermal	IRP Baseload Renewable	IRP Solar	IRP Wind	IRP FOT Summer	IRP FOT Winter	Thermal	Solar	Wind	Total Remaining Potential After Thermal, Solar, Wind Deferral	FOT Summer	FOT Winter
2017	-	-	-	-	500	281	-	-	-	-	-	-
2018	-	-	-	-	521	332	-	-	-	143	143	143
2019	-	-	-	-	878	273	-	-	-	643	643	273
2020	-	-	-	-	807	307	-	-	-	2,165	807	307
2021	-	-	-	-	799	319	-	-	-	2,239	799	319
2022	-	-	-	-	916	308	-	-	-	2,228	916	308
2023	-	-	-	-	844	306	-	-	-	2,217	844	306
2024	-	-	-	-	885	287	-	-	-	2,205	885	287
2025	-	-	-	-	1,042	348	-	-	-	2,194	1,042	348
2026	-	-	-	-	978	351	-	-	-	2,183	978	351
2027	-	-	-	-	1,040	297	-	-	-	2,172	1,040	297
2028	-	-	11	-	1,575	413	-	11	-	2,155	1,575	413
2029	200	30	108	-	1,575	551	200	108	-	1,892	1,575	551
2030	636	30	108	-	1,566	516	636	108	-	1,446	1,446	516
2031	636	30	226	85	1,575	490	636	226	85	1,357	1,357	490
2032	636	30	463	85	1,575	451	636	463	85	1,213	1,213	451
2033	1,313	30	689	85	1,575	437	1,313	689	85	396	396	396
2034	1,313	30	737	85	1,575	477	1,313	737	85	354	354	354
2035	1,313	30	1,028	85	1,575	479	1,313	787	85	266	266	266
2036	1,313	30	1,040	859	1,539	766	1,313	787	436	210	210	210

² PacifiCorp, 151 FERC ¶ 61,170 (2015).

IRP Partial Displacements (Previous Filing)

Thermal partial displacement was 1,235 MW in the base case and 1,335 MW in the avoided cost case as shown in the table below, adjusted for solar degradation:

**Partial Displacement Adjusted for Solar Degradation
MW Capacity (July)**

Year	a		b	c		d		e	f		g	h		i	j		k
	Signed & Potential QFs			Cumulative			Base Case		Avoided Cost Case								
	Adjusted For Solar Degradation			2015 IRP Update			Displacement		Nameplate		Displacement						
	Signed	Potential	Total	CCCT MW	FOT	CCCT	FOT	New QF	Total	CCCT	FOT						
	a + b			MIN(c,d)		MIN(e,c-f)		c+h		MIN(d,i)		MIN(e,i-j)					
2017	13.9	-	13.9	-	747.7	-	13.9	-	13.9	-	13.9	-	13.9	-	13.9	-	13.9
2018	11.5	87.9	99.4	-	1,093.9	-	99.4	100.0	199.4	-	199.4	-	199.4	-	199.4	-	199.4
2019	42.7	523.1	565.9	-	1,245.7	-	565.9	100.0	665.9	-	665.9	-	665.9	-	665.9	-	665.9
2020	42.4	1,177.0	1,219.5	-	1,203.0	-	1,203.0	100.0	1,319.5	-	1,203.0	-	1,319.5	-	1,203.0	-	1,203.0
2021	52.3	1,171.5	1,223.8	-	970.2	-	970.2	100.0	1,323.8	-	970.2	-	1,323.8	-	970.2	-	970.2
2022	48.3	1,165.9	1,214.2	-	1,060.0	-	1,060.0	100.0	1,314.2	-	1,060.0	-	1,314.2	-	1,060.0	-	1,060.0
2023	48.0	1,160.4	1,208.4	-	965.3	-	965.3	100.0	1,308.4	-	965.3	-	1,308.4	-	965.3	-	965.3
2024	47.8	1,154.9	1,202.7	-	993.0	-	993.0	100.0	1,302.7	-	993.0	-	1,302.7	-	993.0	-	993.0
2025	47.5	1,149.4	1,196.9	-	1,440.3	-	1,196.9	100.0	1,296.9	-	1,196.9	-	1,296.9	-	1,296.9	-	1,296.9
2026	47.2	1,144.0	1,191.2	-	1,440.1	-	1,191.2	100.0	1,291.2	-	1,191.2	-	1,291.2	-	1,291.2	-	1,291.2
2027	46.9	1,138.6	1,185.5	-	1,442.9	-	1,185.5	100.0	1,285.5	-	1,185.5	-	1,285.5	-	1,285.5	-	1,285.5
2028	46.6	1,133.2	1,179.9	1,112.0	1,177.3	1,112.0	67.9	100.0	1,279.9	1,112.0	67.9	100.0	1,279.9	1,112.0	167.9	-	167.9
2029	46.4	1,127.9	1,174.3	1,112.0	1,222.8	1,112.0	62.3	100.0	1,274.3	1,112.0	62.3	100.0	1,274.3	1,112.0	162.3	-	162.3
2030	46.1	1,122.6	1,168.7	1,747.0	1,442.9	1,168.7	-	100.0	1,268.7	1,268.7	-	100.0	1,268.7	1,268.7	-	-	-
2031	45.8	1,117.3	1,163.1	2,201.0	1,106.6	1,168.7	-	100.0	1,263.1	1,268.7	-	100.0	1,263.1	1,268.7	-	-	-
2032	45.6	1,112.0	1,157.6	2,201.0	1,174.0	1,168.7	-	100.0	1,257.6	1,268.7	-	100.0	1,257.6	1,268.7	-	-	-
2033	45.3	1,058.5	1,103.8	2,624.0	1,442.9	1,168.7	-	100.0	1,203.8	1,268.7	-	100.0	1,203.8	1,268.7	-	-	-
2034	45.0	829.5	874.6	2,624.0	1,442.9	1,168.7	-	100.0	974.6	1,268.7	-	100.0	974.6	1,268.7	-	-	-
2035	44.8	332.7	377.5	2,624.0	1,442.9	1,168.7	-	100.0	477.5	1,268.7	-	100.0	477.5	1,268.7	-	-	-
2036	44.5	331.5	376.0	2,624.0	1,442.9	1,168.7	-	100.0	476.0	1,268.7	-	100.0	476.0	1,268.7	-	-	-
2037	37.2	330.3	367.6	2,624.0	1,442.9	1,168.7	-	100.0	467.6	1,268.7	-	100.0	467.6	1,268.7	-	-	-
2038	37.0	296.7	333.7	2,624.0	1,442.9	1,168.7	-	100.0	433.7	1,268.7	-	100.0	433.7	1,268.7	-	-	-
2039	10.2	114.7	124.9	2,624.0	1,442.9	1,168.7	-	100.0	224.9	1,268.7	-	100.0	224.9	1,268.7	-	-	-
2040	10.2	-	10.2	2,624.0	1,442.9	1,168.7	-	100.0	110.2	1,268.7	-	100.0	110.2	1,268.7	-	-	-
2041	-	-	-	2,624.0	1,442.9	1,168.7	-	100.0	100.0	1,268.7	-	100.0	100.0	1,268.7	-	-	-
2042	-	-	-	2,624.0	1,442.9	1,168.7	-	100.0	100.0	1,268.7	-	100.0	100.0	1,268.7	-	-	-

CCCT Partial Displacement in 2030	Base Case	AC Case
Before Solar Degradation	1,235.23	1,335.23
After Solar Degradation	1,168.66	1,268.66

ROCKY MOUNTAIN POWER

DOCKET 03-035-14 AND DOCKET 17-035-37

UPDATE IMPACT – UPDATED AVOIDED COST STUDY

2017.Q1 - June 2017

Appendix B.1

Avoided Cost Prices \$/MWh Utah 2017.Q1 Sch 38

Year	Thermal Avoided Cost at 85.0% CF (2)	Solar Tracking Avoided Cost at 31.1% CF (2)	Wind Avoided Cost at 31.0% CF (2)	Thermal Utah 2016.Q4 Filing	Thermal Difference
2018	\$19.82	\$19.25	\$18.09	\$23.29	(\$3.46)
2019	\$18.23	\$16.87	\$16.83	\$19.81	(\$1.57)
2020	\$16.72	\$14.65	\$16.21	\$18.69	(\$1.97)
2021	\$17.80	\$15.93	\$16.40	\$19.31	(\$1.50)
2022	\$18.66	\$16.88	\$16.87	\$20.94	(\$2.28)
2023	\$21.17	\$18.59	\$21.45	\$23.20	(\$2.04)
2024	\$22.50	\$19.71	\$20.60	\$25.83	(\$3.33)
2025	\$24.17	\$20.44	\$22.94	\$28.58	(\$4.40)
2026	\$24.23	\$20.86	\$22.77	\$32.73	(\$8.51)
2027	\$25.56	\$22.16	\$23.67	\$35.49	(\$9.93)
2028	\$28.73	\$23.28	\$27.39	\$35.17	(\$6.44)
2029	\$31.91	\$24.49	\$30.94	\$38.00	(\$6.09)
2030	\$35.60	\$27.20	\$34.61	\$54.05	(\$18.45)
2031	\$37.70	\$28.23	\$36.49	\$55.61	(\$17.91)
2032	\$39.41	\$29.78	\$38.58	\$57.15	(\$17.73)

15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)

2018-2032	\$/MWh	\$23.68 (4)	\$20.07 (4)	\$22.44 (4)	\$29.42 (5)	(\$5.74)
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Footnotes:

- (1) Discount Rate - 2017 IRP
- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2018 - 2032
- (4) Levelized Monthly
- (5) Levelized Annually. Monthly calculation is more accurate when the QF has seasonal variation, or begins mid-year.

