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Salt Lake City, Utah 84116

February 22, 2018

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.Q4 Avoided Cost Input Changes**
Docket 17-035-37 – 2017.Q4 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 routine changes identified in the Company's previous compliance filing, which was submitted to the Commission on December 21, 2017.

Certain routine and non-routine changes identified in the Company's June 21, 2017 compliance filing were challenged by parties and addressed in the Commission's January 23, 2018 order in Docket No. 17-035-37. The Commission-approved changes are reflected in the list of Routine Updates.

Routine Updates

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

1. **GRID Model Data Updates** – A number of data and modeling assumption updates have occurred in the GRID model since the last filing. **Appendix A** provides a summary of those updates.
2. **Official Forward Price Curve (OFPC)** – Update to the curve dated December 29, 2017 (1712 OFPC).
3. **Qualifying Facility (QF) Queue** – Update the QF queue to reflect current potential QFs. The QF queue was revised to include 5,467 MW nameplate in this filing. The potential queue was 5,825 MW nameplate in the 2017.Q3 filing.
4. **Commission-Ordered Adjustments** – The 2021 wind and transmission resources in the 2017 IRP preferred portfolio are now considered deferrable by wind resources outside the constrained area of Wyoming and the associated avoided costs reflect real-levelized production tax credits consistent with the inputs used to develop the 2017 IRP preferred portfolio. Changes related to REC ownership and the use of inflation to set avoided costs beyond the term of the IRP preferred portfolio have been incorporated but do not impact the avoided cost inputs or results at this time.

Non-Routine Updates

The Company identifies the following non-routine update to its avoided cost inputs:

1. **Trapped Energy Value** – When transfer capability and system balancing sales are fully utilized and all dispatchable resources in an area are backed down to minimum, any additional resources in that area are currently assigned a “trapped energy” value that is equal to 75% of the market price for that interval. In certain constrained areas, primarily in Wyoming, incremental resources are assumed to result in curtailment of existing resources which are not dispatchable by the GRID model, and the avoided cost includes the loss of PTCs, if applicable. The Company’s proposed update sets the value of trapped energy in all other areas at zero. This is consistent with the Commission’s Dec. 22, 2017 Order in Docket No. 17-035-36, which concluded the Company is not obligated to assume QF power it cannot use will be sold in a secondary market.

Additional Details

Additional details are 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 through 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 through 2020 followed by the remainder of the Aeolus wind resource from the 2017 IRP preferred portfolio starting in 2021. The remaining capacity from the proxy wind QF resource displaces FOTs through 2030 followed by the Dave Johnston wind resource in 2031.

3. **Impact to Avoided Cost Prices (\$/MWh)** – Provided as **Appendix B** is the \$/MWh impact of the above mentioned updates on avoided costs. Appendices B.1-B.3 compare the avoided cost after incorporating routine updates to the previous compliance filing. Appendices B.4-B.6 compare the avoided cost after incorporating the non-routine update to the avoided cost after incorporating the routine updates.
 - a. Avoided costs presented in **Appendices B.1/B.4** were calculated assuming a 100 MW 85 percent capacity factor thermal QF resource.
 - b. Avoided costs presented in **Appendices B.2/B.5** were calculated assuming an 80 MW 31 percent capacity factor wind QF resource.
 - c. Avoided costs presented in **Appendices B.3/B.6** were calculated assuming an 80 MW 31.1 percent capacity factor tracking solar QF resource.
4. **Major Changes from the Prior Study** – Provided as **Appendix C** is a \$/MWh step impact study of the updates from the prior study for a baseload QF resource. 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

Pursuant to Commission Rules R746-405 and as directed by the Commission in the order referenced above, the Company hereby updates the Schedule 38 tariff to include language concerning the Renewable Energy Credits associated with QF output..

The enclosed proposed tariff sheet is associated with Tariff P.S.C.U No. 50 of PacifiCorp, d.b.a. Rocky Mountain Power, applicable to electric service in the State of Utah. Pursuant to the requirement of Rule R746-405D, PacifiCorp states that the proposed tariff sheets do not constitute a violation of state law or Commission rule.

PacifiCorp respectfully requests an effective date of March 1, 2018.

First Revision of Sheet No. 38.9

Schedule 38

Qualifying Facility Procedures

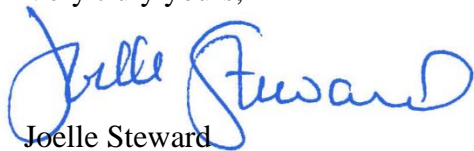
It is respectfully requested that all formal correspondence and requests regarding this compliance filing be addressed to:

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 Jana Saba at (801) 220-2823, or Dan MacNeil at (503) 813-5523.

Very truly yours,



Joelle Steward
Vice President, Regulation

ROCKY MOUNTAIN POWER
DOCKET 03-035-14 AND DOCKET 17-035-37
DESCRIPTION OF AVOIDED COST INPUT CHANGES
2017.Q4 – FEBRUARY 2018

Appendix A

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

Assumptions that have changed since the 2017.Q3 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 December 29, 2017 OFPC (1712 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 2017.
- Coal burn expense reflects incremental coal costs and coal take or pay minimum burn levels.

Integrated Resource Plan (IRP) Resources

- 2017 IRP 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.

REC Ownership:

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

Hydro Resources

- 2017 hydro forecast prepared September 2017.
- 2017 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 December 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 from July 2017 (Fall 2017 Load Forecast).

Long-Term Contracts

- Long-term contracts which have prices that are indexed to market are consistent with the 1712 OFPC.
- Contracts are modeled based on 48 months ended June 2017.
- 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 2017.
- Mid-C and Palo Verde (PV) markets uncapped.
- Additional heavy load hour (HLH) and light load hour (LLH) sales limited to historical 48-month average less monthly executed STF contracts as of December 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 2021.
- Typical week retail load reserve calculation thereafter.

Short-Term Firm (STF) Transactions

- Executed STF contracts as of December 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 2017.

Wind and Solar Resources

- Existing wind generation profiles modeled using 2016 actual generation shape.
- Wind generation shaped to hourly using 2016 actual generation shape¹.
- Solar generation modeled using 12x24 profiles.

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.

- Capacity contribution values used in this study reflect the values from the 2017 IRP, and are summarized below.

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 2017.
- 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.
 - Pursuant to the Commission’s January 23, 2017 order in Docket No. 17-035-37, Energy Gateway sub-segment D2 is considered deferrable when the 2021 Aeolus wind resource is deferred by wind resources outside the constrained area of Wyoming. The 2017 IRP preferred portfolio includes 1,100 MW of 2021 Aeolus wind, and 750 MW of incremental transmission capacity; however, the IRP also included 300MW of 2021 Aeolus wind in the absence of any transmission upgrades. As a result, Energy Gateway sub-segment D2 is assumed to be deferred with the first 800 MW of the 2021 Aeolus wind resource.**
 - When 2021 Aeolus wind resources are deferred by wind resources in the constrained area of Wyoming, they do not defer Energy Gateway sub-segment D2.**
 - In addition, each increment of transmission deferral results in prorated adjustments to transmission system reliability in the form of transmission system derates, and to line losses.**
- 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%	2021 12 31
2	Boswell Springs II Wind	12.64	80.00	40.7%	15.800%	2021 12 31
3	Boswell Springs III Wind	12.64	80.00	40.7%	15.800%	2021 12 31

4	Boswell Springs IV Wind	12.64	80.00	40.7%	15.800%	2021 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
7	Sage I Solar QF	11.93	20.00	28.2%	59.700%	2019 10 01
8	Sage II Solar QF	11.93	20.00	28.2%	59.700%	2019 10 01
9	BYU-ID QF	4.20	5.60	79.0%	74.900%	2017 09 29
10	Sage III Solar QF	10.50	17.60	26.7%	59.700%	2019 10 01
11	Beatty Solar (Terminated)	-3.24	-5.00		64.800%	2016 12 01
12	Monticello Wind QF	12.51	79.20	33.8%	15.8%	2021 12 31
13	Tesoro Non Firm QF	0.00	25.00	85.0%	0.000%	2018 01 01
Total Signed MW		155.08	577.40			

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 - 254 - OR - Solar	35.64	55.00	24.6%	64.800%	2020 12 31
9	QF - 405 - OR - Solar	32.40	50.00	27.1%	64.800%	2019 12 01
10	QF - 406 - OR - Solar	51.84	80.00	27.1%	64.800%	2019 12 01
11	QF - 407 - OR - Solar	51.84	80.00	27.1%	64.800%	2019 12 01
12	QF - 408 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
13	QF - 409 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
14	QF - 410 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
15	QF - 411 - OR - Solar	32.40	50.00	27.5%	64.800%	2019 12 01
16	QF - 418 - OR - Solar	34.99	54.00	22.7%	64.800%	2019 06 01
17	QF - 412 - WY - Wind	7.90	50.00	45.4%	15.800%	2018 12 01
18	QF - 432 - WY - Solar	35.80	60.00	26.3%	59.7%	2018 12 01
19	QF - 432 - WY - Wind	7.61	55.00	27.3%	13.8%	2018 12 01
20	QF - 414 - OR - Solar	10.77	20.00	19.3%	53.900%	2018 11 01
21	QF - 415 - OR - Solar	19.39	36.00	20.3%	53.900%	2018 11 01
22	QF - 416 - OR - Solar	7.00	13.00	21.9%	53.800%	2018 11 01
23	QF - 430 - WY - Wind	2.61	16.50	29.5%	15.800%	2018 07 01
24	QF - 429 - WY - Solar	23.87	40.00	30.2%	59.700%	2020 01 01
25	QF - 428 - WY - Solar	23.87	40.00	30.2%	59.700%	2020 01 01
26	QF - 393 - OR - Solar	32.40	50.00	28.7%	64.800%	2018 12 01
27	QF - 433 - UT - Non firm	0.00	31.80	58.2%	0.000%	2018 01 01
28	QF - 434 - UT - Non firm	0.00	6.20	85.0%	0.000%	2018 01 01
29	QF - 308 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01
30	QF - 309 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01
31	QF - 310 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01

32	QF - 311 - WY - Wind	6.32	40.00	46.6%	15.800%	2020 11 01
33	QF - 313 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
34	QF - 315 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
35	QF - 317 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
36	QF - 319 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
37	QF - 321 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
38	QF - 323 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
39	QF - 325 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
40	QF - 358 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
41	QF - 359 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
42	QF - 360 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
43	QF - 361 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
44	QF - 362 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
45	QF - 363 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
46	QF - 364 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
47	QF - 398 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
48	QF - 399 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
49	QF - 400 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
50	QF - 401 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
51	QF - 402 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
52	QF - 403 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
53	QF - 436 - WY - Solar	17.90	30.00	26.8%	59.700%	2020 01 01
54	QF - 437 - WY - Solar	47.74	80.00	29.0%	59.700%	2020 01 01
55	QF - 440 - OR - Solar	32.40	50.00	28.9%	64.800%	2019 06 01
56	QF - 328 - OR - Solar	29.81	46.00	28.7%	64.800%	2019 06 01
57	QF - 282 - WY - Solar	44.69	74.90	30.6%	59.700%	2019 03 01
58	QF - 337 - WY - Solar	7.95	13.33	26.7%	59.700%	2019 03 01
59	QF - 438 - OR - Solar	39.27	60.60	25.6%	64.800%	2020 11 01
60	QF - 439 - UT - Solar	34.61	58.00	31.6%	59.700%	2021 01 01
61	QF - 442 - WY - Solar	47.74	80.00	26.7%	59.700%	2020 01 01
62	QF - 443 - WY - Wind	12.64	80.00	33.0%	15.800%	2020 12 01
63	QF - 444 - WY - Solar	34.61	58.00	28.0%	59.700%	2020 01 01
64	QF - 444 - WY - Wind	7.20	50.00	51.6%	14.400%	2020 01 01
65	QF - 445 - UT - Solar	47.74	80.00	25.8%	59.700%	2020 11 01
66	QF - 292 - OR - Solar	25.92	40.00	28.3%	64.800%	2021 01 01
67	QF - 293 - OR - Solar	32.40	50.00	26.7%	64.800%	2021 01 01
68	QF - 446 - WY - Solar	2.98	5.00	28.4%	59.600%	2019 01 01
69	QF - 447 - WY - Solar	2.98	5.00	28.4%	59.600%	2019 01 01
70	QF - 448 - WY - Solar	2.98	5.00	29.2%	59.600%	2019 01 01
71	QF - 449 - UT - Wind	12.51	79.20	29.6%	15.800%	2020 11 01
72	QF - 451 - OR - Gas	0.00	20.00	14.3%	0.000%	2018 03 01
73	QF - 450 - UT - Solar	11.93	20.00	31.19%	59.700%	2019 01 01
74	QF - 453 - UT - Solar	47.74	80.00	26.9%	59.700%	2020 07 01
75	QF - 454 - UT - Solar	47.74	80.00	26.9%	59.700%	2020 07 01
76	QF - 455 - UT - Solar	47.74	80.00	26.9%	59.700%	2020 07 01

77	QF - 456 - WY - Gas	0.00	13.30	85.0%	0.000%	2018 02 01
78	QF - 458 - OR - Solar	25.92	40.00	23.1%	64.800%	2020 11 01
79	QF - 427 - WY - Wind	11.99	75.90	46.7%	15.800%	2019 09 01
80	QF - 372 - WY - Solar	23.87	40.00	27.4%	59.700%	2019 06 30
81	QF - 304 - WY - Solar	17.90	30.00	27.4%	59.700%	2020 01 01
82	QF - 305 - WY - Solar	47.74	80.00	27.4%	59.700%	2020 01 01
83	QF - 390 - WY - Solar	11.93	20.00	26.9%	59.700%	2018 12 01
84	QF - 391 - WY - Solar	11.93	20.00	27.7%	59.700%	2018 12 01
85	QF - 389 - WY - Wind	12.55	79.40	41.6%	15.800%	2019 01 01
Total Potential MW		2506.96	4889.13			

Total Partial Displacement	2662.04	5466.53
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86	Utah 2017.Q4	100.00	100.00	85.0%	100.0%	2018 01 01
Partial Displacement after QF		2762.04				

Note that interconnection of the Boswell Springs I-IV Wind projects requires additional transmission facilities beyond the Aeolus-Bridger/Anticline upgrade included in the 2017 IRP preferred portfolio. Because they cannot interconnect given the assumptions in the 2017 IRP preferred portfolio, for purposes of the QF queue, these resources are not assumed to displace any resources from the 2017 IRP preferred portfolio, nor are they included in the GRID model. 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 incremental thermal QF defers available FOTs for entire term.
- Tracking Solar: **866** MW of solar resources are displaced by the QF queue. After degradation, the incremental solar QF displaces 73 MW of Utah South tracking solar resources in 2035. **The Company retains RECs starting in 2035.**
- Wind: **1074** MW of wind resources are displaced by the QF queue. The incremental wind QF displaces **26** MW of Wyoming Aeolus Wind in 2021 and **54** MW of Dave Johnston wind resources in 2031. **Since 32% of the project (26 MW / 80 MW) defers Wyoming**

Aeolus wind in 2021, the Company retains 32% of the QF's RECs starting in 2021, and retains 100% of the RECs starting in 2031.

Year	IRP Additions (Nameplate MW)				Base Case Displacement (Deferred Nameplate MW)				
	IRP Thermal	IRP Baseload Renewable	IRP Solar	IRP Wind	Thermal	Solar	Wind	FOT Summer	FOT Winter
2017	-	-	-	-	-	-	-	(3)	(3)
2018	-	-	-	-	-	-	-	55	55
2019	-	-	-	-	-	-	-	497	273
2020	-	-	-	-	-	-	-	807	307
2021	-	-	-	1,100	-	-	1,074	799	319
2022	-	-	-	1,100	-	-	1,074	916	308
2023	-	-	-	1,100	-	-	1,074	844	306
2024	-	-	-	1,100	-	-	1,074	885	287
2025	-	-	-	1,100	-	-	1,074	1,042	348
2026	-	-	-	1,100	-	-	1,074	978	351
2027	-	-	-	1,100	-	-	1,074	1,040	297
2028	-	-	11	1,100	-	11	1,074	1,575	413
2029	200	30	108	1,100	200	108	1,074	1,575	551
2030	636	30	108	1,100	636	108	1,074	1,566	516
2031	636	30	226	1,185	636	226	1,074	1,541	490
2032	636	30	463	1,185	636	463	1,074	1,396	451
2033	1,313	30	689	1,185	1,313	689	1,074	578	437
2034	1,313	30	737	1,185	1,313	737	1,074	505	477
2035	1,313	30	1,028	1,185	1,313	866	1,074	293	293
2036	1,313	30	1,040	1,959	1,313	866	1,074	231	231

IRP Partial Displacements (Previous Filing)

Thermal partial displacement was 2,919.62 MW in the base case and 3,019.62 MW in the avoided cost case as shown in the table below, adjusted for solar degradation:

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%	2021 12 31
2	Boswell Springs II Wind	12.64	80.00	40.7%	15.800%	2021 12 31
3	Boswell Springs III Wind	12.64	80.00	40.7%	15.800%	2021 12 31
4	Boswell Springs IV Wind	12.64	80.00	40.7%	15.800%	2021 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
7	Sage I Solar QF	11.93	20.00	28.2%	59.700%	2019 10 01
8	Sage II Solar QF	11.93	20.00	28.2%	59.700%	2019 10 01
9	BYU-ID QF	4.20	5.60	79.0%	74.900%	2017 09 29
10	Sage III Solar QF	10.50	17.60	26.7%	59.700%	2019 10 01
11	Beatty Solar (Terminated)	-3.24	-5.00		64.800%	2016 12 01
Total Signed MW		142.57	473.20			

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 - 254 - OR - Solar	35.64	55.00	24.6%	64.800%	2020 12 31
9	QF - 372 - WY - Solar	23.87	40.00	27.4%	59.700%	2019 06 30
10	QF - 380 - OR - Solar	32.40	50.00	25.8%	64.800%	2019 01 01
11	QF - 381 - OR - Solar	51.84	80.00	29.3%	64.800%	2021 01 01
12	QF - 397 - OR - Solar	12.96	20.00	29.3%	64.800%	2021 01 01
13	QF - 383 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
14	QF - 384 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
15	QF - 385 - OR - Solar	51.84	80.00	28.0%	64.800%	2019 12 01
16	QF - 388 - UT - Solar	61.35	80.00	27.8%	76.700%	2019 11 01
17	QF - 389 - WY - Wind	12.55	79.40	41.6%	15.800%	2019 01 01
18	QF - 390 - WY - Solar	11.93	20.00	26.9%	59.700%	2018 12 01
19	QF - 391 - WY - Solar	11.93	20.00	27.7%	59.700%	2018 12 01
20	QF - 394 - WY - Wind	12.64	80.00	52.1%	15.800%	2020 01 01
21	QF - 339 - WY - Wind	11.99	75.90	46.9%	15.800%	2019 01 01
22	QF - 304 - WY - Solar	17.90	30.00	27.4%	59.700%	2020 01 01
23	QF - 305 - WY - Solar	47.74	80.00	27.4%	59.700%	2020 01 01
24	QF - 292 - OR - Solar	25.92	40.00	28.3%	64.800%	2019 12 31
25	QF - 293 - OR - Solar	32.40	50.00	26.7%	64.800%	2019 12 31
26	QF - 396 - OR - Solar	18.53	28.60	28.9%	64.800%	2019 08 01
27	QF - 405 - OR - Solar	32.40	50.00	27.1%	64.800%	2019 12 01
28	QF - 406 - OR - Solar	51.84	80.00	27.1%	64.800%	2019 12 01
29	QF - 407 - OR - Solar	51.84	80.00	27.1%	64.800%	2019 12 01

30	QF - 408 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
31	QF - 409 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
32	QF - 410 - OR - Solar	51.84	80.00	26.7%	64.800%	2019 12 01
33	QF - 411 - OR - Solar	32.40	50.00	27.5%	64.800%	2019 12 01
34	QF - 418 - OR - Solar	34.99	54.00	22.7%	64.800%	2019 06 01
35	QF - 412 - WY - Wind	7.90	50.00	45.4%	15.800%	2018 12 01
36	QF - 426 - UT - Solar	15.16	40.00	23.6%	37.900%	2018 09 18
37	QF - 432 - WY - Solar	35.80	60.00	26.3%	59.7%	2018 12 01
38	QF - 432 - WY - Wind	7.61	55.00	27.3%	13.8%	2018 12 01
39	QF - 427 - WY - Wind	12.64	80.00	46.7%	15.800%	2019 09 01
40	QF - 413 - UT - Solar	58.02	80.00	27.7%	72.500%	2020 01 01
41	QF - 414 - OR - Solar	10.77	20.00	19.3%	53.900%	2018 11 01
42	QF - 415 - OR - Solar	19.39	36.00	20.3%	53.900%	2018 11 01
43	QF - 416 - OR - Solar	7.00	13.00	21.9%	53.800%	2018 11 01
44	QF - 417 - UT - Solar	20.89	35.00	29.0%	59.700%	2018 12 15
45	QF - 430 - WY - Wind	2.61	16.50	29.5%	15.800%	2018 07 01
46	QF - 419 - UT - Solar	44.75	75.00	30.6%	59.700%	2020 07 01
47	QF - 420 - WY - Solar	2.98	5.00	28.0%	59.600%	2018 06 01
48	QF - 421 - UT - Solar	11.93	20.00	31.6%	59.700%	2020 10 01
49	QF - 422 - UT - Solar	11.93	20.00	31.6%	59.700%	2020 10 01
50	QF - 423 - UT - Solar	11.93	20.00	31.6%	59.700%	2020 10 01
51	QF - 424 - UT - Solar	11.93	20.00	31.6%	59.700%	2020 10 01
52	QF - 425 - UT - Solar	47.74	80.00	31.6%	59.700%	2020 10 01
53	QF - 429 - WY - Solar	23.87	40.00	30.2%	59.700%	2020 01 01
54	QF - 428 - WY - Solar	23.87	40.00	30.2%	59.700%	2020 01 01
55	QF - 393 - OR - Solar	32.40	50.00	28.7%	64.800%	2018 12 01
56	QF - 433 - UT - Non firm	0.00	31.80	58.2%	0.000%	2018 01 01
57	QF - 434 - UT - Non firm	0.00	6.20	85.0%	0.000%	2018 01 01
58	QF - 435 - UT - Non firm	0.00	25.00	85.0%	0.000%	2018 01 01
59	QF - 308 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01
60	QF - 309 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01
61	QF - 310 - WY - Wind	12.64	80.00	46.6%	15.800%	2020 11 01
62	QF - 311 - WY - Wind	6.32	40.00	46.6%	15.800%	2020 11 01
63	QF - 313 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
64	QF - 315 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
65	QF - 317 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
66	QF - 319 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
67	QF - 321 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
68	QF - 323 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
69	QF - 325 - UT - Solar	47.74	80.00	29.6%	59.700%	2019 12 01
70	QF - 358 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
71	QF - 359 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
72	QF - 360 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
73	QF - 361 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
74	QF - 362 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
75	QF - 363 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
76	QF - 364 - UT - Solar	47.74	80.00	29.7%	59.700%	2019 12 01
77	QF - 431 - UT - Solar	47.74	80.00	29.6%	59.700%	2020 06 01
78	QF - 398 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
79	QF - 399 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
80	QF - 400 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
81	QF - 401 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
82	QF - 402 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01

83	QF - 403 - OR - Solar	47.31	73.00	30.6%	64.800%	2021 01 01
84	QF - 436 - WY - Solar	17.90	30.00	26.8%	59.700%	2020 01 01
85	QF - 437 - WY - Solar	47.74	80.00	29.0%	59.700%	2020 01 01
86	QF - 440 - OR - Solar	32.40	50.00	28.9%	64.800%	2019 06 01
87	QF - 328 - OR - Solar	29.81	46.00	28.7%	64.800%	2019 06 01
88	QF - 282 - WY - Solar	44.69	74.90	30.6%	59.700%	2019 03 01
89	QF - 337 - WY - Solar	7.95	13.33	26.7%	59.700%	2019 03 01
90	QF - 438 - OR - Solar	39.27	60.60	25.6%	64.800%	2020 11 01
91	QF - 439 - UT - Solar	34.61	58.00	31.6%	59.700%	2021 01 01
92	QF - 442 - WY - Solar	47.74	80.00	26.7%	59.700%	2020 01 01
Total Potential MW		2845.13	5352.23			
Total Partial Displacement		2987.70	5825.43			
93	Utah 2017.Q3	100.00	100.00	85.0%	100.0%	2018 01 01
Partial Displacement after QF		3087.70				

ROCKY MOUNTAIN POWER
DOCKET 03-035-14 AND DOCKET 17-035-37
UPDATE IMPACT – UPDATED AVOIDED COST STUDY
2017.Q4 – FEBRUARY 2018

Appendix B.1

Avoided Cost Prices \$/MWh

Utah 2017.Q4 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 Difference	Solar Tracking Difference	Wind Difference
2018	\$19.38	\$19.33	\$17.83	(\$1.31)	(\$1.13)	(\$1.18)
2019	\$19.04	\$17.84	\$17.52	\$0.20	\$0.27	\$0.18
2020	\$16.16	\$11.71	\$14.78	(\$0.77)	(\$0.28)	(\$0.97)
2021	\$17.96	\$15.12	\$26.26	(\$0.91)	\$0.17	\$8.78
2022	\$19.77	\$16.88	\$27.00	(\$0.14)	(\$0.10)	\$8.56
2023	\$20.02	\$17.89	\$26.75	(\$0.72)	(\$0.54)	\$7.59
2024	\$22.39	\$19.63	\$29.37	(\$1.87)	(\$1.56)	\$7.00
2025	\$25.49	\$20.97	\$31.57	(\$2.15)	(\$2.61)	\$6.01
2026	\$25.70	\$21.81	\$31.68	(\$1.69)	(\$2.22)	\$6.69
2027	\$26.61	\$23.51	\$33.05	(\$1.79)	(\$0.87)	\$6.97
2028	\$29.55	\$23.68	\$29.49	(\$0.86)	(\$1.53)	\$0.93
2029	\$32.51	\$24.87	\$31.43	(\$0.02)	(\$2.05)	\$0.33
2030	\$35.74	\$24.97	\$32.15	\$0.75	(\$3.30)	(\$1.64)
2031	\$37.46	\$26.43	\$57.36	\$1.04	(\$2.89)	\$22.14
2032	\$39.22	\$27.16	\$57.50	\$1.52	(\$2.96)	\$21.00

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

2018-2032	\$/MWh	\$23.96 (4)	\$19.72 (4)	\$28.32 (4)	(\$0.70)	(\$1.15)	\$5.28
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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

Table 1
Avoided Cost Prices
Utah 2017.Q4 - 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	\$19.38	\$19.38
2019	\$0.00	\$19.04	\$19.04
2020	\$0.00	\$16.16	\$16.16
2021	\$0.00	\$17.96	\$17.96
2022	\$0.00	\$19.77	\$19.77
2023	\$0.00	\$20.02	\$20.02
2024	\$0.00	\$22.39	\$22.39
2025	\$0.00	\$25.49	\$25.49
2026	\$0.00	\$25.70	\$25.70
2027	\$0.00	\$26.61	\$26.61
2028	\$0.00	\$29.55	\$29.55
2029	\$0.00	\$32.51	\$32.51
2030	\$0.00	\$35.74	\$35.74
2031	\$0.00	\$37.46	\$37.46
2032	\$0.00	\$39.22	\$39.22
2033	\$0.00	\$43.94	\$43.94
2034	\$0.00	\$46.10	\$46.10
2035	\$0.00	\$49.54	\$49.54
2036	\$0.00	\$53.27	\$53.27
2037	\$0.00	\$54.46	\$54.46

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$23.96	\$23.96

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$25.27	\$25.27

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$29.08	\$29.08

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4 - 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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Official Forward Price Curve Forecast dated Dec 29, 2017

Table 5
Utah 2017.Q4 - 100.0 MW and 85.0% CF
January 2018 through December 2037

Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 181,507,722 \$ - \$ 181,507,722 \$ 7,181,710 \$25.27

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 172,089,433 \$ - \$ 172,089,433 \$ 7,181,378 \$23.96

20 Year Starting 2019 \$ 244,491,502 \$ - \$ 244,491,502 \$ 8,406,727 \$29.08

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	85.0% CF	Dollars	MWH	85.0% CF
Jan-18	1,269,919	-	1,269,919	63,240	20.08
Feb-18	1,084,918	-	1,084,918	57,120	18.99
Mar-18	1,107,952	-	1,107,952	63,240	17.52
Apr-18	1,005,113	-	1,005,113	61,200	16.42
May-18	1,053,543	-	1,053,543	63,240	16.66
Jun-18	992,867	-	992,867	61,200	16.22
Jul-18	1,633,982	-	1,633,982	63,240	25.84
Aug-18	1,491,808	-	1,491,808	63,240	23.59
Sep-18	1,184,652	-	1,184,652	61,200	19.36
Oct-18	1,122,267	-	1,122,267	63,240	17.75
Nov-18	1,123,455	-	1,123,455	61,200	18.36
Dec-18	1,357,713	-	1,357,713	63,240	21.47
Jan-19	1,373,089	-	1,373,089	63,240	21.71
Feb-19	1,145,347	-	1,145,347	57,120	20.05
Mar-19	1,148,761	-	1,148,761	63,240	18.17
Apr-19	985,715	-	985,715	61,200	16.11
May-19	1,040,826	-	1,040,826	63,240	16.46
Jun-19	1,010,259	-	1,010,259	61,200	16.51
Jul-19	1,431,053	-	1,431,053	63,240	22.63
Aug-19	1,410,302	-	1,410,302	63,240	22.30
Sep-19	1,152,159	-	1,152,159	61,200	18.83
Oct-19	1,128,190	-	1,128,190	63,240	17.84
Nov-19	1,144,452	-	1,144,452	61,200	18.70
Dec-19	1,204,089	-	1,204,089	63,240	19.04
Jan-20	1,133,951	-	1,133,951	63,240	17.93
Feb-20	1,162,909	-	1,162,909	59,160	19.66
Mar-20	966,752	-	966,752	63,240	15.29
Apr-20	810,195	-	810,195	61,200	13.24
May-20	846,145	-	846,145	63,240	13.38
Jun-20	857,937	-	857,937	61,200	14.02
Jul-20	1,003,598	-	1,003,598	63,240	15.87
Aug-20	1,069,496	-	1,069,496	63,240	16.91
Sep-20	946,851	-	946,851	61,200	15.47
Oct-20	1,052,582	-	1,052,582	63,240	16.64
Nov-20	988,286	-	988,286	61,200	16.15
Dec-20	1,226,175	-	1,226,175	63,240	19.39
Jan-21	1,171,401	-	1,171,401	63,240	18.52
Feb-21	1,059,788	-	1,059,788	57,120	18.55
Mar-21	1,234,574	-	1,234,574	63,240	19.52
Apr-21	950,553	-	950,553	61,200	15.53
May-21	985,547	-	985,547	63,240	15.58
Jun-21	952,465	-	952,465	61,200	15.56
Jul-21	1,085,187	-	1,085,187	63,240	17.16
Aug-21	1,229,941	-	1,229,941	63,240	19.45
Sep-21	1,182,272	-	1,182,272	61,200	19.32
Oct-21	1,168,048	-	1,168,048	63,240	18.47
Nov-21	1,081,699	-	1,081,699	61,200	17.67
Dec-21	1,269,244	-	1,269,244	63,240	20.07
Jan-22	1,367,789	-	1,367,789	63,240	21.63
Feb-22	1,188,351	-	1,188,351	57,120	20.80
Mar-22	1,253,338	-	1,253,338	63,240	19.82

Apr-22	1,090,364	-	1,090,364	61,200	17.82
May-22	1,057,843	-	1,057,843	63,240	16.73
Jun-22	1,002,320	-	1,002,320	61,200	16.38
Jul-22	1,221,177	-	1,221,177	63,240	19.31
Aug-22	1,353,911	-	1,353,911	63,240	21.41
Sep-22	1,366,057	-	1,366,057	61,200	22.32
Oct-22	1,290,861	-	1,290,861	63,240	20.41
Nov-22	1,251,856	-	1,251,856	61,200	20.46
Dec-22	1,279,729	-	1,279,729	63,240	20.24
Jan-23	1,221,994	-	1,221,994	63,240	19.32
Feb-23	1,182,382	-	1,182,382	57,120	20.70
Mar-23	1,287,491	-	1,287,491	63,240	20.36
Apr-23	1,116,043	-	1,116,043	61,200	18.24
May-23	1,088,130	-	1,088,130	63,240	17.21
Jun-23	1,010,553	-	1,010,553	61,200	16.51
Jul-23	1,293,778	-	1,293,778	63,240	20.46
Aug-23	1,440,602	-	1,440,602	63,240	22.78
Sep-23	1,436,080	-	1,436,080	61,200	23.47
Oct-23	1,323,324	-	1,323,324	63,240	20.93
Nov-23	1,207,640	-	1,207,640	61,200	19.73
Dec-23	1,296,800	-	1,296,800	63,240	20.51
Jan-24	1,266,660	-	1,266,660	63,240	20.03
Feb-24	1,373,484	-	1,373,484	59,160	23.22
Mar-24	1,467,415	-	1,467,415	63,240	23.20
Apr-24	1,270,216	-	1,270,216	61,200	20.76
May-24	1,271,932	-	1,271,932	63,240	20.11
Jun-24	1,229,355	-	1,229,355	61,200	20.09
Jul-24	1,397,068	-	1,397,068	63,240	22.09
Aug-24	1,565,711	-	1,565,711	63,240	24.76
Sep-24	1,562,572	-	1,562,572	61,200	25.53
Oct-24	1,443,702	-	1,443,702	63,240	22.83
Nov-24	1,353,014	-	1,353,014	61,200	22.11
Dec-24	1,515,670	-	1,515,670	63,240	23.97
Jan-25	1,520,970	-	1,520,970	63,240	24.05
Feb-25	1,403,215	-	1,403,215	57,120	24.57
Mar-25	1,543,640	-	1,543,640	63,240	24.41
Apr-25	1,560,248	-	1,560,248	61,200	25.49
May-25	1,362,246	-	1,362,246	63,240	21.54
Jun-25	1,429,794	-	1,429,794	61,200	23.36
Jul-25	1,690,031	-	1,690,031	63,240	26.72
Aug-25	1,718,461	-	1,718,461	63,240	27.17
Sep-25	1,739,684	-	1,739,684	61,200	28.43
Oct-25	1,656,304	-	1,656,304	63,240	26.19
Nov-25	1,641,387	-	1,641,387	61,200	26.82
Dec-25	1,713,770	-	1,713,770	63,240	27.10
Jan-26	1,673,300	-	1,673,300	63,240	26.46
Feb-26	1,457,495	-	1,457,495	57,120	25.52
Mar-26	1,578,430	-	1,578,430	63,240	24.96
Apr-26	1,587,261	-	1,587,261	61,200	25.94
May-26	1,370,539	-	1,370,539	63,240	21.67
Jun-26	1,454,668	-	1,454,668	61,200	23.77
Jul-26	1,543,390	-	1,543,390	63,240	24.41
Aug-26	1,756,961	-	1,756,961	63,240	27.78
Sep-26	1,730,704	-	1,730,704	61,200	28.28
Oct-26	1,683,548	-	1,683,548	63,240	26.62
Nov-26	1,514,883	-	1,514,883	61,200	24.75
Dec-26	1,782,499	-	1,782,499	63,240	28.19
Jan-27	1,692,354	-	1,692,354	63,240	26.76
Feb-27	1,460,675	-	1,460,675	57,120	25.57
Mar-27	1,609,313	-	1,609,313	63,240	25.45
Apr-27	1,557,059	-	1,557,059	61,200	25.44
May-27	1,466,127	-	1,466,127	63,240	23.18