Table 1
Avoided Cost Prices
Utah 2017.Q1 Sch 38 Thermal - 100.0 MW and 85.0% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	Total Price @ 85.0% Capacity Factor \$/MWh
2018	\$0.00	\$19.82	\$19.82
2019	\$0.00	\$18.23	\$18.23
2020	\$0.00	\$16.72	\$16.72
2021	\$0.00	\$17.80	\$17.80
2022	\$0.00	\$18.66	\$18.66
2023	\$0.00	\$21.17	\$21.17
2024	\$0.00	\$22.50	\$22.50
2025	\$0.00	\$24.17	\$24.17
2026	\$0.00	\$24.23	\$24.23
2027	\$0.00	\$25.56	\$25.56
2028	\$0.00	\$28.73	\$28.73
2029	\$0.00	\$31.91	\$31.91
2030	\$0.00	\$35.60	\$35.60
2031	\$0.00	\$37.70	\$37.70
2032	\$0.00	\$39.41	\$39.41
2033	\$0.00	\$43.98	\$43.98
2034	\$0.00	\$47.46	\$47.46
2035	\$0.00	\$54.04	\$54.04
2036	\$0.00	\$57.97	\$57.97
2037	\$0.00	\$59.54	\$59.54

2018-2032 15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)
 \$/kW \$0.00
 \$/MWh \$23.68 \$23.68 (3)

2020-2034 15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)
 \$/kW \$0.00
 \$/MWh \$26.56 \$26.56 (3)

Footnotes:

- (1) Discount Rate - 2017 IRP
- (2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.
- (3) Levelized Monthly

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2017.Q1 Sch 38 Thermal - 100.0 MW and 85.0% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2018	19.82	22.68	23.76	21.62	17.80	16.55	16.64	21.00	21.16	18.33	18.47	18.72	21.25
2019	18.23	20.88	18.40	17.78	15.57	14.59	15.88	21.28	20.37	17.82	18.39	17.79	19.83
2020	16.72	17.32	17.86	16.97	15.11	13.83	13.59	17.03	17.98	18.05	17.05	16.21	19.58
2021	17.80	19.71	18.02	18.17	15.10	14.53	14.40	17.02	18.07	18.78	17.99	18.15	23.58
2022	18.66	18.48	19.58	19.17	16.26	15.43	15.36	18.56	19.12	19.98	19.85	19.69	22.37
2023	21.17	30.70	18.94	19.83	16.75	17.89	17.71	20.50	21.43	21.82	23.80	20.16	24.02
2024	22.50	21.99	24.98	21.87	18.29	19.49	20.17	22.34	24.14	22.14	26.04	22.37	26.09
2025	24.17	26.09	24.13	23.77	21.26	20.77	21.29	24.74	25.39	23.69	24.91	26.29	27.61
2026	24.23	27.59	25.26	23.73	21.11	21.21	22.13	24.66	24.86	25.73	25.20	24.93	24.33
2027	25.56	24.99	25.06	29.87	22.51	22.10	22.54	25.84	26.06	26.78	27.12	25.67	28.01
2028	28.73	28.07	28.79	27.80	25.15	25.25	25.23	30.62	31.17	30.36	31.11	28.86	32.19
2029	31.91	33.58	32.05	30.87	26.69	27.09	26.86	33.14	34.60	33.73	34.41	32.56	37.04
2030	35.60	38.35	38.49	33.77	29.27	29.17	29.19	37.32	38.93	36.62	37.29	36.69	42.00
2031	37.70	41.87	41.39	35.75	31.08	30.88	33.24	39.24	40.61	38.24	38.35	37.62	44.17
2032	39.41	43.51	42.43	36.88	32.11	32.64	31.73	41.84	42.65	40.31	41.42	40.12	47.09
2033	43.98	48.57	48.56	40.46	34.84	34.91	34.68	45.23	50.17	44.81	44.89	46.13	54.42
2034	47.46	54.70	52.41	44.14	38.03	38.41	36.75	50.76	54.32	45.77	48.65	49.92	55.49
2035	54.04	56.57	57.09	50.00	44.12	44.89	44.62	63.12	65.40	54.51	55.34	54.09	58.38
2036	57.97	59.16	59.64	52.97	47.97	48.36	47.53	67.31	69.38	59.86	59.84	59.85	63.38

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q1 Sch 38 Thermal - 100.0 MW and 85.0% CF

Year	PacifiCorp		
	Delivered IRP - Utah Greenfield Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2016	\$2.32	\$2.29	\$2.35
2017	\$2.95	\$2.97	\$2.97
2018	\$2.70	\$2.72	\$2.70
2019	\$2.48	\$2.50	\$2.48
2020	\$2.51	\$2.50	\$2.48
2021	\$2.56	\$2.52	\$2.53
2022	\$2.58	\$2.53	\$2.55
2023	\$3.02	\$2.91	\$2.99
2024	\$3.64	\$3.50	\$3.61
2025	\$3.84	\$3.78	\$3.81
2026	\$3.84	\$3.77	\$3.81
2027	\$3.99	\$3.92	\$3.95
2028	\$4.18	\$4.15	\$4.15
2029	\$4.50	\$4.51	\$4.47
2030	\$4.85	\$4.88	\$4.81
2031	\$5.07	\$5.11	\$5.04
2032	\$5.31	\$5.38	\$5.28
2033	\$5.65	\$5.76	\$5.62
2034	\$5.93	\$6.02	\$5.90
2035	\$6.25	\$6.29	\$6.23
2036	\$6.73	\$6.80	\$6.70
2037	\$6.93	\$7.05	\$6.90
2038	\$7.30	\$7.46	\$7.28
2039	\$7.56	\$7.75	\$7.54
2040	\$7.84	\$8.03	\$7.82
2041	\$8.04	\$8.24	\$8.03
2042	\$8.25	\$8.45	\$8.24

Official Forward Price Curve Forecast dated Mar 31, 2017

Table 5
Utah 2017.Q1 Sch 38 Thermal - 100.0 MW and 85.0% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year starting 2020	\$	190,784,030	\$	-	\$	190,784,030	7,182,064	\$26.56
Nominal NPV at 6.57% Discount Rate								
15 Year Starting 2018	\$	170,062,223	\$	-	\$	170,062,223	7,181,378	\$23.68

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	85.0% CF	Dollars	MWH	85.0% CF
Jan-18	1,434,391	-	1,434,391	63,240	22.68
Feb-18	1,357,384	-	1,357,384	57,120	23.76
Mar-18	1,367,515	-	1,367,515	63,240	21.62
Apr-18	1,089,625	-	1,089,625	61,200	17.80
May-18	1,046,888	-	1,046,888	63,240	16.55
Jun-18	1,018,207	-	1,018,207	61,200	16.64
Jul-18	1,327,786	-	1,327,786	63,240	21.00
Aug-18	1,338,356	-	1,338,356	63,240	21.16
Sep-18	1,122,101	-	1,122,101	61,200	18.33
Oct-18	1,168,030	-	1,168,030	63,240	18.47
Nov-18	1,145,932	-	1,145,932	61,200	18.72
Dec-18	1,344,149	-	1,344,149	63,240	21.25
Jan-19	1,320,480	-	1,320,480	63,240	20.88
Feb-19	1,051,232	-	1,051,232	57,120	18.40
Mar-19	1,124,420	-	1,124,420	63,240	17.78
Apr-19	952,828	-	952,828	61,200	15.57
May-19	922,852	-	922,852	63,240	14.59
Jun-19	972,087	-	972,087	61,200	15.88
Jul-19	1,345,603	-	1,345,603	63,240	21.28
Aug-19	1,288,414	-	1,288,414	63,240	20.37
Sep-19	1,090,888	-	1,090,888	61,200	17.82
Oct-19	1,163,178	-	1,163,178	63,240	18.39
Nov-19	1,088,728	-	1,088,728	61,200	17.79
Dec-19	1,254,211	-	1,254,211	63,240	19.83
Jan-20	1,095,506	-	1,095,506	63,240	17.32
Feb-20	1,056,326	-	1,056,326	59,160	17.86
Mar-20	1,073,178	-	1,073,178	63,240	16.97
Apr-20	924,716	-	924,716	61,200	15.11
May-20	874,734	-	874,734	63,240	13.83
Jun-20	831,732	-	831,732	61,200	13.59
Jul-20	1,077,222	-	1,077,222	63,240	17.03
Aug-20	1,136,749	-	1,136,749	63,240	17.98
Sep-20	1,104,360	-	1,104,360	61,200	18.05
Oct-20	1,078,309	-	1,078,309	63,240	17.05
Nov-20	991,886	-	991,886	61,200	16.21
Dec-20	1,238,193	-	1,238,193	63,240	19.58
Jan-21	1,246,158	-	1,246,158	63,240	19.71
Feb-21	1,029,085	-	1,029,085	57,120	18.02
Mar-21	1,149,038	-	1,149,038	63,240	18.17
Apr-21	923,904	-	923,904	61,200	15.10
May-21	918,796	-	918,796	63,240	14.53
Jun-21	881,479	-	881,479	61,200	14.40
Jul-21	1,076,340	-	1,076,340	63,240	17.02
Aug-21	1,143,047	-	1,143,047	63,240	18.07
Sep-21	1,149,379	-	1,149,379	61,200	18.78

Oct-21	1,137,726	-	1,137,726	63,240	17.99
Nov-21	1,110,527	-	1,110,527	61,200	18.15
Dec-21	1,491,219	-	1,491,219	63,240	23.58
Jan-22	1,168,507	-	1,168,507	63,240	18.48
Feb-22	1,118,437	-	1,118,437	57,120	19.58
Mar-22	1,212,547	-	1,212,547	63,240	19.17
Apr-22	995,373	-	995,373	61,200	16.26
May-22	976,026	-	976,026	63,240	15.43
Jun-22	939,753	-	939,753	61,200	15.36
Jul-22	1,173,769	-	1,173,769	63,240	18.56
Aug-22	1,209,316	-	1,209,316	63,240	19.12
Sep-22	1,222,976	-	1,222,976	61,200	19.98
Oct-22	1,255,368	-	1,255,368	63,240	19.85
Nov-22	1,204,724	-	1,204,724	61,200	19.69
Dec-22	1,414,876	-	1,414,876	63,240	22.37
Jan-23	1,941,201	-	1,941,201	63,240	30.70
Feb-23	1,081,799	-	1,081,799	57,120	18.94
Mar-23	1,253,886	-	1,253,886	63,240	19.83
Apr-23	1,024,837	-	1,024,837	61,200	16.75
May-23	1,131,455	-	1,131,455	63,240	17.89
Jun-23	1,083,910	-	1,083,910	61,200	17.71
Jul-23	1,296,218	-	1,296,218	63,240	20.50
Aug-23	1,355,290	-	1,355,290	63,240	21.43
Sep-23	1,335,615	-	1,335,615	61,200	21.82
Oct-23	1,505,220	-	1,505,220	63,240	23.80
Nov-23	1,233,660	-	1,233,660	61,200	20.16
Dec-23	1,518,776	-	1,518,776	63,240	24.02
Jan-24	1,390,514	-	1,390,514	63,240	21.99
Feb-24	1,477,922	-	1,477,922	59,160	24.98
Mar-24	1,383,070	-	1,383,070	63,240	21.87
Apr-24	1,119,334	-	1,119,334	61,200	18.29
May-24	1,232,688	-	1,232,688	63,240	19.49
Jun-24	1,234,332	-	1,234,332	61,200	20.17
Jul-24	1,413,033	-	1,413,033	63,240	22.34
Aug-24	1,526,802	-	1,526,802	63,240	24.14
Sep-24	1,354,931	-	1,354,931	61,200	22.14
Oct-24	1,646,721	-	1,646,721	63,240	26.04
Nov-24	1,369,173	-	1,369,173	61,200	22.37
Dec-24	1,649,990	-	1,649,990	63,240	26.09
Jan-25	1,649,669	-	1,649,669	63,240	26.09
Feb-25	1,378,443	-	1,378,443	57,120	24.13
Mar-25	1,503,408	-	1,503,408	63,240	23.77
Apr-25	1,300,965	-	1,300,965	61,200	21.26
May-25	1,313,660	-	1,313,660	63,240	20.77
Jun-25	1,302,757	-	1,302,757	61,200	21.29
Jul-25	1,564,432	-	1,564,432	63,240	24.74
Aug-25	1,605,866	-	1,605,866	63,240	25.39
Sep-25	1,449,928	-	1,449,928	61,200	23.69
Oct-25	1,575,419	-	1,575,419	63,240	24.91
Nov-25	1,608,742	-	1,608,742	61,200	26.29
Dec-25	1,745,945	-	1,745,945	63,240	27.61
Jan-26	1,744,604	-	1,744,604	63,240	27.59
Feb-26	1,442,758	-	1,442,758	57,120	25.26
Mar-26	1,500,719	-	1,500,719	63,240	23.73
Apr-26	1,291,670	-	1,291,670	61,200	21.11
May-26	1,341,501	-	1,341,501	63,240	21.21