Jun-27	1,601,954	-	1,601,954	61,200	26.18
Jul-27	1,620,575	-	1,620,575	63,240	25.63
Aug-27	1,829,348	-	1,829,348	63,240	28.93
Sep-27	1,814,503	-	1,814,503	61,200	29.65
Oct-27	1,695,542	-	1,695,542	63,240	26.81
Nov-27	1,616,939	-	1,616,939	61,200	26.42
Dec-27	1,850,801	-	1,850,801	63,240	29.27
Jan-28	1,908,935	-	1,908,935	63,240	30.19
Feb-28	1,794,594	-	1,794,594	59,160	30.33
Mar-28	1,790,013	-	1,790,013	63,240	28.31
Apr-28	1,661,756	-	1,661,756	61,200	27.15
May-28	1,670,670	-	1,670,670	63,240	26.42
Jun-28	1,742,674	-	1,742,674	61,200	28.48
Jul-28	1,760,852	-	1,760,852	63,240	27.84
Aug-28	2,163,244	-	2,163,244	63,240	34.21
Sep-28	1,988,036	-	1,988,036	61,200	32.48
Oct-28	1,858,173	-	1,858,173	63,240	29.38
Nov-28	1,845,066	-	1,845,066	61,200	30.15
Dec-28	1,882,056	-	1,882,056	63,240	29.76
Jan-29	1,984,000	-	1,984,000	63,240	31.37
Feb-29	1,775,146	-	1,775,146	57,120	31.08
Mar-29	1,891,406	-	1,891,406	63,240	29.91
Apr-29	1,908,599	-	1,908,599	61,200	31.19
May-29	1,802,144	-	1,802,144	63,240	28.50
Jun-29	1,860,249	-	1,860,249	61,200	30.40
Jul-29	2,107,994	-	2,107,994	63,240	33.33
Aug-29	2,459,083	-	2,459,083	63,240	38.88
Sep-29	2,277,941	-	2,277,941	61,200	37.22
Oct-29	2,111,828	-	2,111,828	63,240	33.39
Nov-29	1,903,514	-	1,903,514	61,200	31.10
Dec-29	2,124,026	-	2,124,026	63,240	33.59
Jan-30	2,251,959	-	2,251,959	63,240	35.61
Feb-30	2,014,693	-	2,014,693	57,120	35.27
Mar-30	2,103,689	-	2,103,689	63,240	33.27
Apr-30	1,914,007	-	1,914,007	61,200	31.27
May-30	1,966,171	-	1,966,171	63,240	31.09
Jun-30	1,964,470	-	1,964,470	61,200	32.10
Jul-30	2,385,504	-	2,385,504	63,240	37.72
Aug-30	2,664,189	-	2,664,189	63,240	42.13
Sep-30	2,557,033	-	2,557,033	61,200	41.78
Oct-30	2,364,215	-	2,364,215	63,240	37.38
Nov-30	2,052,249	-	2,052,249	61,200	33.53
Dec-30	2,374,407	-	2,374,407	63,240	37.55
Jan-31	2,347,989	-	2,347,989	63,240	37.13
Feb-31	2,111,054	-	2,111,054	57,120	36.96
Mar-31	2,193,081	-	2,193,081	63,240	34.68
Apr-31	2,059,179	-	2,059,179	61,200	33.65
May-31	2,030,257	-	2,030,257	63,240	32.10
Jun-31	2,111,398	-	2,111,398	61,200	34.50
Jul-31	2,530,574	-	2,530,574	63,240	40.02
Aug-31	2,750,231	-	2,750,231	63,240	43.49
Sep-31	2,680,929	-	2,680,929	61,200	43.81
Oct-31	2,364,752	-	2,364,752	63,240	37.39
Nov-31	2,167,112	-	2,167,112	61,200	35.41
Dec-31	2,547,147	-	2,547,147	63,240	40.28
Jan-32	2,527,715	-	2,527,715	63,240	39.97
Feb-32	2,267,676	-	2,267,676	59,160	38.33
Mar-32	2,285,414	-	2,285,414	63,240	36.14
Apr-32	2,205,053	-	2,205,053	61,200	36.03
May-32	2,131,824	-	2,131,824	63,240	33.71
Jun-32	2,232,785	-	2,232,785	61,200	36.48
Jul-32	2,640,534	-	2,640,534	63,240	41.75

Aug-32	2,835,858	-	2,835,858	63,240	44.84
Sep-32	2,799,135	-	2,799,135	61,200	45.74
Oct-32	2,460,134	-	2,460,134	63,240	38.90
Nov-32	2,288,155	-	2,288,155	61,200	37.39
Dec-32	2,605,899	-	2,605,899	63,240	41.21
Jan-33	2,660,962	-	2,660,962	63,240	42.08
Feb-33	2,443,272	-	2,443,272	57,120	42.77
Mar-33	2,369,646	-	2,369,646	63,240	37.47
Apr-33	2,357,481	-	2,357,481	61,200	38.52
May-33	2,311,998	-	2,311,998	63,240	36.56
Jun-33	2,467,216	-	2,467,216	61,200	40.31
Jul-33	3,766,679	-	3,766,679	63,240	59.56
Aug-33	3,096,793	-	3,096,793	63,240	48.97
Sep-33	2,985,886	-	2,985,886	61,200	48.79
Oct-33	2,705,902	-	2,705,902	63,240	42.79
Nov-33	2,551,519	-	2,551,519	61,200	41.69
Dec-33	3,002,769	-	3,002,769	63,240	47.48
Jan-34	2,826,259	-	2,826,259	63,240	44.69
Feb-34	2,473,323	-	2,473,323	57,120	43.30
Mar-34	2,482,514	-	2,482,514	63,240	39.26
Apr-34	2,419,974	-	2,419,974	61,200	39.54
May-34	2,421,336	-	2,421,336	63,240	38.29
Jun-34	2,561,502	-	2,561,502	61,200	41.85
Jul-34	3,980,396	-	3,980,396	63,240	62.94
Aug-34	3,281,095	-	3,281,095	63,240	51.88
Sep-34	3,030,932	-	3,030,932	61,200	49.53
Oct-34	2,837,763	-	2,837,763	63,240	44.87
Nov-34	2,693,400	-	2,693,400	61,200	44.01
Dec-34	3,318,673	-	3,318,673	63,240	52.48
Jan-35	3,092,073	-	3,092,073	63,240	48.89
Feb-35	2,679,372	-	2,679,372	57,120	46.91
Mar-35	2,683,529	-	2,683,529	63,240	42.43
Apr-35	2,493,991	-	2,493,991	61,200	40.75
May-35	2,477,654	-	2,477,654	63,240	39.18
Jun-35	2,483,878	-	2,483,878	61,200	40.59
Jul-35	4,404,365	-	4,404,365	63,240	69.65
Aug-35	3,906,461	-	3,906,461	63,240	61.77
Sep-35	3,251,238	-	3,251,238	61,200	53.12
Oct-35	2,989,516	-	2,989,516	63,240	47.27
Nov-35	2,903,624	-	2,903,624	61,200	47.44
Dec-35	3,518,612	-	3,518,612	63,240	55.64
Jan-36	3,148,561	-	3,148,561	63,240	49.79
Feb-36	2,774,411	-	2,774,411	59,160	46.90
Mar-36	2,612,740	-	2,612,740	63,240	41.31
Apr-36	2,463,895	-	2,463,895	61,200	40.26
May-36	2,651,818	-	2,651,818	63,240	41.93
Jun-36	2,835,717	-	2,835,717	61,200	46.34
Jul-36	4,454,970	-	4,454,970	63,240	70.45
Aug-36	4,514,899	-	4,514,899	63,240	71.39
Sep-36	3,943,914	-	3,943,914	61,200	64.44
Oct-36	3,446,379	-	3,446,379	63,240	54.50
Nov-36	3,209,176	-	3,209,176	61,200	52.44
Dec-36	3,719,853	-	3,719,853	63,240	58.82
Jan-37	3,217,829	-	3,217,829	63,240	50.88
Feb-37	2,737,674	-	2,737,674	57,120	47.93
Mar-37	2,670,221	-	2,670,221	63,240	42.22
Apr-37	2,518,101	-	2,518,101	61,200	41.15
May-37	2,710,158	-	2,710,158	63,240	42.86
Jun-37	2,898,103	-	2,898,103	61,200	47.35
Jul-37	4,552,979	-	4,552,979	63,240	72.00
Aug-37	4,614,227	-	4,614,227	63,240	72.96
Sep-37	4,030,681	-	4,030,681	61,200	65.86

Oct-37	3,522,200	-	3,522,200	63,240	55.70
Nov-37	3,279,778	-	3,279,778	61,200	53.59
Dec-37	3,801,690	-	3,801,690	63,240	60.12
Jan-38	3,288,622	-	3,288,622	63,240	52.00
Feb-38	2,797,903	-	2,797,903	57,120	48.98
Mar-38	2,728,966	-	2,728,966	63,240	43.15
Apr-38	2,573,499	-	2,573,499	61,200	42.05
May-38	2,769,781	-	2,769,781	63,240	43.80
Jun-38	2,961,861	-	2,961,861	61,200	48.40
Jul-38	4,653,145	-	4,653,145	63,240	73.58
Aug-38	4,715,740	-	4,715,740	63,240	74.57
Sep-38	4,119,356	-	4,119,356	61,200	67.31
Oct-38	3,599,688	-	3,599,688	63,240	56.92
Nov-38	3,351,933	-	3,351,933	61,200	54.77
Dec-38	3,885,327	-	3,885,327	63,240	61.44

Appendix B.2

Avoided Cost Prices \$/MWh Utah 2017.Q4 Sch 38

Year	Wind Avoided Cost at 31.0% CF (2)	Wind UT 2017.Q3 Filing	Wind Difference
2018	\$17.83	\$19.01	(\$1.18)
2019	\$17.52	\$17.34	\$0.18
2020	\$14.78	\$15.75	(\$0.97)
2021	\$26.26	\$17.48	\$8.78
2022	\$27.00	\$18.44	\$8.56
2023	\$26.75	\$19.16	\$7.59
2024	\$29.37	\$22.36	\$7.00
2025	\$31.57	\$25.56	\$6.01
2026	\$31.68	\$24.99	\$6.69
2027	\$33.05	\$26.08	\$6.97
2028	\$29.49	\$28.57	\$0.93
2029	\$31.43	\$31.10	\$0.33
2030	\$32.15	\$33.79	(\$1.64)
2031	\$57.36	\$35.22	\$22.14
2032	\$57.50	\$36.50	\$21.00

	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)		Discount Rate - 2017 II
2018-2032	\$/MWh	\$28.32 (4) \$23.04 (4) \$5.28	6.570%

Footnotes:

- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2018 - 2032
- (4) Levelized Monthly

Table 1
Avoided Cost Prices
Utah 2017.Q4_Wind - 80.0 MW and 31.0% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	Total Price @ 31.0% Capacity Factor \$/MWh
2018	\$0.00	\$17.83	\$17.83
2019	\$0.00	\$17.52	\$17.52
2020	\$0.00	\$14.78	\$14.78
2021	\$33.09	\$14.09	\$26.26
2022	\$33.85	\$14.55	\$27.00
2023	\$34.63	\$14.01	\$26.75
2024	\$35.43	\$16.38	\$29.37
2025	\$36.24	\$18.24	\$31.57
2026	\$37.07	\$18.05	\$31.68
2027	\$37.93	\$19.10	\$33.05
2028	\$38.81	\$15.26	\$29.49
2029	\$39.71	\$16.82	\$31.43
2030	\$40.62	\$17.21	\$32.15
2031	\$195.75	(\$14.64)	\$57.36
2032	\$200.05	(\$15.86)	\$57.50
2033	\$204.45	(\$18.14)	\$57.05
2034	\$209.13	(\$18.62)	\$58.30
2035	\$213.93	(\$17.33)	\$61.35
2036	\$218.82	(\$14.42)	\$65.83
2037	\$223.63	(\$14.65)	\$67.54

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$39.82		
\$/MWh		\$13.67	\$28.32

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$50.86		
\$/MWh		\$11.92	\$30.62

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$75.29		
\$/MWh		\$7.81	\$35.50

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 3
2017 IRP Wyoming Wind Resource
41% Capacity Factor

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)	(h)
2017 IRP Wyoming Wind Resource - 41% Capacity Factor									
2016	\$1,637	\$115.69	\$37.57	\$42.46	\$0.65	(\$17.76)	\$25.35	\$91.50	\$0.57
2017		\$118.01	\$38.32	\$43.32	\$0.66	(\$18.12)	\$25.86	\$93.31	\$0.58
2018		\$120.25	\$39.05	\$44.14	\$0.67	(\$18.46)	\$26.35	\$95.09	\$0.59
2019		\$122.90	\$39.91	\$45.11	\$0.68	(\$18.87)	\$26.92	\$97.16	\$0.60
2020		\$126.10	\$40.95	\$46.29	\$0.70	(\$19.36)	\$27.63	\$99.70	\$0.62
2021		\$129.13	\$41.93	\$47.40	\$0.72	(\$19.82)	\$28.30	\$102.13	\$0.63
2022		\$132.10	\$42.89	\$48.49	\$0.74	(\$20.28)	\$28.95	\$104.47	\$0.64
2023		\$135.14	\$43.88	\$49.60	\$0.76	(\$20.75)	\$29.61	\$106.87	\$0.65
2024		\$138.25	\$44.89	\$50.74	\$0.78	(\$21.23)	\$30.29	\$109.33	\$0.66
2025		\$141.43	\$45.92	\$51.91	\$0.80	(\$21.72)	\$30.99	\$111.85	\$0.68
2026		\$144.68	\$46.98	\$53.10	\$0.82	(\$22.22)	\$31.70	\$114.42	\$0.70
2027		\$148.01	\$48.06	\$54.33	\$0.84	(\$22.73)	\$32.44	\$117.07	\$0.72
2028		\$151.41	\$49.17	\$55.58	\$0.86	(\$23.25)	\$33.19	\$119.77	\$0.74
2029		\$154.89	\$50.30	\$56.85	\$0.88	(\$23.78)	\$33.95	\$122.54	\$0.76
2030		\$158.45	\$51.46	\$58.16	\$0.90	(\$24.33)	\$34.73	\$125.35	\$0.78
2031		\$162.09	\$52.64	\$59.50	\$0.92	(\$24.89)	\$35.53	\$128.22	\$0.80
2032		\$165.66	\$53.80	\$60.81	\$0.94	(\$25.44)	\$36.31	\$131.04	\$0.82
2033		\$169.30	\$54.98	\$62.14	\$0.96	(\$26.00)	\$37.10	\$133.91	\$0.84
2034		\$173.19	\$56.24	\$63.57	\$0.98	(\$26.60)	\$37.95	\$136.96	\$0.86
2035		\$177.17	\$57.53	\$65.03	\$1.00	(\$27.21)	\$38.82	\$140.10	\$0.88
2036		\$181.24	\$58.85	\$66.52	\$1.02	(\$27.84)	\$39.70	\$143.29	\$0.90
2037		\$185.23	\$60.14	\$67.99	\$1.04	(\$28.45)	\$40.58	\$146.44	\$0.92
2038		\$189.31	\$61.46	\$69.48	\$1.06	(\$29.08)	\$41.46	\$149.64	\$0.94
2039		\$193.47	\$62.81	\$71.01	\$1.08	(\$29.72)	\$42.37	\$152.91	\$0.96
2040		\$197.73	\$64.19	\$72.57	\$1.10	(\$30.37)	\$43.30	\$156.28	\$0.98
2041		\$202.08	\$65.60	\$74.17	\$1.12	(\$31.04)	\$44.25	\$159.70	\$1.00
2042		\$206.53	\$67.04	\$75.80	\$1.14	(\$31.72)	\$45.22	\$163.20	\$1.02

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 41.2%)
	(g)	= (d) + (f)
	(h)	Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming Wind Resource - 41% Capacity Factor		
Wind	Cost and Input Assumptions	
2016 \$	\$1,637	Plant capacity cost \$/kW-yr IRP2017 Chapter 8, page 220
2016 \$	\$37.57	Fixed O&M, plus on-going capital cost \$/kW-yr
2016 \$	0.57	Integration Cost \$/MWh
2016 \$	\$0.65	Variable O&M \$/MWh
2016 \$	(\$17.76)	Tax Credit \$/MWh Corrected
	7.067%	Payment Factor
	41%	Capacity Factor IRP2017 Chapter 8, page 220

Company Official Inflation Forecast Dated December 29, 2017					
2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Wyoming DJ Wind Resource
43% Capacity Factor

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)
<u>2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor</u>									
2016	\$1,737	\$122.78	\$37.57	\$42.57	\$0.65	-	\$43.22	\$162.79	\$0.57
2017		\$125.24	\$38.32	\$43.42	\$0.66	\$0.00	\$44.08	\$166.05	\$0.58
2018		\$127.62	\$39.05	\$44.25	\$0.67	\$0.00	\$44.92	\$169.19	\$0.59
2019		\$130.43	\$39.91	\$45.22	\$0.68	\$0.00	\$45.90	\$172.90	\$0.60
2020		\$133.82	\$40.95	\$46.40	\$0.70	\$0.00	\$47.10	\$177.41	\$0.62
2021		\$137.03	\$41.93	\$47.51	\$0.72	\$0.00	\$48.23	\$181.67	\$0.63
2022		\$140.18	\$42.89	\$48.60	\$0.74	\$0.00	\$49.34	\$185.86	\$0.64
2023		\$143.40	\$43.88	\$49.72	\$0.76	\$0.00	\$50.48	\$190.14	\$0.65
2024		\$146.70	\$44.89	\$50.86	\$0.78	\$0.00	\$51.64	\$194.53	\$0.66
2025		\$150.07	\$45.92	\$52.03	\$0.80	\$0.00	\$52.83	\$199.00	\$0.68
2026		\$153.52	\$46.98	\$53.23	\$0.82	\$0.00	\$54.05	\$203.59	\$0.70
2027		\$157.05	\$48.06	\$54.45	\$0.84	\$0.00	\$55.29	\$208.27	\$0.72
2028		\$160.66	\$49.17	\$55.71	\$0.86	\$0.00	\$56.57	\$213.07	\$0.74
2029		\$164.36	\$50.30	\$56.99	\$0.88	\$0.00	\$57.87	\$217.97	\$0.76
2030		\$168.14	\$51.46	\$58.30	\$0.90	\$0.00	\$59.20	\$222.99	\$0.78
2031		\$172.01	\$52.64	\$59.64	\$0.92	\$0.00	\$60.56	\$228.12	\$0.80
2032		\$175.79	\$53.80	\$60.95	\$0.94	\$0.00	\$61.89	\$233.13	\$0.82
2033		\$179.66	\$54.98	\$62.29	\$0.96	\$0.00	\$63.25	\$238.26	\$0.84
2034		\$183.79	\$56.24	\$63.72	\$0.98	\$0.00	\$64.70	\$243.72	\$0.86
2035		\$188.02	\$57.53	\$65.19	\$1.00	\$0.00	\$66.19	\$249.32	\$0.88
2036		\$192.34	\$58.85	\$66.69	\$1.02	\$0.00	\$67.71	\$255.03	\$0.90
2037		\$196.57	\$60.14	\$68.15	\$1.04	\$0.00	\$69.19	\$260.63	\$0.92
2038		\$200.89	\$61.46	\$69.65	\$1.06	\$0.00	\$70.71	\$266.34	\$0.94
2039		\$205.31	\$62.81	\$71.18	\$1.08	\$0.00	\$72.26	\$272.19	\$0.96
2040		\$209.83	\$64.19	\$72.75	\$1.10	\$0.00	\$73.85	\$278.16	\$0.98
2041		\$214.45	\$65.60	\$74.35	\$1.12	\$0.00	\$75.47	\$284.27	\$1.00
2042		\$219.17	\$67.04	\$75.98	\$1.14	\$0.00	\$77.12	\$290.50	\$1.02

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 43.0%)
(g) = (d) + (f)
(i) Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor			
Wind	Cost and Input Assumptions		

2016 \$	\$1.737	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 \$	\$0.65	Variable O&M	\$/MWH
2016 \$		Tax Credit \$/MWh	\$/MWH

7.067% Payment Factor
43% Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Aeolus-Bridger/Anticline Transmission

Year	Retail Revenue Requirement	Months In Service	Total Resource Costs
	\$/kW-yr	#	\$/kW-yr
	(b)	(d)	(h)

2017 IRP Aeolus-Bridger/Anticline Transmission

2020	\$47.36	2	\$7.89
2021	\$48.59	12	\$48.59
2022	\$49.71	12	\$49.71
2023	\$50.85	12	\$50.85
2024	\$52.02	12	\$52.02
2025	\$53.22	12	\$53.22
2026	\$54.44	12	\$54.44
2027	\$55.69	12	\$55.69
2028	\$56.97	12	\$56.97
2029	\$58.28	12	\$58.28
2030	\$59.62	12	\$59.62
2031	\$60.99	12	\$60.99
2032	\$62.33	12	\$62.33
2033	\$63.70	12	\$63.70
2034	\$65.17	12	\$65.17
2035	\$66.67	12	\$66.67
2036	\$68.20	12	\$68.20
2037	\$69.70	12	\$69.70
2038	\$71.23	12	\$71.23
2039	\$72.80	12	\$72.80
2040	\$74.40	12	\$74.40
2041	\$76.04	12	\$76.04
2042	\$77.71	12	\$77.71

Transfer Capacity (MW) 750
Retail Revenue Requirement \$48.59

Company Official Inflation Forecast Dated December 29, 2017

2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4_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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Official Forward Price Curve Forecast dated Dec 29, 2017

Table 5
Utah 2017.Q4_Wind - 80.0 MW and 31.0% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 24,948,752 \$ 39,166,608 \$ 64,115,360 \$ 2,093,854 \$30.62

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 28,622,586 \$ 30,667,115 \$ 59,289,702 \$ 2,093,750 \$28.32

20 Year Starting 2019 \$ 19,144,183 \$ 67,872,022 \$ 87,016,205 \$ 2,451,093 \$35.50

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	31.0% CF	Dollars	MWH	31.0% CF
Jan-18	320,055	-	320,055	16,514	19.38
Feb-18	247,382	-	247,382	13,817	17.90
Mar-18	293,905	-	293,905	16,879	17.41
Apr-18	233,800	-	233,800	14,505	16.12
May-18	220,769	-	220,769	14,311	15.43
Jun-18	260,586	-	260,586	17,961	14.51
Jul-18	426,535	-	426,535	20,667	20.64
Aug-18	415,143	-	415,143	21,506	19.30
Sep-18	367,270	-	367,270	21,102	17.40
Oct-18	340,588	-	340,588	20,214	16.85
Nov-18	353,472	-	353,472	20,178	17.52
Dec-18	399,407	-	399,407	19,857	20.11
Jan-19	342,398	-	342,398	16,514	20.73
Feb-19	257,233	-	257,233	13,817	18.62
Mar-19	299,981	-	299,981	16,879	17.77
Apr-19	227,186	-	227,186	14,505	15.66
May-19	219,457	-	219,457	14,311	15.33
Jun-19	269,391	-	269,391	17,961	15.00
Jul-19	376,319	-	376,319	20,667	18.21
Aug-19	410,124	-	410,124	21,506	19.07
Sep-19	356,157	-	356,157	21,102	16.88
Oct-19	343,719	-	343,719	20,214	17.00
Nov-19	354,418	-	354,418	20,178	17.56
Dec-19	353,612	-	353,612	19,857	17.81
Jan-20	278,029	-	278,029	16,514	16.84
Feb-20	260,802	-	260,802	14,458	18.04
Mar-20	244,785	-	244,785	16,879	14.50
Apr-20	182,748	-	182,748	14,505	12.60
May-20	177,648	-	177,648	14,311	12.41
Jun-20	228,564	-	228,564	17,961	12.73
Jul-20	295,715	-	295,715	20,667	14.31
Aug-20	307,331	-	307,331	21,506	14.29
Sep-20	280,106	-	280,106	21,102	13.27
Oct-20	290,425	-	290,425	20,214	14.37
Nov-20	308,501	-	308,501	20,178	15.29
Dec-20	369,763	-	369,763	19,857	18.62
Jan-21	429,341	220,617	649,958	16,514	39.36
Feb-21	238,016	220,617	458,633	13,817	33.19
Mar-21	339,011	220,617	559,628	16,879	33.15
Apr-21	169,957	220,617	390,574	14,505	26.93
May-21	85,188	220,617	305,805	14,311	21.37
Jun-21	127,428	220,617	348,045	17,961	19.38
Jul-21	154,225	220,617	374,842	20,667	18.14
Aug-21	225,906	220,617	446,523	21,506	20.76
Sep-21	330,232	220,617	550,849	21,102	26.10
Oct-21	301,945	220,617	522,562	20,214	25.85
Nov-21	344,512	220,617	565,129	20,178	28.01
Dec-21	319,280	220,617	539,897	19,857	27.19
Jan-22	394,305	225,672	619,977	16,514	37.54
Feb-22	275,765	225,672	501,437	13,817	36.29
Mar-22	333,721	225,672	559,393	16,879	33.14

Apr-22	175,691	225,672	401,363	14,505	27.67
May-22	85,284	225,672	310,956	14,311	21.73
Jun-22	127,827	225,672	353,499	17,961	19.68
Jul-22	181,598	225,672	407,270	20,667	19.71
Aug-22	237,836	225,672	463,508	21,506	21.55
Sep-22	325,202	225,672	550,874	21,102	26.10
Oct-22	329,775	225,672	555,447	20,214	27.48
Nov-22	354,305	225,672	579,976	20,178	28.74
Dec-22	343,833	225,672	569,505	19,857	28.68
Jan-23	333,860	230,856	564,716	16,514	34.20
Feb-23	261,603	230,856	492,459	13,817	35.64
Mar-23	352,264	230,856	583,120	16,879	34.55
Apr-23	147,048	230,856	377,904	14,505	26.05
May-23	88,777	230,856	319,634	14,311	22.33
Jun-23	125,586	230,856	356,442	17,961	19.85
Jul-23	207,548	230,856	438,404	20,667	21.21
Aug-23	249,159	230,856	480,015	21,506	22.32
Sep-23	340,727	230,856	571,583	21,102	27.09
Oct-23	323,515	230,856	554,371	20,214	27.42
Nov-23	333,927	230,856	564,783	20,178	27.99
Dec-23	284,335	230,856	515,191	19,857	25.95
Jan-24	376,695	236,170	612,865	16,514	37.11
Feb-24	313,162	236,170	549,332	14,458	37.99
Mar-24	391,799	236,170	627,969	16,879	37.20
Apr-24	207,318	236,170	443,488	14,505	30.57
May-24	152,488	236,170	388,658	14,311	27.16
Jun-24	149,873	236,170	386,043	17,961	21.49
Jul-24	223,311	236,170	459,482	20,667	22.23
Aug-24	285,585	236,170	521,755	21,506	24.26
Sep-24	356,411	236,170	592,582	21,102	28.08
Oct-24	349,715	236,170	585,885	20,214	28.98
Nov-24	347,326	236,170	583,496	20,178	28.92
Dec-24	418,616	236,170	654,786	19,857	32.98
Jan-25	440,372	241,614	681,986	16,514	41.30
Feb-25	325,621	241,614	567,235	13,817	41.05
Mar-25	409,437	241,614	651,051	16,879	38.57
Apr-25	273,987	241,614	515,600	14,505	35.55
May-25	133,443	241,614	375,057	14,311	26.21
Jun-25	162,179	241,614	403,793	17,961	22.48
Jul-25	233,025	241,614	474,639	20,667	22.97
Aug-25	271,002	241,614	512,616	21,506	23.84
Sep-25	392,110	241,614	633,723	21,102	30.03
Oct-25	410,119	241,614	651,733	20,214	32.24
Nov-25	476,362	241,614	717,976	20,178	35.58
Dec-25	439,287	241,614	680,901	19,857	34.29
Jan-26	523,685	247,165	770,850	16,514	46.68
Feb-26	320,355	247,165	567,520	13,817	41.07
Mar-26	399,253	247,165	646,419	16,879	38.30
Apr-26	249,845	247,165	497,010	14,505	34.26
May-26	129,627	247,165	376,792	14,311	26.33
Jun-26	159,892	247,165	407,057	17,961	22.66
Jul-26	222,297	247,165	469,463	20,667	22.72
Aug-26	278,147	247,165	525,313	21,506	24.43
Sep-26	381,683	247,165	628,848	21,102	29.80
Oct-26	393,213	247,165	640,379	20,214	31.68
Nov-26	434,944	247,165	682,109	20,178	33.80
Dec-26	432,330	247,165	679,495	19,857	34.22
Jan-27	526,226	252,890	779,115	16,514	47.18
Feb-27	309,199	252,890	562,089	13,817	40.68
Mar-27	411,698	252,890	664,588	16,879	39.37
Apr-27	261,026	252,890	513,916	14,505	35.43
May-27	144,959	252,890	397,849	14,311	27.80

Jun-27	183,161	252,890	436,051	17,961	24.28
Jul-27	214,101	252,890	466,991	20,667	22.60
Aug-27	323,095	252,890	575,985	21,506	26.78
Sep-27	403,041	252,890	655,931	21,102	31.08
Oct-27	456,377	252,890	709,266	20,214	35.09
Nov-27	463,845	252,890	716,735	20,178	35.52
Dec-27	457,750	252,890	710,640	19,857	35.79
Jan-28	289,664	258,722	548,386	16,514	33.21
Feb-28	176,707	258,722	435,429	14,458	30.12
Mar-28	306,722	258,722	565,445	16,879	33.50
Apr-28	153,977	258,722	412,699	14,505	28.45
May-28	144,334	258,722	403,056	14,311	28.16
Jun-28	124,637	258,722	383,359	17,961	21.34
Jul-28	350,865	258,722	609,587	20,667	29.50
Aug-28	389,455	258,722	648,177	21,506	30.14
Sep-28	369,991	258,722	628,713	21,102	29.79
Oct-28	401,034	258,722	659,757	20,214	32.64
Nov-28	317,191	258,722	575,913	20,178	28.54
Dec-28	305,114	258,722	563,836	19,857	28.39
Jan-29	290,433	264,706	555,139	16,514	33.62
Feb-29	210,336	264,706	475,042	13,817	34.38
Mar-29	319,711	264,706	584,417	16,879	34.62
Apr-29	182,520	264,706	447,226	14,505	30.83
May-29	165,092	264,706	429,797	14,311	30.03
Jun-29	166,561	264,706	431,267	17,961	24.01
Jul-29	329,499	264,706	594,205	20,667	28.75
Aug-29	403,434	264,706	668,139	21,506	31.07
Sep-29	445,318	264,706	710,024	21,102	33.65
Oct-29	409,377	264,706	674,083	20,214	33.35
Nov-29	401,345	264,706	666,050	20,178	33.01
Dec-29	335,880	264,706	600,585	19,857	30.25
Jan-30	314,979	270,776	585,755	16,514	35.47
Feb-30	204,438	270,776	475,214	13,817	34.39
Mar-30	347,391	270,776	618,167	16,879	36.62
Apr-30	185,001	270,776	455,777	14,505	31.42
May-30	183,920	270,776	454,696	14,311	31.77
Jun-30	150,975	270,776	421,751	17,961	23.48
Jul-30	319,522	270,776	590,298	20,667	28.56
Aug-30	440,028	270,776	710,804	21,506	33.05
Sep-30	495,038	270,776	765,814	21,102	36.29
Oct-30	449,085	270,776	719,861	20,214	35.61
Nov-30	308,181	270,776	578,957	20,178	28.69
Dec-30	344,535	270,776	615,311	19,857	30.99
Jan-31	(564,362)	1,305,000	740,638	16,514	44.85
Feb-31	(485,544)	1,305,000	819,456	13,817	59.31
Mar-31	(336,876)	1,305,000	968,124	16,879	57.36
Apr-31	(321,857)	1,305,000	983,143	14,505	67.78
May-31	(194,338)	1,305,000	1,110,662	14,311	77.61
Jun-31	(228,689)	1,305,000	1,076,312	17,961	59.93
Jul-31	(3,842)	1,305,000	1,301,159	20,667	62.96
Aug-31	14,576	1,305,000	1,319,576	21,506	61.36
Sep-31	49,758	1,305,000	1,354,758	21,102	64.20
Oct-31	(117,727)	1,305,000	1,187,273	20,214	58.73
Nov-31	(517,685)	1,305,000	787,315	20,178	39.02
Dec-31	(477,997)	1,305,000	827,003	19,857	41.65
Jan-32	(568,962)	1,333,669	764,708	16,514	46.31
Feb-32	(549,563)	1,333,669	784,107	14,458	54.23
Mar-32	(347,824)	1,333,669	985,845	16,879	58.41
Apr-32	(336,844)	1,333,669	996,826	14,505	68.72
May-32	(199,748)	1,333,669	1,133,922	14,311	79.23
Jun-32	(246,922)	1,333,669	1,086,747	17,961	60.51
Jul-32	(9,239)	1,333,669	1,324,430	20,667	64.08

Aug-32	7,027	1,333,669	1,340,696	21,506	62.34
Sep-32	26,860	1,333,669	1,360,530	21,102	64.47
Oct-32	(106,721)	1,333,669	1,226,949	20,214	60.70
Nov-32	(535,242)	1,333,669	798,428	20,178	39.57
Dec-32	(592,317)	1,333,669	741,353	19,857	37.33
Jan-33	(738,858)	1,362,987	624,130	16,514	37.79
Feb-33	(602,924)	1,362,987	760,063	13,817	55.01
Mar-33	(354,490)	1,362,987	1,008,497	16,879	59.75
Apr-33	(329,826)	1,362,987	1,033,162	14,505	71.23
May-33	(226,117)	1,362,987	1,136,870	14,311	79.44
Jun-33	(260,201)	1,362,987	1,102,786	17,961	61.40
Jul-33	8,836	1,362,987	1,371,823	20,667	66.38
Aug-33	(73,670)	1,362,987	1,289,317	21,506	59.95
Sep-33	25,316	1,362,987	1,388,304	21,102	65.79
Oct-33	(124,396)	1,362,987	1,238,592	20,214	61.27
Nov-33	(578,127)	1,362,987	784,860	20,178	38.90
Dec-33	(691,419)	1,362,987	671,568	19,857	33.82
Jan-34	(789,186)	1,394,181	604,995	16,514	36.64
Feb-34	(620,172)	1,394,181	774,010	13,817	56.02
Mar-34	(340,208)	1,394,181	1,053,973	16,879	62.44
Apr-34	(347,078)	1,394,181	1,047,103	14,505	72.19
May-34	(219,324)	1,394,181	1,174,857	14,311	82.09
Jun-34	(231,068)	1,394,181	1,163,114	17,961	64.76
Jul-34	(18,990)	1,394,181	1,375,192	20,667	66.54
Aug-34	(82,115)	1,394,181	1,312,067	21,506	61.01
Sep-34	41,984	1,394,181	1,436,165	21,102	68.06
Oct-34	(89,402)	1,394,181	1,304,779	20,214	64.55
Nov-34	(615,611)	1,394,181	778,571	20,178	38.58
Dec-34	(739,133)	1,394,181	655,048	19,857	32.99
Jan-35	(840,785)	1,426,201	585,416	16,514	35.45
Feb-35	(622,249)	1,426,201	803,952	13,817	58.18
Mar-35	(319,323)	1,426,201	1,106,878	16,879	65.58
Apr-35	(241,932)	1,426,201	1,184,269	14,505	81.65
May-35	(177,273)	1,426,201	1,248,928	14,311	87.27
Jun-35	(172,980)	1,426,201	1,253,221	17,961	69.78
Jul-35	(42,121)	1,426,201	1,384,079	20,667	66.97
Aug-35	8,378	1,426,201	1,434,579	21,506	66.71
Sep-35	71,654	1,426,201	1,497,855	21,102	70.98
Oct-35	(76,221)	1,426,201	1,349,980	20,214	66.78
Nov-35	(608,740)	1,426,201	817,460	20,178	40.51
Dec-35	(748,171)	1,426,201	678,030	19,857	34.15
Jan-36	(969,326)	1,458,824	489,498	16,514	29.64
Feb-36	(720,652)	1,458,824	738,172	14,458	51.06
Mar-36	(431,196)	1,458,824	1,027,628	16,879	60.88
Apr-36	(309,687)	1,458,824	1,149,136	14,505	79.22
May-36	(107,049)	1,458,824	1,351,775	14,311	94.46
Jun-36	30,913	1,458,824	1,489,737	17,961	82.94
Jul-36	329,733	1,458,824	1,788,557	20,667	86.54
Aug-36	440,874	1,458,824	1,899,697	21,506	88.33
Sep-36	259,375	1,458,824	1,718,199	21,102	81.42
Oct-36	(75,627)	1,458,824	1,383,197	20,214	68.43
Nov-36	(737,376)	1,458,824	721,448	20,178	35.75
Dec-36	(855,164)	1,458,824	603,660	19,857	30.40
Jan-37	(990,651)	1,490,865	500,214	16,514	30.29
Feb-37	(711,110)	1,490,865	779,755	13,960	55.86
Mar-37	(440,682)	1,490,865	1,050,183	16,879	62.22
Apr-37	(316,501)	1,490,865	1,174,364	14,505	80.96
May-37	(109,404)	1,490,865	1,381,461	14,311	96.53
Jun-37	31,594	1,490,865	1,522,458	17,961	84.77
Jul-37	336,988	1,490,865	1,827,852	20,667	88.44
Aug-37	450,573	1,490,865	1,941,438	21,506	90.28
Sep-37	265,081	1,490,865	1,755,946	21,102	83.21