Jun-26	1,354,339	-	1,354,339	61,200	22.13
Jul-26	1,559,269	-	1,559,269	63,240	24.66
Aug-26	1,572,430	-	1,572,430	63,240	24.86
Sep-26	1,574,561	-	1,574,561	61,200	25.73
Oct-26	1,593,583	-	1,593,583	63,240	25.20
Nov-26	1,525,693	-	1,525,693	61,200	24.93
Dec-26	1,538,897	-	1,538,897	63,240	24.33
Jan-27	1,580,426	-	1,580,426	63,240	24.99
Feb-27	1,431,236	-	1,431,236	57,120	25.06
Mar-27	1,889,257	-	1,889,257	63,240	29.87
Apr-27	1,377,457	-	1,377,457	61,200	22.51
May-27	1,397,604	-	1,397,604	63,240	22.10
Jun-27	1,379,168	-	1,379,168	61,200	22.54
Jul-27	1,633,968	-	1,633,968	63,240	25.84
Aug-27	1,648,025	-	1,648,025	63,240	26.06
Sep-27	1,638,798	-	1,638,798	61,200	26.78
Oct-27	1,714,884	-	1,714,884	63,240	27.12
Nov-27	1,570,983	-	1,570,983	61,200	25.67
Dec-27	1,771,404	-	1,771,404	63,240	28.01
Jan-28	1,775,127	-	1,775,127	63,240	28.07
Feb-28	1,703,236	-	1,703,236	59,160	28.79
Mar-28	1,758,252	-	1,758,252	63,240	27.80
Apr-28	1,539,309	-	1,539,309	61,200	25.15
May-28	1,596,827	-	1,596,827	63,240	25.25
Jun-28	1,543,882	-	1,543,882	61,200	25.23
Jul-28	1,936,213	-	1,936,213	63,240	30.62
Aug-28	1,971,210	-	1,971,210	63,240	31.17
Sep-28	1,857,765	-	1,857,765	61,200	30.36
Oct-28	1,967,533	-	1,967,533	63,240	31.11
Nov-28	1,766,416	-	1,766,416	61,200	28.86
Dec-28	2,035,513	-	2,035,513	63,240	32.19
Jan-29	2,123,794	-	2,123,794	63,240	33.58
Feb-29	1,830,436	-	1,830,436	57,120	32.05
Mar-29	1,952,511	-	1,952,511	63,240	30.87
Apr-29	1,633,646	-	1,633,646	61,200	26.69
May-29	1,713,277	-	1,713,277	63,240	27.09
Jun-29	1,643,762	-	1,643,762	61,200	26.86
Jul-29	2,095,800	-	2,095,800	63,240	33.14
Aug-29	2,188,025	-	2,188,025	63,240	34.60
Sep-29	2,064,551	-	2,064,551	61,200	33.73
Oct-29	2,176,281	-	2,176,281	63,240	34.41
Nov-29	1,992,911	-	1,992,911	61,200	32.56
Dec-29	2,342,368	-	2,342,368	63,240	37.04
Jan-30	2,425,142	-	2,425,142	63,240	38.35
Feb-30	2,198,733	-	2,198,733	57,120	38.49
Mar-30	2,135,450	-	2,135,450	63,240	33.77
Apr-30	1,791,513	-	1,791,513	61,200	29.27
May-30	1,844,996	-	1,844,996	63,240	29.17
Jun-30	1,786,596	-	1,786,596	61,200	29.19
Jul-30	2,360,112	-	2,360,112	63,240	37.32
Aug-30	2,461,870	-	2,461,870	63,240	38.93
Sep-30	2,241,222	-	2,241,222	61,200	36.62
Oct-30	2,358,235	-	2,358,235	63,240	37.29
Nov-30	2,245,702	-	2,245,702	61,200	36.69
Dec-30	2,656,234	-	2,656,234	63,240	42.00
Jan-31	2,647,624	-	2,647,624	63,240	41.87

Feb-31	2,364,112	-	2,364,112	57,120	41.39
Mar-31	2,261,115	-	2,261,115	63,240	35.75
Apr-31	1,902,303	-	1,902,303	61,200	31.08
May-31	1,952,536	-	1,952,536	63,240	30.88
Jun-31	2,034,326	-	2,034,326	61,200	33.24
Jul-31	2,481,650	-	2,481,650	63,240	39.24
Aug-31	2,568,003	-	2,568,003	63,240	40.61
Sep-31	2,340,452	-	2,340,452	61,200	38.24
Oct-31	2,425,445	-	2,425,445	63,240	38.35
Nov-31	2,302,513	-	2,302,513	61,200	37.62
Dec-31	2,793,183	-	2,793,183	63,240	44.17
Jan-32	2,751,519	-	2,751,519	63,240	43.51
Feb-32	2,510,406	-	2,510,406	59,160	42.43
Mar-32	2,332,536	-	2,332,536	63,240	36.88
Apr-32	1,965,369	-	1,965,369	61,200	32.11
May-32	2,064,308	-	2,064,308	63,240	32.64
Jun-32	1,941,633	-	1,941,633	61,200	31.73
Jul-32	2,645,746	-	2,645,746	63,240	41.84
Aug-32	2,696,898	-	2,696,898	63,240	42.65
Sep-32	2,466,756	-	2,466,756	61,200	40.31
Oct-32	2,619,696	-	2,619,696	63,240	41.42
Nov-32	2,455,150	-	2,455,150	61,200	40.12
Dec-32	2,977,937	-	2,977,937	63,240	47.09
Jan-33	3,071,502	-	3,071,502	63,240	48.57
Feb-33	2,773,926	-	2,773,926	57,120	48.56
Mar-33	2,558,897	-	2,558,897	63,240	40.46
Apr-33	2,132,085	-	2,132,085	61,200	34.84
May-33	2,207,778	-	2,207,778	63,240	34.91
Jun-33	2,122,555	-	2,122,555	61,200	34.68
Jul-33	2,860,525	-	2,860,525	63,240	45.23
Aug-33	3,172,944	-	3,172,944	63,240	50.17
Sep-33	2,742,163	-	2,742,163	61,200	44.81
Oct-33	2,838,743	-	2,838,743	63,240	44.89
Nov-33	2,823,301	-	2,823,301	61,200	46.13
Dec-33	3,441,611	-	3,441,611	63,240	54.42
Jan-34	3,459,275	-	3,459,275	63,240	54.70
Feb-34	2,993,692	-	2,993,692	57,120	52.41
Mar-34	2,791,431	-	2,791,431	63,240	44.14
Apr-34	2,327,737	-	2,327,737	61,200	38.03
May-34	2,428,949	-	2,428,949	63,240	38.41
Jun-34	2,249,381	-	2,249,381	61,200	36.75
Jul-34	3,209,820	-	3,209,820	63,240	50.76
Aug-34	3,435,229	-	3,435,229	63,240	54.32
Sep-34	2,801,282	-	2,801,282	61,200	45.77
Oct-34	3,076,743	-	3,076,743	63,240	48.65
Nov-34	3,055,148	-	3,055,148	61,200	49.92
Dec-34	3,509,213	-	3,509,213	63,240	55.49
Jan-35	3,577,333	-	3,577,333	63,240	56.57
Feb-35	3,261,067	-	3,261,067	57,120	57.09
Mar-35	3,161,759	-	3,161,759	63,240	50.00
Apr-35	2,700,276	-	2,700,276	61,200	44.12
May-35	2,839,152	-	2,839,152	63,240	44.89
Jun-35	2,730,722	-	2,730,722	61,200	44.62
Jul-35	3,991,433	-	3,991,433	63,240	63.12
Aug-35	4,135,621	-	4,135,621	63,240	65.40
Sep-35	3,335,810	-	3,335,810	61,200	54.51

Oct-35	3,499,835	-	3,499,835	63,240	55.34
Nov-35	3,310,599	-	3,310,599	61,200	54.09
Dec-35	3,692,196	-	3,692,196	63,240	58.38
Jan-36	3,741,115	-	3,741,115	63,240	59.16
Feb-36	3,528,111	-	3,528,111	59,160	59.64
Mar-36	3,349,625	-	3,349,625	63,240	52.97
Apr-36	2,935,915	-	2,935,915	61,200	47.97
May-36	3,058,081	-	3,058,081	63,240	48.36
Jun-36	2,908,808	-	2,908,808	61,200	47.53
Jul-36	4,256,444	-	4,256,444	63,240	67.31
Aug-36	4,387,482	-	4,387,482	63,240	69.38
Sep-36	3,663,580	-	3,663,580	61,200	59.86
Oct-36	3,784,101	-	3,784,101	63,240	59.84
Nov-36	3,662,686	-	3,662,686	61,200	59.85
Dec-36	4,008,195	-	4,008,195	63,240	63.38
Jan-37	3,831,940	-	3,831,940	63,240	60.59
Feb-37	3,613,764	-	3,613,764	57,120	63.27
Mar-37	3,430,945	-	3,430,945	63,240	54.25
Apr-37	3,007,192	-	3,007,192	61,200	49.14
May-37	3,132,323	-	3,132,323	63,240	49.53
Jun-37	2,979,427	-	2,979,427	61,200	48.68
Jul-37	4,359,780	-	4,359,780	63,240	68.94
Aug-37	4,493,998	-	4,493,998	63,240	71.06
Sep-37	3,752,522	-	3,752,522	61,200	61.32
Oct-37	3,875,969	-	3,875,969	63,240	61.29
Nov-37	3,751,606	-	3,751,606	61,200	61.30
Dec-37	4,105,504	-	4,105,504	63,240	64.92

Appendix B.2

Avoided Cost Prices \$/MWh Utah 2017.Q1 Sch 38 Solar T - 80.0 MW and 31.1% CF

Year	Avoided Cost at 31.1% CF (2)	Utah 2016.Q4 Filing	Difference
2018	\$19.25	\$23.29	(\$4.04)
2019	\$16.87	\$19.81	(\$2.94)
2020	\$14.65	\$18.69	(\$4.04)
2021	\$15.93	\$19.31	(\$3.38)
2022	\$16.88	\$20.94	(\$4.06)
2023	\$18.59	\$23.20	(\$4.61)
2024	\$19.71	\$25.83	(\$6.12)
2025	\$20.44	\$28.58	(\$8.14)
2026	\$20.86	\$32.73	(\$11.88)
2027	\$22.16	\$35.49	(\$13.33)
2028	\$23.28	\$35.17	(\$11.90)
2029	\$24.49	\$38.00	(\$13.51)
2030	\$27.20	\$54.05	(\$26.86)
2031	\$28.23	\$55.61	(\$27.38)
2032	\$29.78	\$57.15	(\$27.37)
2033	\$35.09	\$0.00	\$35.09
2034	\$40.35	\$0.00	\$40.35
2035	\$86.65	\$0.00	\$86.65
2036	\$89.01	\$0.00	\$89.01
2037	\$90.90	\$0.00	\$90.90

2018-2032	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)		
	\$/MWh	\$20.07 (4)	\$29.42 (5)
			(\$9.35)

Footnotes:

- (1) Discount Rate - 2017 IRP
 - (2) Total Avoided Costs with Capacity included at an 31.1% capacity factor
 - (3) 15-Year NPC is 2018 - 2032
 - (4) Levelized Monthly
 - (5) Levelized Annually.
- The levelized monthly calculation is more accurate when the QF has seasonal loads or when the QF project doesn't start in January.