Oct-37	(77,291)	1,490,865	1,413,574	20,214	69.93
Nov-37	(753,598)	1,490,865	737,266	20,178	36.54
Dec-37	(873,978)	1,490,865	616,887	19,857	31.07
Jan-38	(1,012,445)	1,523,510	511,065	16,514	30.95
Feb-38	(726,754)	1,523,510	796,756	13,960	57.08
Mar-38	(450,377)	1,523,510	1,073,132	16,879	63.58
Apr-38	(323,464)	1,523,510	1,200,046	14,505	82.73
May-38	(111,811)	1,523,510	1,411,699	14,311	98.64
Jun-38	32,289	1,523,510	1,555,798	17,961	86.62
Jul-38	344,401	1,523,510	1,867,911	20,667	90.38
Aug-38	460,485	1,523,510	1,983,995	21,506	92.25
Sep-38	270,913	1,523,510	1,794,423	21,102	85.03
Oct-38	(78,991)	1,523,510	1,444,518	20,214	71.46
Nov-38	(770,178)	1,523,510	753,332	20,178	37.33
Dec-38	(893,205)	1,523,510	630,304	19,857	31.74

Appendix B.3
Avoided Cost Prices \$/MWh
Utah 2017.Q4 Sch 38

Year	Solar Tracking Avoided Cost at 31.1% CF (2)	Solar Tracking UT 2017.Q3 Filing	Solar Tracking Difference
2018	\$19.33	\$20.46	(\$1.13)
2019	\$17.84	\$17.57	\$0.27
2020	\$11.71	\$11.99	(\$0.28)
2021	\$15.12	\$14.95	\$0.17
2022	\$16.88	\$16.98	(\$0.10)
2023	\$17.89	\$18.43	(\$0.54)
2024	\$19.63	\$21.19	(\$1.56)
2025	\$20.97	\$23.58	(\$2.61)
2026	\$21.81	\$24.04	(\$2.22)
2027	\$23.51	\$24.37	(\$0.87)
2028	\$23.68	\$25.22	(\$1.53)
2029	\$24.87	\$26.92	(\$2.05)
2030	\$24.97	\$28.27	(\$3.30)
2031	\$26.43	\$29.32	(\$2.89)
2032	\$27.16	\$30.12	(\$2.96)

	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)			Discount Rate - 2017 IRP
2018-2032	\$/MWh	\$19.72 (4)	\$20.87 (4)	6.570%
			(\$1.15)	

Footnotes:

- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2018 - 2032
- (4) Levelized Monthly

Table 1
Avoided Cost Prices
Utah 2017.Q4_Solar - 80.0 MW and 31.1% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	Total Price @ 31.1% Capacity Factor \$/MWh
2018	\$0.00	\$19.33	\$19.33
2019	\$0.00	\$17.84	\$17.84
2020	\$0.00	\$11.71	\$11.71
2021	\$0.00	\$15.12	\$15.12
2022	\$0.00	\$16.88	\$16.88
2023	\$0.00	\$17.89	\$17.89
2024	\$0.00	\$19.63	\$19.63
2025	\$0.00	\$20.97	\$20.97
2026	\$0.00	\$21.81	\$21.81
2027	\$0.00	\$23.51	\$23.51
2028	\$0.00	\$23.68	\$23.68
2029	\$0.00	\$24.87	\$24.87
2030	\$0.00	\$24.97	\$24.97
2031	\$0.00	\$26.43	\$26.43
2032	\$0.00	\$27.16	\$27.16
2033	\$0.00	\$28.99	\$28.99
2034	\$0.00	\$30.60	\$30.60
2035	\$216.12	(\$3.14)	\$83.36
2036	\$221.08	\$0.34	\$89.09
2037	\$225.96	\$0.35	\$91.23

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$19.72	\$19.72

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$20.13	\$20.13

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$26.20		
\$/MWh		\$18.23	\$27.86

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 3
2017 IRP Utah Solar Resource
31% Capacity Factor

Year	Estimated Capital Cost \$/kW (a)	Fixed Capital Cost at Real Levelized \$/kW-yr (b)	Fixed O&M \$/kW-yr (c)	Fixed Costs \$/MWh (d)	Variable O&M \$/MWh (e)	Tax Credit \$/MWh (f)	Total Resource Costs \$/MWh (g)	Total Resource Costs \$/kW-yr (h)	Wind Integration Cost \$/MWh (h)
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		\$143.42	\$20.09	\$60.02	\$0.00	(\$2.50)	\$57.52	\$156.70	\$0.62
2018		\$146.14	\$20.47	\$61.16	\$0.00	(\$2.55)	\$58.61	\$159.66	\$0.63
2019		\$149.36	\$20.92	\$62.50	\$0.00	(\$2.61)	\$59.89	\$163.17	\$0.64
2020		\$153.24	\$21.46	\$64.13	\$0.00	(\$2.68)	\$61.45	\$167.40	\$0.66
2021		\$156.92	\$21.98	\$65.67	\$0.00	(\$2.74)	\$62.93	\$171.44	\$0.68
2022		\$160.53	\$22.49	\$67.18	\$0.00	(\$2.80)	\$64.38	\$175.39	\$0.70
2023		\$164.22	\$23.01	\$68.72	\$0.00	(\$2.86)	\$65.86	\$179.44	\$0.72
2024		\$168.00	\$23.54	\$70.31	\$0.00	(\$2.93)	\$67.38	\$183.56	\$0.74
2025		\$171.86	\$24.08	\$71.92	\$0.00	(\$3.00)	\$68.92	\$187.77	\$0.76
2026		\$175.81	\$24.63	\$73.57	\$0.00	(\$3.07)	\$70.50	\$192.08	\$0.78
2027		\$179.85	\$25.20	\$75.27	\$0.00	(\$3.14)	\$72.13	\$196.50	\$0.80
2028		\$183.99	\$25.78	\$77.00	\$0.00	(\$3.21)	\$73.79	\$201.02	\$0.82
2029		\$188.22	\$26.37	\$78.77	\$0.00	(\$3.28)	\$75.49	\$205.65	\$0.84
2030		\$192.55	\$26.98	\$80.58	\$0.00	(\$3.36)	\$77.22	\$210.38	\$0.86
2031		\$196.98	\$27.60	\$82.43	\$0.00	(\$3.44)	\$78.99	\$215.21	\$0.88
2032		\$201.31	\$28.21	\$84.25	\$0.00	(\$3.52)	\$80.73	\$219.93	\$0.90
2033		\$205.74	\$28.83	\$86.10	\$0.00	(\$3.60)	\$82.50	\$224.76	\$0.92
2034		\$210.47	\$29.49	\$88.08	\$0.00	(\$3.68)	\$84.40	\$229.93	\$0.94
2035		\$215.31	\$30.17	\$90.11	\$0.00	(\$3.76)	\$86.35	\$235.24	\$0.96
2036		\$220.26	\$30.86	\$92.18	\$0.00	(\$3.85)	\$88.33	\$240.63	\$0.98
2037		\$225.11	\$31.54	\$94.21	\$0.00	(\$3.93)	\$90.28	\$245.94	\$1.00
2038		\$230.06	\$32.23	\$96.28	\$0.00	(\$4.02)	\$92.26	\$251.34	\$1.02
2039		\$235.12	\$32.94	\$98.39	\$0.00	(\$4.11)	\$94.28	\$256.86	\$1.04
2040		\$240.29	\$33.66	\$100.56	\$0.00	(\$4.20)	\$96.36	\$262.51	\$1.06
2041		\$245.58	\$34.40	\$102.77	\$0.00	(\$4.29)	\$98.48	\$268.29	\$1.08
2042		\$250.98	\$35.16	\$105.03	\$0.00	(\$4.38)	\$100.65	\$274.21	\$1.10

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	\$/MWH
	7.716%	Payment Factor	
	31.1%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Aeolus-Bridger/Anticline Transmission

Year	Retail Revenue Requirement	Months In Service	Total Resource Costs
	\$/kW-yr	#	\$/kW-yr
	(b)	(d)	(h)

2017 IRP Aeolus-Bridger/Anticline Transmission

2020	\$47.36	2	\$7.89
2021	\$48.59	12	\$48.59
2022	\$49.71	12	\$49.71
2023	\$50.85	12	\$50.85
2024	\$52.02	12	\$52.02
2025	\$53.22	12	\$53.22
2026	\$54.44	12	\$54.44
2027	\$55.69	12	\$55.69
2028	\$56.97	12	\$56.97
2029	\$58.28	12	\$58.28
2030	\$59.62	12	\$59.62
2031	\$60.99	12	\$60.99
2032	\$62.33	12	\$62.33
2033	\$63.70	12	\$63.70
2034	\$65.17	12	\$65.17
2035	\$66.67	12	\$66.67
2036	\$68.20	12	\$68.20
2037	\$69.70	12	\$69.70
2038	\$71.23	12	\$71.23
2039	\$72.80	12	\$72.80
2040	\$74.40	12	\$74.40
2041	\$76.04	12	\$76.04
2042	\$77.71	12	\$77.71

Transfer Capacity (MW) 750

Retail Revenue Requirement \$48.59
(\$/kW-year, 2021\$)

Company Official Inflation Forecast Dated December 29, 2017

2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4_Solar - 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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Official Forward Price Curve Forecast dated Dec 29, 2017

Table 5
Utah 2017.Q4_Solar - 80.0 MW and 31.1% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 40,858,367 \$ - \$ 40,858,367 \$ 2,029,992 \$20.13

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 40,221,881 \$ - \$ 40,221,881 \$ 2,040,121 \$19.72

20 Year Starting 2019 \$ 42,995,417 \$ 22,713,940 \$ 65,709,358 \$ 2,358,442 \$27.86

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	30.7% CF	Dollars	MWH	30.7% CF
Jan-18	203,477	-	203,477	10,534	19.32
Feb-18	209,749	-	209,749	11,789	17.79
Mar-18	317,068	-	317,068	18,361	17.27
Apr-18	333,073	-	333,073	21,207	15.71
May-18	401,235	-	401,235	24,549	16.34
Jun-18	411,465	-	411,465	26,080	15.78
Jul-18	714,965	-	714,965	23,606	30.29
Aug-18	563,202	-	563,202	23,644	23.82
Sep-18	375,002	-	375,002	20,842	17.99
Oct-18	290,657	-	290,657	16,897	17.20
Nov-18	196,135	-	196,135	11,381	17.23
Dec-18	191,233	-	191,233	8,780	21.78
Jan-19	221,484	-	221,484	10,481	21.13
Feb-19	216,069	-	216,069	11,730	18.42
Mar-19	322,342	-	322,342	18,269	17.64
Apr-19	321,991	-	321,991	21,101	15.26
May-19	391,205	-	391,205	24,426	16.02
Jun-19	397,548	-	397,548	25,950	15.32
Jul-19	537,538	-	537,538	23,488	22.89
Aug-19	499,259	-	499,259	23,526	21.22
Sep-19	344,820	-	344,820	20,738	16.63
Oct-19	278,016	-	278,016	16,813	16.54
Nov-19	191,565	-	191,565	11,324	16.92
Dec-19	141,348	-	141,348	8,736	16.18
Jan-20	131,780	-	131,780	10,429	12.64
Feb-20	165,505	-	165,505	12,089	13.69
Mar-20	192,040	-	192,040	18,178	10.56
Apr-20	233,552	-	233,552	20,996	11.12
May-20	265,866	-	265,866	24,304	10.94
Jun-20	282,313	-	282,313	25,820	10.93
Jul-20	289,606	-	289,606	23,371	12.39
Aug-20	302,697	-	302,697	23,409	12.93
Sep-20	292,253	-	292,253	20,634	14.16
Oct-20	187,865	-	187,865	16,729	11.23
Nov-20	114,411	-	114,411	11,268	10.15
Dec-20	70,279	-	70,279	8,693	8.09
Jan-21	225,675	-	225,675	10,377	21.75
Feb-21	206,395	-	206,395	11,614	17.77
Mar-21	373,760	-	373,760	18,087	20.66
Apr-21	316,954	-	316,954	20,891	15.17
May-21	292,442	-	292,442	24,183	12.09
Jun-21	243,058	-	243,058	25,691	9.46
Jul-21	197,436	-	197,436	23,254	8.49
Aug-21	305,264	-	305,264	23,292	13.11
Sep-21	407,143	-	407,143	20,531	19.83
Oct-21	326,948	-	326,948	16,645	19.64
Nov-21	176,675	-	176,675	11,211	15.76
Dec-21	169,653	-	169,653	8,649	19.62
Jan-22	241,884	-	241,884	10,325	23.43
Feb-22	261,453	-	261,453	11,555	22.63
Mar-22	376,025	-	376,025	17,997	20.89

Apr-22	365,325	-	365,325	20,786	17.58
May-22	303,416	-	303,416	24,062	12.61
Jun-22	236,531	-	236,531	25,563	9.25
Jul-22	247,137	-	247,137	23,137	10.68
Aug-22	356,843	-	356,843	23,175	15.40
Sep-22	441,658	-	441,658	20,429	21.62
Oct-22	364,287	-	364,287	16,562	22.00
Nov-22	215,972	-	215,972	11,155	19.36
Dec-22	191,295	-	191,295	8,606	22.23
Jan-23	230,454	-	230,454	10,273	22.43
Feb-23	255,688	-	255,688	11,498	22.24
Mar-23	392,505	-	392,505	17,907	21.92
Apr-23	347,494	-	347,494	20,682	16.80
May-23	333,177	-	333,177	23,941	13.92
Jun-23	294,486	-	294,486	25,435	11.58
Jul-23	322,976	-	322,976	23,022	14.03
Aug-23	393,983	-	393,983	23,059	17.09
Sep-23	486,356	-	486,356	20,327	23.93
Oct-23	362,764	-	362,764	16,479	22.01
Nov-23	228,784	-	228,784	11,099	20.61
Dec-23	149,463	-	149,463	8,563	17.45
Jan-24	232,205	-	232,205	10,222	22.72
Feb-24	305,219	-	305,219	11,849	25.76
Mar-24	410,614	-	410,614	17,817	23.05
Apr-24	438,764	-	438,764	20,579	21.32
May-24	364,986	-	364,986	23,822	15.32
Jun-24	323,884	-	323,884	25,308	12.80
Jul-24	291,267	-	291,267	22,907	12.72
Aug-24	442,395	-	442,395	22,944	19.28
Sep-24	533,644	-	533,644	20,225	26.39
Oct-24	393,843	-	393,843	16,397	24.02
Nov-24	205,065	-	205,065	11,044	18.57
Dec-24	212,435	-	212,435	8,520	24.93
Jan-25	247,910	-	247,910	10,171	24.37
Feb-25	307,484	-	307,484	11,383	27.01
Mar-25	423,876	-	423,876	17,728	23.91
Apr-25	493,132	-	493,132	20,476	24.08
May-25	406,568	-	406,568	23,703	17.15
Jun-25	381,029	-	381,029	25,181	15.13
Jul-25	246,131	-	246,131	22,792	10.80
Aug-25	428,168	-	428,168	22,829	18.76
Sep-25	605,055	-	605,055	20,124	30.07
Oct-25	409,967	-	409,967	16,315	25.13
Nov-25	246,954	-	246,954	10,989	22.47
Dec-25	211,374	-	211,374	8,477	24.93
Jan-26	306,669	-	306,669	10,120	30.30
Feb-26	311,688	-	311,688	11,326	27.52
Mar-26	429,513	-	429,513	17,639	24.35
Apr-26	532,854	-	532,854	20,374	26.15
May-26	398,663	-	398,663	23,584	16.90
Jun-26	389,580	-	389,580	25,055	15.55
Jul-26	277,682	-	277,682	22,678	12.24
Aug-26	452,460	-	452,460	22,715	19.92
Sep-26	586,014	-	586,014	20,023	29.27
Oct-26	416,055	-	416,055	16,233	25.63
Nov-26	254,588	-	254,588	10,934	23.28
Dec-26	205,182	-	205,182	8,435	24.33
Jan-27	298,018	-	298,018	10,069	29.60
Feb-27	307,685	-	307,685	11,269	27.30
Mar-27	434,627	-	434,627	17,551	24.76
Apr-27	525,105	-	525,105	20,272	25.90
May-27	437,262	-	437,262	23,466	18.63

Jun-27	438,029	-	438,029	24,930	17.57
Jul-27	293,083	-	293,083	22,565	12.99
Aug-27	512,270	-	512,270	22,602	22.67
Sep-27	625,040	-	625,040	19,923	31.37
Oct-27	520,429	-	520,429	16,152	32.22
Nov-27	279,319	-	279,319	10,879	25.67
Dec-27	219,942	-	219,942	8,393	26.21
Jan-28	316,980	-	316,980	10,019	31.64
Feb-28	323,156	-	323,156	11,614	27.83
Mar-28	448,140	-	448,140	17,463	25.66
Apr-28	514,083	-	514,083	20,170	25.49
May-28	473,312	-	473,312	23,349	20.27
Jun-28	459,103	-	459,103	24,805	18.51
Jul-28	389,691	-	389,691	22,452	17.36
Aug-28	484,103	-	484,103	22,489	21.53
Sep-28	578,604	-	578,604	19,823	29.19
Oct-28	481,264	-	481,264	16,071	29.95
Nov-28	275,920	-	275,920	10,825	25.49
Dec-28	168,482	-	168,482	8,351	20.18
Jan-29	346,897	-	346,897	9,969	34.80
Feb-29	339,958	-	339,958	11,157	30.47
Mar-29	485,605	-	485,605	17,376	27.95
Apr-29	574,342	-	574,342	20,069	28.62
May-29	500,619	-	500,619	23,232	21.55
Jun-29	475,588	-	475,588	24,681	19.27
Jul-29	330,763	-	330,763	22,340	14.81
Aug-29	396,753	-	396,753	22,376	17.73
Sep-29	600,976	-	600,976	19,724	30.47
Oct-29	472,643	-	472,643	15,991	29.56
Nov-29	363,112	-	363,112	10,771	33.71
Dec-29	236,706	-	236,706	8,309	28.49
Jan-30	374,159	-	374,159	9,919	37.72
Feb-30	319,078	-	319,078	11,101	28.74
Mar-30	526,210	-	526,210	17,289	30.44
Apr-30	577,630	-	577,630	19,969	28.93
May-30	514,035	-	514,035	23,116	22.24
Jun-30	497,466	-	497,466	24,558	20.26
Jul-30	313,181	-	313,181	22,228	14.09
Aug-30	386,511	-	386,511	22,264	17.36
Sep-30	585,580	-	585,580	19,626	29.84
Oct-30	508,780	-	508,780	15,911	31.98
Nov-30	276,136	-	276,136	10,717	25.77
Dec-30	238,515	-	238,515	8,268	28.85
Jan-31	388,411	-	388,411	9,869	39.35
Feb-31	342,845	-	342,845	11,046	31.04
Mar-31	531,418	-	531,418	17,203	30.89
Apr-31	604,298	-	604,298	19,869	30.41
May-31	544,515	-	544,515	23,000	23.67
Jun-31	536,467	-	536,467	24,435	21.95
Jul-31	371,091	-	371,091	22,117	16.78
Aug-31	332,998	-	332,998	22,153	15.03
Sep-31	614,702	-	614,702	19,528	31.48
Oct-31	509,755	-	509,755	15,831	32.20
Nov-31	266,321	-	266,321	10,663	24.98
Dec-31	347,725	-	347,725	8,226	42.27
Jan-32	428,070	-	428,070	9,820	43.59
Feb-32	365,116	-	365,116	11,383	32.08
Mar-32	567,815	-	567,815	17,117	33.17
Apr-32	650,010	-	650,010	19,770	32.88
May-32	556,389	-	556,389	22,885	24.31
Jun-32	551,707	-	551,707	24,313	22.69
Jul-32	374,006	-	374,006	22,006	17.00