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2017.Q1 Sch 38 Solar T - 80.0 MW and 31.1% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2018	19.25	23.14	23.86	22.01	17.52	16.18	16.50	21.76	21.43	17.44	18.05	17.95	19.20
2019	16.87	20.25	16.22	16.29	14.98	14.68	14.97	21.42	19.44	15.14	16.46	16.78	17.08
2020	14.65	16.58	16.19	14.79	14.22	12.76	12.50	14.17	15.02	16.93	14.97	15.52	15.66
2021	15.93	16.47	16.78	17.87	15.24	14.46	14.13	14.36	16.57	19.14	15.68	15.92	16.50
2022	16.88	16.72	18.08	18.97	16.16	15.54	15.11	15.54	16.11	20.15	18.05	17.19	17.11
2023	18.59	17.34	17.56	20.07	16.93	16.73	16.82	18.27	19.90	22.09	20.13	19.03	18.31
2024	19.71	17.18	19.90	22.10	17.65	17.05	17.76	19.77	23.64	21.49	20.90	19.50	18.67
2025	20.44	19.44	21.07	23.11	19.09	18.12	18.67	19.71	21.11	22.82	21.97	22.45	19.08
2026	20.86	20.95	21.63	23.30	19.32	18.73	20.06	21.15	18.44	24.80	22.55	21.33	19.18
2027	22.16	20.85	22.12	24.22	20.00	19.21	20.80	22.12	23.42	26.55	23.20	21.93	21.50
2028	23.28	22.88	23.25	24.62	21.12	21.42	21.26	24.04	24.13	25.75	24.50	23.35	24.74
2029	24.49	22.13	25.03	26.17	22.16	21.55	22.47	24.97	25.25	27.22	26.35	25.31	28.58
2030	27.20	30.03	28.66	27.09	23.61	24.37	24.20	28.28	28.60	29.55	28.30	26.78	33.62
2031	28.23	33.77	30.30	28.17	24.93	24.72	24.94	29.94	29.60	30.12	29.18	26.65	33.95
2032	29.78	35.12	31.33	29.31	25.83	27.36	25.72	32.30	31.03	30.44	30.34	29.64	37.92
2033	35.09	41.24	38.07	31.80	27.43	27.94	27.51	47.27	39.93	33.59	33.95	35.26	51.47
2034	40.35	50.76	43.97	35.68	29.18	32.36	28.91	59.01	46.20	36.13	42.05	42.19	54.41
2035	(0.07)	(0.09)	(0.11)	(0.18)	(0.24)	(0.08)	(0.06)	0.13	0.01	(0.09)	0.06	(0.13)	(0.09)
2036	(0.09)	(0.08)	(0.10)	(0.15)	(0.21)	(0.18)	(0.17)	0.05	0.06	(0.06)	(0.05)	(0.07)	(0.05)

Table 3
2017 IRP Utah Solar Resource
31% Capacity Factor

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Costs	Total Resource Costs	Solar Integration Cost
	\$/kW	\$/kW-yr	\$/kW-yr	\$/MWh	\$/MWh	\$/MWh	\$/MWh	\$/kW-yr	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
2017 IRP Utah Solar Resource - 31% Capacity Factor									
2016	\$1,822	\$140.61	\$19.69	\$58.84	\$0.00	(\$2.45)	\$56.40	\$153.64	\$0.60
2017		\$143.72	\$20.13	\$60.14	\$0.00	(\$2.50)	\$57.64	\$157.04	\$0.62
2018		\$146.84	\$20.57	\$61.45	\$0.00	(\$2.55)	\$58.90	\$160.46	\$0.63
2019		\$149.78	\$20.98	\$62.68	\$0.00	(\$2.60)	\$60.08	\$163.68	\$0.64
2020		\$152.99	\$21.43	\$64.02	\$0.00	(\$2.66)	\$61.36	\$167.17	\$0.65
2021		\$156.42	\$21.91	\$65.46	\$0.00	(\$2.72)	\$62.74	\$170.92	\$0.66
2022		\$159.95	\$22.40	\$66.93	\$0.00	(\$2.78)	\$64.15	\$174.78	\$0.67
2023		\$163.63	\$22.92	\$68.47	\$0.00	(\$2.84)	\$65.63	\$178.81	\$0.69
2024		\$167.42	\$23.45	\$70.06	\$0.00	(\$2.91)	\$67.15	\$182.94	\$0.71
2025		\$171.30	\$23.99	\$71.68	\$0.00	(\$2.98)	\$68.70	\$187.17	\$0.73
2026		\$175.23	\$24.54	\$73.33	\$0.00	(\$3.05)	\$70.28	\$191.46	\$0.75
2027		\$179.29	\$25.11	\$75.03	\$0.00	(\$3.12)	\$71.91	\$195.90	\$0.77
2028		\$183.46	\$25.69	\$76.77	\$0.00	(\$3.19)	\$73.58	\$200.46	\$0.79
2029		\$187.80	\$26.30	\$78.59	\$0.00	(\$3.27)	\$75.32	\$205.19	\$0.81
2030		\$192.27	\$26.93	\$80.46	\$0.00	(\$3.35)	\$77.11	\$210.07	\$0.83
2031		\$196.89	\$27.58	\$82.39	\$0.00	(\$3.43)	\$78.96	\$215.13	\$0.85
2032		\$201.63	\$28.24	\$84.38	\$0.00	(\$3.51)	\$80.87	\$220.31	\$0.87
2033		\$206.51	\$28.92	\$86.42	\$0.00	(\$3.59)	\$82.83	\$225.65	\$0.89
2034		\$211.51	\$29.62	\$88.51	\$0.00	(\$3.68)	\$84.83	\$231.10	\$0.91
2035		\$216.62	\$30.34	\$90.65	\$0.00	(\$3.77)	\$86.88	\$236.69	\$0.93
2036		\$221.89	\$31.08	\$92.85	\$0.00	(\$3.86)	\$88.99	\$242.45	\$0.95
2037		\$227.28	\$31.83	\$95.11	\$0.00	(\$3.95)	\$91.16	\$248.35	\$0.97
2038		\$232.83	\$32.61	\$97.43	\$0.00	(\$4.05)	\$93.38	\$254.41	\$0.99
2039		\$238.53	\$33.41	\$99.82	\$0.00	(\$4.15)	\$95.67	\$260.63	\$1.01
2040		\$244.36	\$34.23	\$102.26	\$0.00	(\$4.25)	\$98.01	\$267.01	\$1.03
2041		\$250.35	\$35.07	\$104.77	\$0.00	(\$4.35)	\$100.42	\$273.57	\$1.06
2042		\$256.52	\$35.93	\$107.35	\$0.00	(\$4.46)	\$102.89	\$280.30	\$1.09

Sources, Inputs and Assumptions

Source:	(c)(f)	Plant Costs - 2017 IRP - Table 6.1 & 6.2
	(a)	Plant capacity cost
	(b)	= (a) x 0.0771567801772526
	(d)	= ((b) + (c)) / (8.76 x 31.1%)
	(g)	= (d) + (f)
	(h)	Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Utah Solar Resource - 31% Capacity Factor	
Wind	Cost and Input Assumptions

2016 \$	\$1,822	Plant capacity cost	\$/kW-yr
2016 \$	\$19.69	Fixed O&M, plus on-going capital cost	\$/kW-yr
2016 \$	0.60	Integration Cost	\$/MWH
2016 \$	\$0.00	Variable O&M	\$/MWH
2016 \$	(2.45)	Tax Credit	\$/MWH
	7.716%	Payment Factor	
	31.1%	Capacity Factor	

Company Official Inflation Forecast Dated March 31, 2017					
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2017	2.2%	2026	2.3%	2035	2.4%
2018	2.2%	2027	2.3%	2036	2.4%
2019	2.0%	2028	2.3%	2037	2.4%
2020	2.1%	2029	2.4%	2038	2.4%
2021	2.2%	2030	2.4%	2039	2.4%
2022	2.3%	2031	2.4%	2040	2.4%
2023	2.3%	2032	2.4%	2041	2.5%
2024	2.3%	2033	2.4%	2042	2.5%
2025	2.3%	2034	2.4%	2043	2.5%

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q1 Sch 38 Solar T - 80.0 MW and 31.1% CF

Year	PacifiCorp		
	Delivered IRP - Utah Greenfield Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2016	\$2.32	\$2.29	\$2.35
2017	\$2.95	\$2.97	\$2.97
2018	\$2.70	\$2.72	\$2.70
2019	\$2.48	\$2.50	\$2.48
2020	\$2.51	\$2.50	\$2.48
2021	\$2.56	\$2.52	\$2.53
2022	\$2.58	\$2.53	\$2.55
2023	\$3.02	\$2.91	\$2.99
2024	\$3.64	\$3.50	\$3.61
2025	\$3.84	\$3.78	\$3.81
2026	\$3.84	\$3.77	\$3.81
2027	\$3.99	\$3.92	\$3.95
2028	\$4.18	\$4.15	\$4.15
2029	\$4.50	\$4.51	\$4.47
2030	\$4.85	\$4.88	\$4.81
2031	\$5.07	\$5.11	\$5.04
2032	\$5.31	\$5.38	\$5.28
2033	\$5.65	\$5.76	\$5.62
2034	\$5.93	\$6.02	\$5.90
2035	\$6.25	\$6.29	\$6.23
2036	\$6.73	\$6.80	\$6.70
2037	\$6.93	\$7.05	\$6.90
2038	\$7.30	\$7.46	\$7.28
2039	\$7.56	\$7.75	\$7.54
2040	\$7.84	\$8.03	\$7.82
2041	\$8.04	\$8.24	\$8.03
2042	\$8.25	\$8.45	\$8.24