Aug-32	329,842	-	329,842	22,042	14.96
Sep-32	591,066	-	591,066	19,430	30.42
Oct-32	527,686	-	527,686	15,752	33.50
Nov-32	318,551	-	318,551	10,610	30.02
Dec-32	261,638	-	261,638	8,185	31.97
Jan-33	392,086	-	392,086	9,771	40.13
Feb-33	363,370	-	363,370	10,936	33.23
Mar-33	594,086	-	594,086	17,031	34.88
Apr-33	669,862	-	669,862	19,671	34.05
May-33	582,061	-	582,061	22,771	25.56
Jun-33	597,169	-	597,169	24,191	24.69
Jul-33	766,160	-	766,160	21,896	34.99
Aug-33	278,215	-	278,215	21,932	12.69
Sep-33	518,248	-	518,248	19,333	26.81
Oct-33	471,400	-	471,400	15,674	30.08
Nov-33	321,514	-	321,514	10,557	30.46
Dec-33	299,378	-	299,378	8,144	36.76
Jan-34	419,519	-	419,519	9,722	43.15
Feb-34	355,278	-	355,278	10,881	32.65
Mar-34	616,235	-	616,235	16,946	36.36
Apr-34	664,100	-	664,100	19,573	33.93
May-34	600,724	-	600,724	22,657	26.51
Jun-34	596,926	-	596,926	24,070	24.80
Jul-34	802,894	-	802,894	21,787	36.85
Aug-34	304,264	-	304,264	21,822	13.94
Sep-34	496,960	-	496,960	19,236	25.83
Oct-34	565,315	-	565,315	15,595	36.25
Nov-34	328,013	-	328,013	10,504	31.23
Dec-34	397,321	-	397,321	8,103	49.03
Jan-35	118,640	1,440,832	1,559,471	9,674	161.21
Feb-35	59,124	1,440,832	1,499,956	10,826	138.55
Mar-35	138,648	1,440,832	1,579,480	16,861	93.67
Apr-35	111,668	1,440,832	1,552,500	19,475	79.72
May-35	(84,420)	1,440,832	1,356,412	22,544	60.17
Jun-35	(218,811)	1,440,832	1,222,021	23,950	51.02
Jul-35	(378,450)	1,440,832	1,062,382	21,678	49.01
Aug-35	(414,838)	1,440,832	1,025,993	21,713	47.25
Sep-35	(162,411)	1,440,832	1,278,421	19,140	66.79
Oct-35	67,001	1,440,832	1,507,833	15,517	97.17
Nov-35	56,293	1,440,832	1,497,124	10,451	143.25
Dec-35	80,036	1,440,832	1,520,868	8,063	188.62
Jan-36	3,094	1,473,845	1,476,939	9,625	153.45
Feb-36	3,010	1,473,845	1,476,855	11,157	132.37
Mar-36	4,320	1,473,845	1,478,165	16,777	88.11
Apr-36	4,400	1,473,845	1,478,245	19,377	76.29
May-36	5,830	1,473,845	1,479,676	22,431	65.97
Jun-36	6,618	1,473,845	1,480,464	23,830	62.13
Jul-36	9,527	1,473,845	1,483,372	21,569	68.77
Aug-36	10,828	1,473,845	1,484,674	21,605	68.72
Sep-36	8,098	1,473,845	1,481,944	19,044	77.82
Oct-36	5,295	1,473,845	1,479,140	15,440	95.80
Nov-36	3,418	1,473,845	1,477,263	10,399	142.06
Dec-36	3,055	1,473,845	1,476,900	8,023	184.09
Jan-37	3,162	1,506,369	1,509,531	9,625	156.83
Feb-37	2,970	1,506,369	1,509,339	10,772	140.11
Mar-37	4,415	1,506,369	1,510,784	16,777	90.05
Apr-37	4,497	1,506,369	1,510,865	19,377	77.97
May-37	5,959	1,506,369	1,512,327	22,431	67.42
Jun-37	6,764	1,506,369	1,513,133	23,830	63.50
Jul-37	9,737	1,506,369	1,516,105	21,569	70.29
Aug-37	11,067	1,506,369	1,517,435	21,605	70.24
Sep-37	8,276	1,506,369	1,514,645	19,044	79.53

Oct-37	5,412	1,506,369	1,511,780	15,440	97.92
Nov-37	3,493	1,506,369	1,509,862	10,399	145.19
Dec-37	3,122	1,506,369	1,509,490	8,023	188.15
Jan-38	3,232	1,539,443	1,542,675	9,625	160.27
Feb-38	3,036	1,539,443	1,542,479	10,772	143.19
Mar-38	4,512	1,539,443	1,543,956	16,777	92.03
Apr-38	4,595	1,539,443	1,544,039	19,377	79.68
May-38	6,090	1,539,443	1,545,533	22,431	68.90
Jun-38	6,913	1,539,443	1,546,356	23,830	64.89
Jul-38	9,951	1,539,443	1,549,394	21,569	71.83
Aug-38	11,310	1,539,443	1,550,754	21,605	71.78
Sep-38	8,459	1,539,443	1,547,902	19,044	81.28
Oct-38	5,531	1,539,443	1,544,974	15,440	100.07
Nov-38	3,570	1,539,443	1,543,014	10,399	148.38
Dec-38	3,191	1,539,443	1,542,634	8,023	192.28

Appendix B.4

Avoided Cost Prices \$/MWh Utah 2017.Q4 Sch 38 - Non-Routine Update

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 Difference	Solar Tracking Difference	Wind Difference
2018	\$19.38	\$19.33	\$17.83	\$0.00	\$0.00	\$0.00
2019	\$19.04	\$17.84	\$17.52	\$0.00	\$0.00	\$0.00
2020	\$15.31	\$9.48	\$14.10	(\$0.85)	(\$2.23)	(\$0.68)
2021	\$13.31	\$2.60	\$23.33	(\$4.64)	(\$12.51)	(\$2.93)
2022	\$14.65	\$4.40	\$24.97	(\$5.12)	(\$12.48)	(\$2.03)
2023	\$14.28	\$3.37	\$24.32	(\$5.74)	(\$14.52)	(\$2.43)
2024	\$16.56	\$3.97	\$26.54	(\$5.83)	(\$15.66)	(\$2.83)
2025	\$19.81	\$6.50	\$29.67	(\$5.68)	(\$14.47)	(\$1.89)
2026	\$19.32	\$5.43	\$29.02	(\$6.38)	(\$16.38)	(\$2.67)
2027	\$19.65	\$5.35	\$29.50	(\$6.96)	(\$18.16)	(\$3.55)
2028	\$23.89	\$8.65	\$28.73	(\$5.66)	(\$15.03)	(\$0.76)
2029	\$26.35	\$9.35	\$30.79	(\$6.16)	(\$15.52)	(\$0.64)
2030	\$29.71	\$9.79	\$31.83	(\$6.03)	(\$15.17)	(\$0.31)
2031	\$31.17	\$11.19	\$63.21	(\$6.29)	(\$15.24)	\$5.86
2032	\$32.99	\$11.71	\$63.42	(\$6.22)	(\$15.45)	\$5.92

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

2018-2032	\$/MWh	\$19.72 (4)	\$8.98 (4)	\$27.42 (4)	(\$4.24)	(\$10.74)	(\$0.90)
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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

Table 1
Avoided Cost Prices
Utah 2017.Q4 - 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	\$19.38	\$19.38
2019	\$0.00	\$19.04	\$19.04
2020	\$0.00	\$15.31	\$15.31
2021	\$0.00	\$13.31	\$13.31
2022	\$0.00	\$14.65	\$14.65
2023	\$0.00	\$14.28	\$14.28
2024	\$0.00	\$16.56	\$16.56
2025	\$0.00	\$19.81	\$19.81
2026	\$0.00	\$19.32	\$19.32
2027	\$0.00	\$19.65	\$19.65
2028	\$0.00	\$23.89	\$23.89
2029	\$0.00	\$26.35	\$26.35
2030	\$0.00	\$29.71	\$29.71
2031	\$0.00	\$31.17	\$31.17
2032	\$0.00	\$32.99	\$32.99
2033	\$0.00	\$38.66	\$38.66
2034	\$0.00	\$41.61	\$41.61
2035	\$0.00	\$48.80	\$48.80
2036	\$0.00	\$52.75	\$52.75
2037	\$0.00	\$53.93	\$53.93

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$19.72	\$19.72

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$20.54	\$20.54

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$24.82	\$24.82

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4 - 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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Table 5

Utah 2017.Q4 - 100.0 MW and 85.0% CF

January 2018 through December 2037

Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 147,503,344 \$ - \$ 147,503,344 \$ 7,181,710 \$20.54

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 141,648,712 \$ - \$ 141,648,712 \$ 7,181,378 \$19.72

20 Year Starting 2019 \$ 208,671,368 \$ - \$ 208,671,368 \$ 8,406,727 \$24.82

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	85.0% CF	Dollars	MWH	85.0% CF
Jan-18	1,269,919	-	1,269,919	63,240	20.08
Feb-18	1,084,918	-	1,084,918	57,120	18.99
Mar-18	1,107,952	-	1,107,952	63,240	17.52
Apr-18	1,005,113	-	1,005,113	61,200	16.42
May-18	1,053,543	-	1,053,543	63,240	16.66
Jun-18	992,867	-	992,867	61,200	16.22
Jul-18	1,633,982	-	1,633,982	63,240	25.84
Aug-18	1,491,808	-	1,491,808	63,240	23.59
Sep-18	1,184,652	-	1,184,652	61,200	19.36
Oct-18	1,122,267	-	1,122,267	63,240	17.75
Nov-18	1,123,455	-	1,123,455	61,200	18.36
Dec-18	1,357,713	-	1,357,713	63,240	21.47
Jan-19	1,373,089	-	1,373,089	63,240	21.71
Feb-19	1,145,347	-	1,145,347	57,120	20.05
Mar-19	1,148,761	-	1,148,761	63,240	18.17
Apr-19	985,715	-	985,715	61,200	16.11
May-19	1,040,826	-	1,040,826	63,240	16.46
Jun-19	1,010,259	-	1,010,259	61,200	16.51
Jul-19	1,431,053	-	1,431,053	63,240	22.63
Aug-19	1,410,302	-	1,410,302	63,240	22.30
Sep-19	1,152,159	-	1,152,159	61,200	18.83
Oct-19	1,128,190	-	1,128,190	63,240	17.84
Nov-19	1,144,452	-	1,144,452	61,200	18.70
Dec-19	1,204,089	-	1,204,089	63,240	19.04
Jan-20	1,133,951	-	1,133,951	63,240	17.93
Feb-20	1,162,909	-	1,162,909	59,160	19.66
Mar-20	939,167	-	939,167	63,240	14.85
Apr-20	716,478	-	716,478	61,200	11.71
May-20	792,152	-	792,152	63,240	12.53
Jun-20	842,560	-	842,560	61,200	13.77
Jul-20	937,848	-	937,848	63,240	14.83
Aug-20	972,200	-	972,200	63,240	15.37
Sep-20	750,789	-	750,789	61,200	12.27
Oct-20	985,553	-	985,553	63,240	15.58
Nov-20	969,329	-	969,329	61,200	15.84
Dec-20	1,226,175	-	1,226,175	63,240	19.39
Jan-21	1,114,163	-	1,114,163	63,240	17.62
Feb-21	862,044	-	862,044	57,120	15.09
Mar-21	936,649	-	936,649	63,240	14.81
Apr-21	551,904	-	551,904	61,200	9.02
May-21	567,129	-	567,129	63,240	8.97
Jun-21	581,957	-	581,957	61,200	9.51
Jul-21	823,151	-	823,151	63,240	13.02
Aug-21	835,044	-	835,044	63,240	13.20
Sep-21	717,164	-	717,164	61,200	11.72
Oct-21	776,483	-	776,483	63,240	12.28
Nov-21	952,575	-	952,575	61,200	15.56
Dec-21	1,194,738	-	1,194,738	63,240	18.89
Jan-22	1,246,505	-	1,246,505	63,240	19.71
Feb-22	1,011,378	-	1,011,378	57,120	17.71
Mar-22	864,402	-	864,402	63,240	13.67

Apr-22	621,067	-	621,067	61,200	10.15
May-22	681,795	-	681,795	63,240	10.78
Jun-22	693,165	-	693,165	61,200	11.33
Jul-22	940,103	-	940,103	63,240	14.87
Aug-22	919,340	-	919,340	63,240	14.54
Sep-22	808,248	-	808,248	61,200	13.21
Oct-22	877,781	-	877,781	63,240	13.88
Nov-22	1,083,427	-	1,083,427	61,200	17.70
Dec-22	1,164,339	-	1,164,339	63,240	18.41
Jan-23	1,089,341	-	1,089,341	63,240	17.23
Feb-23	962,173	-	962,173	57,120	16.84
Mar-23	871,929	-	871,929	63,240	13.79
Apr-23	622,085	-	622,085	61,200	10.16
May-23	627,379	-	627,379	63,240	9.92
Jun-23	596,922	-	596,922	61,200	9.75
Jul-23	978,722	-	978,722	63,240	15.48
Aug-23	947,694	-	947,694	63,240	14.99
Sep-23	831,438	-	831,438	61,200	13.59
Oct-23	911,564	-	911,564	63,240	14.41
Nov-23	975,103	-	975,103	61,200	15.93
Dec-23	1,217,064	-	1,217,064	63,240	19.25
Jan-24	1,151,462	-	1,151,462	63,240	18.21
Feb-24	1,110,356	-	1,110,356	59,160	18.77
Mar-24	1,095,306	-	1,095,306	63,240	17.32
Apr-24	700,839	-	700,839	61,200	11.45
May-24	863,838	-	863,838	63,240	13.66
Jun-24	796,763	-	796,763	61,200	13.02
Jul-24	1,084,825	-	1,084,825	63,240	17.15
Aug-24	1,041,760	-	1,041,760	63,240	16.47
Sep-24	894,351	-	894,351	61,200	14.61
Oct-24	991,853	-	991,853	63,240	15.68
Nov-24	1,169,091	-	1,169,091	61,200	19.10
Dec-24	1,463,229	-	1,463,229	63,240	23.14
Jan-25	1,411,420	-	1,411,420	63,240	22.32
Feb-25	1,207,134	-	1,207,134	57,120	21.13
Mar-25	1,162,031	-	1,162,031	63,240	18.37
Apr-25	992,268	-	992,268	61,200	16.21
May-25	823,786	-	823,786	63,240	13.03
Jun-25	908,672	-	908,672	61,200	14.85
Jul-25	1,490,462	-	1,490,462	63,240	23.57
Aug-25	1,193,387	-	1,193,387	63,240	18.87
Sep-25	986,299	-	986,299	61,200	16.12
Oct-25	1,329,949	-	1,329,949	63,240	21.03
Nov-25	1,587,693	-	1,587,693	61,200	25.94
Dec-25	1,659,661	-	1,659,661	63,240	26.24
Jan-26	1,603,672	-	1,603,672	63,240	25.36
Feb-26	1,207,477	-	1,207,477	57,120	21.14
Mar-26	1,171,576	-	1,171,576	63,240	18.53
Apr-26	921,474	-	921,474	61,200	15.06
May-26	832,251	-	832,251	63,240	13.16
Jun-26	910,748	-	910,748	61,200	14.88
Jul-26	1,242,296	-	1,242,296	63,240	19.64
Aug-26	1,195,545	-	1,195,545	63,240	18.90
Sep-26	981,456	-	981,456	61,200	16.04
Oct-26	1,251,945	-	1,251,945	63,240	19.80
Nov-26	1,337,672	-	1,337,672	61,200	21.86
Dec-26	1,728,600	-	1,728,600	63,240	27.33
Jan-27	1,635,183	-	1,635,183	63,240	25.86
Feb-27	1,180,448	-	1,180,448	57,120	20.67
Mar-27	1,212,515	-	1,212,515	63,240	19.17
Apr-27	944,655	-	944,655	61,200	15.44
May-27	873,931	-	873,931	63,240	13.82