Official Forward Price Curve Forecast dated Mar 31, 2017

Table 5
Utah 2017.Q1 Sch 38 Solar T - 80.0 MW and 31.1% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year starting 2020	\$	44,341,447	\$	-	\$	44,341,447	2,019,918	\$21.95
Nominal NPV at 6.57% Discount Rate								
15 Year Starting 2018	\$	40,947,028	\$	-	\$	40,947,028	2,040,121	\$20.07

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	30.7% CF			
Jan-18	243,760	-	243,760	10,534	23.14
Feb-18	281,351	-	281,351	11,789	23.86
Mar-18	404,057	-	404,057	18,361	22.01
Apr-18	371,650	-	371,650	21,207	17.52
May-18	397,297	-	397,297	24,549	16.18
Jun-18	430,226	-	430,226	26,080	16.50
Jul-18	513,694	-	513,694	23,606	21.76
Aug-18	506,751	-	506,751	23,644	21.43
Sep-18	363,456	-	363,456	20,842	17.44
Oct-18	305,072	-	305,072	16,897	18.05
Nov-18	204,340	-	204,340	11,381	17.95
Dec-18	168,551	-	168,551	8,780	19.20
Jan-19	212,208	-	212,208	10,481	20.25
Feb-19	190,211	-	190,211	11,730	16.22
Mar-19	297,646	-	297,646	18,269	16.29
Apr-19	316,187	-	316,187	21,101	14.98
May-19	358,505	-	358,505	24,426	14.68
Jun-19	388,427	-	388,427	25,950	14.97
Jul-19	503,135	-	503,135	23,488	21.42
Aug-19	457,330	-	457,330	23,526	19.44
Sep-19	313,965	-	313,965	20,738	15.14
Oct-19	276,715	-	276,715	16,813	16.46
Nov-19	189,965	-	189,965	11,324	16.78
Dec-19	149,240	-	149,240	8,736	17.08
Jan-20	172,903	-	172,903	10,429	16.58
Feb-20	195,774	-	195,774	12,089	16.19
Mar-20	268,865	-	268,865	18,178	14.79
Apr-20	298,615	-	298,615	20,996	14.22
May-20	310,041	-	310,041	24,304	12.76
Jun-20	322,754	-	322,754	25,820	12.50
Jul-20	331,124	-	331,124	23,371	14.17
Aug-20	351,495	-	351,495	23,409	15.02
Sep-20	349,392	-	349,392	20,634	16.93
Oct-20	250,514	-	250,514	16,729	14.97
Nov-20	174,867	-	174,867	11,268	15.52
Dec-20	136,121	-	136,121	8,693	15.66
Jan-21	170,946	-	170,946	10,377	16.47
Feb-21	194,857	-	194,857	11,614	16.78
Mar-21	323,253	-	323,253	18,087	17.87
Apr-21	318,438	-	318,438	20,891	15.24
May-21	349,583	-	349,583	24,183	14.46
Jun-21	363,058	-	363,058	25,691	14.13
Jul-21	333,816	-	333,816	23,254	14.36
Aug-21	385,952	-	385,952	23,292	16.57
Sep-21	393,017	-	393,017	20,531	19.14

Oct-21	261,003	-	261,003	16,645	15.68
Nov-21	178,440	-	178,440	11,211	15.92
Dec-21	142,734	-	142,734	8,649	16.50
Jan-22	172,624	-	172,624	10,325	16.72
Feb-22	208,881	-	208,881	11,555	18.08
Mar-22	341,326	-	341,326	17,997	18.97
Apr-22	335,860	-	335,860	20,786	16.16
May-22	374,036	-	374,036	24,062	15.54
Jun-22	386,312	-	386,312	25,563	15.11
Jul-22	359,636	-	359,636	23,137	15.54
Aug-22	373,378	-	373,378	23,175	16.11
Sep-22	411,724	-	411,724	20,429	20.15
Oct-22	298,914	-	298,914	16,562	18.05
Nov-22	191,718	-	191,718	11,155	17.19
Dec-22	147,210	-	147,210	8,606	17.11
Jan-23	178,155	-	178,155	10,273	17.34
Feb-23	201,951	-	201,951	11,498	17.56
Mar-23	359,396	-	359,396	17,907	20.07
Apr-23	350,207	-	350,207	20,682	16.93
May-23	400,598	-	400,598	23,941	16.73
Jun-23	427,837	-	427,837	25,435	16.82
Jul-23	420,585	-	420,585	23,022	18.27
Aug-23	458,764	-	458,764	23,059	19.90
Sep-23	449,009	-	449,009	20,327	22.09
Oct-23	331,725	-	331,725	16,479	20.13
Nov-23	211,255	-	211,255	11,099	19.03
Dec-23	156,825	-	156,825	8,563	18.31
Jan-24	175,600	-	175,600	10,222	17.18
Feb-24	235,796	-	235,796	11,849	19.90
Mar-24	393,813	-	393,813	17,817	22.10
Apr-24	363,294	-	363,294	20,579	17.65
May-24	406,147	-	406,147	23,822	17.05
Jun-24	449,500	-	449,500	25,308	17.76
Jul-24	452,974	-	452,974	22,907	19.77
Aug-24	542,326	-	542,326	22,944	23.64
Sep-24	434,554	-	434,554	20,225	21.49
Oct-24	342,726	-	342,726	16,397	20.90
Nov-24	215,302	-	215,302	11,044	19.50
Dec-24	159,078	-	159,078	8,520	18.67
Jan-25	197,722	-	197,722	10,171	19.44
Feb-25	239,864	-	239,864	11,383	21.07
Mar-25	409,723	-	409,723	17,728	23.11
Apr-25	390,789	-	390,789	20,476	19.09
May-25	429,589	-	429,589	23,703	18.12
Jun-25	470,151	-	470,151	25,181	18.67
Jul-25	449,242	-	449,242	22,792	19.71
Aug-25	481,997	-	481,997	22,829	21.11
Sep-25	459,140	-	459,140	20,124	22.82
Oct-25	358,482	-	358,482	16,315	21.97
Nov-25	246,642	-	246,642	10,989	22.45
Dec-25	161,724	-	161,724	8,477	19.08
Jan-26	211,980	-	211,980	10,120	20.95
Feb-26	244,932	-	244,932	11,326	21.63
Mar-26	411,028	-	411,028	17,639	23.30
Apr-26	393,600	-	393,600	20,374	19.32
May-26	441,675	-	441,675	23,584	18.73

Jun-26	502,518	-	502,518	25,055	20.06
Jul-26	479,605	-	479,605	22,678	21.15
Aug-26	418,803	-	418,803	22,715	18.44
Sep-26	496,625	-	496,625	20,023	24.80
Oct-26	366,056	-	366,056	16,233	22.55
Nov-26	233,254	-	233,254	10,934	21.33
Dec-26	161,774	-	161,774	8,435	19.18
Jan-27	209,938	-	209,938	10,069	20.85
Feb-27	249,256	-	249,256	11,269	22.12
Mar-27	425,083	-	425,083	17,551	24.22
Apr-27	405,398	-	405,398	20,272	20.00
May-27	450,747	-	450,747	23,466	19.21
Jun-27	518,482	-	518,482	24,930	20.80
Jul-27	499,243	-	499,243	22,565	22.12
Aug-27	529,438	-	529,438	22,602	23.42
Sep-27	528,976	-	528,976	19,923	26.55
Oct-27	374,670	-	374,670	16,152	23.20
Nov-27	238,628	-	238,628	10,879	21.93
Dec-27	180,417	-	180,417	8,393	21.50
Jan-28	229,239	-	229,239	10,019	22.88
Feb-28	270,020	-	270,020	11,614	23.25
Mar-28	429,938	-	429,938	17,463	24.62
Apr-28	425,925	-	425,925	20,170	21.12
May-28	500,217	-	500,217	23,349	21.42
Jun-28	527,369	-	527,369	24,805	21.26
Jul-28	539,653	-	539,653	22,452	24.04
Aug-28	542,690	-	542,690	22,489	24.13
Sep-28	510,468	-	510,468	19,823	25.75
Oct-28	393,818	-	393,818	16,071	24.50
Nov-28	252,799	-	252,799	10,825	23.35
Dec-28	206,584	-	206,584	8,351	24.74
Jan-29	220,618	-	220,618	9,969	22.13
Feb-29	279,291	-	279,291	11,157	25.03
Mar-29	454,658	-	454,658	17,376	26.17
Apr-29	444,708	-	444,708	20,069	22.16
May-29	500,639	-	500,639	23,232	21.55
Jun-29	554,509	-	554,509	24,681	22.47
Jul-29	557,891	-	557,891	22,340	24.97
Aug-29	565,026	-	565,026	22,376	25.25
Sep-29	536,808	-	536,808	19,724	27.22
Oct-29	421,343	-	421,343	15,991	26.35
Nov-29	272,619	-	272,619	10,771	25.31
Dec-29	237,450	-	237,450	8,309	28.58
Jan-30	297,906	-	297,906	9,919	30.03
Feb-30	318,144	-	318,144	11,101	28.66
Mar-30	468,365	-	468,365	17,289	27.09
Apr-30	471,457	-	471,457	19,969	23.61
May-30	563,289	-	563,289	23,116	24.37
Jun-30	594,373	-	594,373	24,558	24.20
Jul-30	628,709	-	628,709	22,228	28.28
Aug-30	636,805	-	636,805	22,264	28.60
Sep-30	579,856	-	579,856	19,626	29.55
Oct-30	450,283	-	450,283	15,911	28.30
Nov-30	286,997	-	286,997	10,717	26.78
Dec-30	277,990	-	277,990	8,268	33.62
Jan-31	333,246	-	333,246	9,869	33.77