Jun-27	973,065	-	973,065	61,200	15.90
Jul-27	1,279,049	-	1,279,049	63,240	20.23
Aug-27	1,191,686	-	1,191,686	63,240	18.84
Sep-27	1,016,410	-	1,016,410	61,200	16.61
Oct-27	1,126,824	-	1,126,824	63,240	17.82
Nov-27	1,414,993	-	1,414,993	61,200	23.12
Dec-27	1,783,404	-	1,783,404	63,240	28.20
Jan-28	1,875,809	-	1,875,809	63,240	29.66
Feb-28	1,620,904	-	1,620,904	59,160	27.40
Mar-28	1,467,926	-	1,467,926	63,240	23.21
Apr-28	1,004,654	-	1,004,654	61,200	16.42
May-28	1,111,081	-	1,111,081	63,240	17.57
Jun-28	1,092,636	-	1,092,636	61,200	17.85
Jul-28	1,667,684	-	1,667,684	63,240	26.37
Aug-28	1,666,747	-	1,666,747	63,240	26.36
Sep-28	1,288,773	-	1,288,773	61,200	21.06
Oct-28	1,427,169	-	1,427,169	63,240	22.57
Nov-28	1,757,589	-	1,757,589	61,200	28.72
Dec-28	1,855,863	-	1,855,863	63,240	29.35
Jan-29	1,941,686	-	1,941,686	63,240	30.70
Feb-29	1,536,702	-	1,536,702	57,120	26.90
Mar-29	1,470,480	-	1,470,480	63,240	23.25
Apr-29	1,184,776	-	1,184,776	61,200	19.36
May-29	1,241,789	-	1,241,789	63,240	19.64
Jun-29	1,213,254	-	1,213,254	61,200	19.82
Jul-29	1,910,372	-	1,910,372	63,240	30.21
Aug-29	2,009,346	-	2,009,346	63,240	31.77
Sep-29	1,553,582	-	1,553,582	61,200	25.39
Oct-29	1,671,097	-	1,671,097	63,240	26.42
Nov-29	1,771,563	-	1,771,563	61,200	28.95
Dec-29	2,112,580	-	2,112,580	63,240	33.41
Jan-30	2,198,556	-	2,198,556	63,240	34.77
Feb-30	1,822,267	-	1,822,267	57,120	31.90
Mar-30	1,713,720	-	1,713,720	63,240	27.10
Apr-30	1,177,041	-	1,177,041	61,200	19.23
May-30	1,444,315	-	1,444,315	63,240	22.84
Jun-30	1,243,397	-	1,243,397	61,200	20.32
Jul-30	2,267,523	-	2,267,523	63,240	35.86
Aug-30	2,272,123	-	2,272,123	63,240	35.93
Sep-30	1,848,336	-	1,848,336	61,200	30.20
Oct-30	1,905,515	-	1,905,515	63,240	30.13
Nov-30	1,885,234	-	1,885,234	61,200	30.80
Dec-30	2,347,739	-	2,347,739	63,240	37.12
Jan-31	2,254,573	-	2,254,573	63,240	35.65
Feb-31	1,975,381	-	1,975,381	57,120	34.58
Mar-31	1,843,185	-	1,843,185	63,240	29.15
Apr-31	1,316,269	-	1,316,269	61,200	21.51
May-31	1,397,615	-	1,397,615	63,240	22.10
Jun-31	1,339,906	-	1,339,906	61,200	21.89
Jul-31	2,329,824	-	2,329,824	63,240	36.84
Aug-31	2,428,166	-	2,428,166	63,240	38.40
Sep-31	1,979,402	-	1,979,402	61,200	32.34
Oct-31	1,822,344	-	1,822,344	63,240	28.82
Nov-31	2,011,657	-	2,011,657	61,200	32.87
Dec-31	2,510,996	-	2,510,996	63,240	39.71
Jan-32	2,458,990	-	2,458,990	63,240	38.88
Feb-32	2,122,319	-	2,122,319	59,160	35.87
Mar-32	1,907,615	-	1,907,615	63,240	30.16
Apr-32	1,426,021	-	1,426,021	61,200	23.30
May-32	1,481,479	-	1,481,479	63,240	23.43
Jun-32	1,468,412	-	1,468,412	61,200	23.99
Jul-32	2,489,093	-	2,489,093	63,240	39.36

Aug-32	2,518,959	-	2,518,959	63,240	39.83
Sep-32	2,109,375	-	2,109,375	61,200	34.47
Oct-32	2,017,523	-	2,017,523	63,240	31.90
Nov-32	2,075,838	-	2,075,838	61,200	33.92
Dec-32	2,556,961	-	2,556,961	63,240	40.43
Jan-33	2,622,327	-	2,622,327	63,240	41.47
Feb-33	2,307,124	-	2,307,124	57,120	40.39
Mar-33	1,960,469	-	1,960,469	63,240	31.00
Apr-33	1,616,185	-	1,616,185	61,200	26.41
May-33	1,686,834	-	1,686,834	63,240	26.67
Jun-33	1,659,350	-	1,659,350	61,200	27.11
Jul-33	3,766,516	-	3,766,516	63,240	59.56
Aug-33	2,894,514	-	2,894,514	63,240	45.77
Sep-33	2,460,636	-	2,460,636	61,200	40.21
Oct-33	2,355,282	-	2,355,282	63,240	37.24
Nov-33	2,463,935	-	2,463,935	61,200	40.26
Dec-33	2,994,111	-	2,994,111	63,240	47.35
Jan-34	2,784,621	-	2,784,621	63,240	44.03
Feb-34	2,365,262	-	2,365,262	57,120	41.41
Mar-34	2,187,435	-	2,187,435	63,240	34.59
Apr-34	1,752,304	-	1,752,304	61,200	28.63
May-34	1,850,620	-	1,850,620	63,240	29.26
Jun-34	1,839,119	-	1,839,119	61,200	30.05
Jul-34	3,998,960	-	3,998,960	63,240	63.23
Aug-34	3,090,988	-	3,090,988	63,240	48.88
Sep-34	2,605,629	-	2,605,629	61,200	42.58
Oct-34	2,531,931	-	2,531,931	63,240	40.04
Nov-34	2,658,565	-	2,658,565	61,200	43.44
Dec-34	3,318,673	-	3,318,673	63,240	52.48
Jan-35	3,092,073	-	3,092,073	63,240	48.89
Feb-35	2,679,372	-	2,679,372	57,120	46.91
Mar-35	2,566,280	-	2,566,280	63,240	40.58
Apr-35	2,188,916	-	2,188,916	61,200	35.77
May-35	2,364,722	-	2,364,722	63,240	37.39
Jun-35	2,355,412	-	2,355,412	61,200	38.49
Jul-35	4,592,996	-	4,592,996	63,240	72.63
Aug-35	3,906,461	-	3,906,461	63,240	61.77
Sep-35	3,221,450	-	3,221,450	61,200	52.64
Oct-35	2,945,503	-	2,945,503	63,240	46.58
Nov-35	2,903,624	-	2,903,624	61,200	47.44
Dec-35	3,518,612	-	3,518,612	63,240	55.64
Jan-36	3,148,561	-	3,148,561	63,240	49.79
Feb-36	2,766,396	-	2,766,396	59,160	46.76
Mar-36	2,482,376	-	2,482,376	63,240	39.25
Apr-36	2,310,001	-	2,310,001	61,200	37.75
May-36	2,624,686	-	2,624,686	63,240	41.50
Jun-36	2,767,792	-	2,767,792	61,200	45.23
Jul-36	4,454,970	-	4,454,970	63,240	70.45
Aug-36	4,514,899	-	4,514,899	63,240	71.39
Sep-36	3,943,914	-	3,943,914	61,200	64.44
Oct-36	3,441,740	-	3,441,740	63,240	54.42
Nov-36	3,209,176	-	3,209,176	61,200	52.44
Dec-36	3,719,853	-	3,719,853	63,240	58.82
Jan-37	3,217,829	-	3,217,829	63,240	50.88
Feb-37	2,729,765	-	2,729,765	57,120	47.79
Mar-37	2,536,989	-	2,536,989	63,240	40.12
Apr-37	2,360,821	-	2,360,821	61,200	38.58
May-37	2,682,429	-	2,682,429	63,240	42.42
Jun-37	2,828,683	-	2,828,683	61,200	46.22
Jul-37	4,552,979	-	4,552,979	63,240	72.00
Aug-37	4,614,227	-	4,614,227	63,240	72.96
Sep-37	4,030,681	-	4,030,681	61,200	65.86

Oct-37	3,517,458	-	3,517,458	63,240	55.62
Nov-37	3,279,778	-	3,279,778	61,200	53.59
Dec-37	3,801,690	-	3,801,690	63,240	60.12
Jan-38	3,288,622	-	3,288,622	63,240	52.00
Feb-38	2,789,820	-	2,789,820	57,120	48.84
Mar-38	2,592,802	-	2,592,802	63,240	41.00
Apr-38	2,412,759	-	2,412,759	61,200	39.42
May-38	2,741,442	-	2,741,442	63,240	43.35
Jun-38	2,890,914	-	2,890,914	61,200	47.24
Jul-38	4,653,145	-	4,653,145	63,240	73.58
Aug-38	4,715,740	-	4,715,740	63,240	74.57
Sep-38	4,119,356	-	4,119,356	61,200	67.31
Oct-38	3,594,842	-	3,594,842	63,240	56.84
Nov-38	3,351,933	-	3,351,933	61,200	54.77
Dec-38	3,885,327	-	3,885,327	63,240	61.44

Appendix B.5

Avoided Cost Prices \$/MWh Utah 2017.Q4 Sch 38

Year	Wind (NonRoutine) Avoided Cost at 85.0% CF (2)	Wind Avoided Cost at 85.0% CF (2)	Difference
2018	\$17.83	\$17.83	\$0.00
2019	\$17.52	\$17.52	\$0.00
2020	\$14.10	\$14.78	(\$0.68)
2021	\$23.33	\$26.26	(\$2.93)
2022	\$24.97	\$27.00	(\$2.03)
2023	\$24.32	\$26.75	(\$2.43)
2024	\$26.54	\$29.37	(\$2.83)
2025	\$29.67	\$31.57	(\$1.89)
2026	\$29.02	\$31.68	(\$2.67)
2027	\$29.50	\$33.05	(\$3.55)
2028	\$28.73	\$29.49	(\$0.76)
2029	\$30.79	\$31.43	(\$0.64)
2030	\$31.83	\$32.15	(\$0.31)
2031	\$63.21	\$57.36	\$5.86
2032	\$63.42	\$57.50	\$5.92

	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)			Discount Rate
2018-2032	\$/MWh	\$27.42 (4)	\$28.32 (4)	0.000%
			(\$0.90)	

Footnotes:

- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2018 - 2032
- (4) Levelized Monthly

Table 1
Avoided Cost Prices
Utah 2017.Q4_Wind - 80.0 MW and 31.0% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	Total Price @ 31.0% Capacity Factor \$/MWh
2018	\$0.00	\$17.83	\$17.83
2019	\$0.00	\$17.52	\$17.52
2020	\$0.00	\$14.10	\$14.10
2021	\$33.09	\$11.16	\$23.33
2022	\$33.85	\$12.52	\$24.97
2023	\$34.63	\$11.58	\$24.32
2024	\$35.43	\$13.55	\$26.54
2025	\$36.24	\$16.35	\$29.67
2026	\$37.07	\$15.38	\$29.02
2027	\$37.93	\$15.55	\$29.50
2028	\$38.81	\$14.50	\$28.73
2029	\$39.71	\$16.18	\$30.79
2030	\$40.62	\$16.89	\$31.83
2031	\$195.75	(\$8.78)	\$63.21
2032	\$200.05	(\$9.94)	\$63.42
2033	\$204.45	(\$12.39)	\$62.80
2034	\$209.13	(\$13.62)	\$63.30
2035	\$213.93	(\$15.82)	\$62.86
2036	\$218.82	(\$13.49)	\$66.75
2037	\$223.63	(\$13.71)	\$68.49

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$39.82		
\$/MWh		\$12.78	\$27.42

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$50.86		
\$/MWh		\$11.20	\$29.91

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$75.29		
\$/MWh		\$7.49	\$35.18

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 3
2017 IRP Aeolus-Bridger/Anticline Transmission

Year	Retail Revenue Requirement	Months In Service	Total Resource Costs
	\$/kW-yr	#	\$/kW-yr
	(b)	(d)	(h)

2017 IRP Aeolus-Bridger/Anticline Transmission

2020	\$47.36	2	\$7.89
2021	\$48.59	12	\$48.59
2022	\$49.71	12	\$49.71
2023	\$50.85	12	\$50.85
2024	\$52.02	12	\$52.02
2025	\$53.22	12	\$53.22
2026	\$54.44	12	\$54.44
2027	\$55.69	12	\$55.69
2028	\$56.97	12	\$56.97
2029	\$58.28	12	\$58.28
2030	\$59.62	12	\$59.62
2031	\$60.99	12	\$60.99
2032	\$62.33	12	\$62.33
2033	\$63.70	12	\$63.70
2034	\$65.17	12	\$65.17
2035	\$66.67	12	\$66.67
2036	\$68.20	12	\$68.20
2037	\$69.70	12	\$69.70
2038	\$71.23	12	\$71.23
2039	\$72.80	12	\$72.80
2040	\$74.40	12	\$74.40
2041	\$76.04	12	\$76.04
2042	\$77.71	12	\$77.71

Transfer Capacity (MW) 750
Retail Revenue Requirement \$48.59

Company Official Inflation Forecast Dated December 29, 2017

2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Wyoming Wind Resource
41% Capacity Factor

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)	(h)
2017 IRP Wyoming Wind Resource - 41% Capacity Factor									
2016	\$1,637	\$115.69	\$37.57	\$42.46	\$0.65	(\$17.76)	\$25.35	\$91.50	\$0.57
2017		\$118.01	\$38.32	\$43.32	\$0.66	(\$18.12)	\$25.86	\$93.31	\$0.58
2018		\$120.25	\$39.05	\$44.14	\$0.67	(\$18.46)	\$26.35	\$95.09	\$0.59
2019		\$122.90	\$39.91	\$45.11	\$0.68	(\$18.87)	\$26.92	\$97.16	\$0.60
2020		\$126.10	\$40.95	\$46.29	\$0.70	(\$19.36)	\$27.63	\$99.70	\$0.62
2021		\$129.13	\$41.93	\$47.40	\$0.72	(\$19.82)	\$28.30	\$102.13	\$0.63
2022		\$132.10	\$42.89	\$48.49	\$0.74	(\$20.28)	\$28.95	\$104.47	\$0.64
2023		\$135.14	\$43.88	\$49.60	\$0.76	(\$20.75)	\$29.61	\$106.87	\$0.65
2024		\$138.25	\$44.89	\$50.74	\$0.78	(\$21.23)	\$30.29	\$109.33	\$0.66
2025		\$141.43	\$45.92	\$51.91	\$0.80	(\$21.72)	\$30.99	\$111.85	\$0.68
2026		\$144.68	\$46.98	\$53.10	\$0.82	(\$22.22)	\$31.70	\$114.42	\$0.70
2027		\$148.01	\$48.06	\$54.33	\$0.84	(\$22.73)	\$32.44	\$117.07	\$0.72
2028		\$151.41	\$49.17	\$55.58	\$0.86	(\$23.25)	\$33.19	\$119.77	\$0.74
2029		\$154.89	\$50.30	\$56.85	\$0.88	(\$23.78)	\$33.95	\$122.54	\$0.76
2030		\$158.45	\$51.46	\$58.16	\$0.90	(\$24.33)	\$34.73	\$125.35	\$0.78
2031		\$162.09	\$52.64	\$59.50	\$0.92	(\$24.89)	\$35.53	\$128.22	\$0.80
2032		\$165.66	\$53.80	\$60.81	\$0.94	(\$25.44)	\$36.31	\$131.04	\$0.82
2033		\$169.30	\$54.98	\$62.14	\$0.96	(\$26.00)	\$37.10	\$133.91	\$0.84
2034		\$173.19	\$56.24	\$63.57	\$0.98	(\$26.60)	\$37.95	\$136.96	\$0.86
2035		\$177.17	\$57.53	\$65.03	\$1.00	(\$27.21)	\$38.82	\$140.10	\$0.88
2036		\$181.24	\$58.85	\$66.52	\$1.02	(\$27.84)	\$39.70	\$143.29	\$0.90
2037		\$185.23	\$60.14	\$67.99	\$1.04	(\$28.45)	\$40.58	\$146.44	\$0.92
2038		\$189.31	\$61.46	\$69.48	\$1.06	(\$29.08)	\$41.46	\$149.64	\$0.94
2039		\$193.47	\$62.81	\$71.01	\$1.08	(\$29.72)	\$42.37	\$152.91	\$0.96
2040		\$197.73	\$64.19	\$72.57	\$1.10	(\$30.37)	\$43.30	\$156.28	\$0.98
2041		\$202.08	\$65.60	\$74.17	\$1.12	(\$31.04)	\$44.25	\$159.70	\$1.00
2042		\$206.53	\$67.04	\$75.80	\$1.14	(\$31.72)	\$45.22	\$163.20	\$1.02

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 41.2%)
	(g)	= (d) + (f)
	(h)	Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming Wind Resource - 41% Capacity Factor	
Wind	Cost and Input Assumptions

2016 \$	\$1,637	Plant capacity cost	\$/kW-yr	IRP2017 Chapter 8, page 220
2016 \$	\$37.57	Fixed O&M, plus on-going capital cost	\$/kW-yr	
2016 \$	0.57	Integration Cost	\$/MWh	
2016 \$	\$0.65	Variable O&M	\$/MWh	
2016 \$	(\$17.76)	Tax Credit \$/MWh	\$/MWh	Corrected
	7.067%	Payment Factor		
	41%	Capacity Factor		IRP2017 Chapter 8, page 220

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Wyoming DJ Wind Resource
43% Capacity Factor