Feb-31	334,698	-	334,698	11,046	30.30
Mar-31	484,670	-	484,670	17,203	28.17
Apr-31	495,311	-	495,311	19,869	24.93
May-31	568,676	-	568,676	23,000	24.72
Jun-31	609,319	-	609,319	24,435	24.94
Jul-31	662,129	-	662,129	22,117	29.94
Aug-31	655,616	-	655,616	22,153	29.60
Sep-31	588,207	-	588,207	19,528	30.12
Oct-31	461,993	-	461,993	15,831	29.18
Nov-31	284,138	-	284,138	10,663	26.65
Dec-31	279,240	-	279,240	8,226	33.95
Jan-32	344,860	-	344,860	9,820	35.12
Feb-32	356,657	-	356,657	11,383	31.33
Mar-32	501,737	-	501,737	17,117	29.31
Apr-32	510,754	-	510,754	19,770	25.83
May-32	626,166	-	626,166	22,885	27.36
Jun-32	625,317	-	625,317	24,313	25.72
Jul-32	710,895	-	710,895	22,006	32.30
Aug-32	683,859	-	683,859	22,042	31.03
Sep-32	591,443	-	591,443	19,430	30.44
Oct-32	477,852	-	477,852	15,752	30.34
Nov-32	314,463	-	314,463	10,610	29.64
Dec-32	310,341	-	310,341	8,185	37.92
Jan-33	402,945	-	402,945	9,771	41.24
Feb-33	416,336	-	416,336	10,936	38.07
Mar-33	541,510	-	541,510	17,031	31.80
Apr-33	539,562	-	539,562	19,671	27.43
May-33	636,205	-	636,205	22,771	27.94
Jun-33	665,524	-	665,524	24,191	27.51
Jul-33	1,035,030	-	1,035,030	21,896	47.27
Aug-33	875,673	-	875,673	21,932	39.93
Sep-33	649,348	-	649,348	19,333	33.59
Oct-33	532,080	-	532,080	15,674	33.95
Nov-33	372,238	-	372,238	10,557	35.26
Dec-33	419,153	-	419,153	8,144	51.47
Jan-34	493,464	-	493,464	9,722	50.76
Feb-34	478,455	-	478,455	10,881	43.97
Mar-34	604,589	-	604,589	16,946	35.68
Apr-34	571,228	-	571,228	19,573	29.18
May-34	733,236	-	733,236	22,657	32.36
Jun-34	695,930	-	695,930	24,070	28.91
Jul-34	1,285,531	-	1,285,531	21,787	59.01
Aug-34	1,008,225	-	1,008,225	21,822	46.20
Sep-34	695,059	-	695,059	19,236	36.13
Oct-34	655,747	-	655,747	15,595	42.05
Nov-34	443,180	-	443,180	10,504	42.19
Dec-34	440,934	-	440,934	8,103	54.41
Jan-35	(867)	1,444,477	1,443,611	9,674	149.23
Feb-35	(1,212)	1,444,477	1,443,265	10,826	133.31
Mar-35	(3,048)	1,444,477	1,441,430	16,861	85.49
Apr-35	(4,738)	1,444,477	1,439,739	19,475	73.93
May-35	(1,781)	1,444,477	1,442,697	22,544	64.00
Jun-35	(1,535)	1,444,477	1,442,942	23,950	60.25
Jul-35	2,844	1,444,477	1,447,322	21,678	66.77
Aug-35	175	1,444,477	1,444,653	21,713	66.53
Sep-35	(1,628)	1,444,477	1,442,849	19,140	75.38

Oct-35	897	1,444,477	1,445,374	15,517	93.15
Nov-35	(1,409)	1,444,477	1,443,068	10,451	138.07
Dec-35	(697)	1,444,477	1,443,780	8,063	179.06
Jan-36	(781)	1,479,630	1,478,849	9,625	153.64
Feb-36	(1,144)	1,479,630	1,478,486	11,157	132.52
Mar-36	(2,596)	1,479,630	1,477,034	16,777	88.04
Apr-36	(4,098)	1,479,630	1,475,531	19,377	76.15
May-36	(4,030)	1,479,630	1,475,600	22,431	65.78
Jun-36	(4,110)	1,479,630	1,475,519	23,830	61.92
Jul-36	1,115	1,479,630	1,480,744	21,569	68.65
Aug-36	1,320	1,479,630	1,480,950	21,605	68.55
Sep-36	(1,233)	1,479,630	1,478,396	19,044	77.63
Oct-36	(848)	1,479,630	1,478,782	15,440	95.78
Nov-36	(726)	1,479,630	1,478,904	10,399	142.21
Dec-36	(395)	1,479,630	1,479,234	8,023	184.38
Jan-37	(800)	1,515,636	1,514,836	9,674	156.60
Feb-37	(1,172)	1,515,636	1,514,464	10,826	139.89
Mar-37	(2,659)	1,515,636	1,512,978	16,861	89.73
Apr-37	(4,198)	1,515,636	1,511,439	19,475	77.61
May-37	(4,128)	1,515,636	1,511,508	22,544	67.05
Jun-37	(4,210)	1,515,636	1,511,426	23,950	63.11
Jul-37	1,142	1,515,636	1,516,778	21,678	69.97
Aug-37	1,353	1,515,636	1,516,989	21,713	69.86
Sep-37	(1,263)	1,515,636	1,514,373	19,140	79.12
Oct-37	(868)	1,515,636	1,514,768	15,517	97.62
Nov-37	(743)	1,515,636	1,514,893	10,451	144.95
Dec-37	(405)	1,515,636	1,515,231	8,063	187.93

Appendix B.3

Avoided Cost Prices \$/MWh Utah 2017.Q1 Sch 38 Wind - 80.0 MW and 31.0% CF

Year	Avoided Cost at 31.0% CF (2)	Utah 2016.Q4 Filing	Difference
2018	\$18.09	\$23.29	(\$5.19)
2019	\$16.83	\$19.81	(\$2.97)
2020	\$16.21	\$18.69	(\$2.48)
2021	\$16.40	\$19.31	(\$2.91)
2022	\$16.87	\$20.94	(\$4.06)
2023	\$21.45	\$23.20	(\$1.76)
2024	\$20.60	\$25.83	(\$5.23)
2025	\$22.94	\$28.58	(\$5.63)
2026	\$22.77	\$32.73	(\$9.96)
2027	\$23.67	\$35.49	(\$11.82)
2028	\$27.39	\$35.17	(\$7.78)
2029	\$30.94	\$38.00	(\$7.06)
2030	\$34.61	\$54.05	(\$19.44)
2031	\$36.49	\$55.61	(\$19.12)
2032	\$38.58	\$57.15	(\$18.56)
2033	\$43.86	\$0.00	\$43.86
2034	\$46.92	\$0.00	\$46.92
2035	\$52.07	\$0.00	\$52.07
2036	\$82.79	\$0.00	\$82.79
2037	\$85.05	\$0.00	\$85.05

2018-2032	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)		
	\$/MWh	\$22.44 (4)	\$29.42 (5)
			(\$6.98)

Footnotes:

- (1) Discount Rate - 2017 IRP
- (2) Total Avoided Costs with Capacity included at an 31.0% capacity factor
- (3) 15-Year NPC is 2018 - 2032
- (4) Levelized Monthly
- (5) Levelized Annually.

The levelized monthly calculation is more accurate when the QF has seasonal loads or when the QF project doesn't start in January.

Table 2
Avoided Energy Costs - Scheduled Hours (\$/MWh)
Utah 2017.Q1 Sch 38 Wind - 80.0 MW and 31.0% CF

Year	Annual	Winter Season					Summer Season				Winter Season		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Energy Only													
2018	18.09	20.54	23.68	21.20	17.16	15.45	15.04	17.31	17.95	16.93	17.30	17.21	18.76
2019	16.83	19.94	17.60	17.50	14.41	12.32	14.57	17.36	17.64	17.21	17.40	16.63	18.01
2020	16.21	19.28	17.45	17.12	13.97	12.23	12.02	15.88	16.92	16.81	16.42	15.73	19.51
2021	16.40	17.52	17.11	17.46	13.52	12.06	12.05	15.15	17.20	17.32	16.21	17.66	21.61
2022	16.87	11.76	17.05	18.27	14.93	12.93	13.03	17.29	16.69	18.66	18.19	17.91	23.01
2023	21.45	41.39	18.56	18.75	15.56	15.53	15.64	18.85	19.37	19.64	20.20	30.02	22.41
2024	20.60	20.43	20.14	20.07	17.29	18.36	18.42	20.55	21.73	21.99	21.81	20.53	23.71
2025	22.94	24.00	24.63	21.25	22.28	20.65	19.59	24.39	25.09	21.01	22.29	25.09	24.18
2026	22.77	25.80	28.53	22.00	20.12	19.95	20.27	22.61	22.64	24.01	22.81	22.35	22.53
2027	23.67	24.62	23.44	24.31	21.44	21.77	20.70	23.88	24.82	25.15	24.87	22.67	24.98
2028	27.39	26.12	28.51	26.98	24.85	24.53	21.62	29.07	29.77	29.28	28.97	26.89	29.71
2029	30.94	32.34	30.51	29.51	26.56	27.34	26.81	32.06	34.13	32.41	32.11	30.14	34.26
2030	34.61	36.03	37.75	33.43	29.38	28.71	28.24	35.82	38.13	35.28	35.74	34.56	39.16
2031	36.49	38.90	40.49	34.90	31.42	31.05	29.68	37.65	40.02	37.35	36.78	35.94	41.18
2032	38.58	41.34	41.22	35.71	32.70	31.84	31.33	39.74	42.14	39.76	40.10	39.14	44.12
2033	43.86	46.44	48.13	40.28	36.13	33.67	34.47	48.15	47.72	43.51	44.41	45.51	52.75
2034	46.92	53.33	52.09	44.74	40.34	37.37	36.61	50.83	50.30	44.48	47.46	48.59	53.46
2035	52.07	55.35	57.49	50.18	44.49	41.81	40.36	56.61	58.34	51.97	53.50	52.62	57.31
2036	(13.01)	(11.04)	(31.80)	(35.10)	(37.45)	(25.05)	(15.40)	2.95	9.62	0.89	(4.37)	(14.51)	(16.68)

Table 3
2017 IRP ID Wind Resource
38% Capacity Factor

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Costs	Total Resource Costs	Wind Integration Cost
	\$/kW	\$/kW-yr	\$/kW-yr	\$/MWh	\$/MWh	\$/MWh	\$/MWh	\$/kW-yr	\$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
2017 IRP ID Wind Resource - 38% Capacity Factor									
2016	\$1,811	\$127.99	\$37.57	\$49.74	\$0.00	-	\$49.74	\$165.56	\$0.57
2017		\$130.82	\$38.40	\$50.84	\$0.00	\$0.00	\$50.84	\$169.22	\$0.59
2018		\$133.66	\$39.23	\$51.94	\$0.00	\$0.00	\$51.94	\$172.89	\$0.60
2019		\$136.34	\$40.02	\$52.98	\$0.00	\$0.00	\$52.98	\$176.36	\$0.61
2020		\$139.26	\$40.88	\$54.12	\$0.00	\$0.00	\$54.12	\$180.14	\$0.62
2021		\$142.39	\$41.80	\$55.33	\$0.00	\$0.00	\$55.33	\$184.19	\$0.63
2022		\$145.60	\$42.74	\$56.58	\$0.00	\$0.00	\$56.58	\$188.34	\$0.64
2023		\$148.95	\$43.72	\$57.88	\$0.00	\$0.00	\$57.88	\$192.67	\$0.65
2024		\$152.40	\$44.73	\$59.22	\$0.00	\$0.00	\$59.22	\$197.13	\$0.67
2025		\$155.93	\$45.77	\$60.59	\$0.00	\$0.00	\$60.59	\$201.70	\$0.69
2026		\$159.51	\$46.82	\$61.98	\$0.00	\$0.00	\$61.98	\$206.33	\$0.71
2027		\$163.20	\$47.90	\$63.42	\$0.00	\$0.00	\$63.42	\$211.10	\$0.73
2028		\$167.00	\$49.01	\$64.89	\$0.00	\$0.00	\$64.89	\$216.01	\$0.75
2029		\$170.95	\$50.17	\$66.43	\$0.00	\$0.00	\$66.43	\$221.12	\$0.77
2030		\$175.02	\$51.36	\$68.01	\$0.00	\$0.00	\$68.01	\$226.38	\$0.79
2031		\$179.22	\$52.59	\$69.64	\$0.00	\$0.00	\$69.64	\$231.81	\$0.81
2032		\$183.53	\$53.86	\$71.31	\$0.00	\$0.00	\$71.31	\$237.39	\$0.83
2033		\$187.97	\$55.16	\$73.04	\$0.00	\$0.00	\$73.04	\$243.13	\$0.85
2034		\$192.52	\$56.50	\$74.81	\$0.00	\$0.00	\$74.81	\$249.02	\$0.87
2035		\$197.17	\$57.87	\$76.62	\$0.00	\$0.00	\$76.62	\$255.04	\$0.89
2036		\$201.96	\$59.28	\$78.48	\$0.00	\$0.00	\$78.48	\$261.24	\$0.91
2037		\$206.86	\$60.72	\$80.38	\$0.00	\$0.00	\$80.38	\$267.58	\$0.93
2038		\$211.91	\$62.20	\$82.34	\$0.00	\$0.00	\$82.34	\$274.11	\$0.95
2039		\$217.10	\$63.72	\$84.36	\$0.00	\$0.00	\$84.36	\$280.82	\$0.97
2040		\$222.40	\$65.28	\$86.42	\$0.00	\$0.00	\$86.42	\$287.68	\$0.99
2041		\$227.86	\$66.88	\$88.54	\$0.00	\$0.00	\$88.54	\$294.74	\$1.01
2042		\$233.47	\$68.53	\$90.72	\$0.00	\$0.00	\$90.72	\$302.00	\$1.03

Sources, Inputs and Assumptions

Source:	(c)(f)	Plant Costs - 2017 IRP - Table 6.1 & 6.2
	(a)	Plant capacity cost
	(b)	= (a) x 0.0706748586244695
	(d)	= ((b) + (c)) / (8.76 x 38.0%)
	(g)	= (d) + (f)
	(h)	Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP ID Wind Resource - 38% Capacity Factor	
Wind	Cost and Input Assumptions

2016 \$	\$1,811	Plant capacity cost	\$/kW-yr
2016 \$	\$37.57	Fixed O&M, plus on-going capital cost	\$/kW-yr
2016 \$	0.57	Integration Cost	\$/MWH
2016 \$	\$0.00	Variable O&M	\$/MWH
2016 \$		Tax Credit	\$/MWH
	7.067%	Payment Factor	
	38%	Capacity Factor	

Company Official Inflation Forecast Dated March 31, 2017					
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2017	2.2%	2026	2.3%	2035	2.4%
2018	2.2%	2027	2.3%	2036	2.4%
2019	2.0%	2028	2.3%	2037	2.4%
2020	2.1%	2029	2.4%	2038	2.4%
2021	2.2%	2030	2.4%	2039	2.4%
2022	2.3%	2031	2.4%	2040	2.4%
2023	2.3%	2032	2.4%	2041	2.5%
2024	2.3%	2033	2.4%	2042	2.5%
2025	2.3%	2034	2.4%	2043	2.5%

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q1 Sch 38 Wind - 80.0 MW and 31.0% CF

Year	PacifiCorp		
	Delivered IRP - Utah Greenfield Fuel Cost	Delivered IRP West Side Fuel Cost	Delivered IRP - Wyo NE Fuel Cost
2016	\$2.32	\$2.29	\$2.35
2017	\$2.95	\$2.97	\$2.97
2018	\$2.70	\$2.72	\$2.70
2019	\$2.48	\$2.50	\$2.48
2020	\$2.51	\$2.50	\$2.48
2021	\$2.56	\$2.52	\$2.53
2022	\$2.58	\$2.53	\$2.55
2023	\$3.02	\$2.91	\$2.99
2024	\$3.64	\$3.50	\$3.61
2025	\$3.84	\$3.78	\$3.81
2026	\$3.84	\$3.77	\$3.81
2027	\$3.99	\$3.92	\$3.95
2028	\$4.18	\$4.15	\$4.15
2029	\$4.50	\$4.51	\$4.47
2030	\$4.85	\$4.88	\$4.81
2031	\$5.07	\$5.11	\$5.04
2032	\$5.31	\$5.38	\$5.28
2033	\$5.65	\$5.76	\$5.62
2034	\$5.93	\$6.02	\$5.90
2035	\$6.25	\$6.29	\$6.23
2036	\$6.73	\$6.80	\$6.70
2037	\$6.93	\$7.05	\$6.90
2038	\$7.30	\$7.46	\$7.28
2039	\$7.56	\$7.75	\$7.54
2040	\$7.84	\$8.03	\$7.82
2041	\$8.04	\$8.24	\$8.03
2042	\$8.25	\$8.45	\$8.24

Official Forward Price Curve Forecast dated Mar 31, 2017

Table 5
Utah 2017.Q1 Sch 38 Wind - 80.0 MW and 31.0% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year starting 2020	\$	53,349,990	\$	-	\$	53,349,990	2,093,965	\$25.48
Nominal NPV at 6.57% Discount Rate								
15 Year Starting 2018	\$	46,992,931	\$	-	\$	46,992,931	2,093,750	\$22.44

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	31.0% CF	Dollars	MWH	31.0% CF
Jan-18	339,267	-	339,267	16,514	20.54
Feb-18	327,250	-	327,250	13,817	23.68
Mar-18	357,795	-	357,795	16,879	21.20
Apr-18	248,912	-	248,912	14,505	17.16
May-18	221,104	-	221,104	14,311	15.45
Jun-18	270,105	-	270,105	17,961	15.04
Jul-18	357,809	-	357,809	20,667	17.31
Aug-18	386,061	-	386,061	21,506	17.95
Sep-18	357,304	-	357,304	21,102	16.93
Oct-18	349,674	-	349,674	20,214	17.30
Nov-18	347,172	-	347,172	20,178	17.21
Dec-18	372,538	-	372,538	19,857	18.76
Jan-19	329,247	-	329,247	16,514	19.94
Feb-19	243,190	-	243,190	13,817	17.60
Mar-19	295,342	-	295,342	16,879	17.50
Apr-19	209,007	-	209,007	14,505	14.41
May-19	176,353	-	176,353	14,311	12.32
Jun-19	261,683	-	261,683	17,961	14.57
Jul-19	358,791	-	358,791	20,667	17.36
Aug-19	379,377	-	379,377	21,506	17.64
Sep-19	363,072	-	363,072	21,102	17.21
Oct-19	351,772	-	351,772	20,214	17.40
Nov-19	335,547	-	335,547	20,178	16.63
Dec-19	357,663	-	357,663	19,857	18.01
Jan-20	318,402	-	318,402	16,514	19.28
Feb-20	252,247	-	252,247	14,458	17.45
Mar-20	289,000	-	289,000	16,879	17.12
Apr-20	202,674	-	202,674	14,505	13.97
May-20	175,073	-	175,073	14,311	12.23
Jun-20	215,925	-	215,925	17,961	12.02
Jul-20	328,116	-	328,116	20,667	15.88
Aug-20	363,831	-	363,831	21,506	16.92
Sep-20	354,645	-	354,645	21,102	16.81
Oct-20	331,971	-	331,971	20,214	16.42
Nov-20	317,410	-	317,410	20,178	15.73
Dec-20	387,414	-	387,414	19,857	19.51
Jan-21	289,331	-	289,331	16,514	17.52
Feb-21	236,473	-	236,473	13,817	17.11
Mar-21	294,785	-	294,785	16,879	17.46
Apr-21	196,137	-	196,137	14,505	13.52
May-21	172,544	-	172,544	14,311	12.06
Jun-21	216,474	-	216,474	17,961	12.05
Jul-21	313,065	-	313,065	20,667	15.15
Aug-21	369,919	-	369,919	21,506	17.20
Sep-21	365,475	-	365,475	21,102	17.32

Oct-21	327,709	-	327,709	20,214	16.21
Nov-21	356,326	-	356,326	20,178	17.66
Dec-21	429,061	-	429,061	19,857	21.61
Jan-22	194,238	-	194,238	16,514	11.76
Feb-22	235,557	-	235,557	13,817	17.05
Mar-22	308,409	-	308,409	16,879	18.27
Apr-22	216,518	-	216,518	14,505	14.93
May-22	185,047	-	185,047	14,311	12.93
Jun-22	234,053	-	234,053	17,961	13.03
Jul-22	357,381	-	357,381	20,667	17.29
Aug-22	358,947	-	358,947	21,506	16.69
Sep-22	393,676	-	393,676	21,102	18.66
Oct-22	367,617	-	367,617	20,214	18.19
Nov-22	361,427	-	361,427	20,178	17.91
Dec-22	456,935	-	456,935	19,857	23.01
Jan-23	683,534	-	683,534	16,514	41.39
Feb-23	256,516	-	256,516	13,817	18.56
Mar-23	316,510	-	316,510	16,879	18.75
Apr-23	225,711	-	225,711	14,505	15.56
May-23	222,218	-	222,218	14,311	15.53
Jun-23	280,953	-	280,953	17,961	15.64
Jul-23	389,660	-	389,660	20,667	18.85
Aug-23	416,625	-	416,625	21,506	19.37
Sep-23	414,455	-	414,455	21,102	19.64
Oct-23	408,305	-	408,305	20,214	20.20
Nov-23	605,734	-	605,734	20,178	30.02
Dec-23	445,047	-	445,047	19,857	22.41
Jan-24	337,382	-	337,382	16,514	20.43
Feb-24	291,251	-	291,251	14,458	20.14
Mar-24	338,810	-	338,810	16,879	20.07
Apr-24	250,760	-	250,760	14,505	17.29
May-24	262,818	-	262,818	14,311	18.36
Jun-24	330,753	-	330,753	17,961	18.42
Jul-24	424,633	-	424,633	20,667	20.55
Aug-24	467,400	-	467,400	21,506	21.73
Sep-24	464,003	-	464,003	21,102	21.99
Oct-24	440,840	-	440,840	20,214	21.81
Nov-24	414,337	-	414,337	20,178	20.53
Dec-24	470,899	-	470,899	19,857	23.71
Jan-25	396,388	-	396,388	16,514	24.00
Feb-25	340,342	-	340,342	13,817	24.63
Mar-25	358,749	-	358,749	16,879	21.25
Apr-25	323,120	-	323,120	14,505	22.28
May-25	295,461	-	295,461	14,311	20.65
Jun-25	351,863	-	351,863	17,961	19.59
Jul-25	504,017	-	504,017	20,667	24.39
Aug-25	539,675	-	539,675	21,506	25.09
Sep-25	443,448	-	443,448	21,102	21.01
Oct-25	450,638	-	450,638	20,214	22.29
Nov-25	506,273	-	506,273	20,178	25.09
Dec-25	480,042	-	480,042	19,857	24.18
Jan-26	426,083	-	426,083	16,514	25.80
Feb-26	394,196	-	394,196	13,817	28.53
Mar-26	371,391	-	371,391	16,879	22.00
Apr-26	291,831	-	291,831	14,505	20.12
May-26	285,516	-	285,516	14,311	19.95

Jun-26	364,052	-	364,052	17,961	20.27
Jul-26	467,194	-	467,194	20,667	22.61
Aug-26	486,965	-	486,965	21,506	22.64
Sep-26	506,707	-	506,707	21,102	24.01
Oct-26	461,185	-	461,185	20,214	22.81
Nov-26	451,012	-	451,012	20,178	22.35
Dec-26	447,383	-	447,383	19,857	22.53
Jan-27	406,489	-	406,489	16,514	24.62
Feb-27	323,888	-	323,888	13,817	23.44
Mar-27	410,384	-	410,384	16,879	24.31
Apr-27	310,999	-	310,999	14,505	21.44
May-27	311,560	-	311,560	14,311	21.77
Jun-27	371,842	-	371,842	17,961	20.70
Jul-27	493,429	-	493,429	20,667	23.88
Aug-27	533,799	-	533,799	21,506	24.82
Sep-27	530,774	-	530,774	21,102	25.15
Oct-27	502,782	-	502,782	20,214	24.87
Nov-27	457,396	-	457,396	20,178	22.67
Dec-27	496,062	-	496,062	19,857	24.98
Jan-28	431,286	-	431,286	16,514	26.12
Feb-28	412,156	-	412,156	14,458	28.51
Mar-28	455,366	-	455,366	16,879	26.98
Apr-28	360,383	-	360,383	14,505	24.85
May-28	351,024	-	351,024	14,311	24.53
Jun-28	388,336	-	388,336	17,961	21.62
Jul-28	600,846	-	600,846	20,667	29.07
Aug-28	640,277	-	640,277	21,506	29.77
Sep-28	617,852	-	617,852	21,102	29.28
Oct-28	585,672	-	585,672	20,214	28.97
Nov-28	542,513	-	542,513	20,178	26.89
Dec-28	589,859	-	589,859	19,857	29.71
Jan-29	534,121	-	534,121	16,514	32.34
Feb-29	421,571	-	421,571	13,817	30.51
Mar-29	498,064	-	498,064	16,879	29.51
Apr-29	385,244	-	385,244	14,505	26.56
May-29	391,282	-	391,282	14,311	27.34
Jun-29	481,546	-	481,546	17,961	26.81
Jul-29	662,686	-	662,686	20,667	32.06
Aug-29	734,011	-	734,011	21,506	34.13
Sep-29	684,028	-	684,028	21,102	32.41
Oct-29	649,012	-	649,012	20,214	32.11
Nov-29	608,098	-	608,098	20,178	30.14
Dec-29	680,355	-	680,355	19,857	34.26
Jan-30	594,938	-	594,938	16,514	36.03
Feb-30	521,541	-	521,541	13,817	37.75
Mar-30	564,291	-	564,291	16,879	33.43
Apr-30	426,132	-	426,132	14,505	29.38
May-30	410,802	-	410,802	14,311	28.71
Jun-30	507,175	-	507,175	17,961	28.24
Jul-30	740,277	-	740,277	20,667	35.82
Aug-30	820,102	-	820,102	21,506	38.13
Sep-30	744,565	-	744,565	21,102	35.28
Oct-30	722,526	-	722,526	20,214	35.74
Nov-30	697,324	-	697,324	20,178	34.56
Dec-30	777,657	-	777,657	19,857	39.16
Jan-31	642,421	-	642,421	16,514	38.90

Feb-31	559,464	-	559,464	13,817	40.49
Mar-31	589,105	-	589,105	16,879	34.90
Apr-31	455,770	-	455,770	14,505	31.42
May-31	444,288	-	444,288	14,311	31.05
Jun-31	533,056	-	533,056	17,961	29.68
Jul-31	778,210	-	778,210	20,667	37.65
Aug-31	860,722	-	860,722	21,506	40.02
Sep-31	788,224	-	788,224	21,102	37.35
Oct-31	743,579	-	743,579	20,214	36.78
Nov-31	725,281	-	725,281	20,178	35.94
Dec-31	817,787	-	817,787	19,857	41.18
Jan-32	682,724	-	682,724	16,514	41.34
Feb-32	595,976	-	595,976	14,458	41.22
Mar-32	602,723	-	602,723	16,879	35.71
Apr-32	474,346	-	474,346	14,505	32.70
May-32	455,698	-	455,698	14,311	31.84
Jun-32	562,754	-	562,754	17,961	31.33
Jul-32	821,282	-	821,282	20,667	39.74
Aug-32	906,155	-	906,155	21,506	42.14
Sep-32	839,102	-	839,102	21,102	39.76
Oct-32	810,523	-	810,523	20,214	40.10
Nov-32	789,764	-	789,764	20,178	39.14
Dec-32	876,028	-	876,028	19,857	44.12
Jan-33	766,815	-	766,815	16,514	46.44
Feb-33	665,027	-	665,027	13,817	48.13
Mar-33	679,864	-	679,864	16,879	40.28
Apr-33	524,115	-	524,115	14,505	36.13
May-33	481,896	-	481,896	14,311	33.67
Jun-33	619,063	-	619,063	17,961	34.47
Jul-33	995,224	-	995,224	20,667	48.15
Aug-33	1,026,306	-	1,026,306	21,506	47.72
Sep-33	918,100	-	918,100	21,102	43.51
Oct-33	897,749	-	897,749	20,214	44.41
Nov-33	918,381	-	918,381	20,178	45.51
Dec-33	1,047,363	-	1,047,363	19,857	52.75
Jan-34	880,703	-	880,703	16,514	53.33
Feb-34	719,781	-	719,781	13,817	52.09
Mar-34	755,148	-	755,148	16,879	44.74
Apr-34	585,099	-	585,099	14,505	40.34
May-34	534,729	-	534,729	14,311	37.37
Jun-34	657,565	-	657,565	17,961	36.61
Jul-34	1,050,545	-	1,050,545	20,667	50.83
Aug-34	1,081,729	-	1,081,729	21,506	50.30
Sep-34	938,737	-	938,737	21,102	44.48
Oct-34	959,377	-	959,377	20,214	47.46
Nov-34	980,406	-	980,406	20,178	48.59
Dec-34	1,061,630	-	1,061,630	19,857	53.46
Jan-35	913,970	-	913,970	16,514	55.35
Feb-35	794,381	-	794,381	13,817	57.49
Mar-35	846,975	-	846,975	16,879	50.18
Apr-35	645,303	-	645,303	14,505	44.49
May-35	598,369	-	598,369	14,311	41.81
Jun-35	724,961	-	724,961	17,961	40.36
Jul-35	1,169,954	-	1,169,954	20,667	56.61
Aug-35	1,254,602	-	1,254,602	21,506	58.34
Sep-35	1,096,744	-	1,096,744	21,102	51.97

Oct-35	1,081,446	-	1,081,446	20,214	53.50
Nov-35	1,061,746	-	1,061,746	20,178	52.62
Dec-35	1,137,951	-	1,137,951	19,857	57.31
Jan-36	(182,266)	1,741,600	1,559,334	16,514	94.43
Feb-36	(459,784)	1,741,600	1,281,816	14,458	88.66
Mar-36	(592,451)	1,741,600	1,149,149	16,879	68.08
Apr-36	(543,168)	1,741,600	1,198,432	14,505	82.62
May-36	(358,515)	1,741,600	1,383,085	14,311	96.65
Jun-36	(276,672)	1,741,600	1,464,928	17,961	81.56
Jul-36	60,978	1,741,600	1,802,578	20,667	87.22
Aug-36	206,969	1,741,600	1,948,569	21,506	90.61
Sep-36	18,700	1,741,600	1,760,300	21,102	83.42
Oct-36	(88,295)	1,741,600	1,653,305	20,214	81.79
Nov-36	(292,858)	1,741,600	1,448,742	20,178	71.80
Dec-36	(331,176)	1,741,600	1,410,424	19,857	71.03
Jan-37	(186,691)	1,783,867	1,597,176	16,514	96.72
Feb-37	(470,946)	1,783,867	1,312,921	13,817	95.02
Mar-37	(606,834)	1,783,867	1,177,032	16,879	69.73
Apr-37	(556,355)	1,783,867	1,227,512	14,505	84.63
May-37	(367,219)	1,783,867	1,416,647	14,311	98.99
Jun-37	(283,389)	1,783,867	1,500,478	17,961	83.54
Jul-37	62,459	1,783,867	1,846,325	20,667	89.34
Aug-37	211,993	1,783,867	1,995,860	21,506	92.81
Sep-37	19,154	1,783,867	1,803,021	21,102	85.44
Oct-37	(90,439)	1,783,867	1,693,428	20,214	83.77
Nov-37	(299,968)	1,783,867	1,483,899	20,178	73.54
Dec-37	(339,216)	1,783,867	1,444,651	19,857	72.75

ROCKY MOUNTAIN POWER

DOCKET 03-035-14 AND DOCKET 17-035-37

STEP STUDY BETWEEN PRIOR FILING AND CURRENT FILING

2017.Q1 - June 2017

Appendix C

Utah Quarterly Compliance Filing Step Study between 2017.Q1 and 2016.Q4 Compliance Filing Total Avoided Cost Prices \$/MWH (1) (4)

Year	2016.Q4 As Filed	1703 OFPC	QF Queue Update	Queue Capacity Contribution	2017 IRP
2018	\$23.29	\$21.82	\$21.84	\$21.83	\$19.82
2019	\$19.81	\$18.90	\$18.85	\$18.59	\$18.23
2020	\$18.69	\$17.48	\$17.28	\$17.28	\$16.72
2021	\$19.31	\$18.16	\$17.87	\$17.87	\$17.80
2022	\$20.94	\$19.84	\$19.81	\$19.81	\$18.66
2023	\$23.20	\$21.44	\$21.54	\$21.54	\$21.17
2024	\$25.83	\$23.99	\$23.89	\$23.89	\$22.50
2025	\$28.58	\$26.63	\$26.36	\$26.36	\$24.17
2026	\$32.74	\$30.05	\$26.95	\$26.95	\$24.23
2027	\$35.49	\$31.91	\$28.61	\$28.61	\$25.56
2028	\$35.18	\$32.38	\$34.81	\$32.74	\$28.73
2029	\$38.00	\$35.36	\$36.63	\$36.44	\$31.91
2030	\$54.05	\$51.59	\$50.82	\$41.91	\$35.60
2031	\$55.61	\$53.16	\$52.63	\$41.84	\$37.70
2032	\$57.15	\$55.02	\$54.68	\$43.61	\$39.41

Nominal Levelized Payment at 6.570% Discount Rate (3)

2018 - 2032	\$29.42	\$27.57	\$27.25	\$25.76	\$23.68
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- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated March 2017
- (3) Discount Rate - 2017 IRP
- (4) Capacity costs are allocated assuming an 85% capacity factor.

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **Quarterly Compliance Filing – Avoided Cost Input Changes** in Docket Nos. 03-035-14 and 17-035-37 was served upon the following by email on June 21, 2017.

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