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)
<u>2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor</u>									
2016	\$1,737	\$122.78	\$37.57	\$42.57	\$0.65	-	\$43.22	\$162.79	\$0.57
2017		\$125.24	\$38.32	\$43.42	\$0.66	\$0.00	\$44.08	\$166.05	\$0.58
2018		\$127.62	\$39.05	\$44.25	\$0.67	\$0.00	\$44.92	\$169.19	\$0.59
2019		\$130.43	\$39.91	\$45.22	\$0.68	\$0.00	\$45.90	\$172.90	\$0.60
2020		\$133.82	\$40.95	\$46.40	\$0.70	\$0.00	\$47.10	\$177.41	\$0.62
2021		\$137.03	\$41.93	\$47.51	\$0.72	\$0.00	\$48.23	\$181.67	\$0.63
2022		\$140.18	\$42.89	\$48.60	\$0.74	\$0.00	\$49.34	\$185.86	\$0.64
2023		\$143.40	\$43.88	\$49.72	\$0.76	\$0.00	\$50.48	\$190.14	\$0.65
2024		\$146.70	\$44.89	\$50.86	\$0.78	\$0.00	\$51.64	\$194.53	\$0.66
2025		\$150.07	\$45.92	\$52.03	\$0.80	\$0.00	\$52.83	\$199.00	\$0.68
2026		\$153.52	\$46.98	\$53.23	\$0.82	\$0.00	\$54.05	\$203.59	\$0.70
2027		\$157.05	\$48.06	\$54.45	\$0.84	\$0.00	\$55.29	\$208.27	\$0.72
2028		\$160.66	\$49.17	\$55.71	\$0.86	\$0.00	\$56.57	\$213.07	\$0.74
2029		\$164.36	\$50.30	\$56.99	\$0.88	\$0.00	\$57.87	\$217.97	\$0.76
2030		\$168.14	\$51.46	\$58.30	\$0.90	\$0.00	\$59.20	\$222.99	\$0.78
2031		\$172.01	\$52.64	\$59.64	\$0.92	\$0.00	\$60.56	\$228.12	\$0.80
2032		\$175.79	\$53.80	\$60.95	\$0.94	\$0.00	\$61.89	\$233.13	\$0.82
2033		\$179.66	\$54.98	\$62.29	\$0.96	\$0.00	\$63.25	\$238.26	\$0.84
2034		\$183.79	\$56.24	\$63.72	\$0.98	\$0.00	\$64.70	\$243.72	\$0.86
2035		\$188.02	\$57.53	\$65.19	\$1.00	\$0.00	\$66.19	\$249.32	\$0.88
2036		\$192.34	\$58.85	\$66.69	\$1.02	\$0.00	\$67.71	\$255.03	\$0.90
2037		\$196.57	\$60.14	\$68.15	\$1.04	\$0.00	\$69.19	\$260.63	\$0.92
2038		\$200.89	\$61.46	\$69.65	\$1.06	\$0.00	\$70.71	\$266.34	\$0.94
2039		\$205.31	\$62.81	\$71.18	\$1.08	\$0.00	\$72.26	\$272.19	\$0.96
2040		\$209.83	\$64.19	\$72.75	\$1.10	\$0.00	\$73.85	\$278.16	\$0.98
2041		\$214.45	\$65.60	\$74.35	\$1.12	\$0.00	\$75.47	\$284.27	\$1.00
2042		\$219.17	\$67.04	\$75.98	\$1.14	\$0.00	\$77.12	\$290.50	\$1.02

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 43.0%)
(g) = (d) + (f)
(i) Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor	
Wind	Cost and Input Assumptions

2016 \$	\$1.737	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 \$	\$0.65	Variable O&M	\$/MWH
2016 \$		Tax Credit \$/MWh	\$/MWH
	7.067%	Payment Factor	
	43%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4_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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Table 5
Utah 2017.Q4_Wind - 80.0 MW and 31.0% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 23,456,594 \$ 39,166,608 \$ 62,623,202 \$ 2,093,854 \$29.91

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 26,753,961 \$ 30,667,115 \$ 57,421,076 \$ 2,093,750 \$27.42

20 Year Starting 2019 \$ 18,368,048 \$ 67,872,022 \$ 86,240,070 \$ 2,451,093 \$35.18

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	31.0% CF	Dollars	MWH	31.0% CF
Jan-18	320,055	-	320,055	16,514	19.38
Feb-18	247,382	-	247,382	13,817	17.90
Mar-18	293,905	-	293,905	16,879	17.41
Apr-18	233,800	-	233,800	14,505	16.12
May-18	220,769	-	220,769	14,311	15.43
Jun-18	260,586	-	260,586	17,961	14.51
Jul-18	426,535	-	426,535	20,667	20.64
Aug-18	415,143	-	415,143	21,506	19.30
Sep-18	367,270	-	367,270	21,102	17.40
Oct-18	340,588	-	340,588	20,214	16.85
Nov-18	353,472	-	353,472	20,178	17.52
Dec-18	399,407	-	399,407	19,857	20.11
Jan-19	342,398	-	342,398	16,514	20.73
Feb-19	257,233	-	257,233	13,817	18.62
Mar-19	299,981	-	299,981	16,879	17.77
Apr-19	227,186	-	227,186	14,505	15.66
May-19	219,457	-	219,457	14,311	15.33
Jun-19	269,391	-	269,391	17,961	15.00
Jul-19	376,319	-	376,319	20,667	18.21
Aug-19	410,124	-	410,124	21,506	19.07
Sep-19	356,157	-	356,157	21,102	16.88
Oct-19	343,719	-	343,719	20,214	17.00
Nov-19	354,418	-	354,418	20,178	17.56
Dec-19	353,612	-	353,612	19,857	17.81
Jan-20	278,029	-	278,029	16,514	16.84
Feb-20	260,802	-	260,802	14,458	18.04
Mar-20	242,513	-	242,513	16,879	14.37
Apr-20	172,344	-	172,344	14,505	11.88
May-20	173,419	-	173,419	14,311	12.12
Jun-20	225,929	-	225,929	17,961	12.58
Jul-20	276,098	-	276,098	20,667	13.36
Aug-20	274,694	-	274,694	21,506	12.77
Sep-20	227,146	-	227,146	21,102	10.76
Oct-20	272,272	-	272,272	20,214	13.47
Nov-20	302,753	-	302,753	20,178	15.00
Dec-20	369,763	-	369,763	19,857	18.62
Jan-21	417,410	220,617	638,027	16,514	38.64
Feb-21	158,716	220,617	379,333	13,817	27.45
Mar-21	284,192	220,617	504,809	16,879	29.91
Apr-21	146,348	220,617	366,965	14,505	25.30
May-21	82,113	220,617	302,730	14,311	21.15
Jun-21	79,807	220,617	300,424	17,961	16.73
Jul-21	54,376	220,617	274,993	20,667	13.31
Aug-21	84,105	220,617	304,722	21,506	14.17
Sep-21	236,045	220,617	456,662	21,102	21.64
Oct-21	251,676	220,617	472,293	20,214	23.36
Nov-21	325,117	220,617	545,734	20,178	27.05
Dec-21	307,411	220,617	528,028	19,857	26.59
Jan-22	375,057	225,672	600,729	16,514	36.38
Feb-22	246,087	225,672	471,759	13,817	34.14
Mar-22	309,625	225,672	535,297	16,879	31.71

Apr-22	168,403	225,672	394,075	14,505	27.17
May-22	84,083	225,672	309,755	14,311	21.64
Jun-22	84,126	225,672	309,798	17,961	17.25
Jul-22	68,701	225,672	294,372	20,667	14.24
Aug-22	125,281	225,672	350,952	21,506	16.32
Sep-22	300,710	225,672	526,382	21,102	24.94
Oct-22	288,172	225,672	513,844	20,214	25.42
Nov-22	336,813	225,672	562,485	20,178	27.88
Dec-22	336,732	225,672	562,403	19,857	28.32
Jan-23	332,502	230,856	563,359	16,514	34.11
Feb-23	233,303	230,856	464,159	13,817	33.59
Mar-23	333,088	230,856	563,944	16,879	33.41
Apr-23	130,566	230,856	361,422	14,505	24.92
May-23	86,032	230,856	316,889	14,311	22.14
Jun-23	79,618	230,856	310,474	17,961	17.29
Jul-23	73,730	230,856	304,587	20,667	14.74
Aug-23	108,972	230,856	339,828	21,506	15.80
Sep-23	182,784	230,856	413,641	21,102	19.60
Oct-23	313,092	230,856	543,948	20,214	26.91
Nov-23	312,599	230,856	543,455	20,178	26.93
Dec-23	333,152	230,856	564,008	19,857	28.40
Jan-24	356,836	236,170	593,007	16,514	35.91
Feb-24	294,174	236,170	530,344	14,458	36.68
Mar-24	377,985	236,170	614,155	16,879	36.38
Apr-24	194,395	236,170	430,565	14,505	29.68
May-24	204,504	236,170	440,674	14,311	30.79
Jun-24	75,404	236,170	311,574	17,961	17.35
Jul-24	79,380	236,170	315,550	20,667	15.27
Aug-24	130,952	236,170	367,122	21,506	17.07
Sep-24	191,163	236,170	427,333	21,102	20.25
Oct-24	290,949	236,170	527,119	20,214	26.08
Nov-24	338,772	236,170	574,943	20,178	28.49
Dec-24	421,076	236,170	657,247	19,857	33.10
Jan-25	414,233	241,614	655,846	16,514	39.72
Feb-25	311,776	241,614	553,390	13,817	40.05
Mar-25	398,722	241,614	640,336	16,879	37.94
Apr-25	283,335	241,614	524,949	14,505	36.19
May-25	154,353	241,614	395,966	14,311	27.67
Jun-25	110,083	241,614	351,696	17,961	19.58
Jul-25	201,774	241,614	443,388	20,667	21.45
Aug-25	107,494	241,614	349,107	21,506	16.23
Sep-25	300,046	241,614	541,660	21,102	25.67
Oct-25	367,732	241,614	609,346	20,214	30.14
Nov-25	469,614	241,614	711,227	20,178	35.25
Dec-25	436,092	241,614	677,706	19,857	34.13
Jan-26	504,904	247,165	752,070	16,514	45.54
Feb-26	293,425	247,165	540,590	13,817	39.12
Mar-26	383,109	247,165	630,275	16,879	37.34
Apr-26	245,958	247,165	493,123	14,505	34.00
May-26	142,939	247,165	390,104	14,311	27.26
Jun-26	102,928	247,165	350,093	17,961	19.49
Jul-26	127,578	247,165	374,743	20,667	18.13
Aug-26	121,868	247,165	369,033	21,506	17.16
Sep-26	225,232	247,165	472,397	21,102	22.39
Oct-26	351,622	247,165	598,787	20,214	29.62
Nov-26	417,584	247,165	664,750	20,178	32.94
Dec-26	428,260	247,165	675,425	19,857	34.01
Jan-27	515,217	252,890	768,107	16,514	46.51
Feb-27	204,766	252,890	457,656	13,817	33.12
Mar-27	399,092	252,890	651,982	16,879	38.63
Apr-27	255,288	252,890	508,178	14,505	35.03
May-27	146,682	252,890	399,571	14,311	27.92

Jun-27	101,801	252,890	354,690	17,961	19.75
Jul-27	103,289	252,890	356,178	20,667	17.23
Aug-27	124,557	252,890	377,447	21,506	17.55
Sep-27	230,525	252,890	483,415	21,102	22.91
Oct-27	394,270	252,890	647,160	20,214	32.01
Nov-27	445,332	252,890	698,222	20,178	34.60
Dec-27	460,876	252,890	713,766	19,857	35.95
Jan-28	286,852	258,722	545,575	16,514	33.04
Feb-28	181,642	258,722	440,364	14,458	30.46
Mar-28	346,464	258,722	605,186	16,879	35.85
Apr-28	226,066	258,722	484,789	14,505	33.42
May-28	164,763	258,722	423,485	14,311	29.59
Jun-28	103,236	258,722	361,958	17,961	20.15
Jul-28	293,776	258,722	552,498	20,667	26.73
Aug-28	271,053	258,722	529,776	21,506	24.63
Sep-28	269,235	258,722	527,957	21,102	25.02
Oct-28	381,579	258,722	640,301	20,214	31.68
Nov-28	325,363	258,722	584,085	20,178	28.95
Dec-28	312,815	258,722	571,537	19,857	28.78
Jan-29	289,698	264,706	554,404	16,514	33.57
Feb-29	225,921	264,706	490,627	13,817	35.51
Mar-29	348,688	264,706	613,394	16,879	36.34
Apr-29	253,677	264,706	518,383	14,505	35.74
May-29	179,174	264,706	443,880	14,311	31.02
Jun-29	138,020	264,706	402,726	17,961	22.42
Jul-29	287,811	264,706	552,517	20,667	26.73
Aug-29	308,282	264,706	572,988	21,506	26.64
Sep-29	340,907	264,706	605,613	21,102	28.70
Oct-29	396,699	264,706	661,405	20,214	32.72
Nov-29	412,909	264,706	677,614	20,178	33.58
Dec-29	338,022	264,706	602,728	19,857	30.35
Jan-30	315,661	270,776	586,437	16,514	35.51
Feb-30	227,479	270,776	498,255	13,817	36.06
Mar-30	396,032	270,776	666,808	16,879	39.50
Apr-30	263,727	270,776	534,503	14,505	36.85
May-30	198,161	270,776	468,937	14,311	32.77
Jun-30	106,742	270,776	377,518	17,961	21.02
Jul-30	297,064	270,776	567,840	20,667	27.48
Aug-30	370,267	270,776	641,043	21,506	29.81
Sep-30	382,723	270,776	653,499	21,102	30.97
Oct-30	435,871	270,776	706,647	20,214	34.96
Nov-30	333,150	270,776	603,926	20,178	29.93
Dec-30	347,865	270,776	618,640	19,857	31.15
Jan-31	(516,868)	1,305,000	788,132	16,514	47.73
Feb-31	(408,431)	1,305,000	896,569	13,817	64.89
Mar-31	(148,489)	1,305,000	1,156,511	16,879	68.52
Apr-31	14,496	1,305,000	1,319,496	14,505	90.97
May-31	(20,563)	1,305,000	1,284,437	14,311	89.75
Jun-31	(90,206)	1,305,000	1,214,794	17,961	67.64
Jul-31	35,328	1,305,000	1,340,328	20,667	64.85
Aug-31	7,854	1,305,000	1,312,854	21,506	61.05
Sep-31	82,755	1,305,000	1,387,755	21,102	65.76
Oct-31	27,956	1,305,000	1,332,956	20,214	65.94
Nov-31	(440,961)	1,305,000	864,039	20,178	42.82
Dec-31	(453,239)	1,305,000	851,761	19,857	42.89
Jan-32	(536,341)	1,333,669	797,329	16,514	48.28
Feb-32	(473,251)	1,333,669	860,419	14,458	59.51
Mar-32	(155,453)	1,333,669	1,178,217	16,879	69.80
Apr-32	(2,369)	1,333,669	1,331,301	14,505	91.78
May-32	(25,978)	1,333,669	1,307,692	14,311	91.38
Jun-32	(104,795)	1,333,669	1,228,874	17,961	68.42
Jul-32	2,949	1,333,669	1,336,618	20,667	64.67

Aug-32	(15,376)	1,333,669	1,318,293	21,506	61.30
Sep-32	100,851	1,333,669	1,434,521	21,102	67.98
Oct-32	25,125	1,333,669	1,358,794	20,214	67.22
Nov-32	(422,306)	1,333,669	911,364	20,178	45.17
Dec-32	(561,898)	1,333,669	771,772	19,857	38.87
Jan-33	(720,172)	1,362,987	642,816	16,514	38.93
Feb-33	(514,998)	1,362,987	847,990	13,817	61.37
Mar-33	(147,983)	1,362,987	1,215,004	16,879	71.98
Apr-33	533	1,362,987	1,363,521	14,505	94.00
May-33	(29,023)	1,362,987	1,333,964	14,311	93.21
Jun-33	(82,253)	1,362,987	1,280,734	17,961	71.31
Jul-33	21,665	1,362,987	1,384,653	20,667	67.00
Aug-33	(85,806)	1,362,987	1,277,182	21,506	59.39
Sep-33	89,199	1,362,987	1,452,186	21,102	68.82
Oct-33	(1,836)	1,362,987	1,361,151	20,214	67.34
Nov-33	(536,623)	1,362,987	826,365	20,178	40.95
Dec-33	(688,070)	1,362,987	674,917	19,857	33.99
Jan-34	(769,148)	1,394,181	625,034	16,514	37.85
Feb-34	(559,236)	1,394,181	834,945	13,817	60.43
Mar-34	(163,869)	1,394,181	1,230,312	16,879	72.89
Apr-34	(25,506)	1,394,181	1,368,675	14,505	94.36
May-34	(55,420)	1,394,181	1,338,761	14,311	93.55
Jun-34	(94,168)	1,394,181	1,300,013	17,961	72.38
Jul-34	3,561	1,394,181	1,397,742	20,667	67.63
Aug-34	(74,209)	1,394,181	1,319,973	21,506	61.38
Sep-34	98,141	1,394,181	1,492,322	21,102	70.72
Oct-34	10,998	1,394,181	1,405,180	20,214	69.51
Nov-34	(594,085)	1,394,181	800,096	20,178	39.65
Dec-34	(739,133)	1,394,181	655,048	19,857	32.99
Jan-35	(840,785)	1,426,201	585,416	16,514	35.45
Feb-35	(622,249)	1,426,201	803,952	13,817	58.18
Mar-35	(257,978)	1,426,201	1,168,223	16,879	69.21
Apr-35	(66,656)	1,426,201	1,359,545	14,505	93.73
May-35	(134,949)	1,426,201	1,291,252	14,311	90.23
Jun-35	(126,134)	1,426,201	1,300,067	17,961	72.38
Jul-35	(58,467)	1,426,201	1,367,734	20,667	66.18
Aug-35	8,345	1,426,201	1,434,546	21,506	66.71
Sep-35	76,449	1,426,201	1,502,650	21,102	71.21
Oct-35	(62,275)	1,426,201	1,363,926	20,214	67.47
Nov-35	(608,740)	1,426,201	817,460	20,178	40.51
Dec-35	(748,171)	1,426,201	678,030	19,857	34.15
Jan-36	(969,326)	1,458,824	489,498	16,514	29.64
Feb-36	(720,652)	1,458,824	738,172	14,458	51.06
Mar-36	(357,433)	1,458,824	1,101,391	16,879	65.25
Apr-36	(227,752)	1,458,824	1,231,072	14,505	84.87
May-36	(94,888)	1,458,824	1,363,936	14,311	95.31
Jun-36	64,459	1,458,824	1,523,283	17,961	84.81
Jul-36	329,733	1,458,824	1,788,557	20,667	86.54
Aug-36	440,874	1,458,824	1,899,697	21,506	88.33
Sep-36	259,375	1,458,824	1,718,199	21,102	81.42
Oct-36	(75,627)	1,458,824	1,383,197	20,214	68.43
Nov-36	(737,376)	1,458,824	721,448	20,178	35.75
Dec-36	(855,164)	1,458,824	603,660	19,857	30.40
Jan-37	(990,651)	1,490,865	500,214	16,514	30.29
Feb-37	(711,110)	1,490,865	779,755	13,960	55.86
Mar-37	(365,296)	1,490,865	1,125,569	16,879	66.68
Apr-37	(232,763)	1,490,865	1,258,102	14,505	86.74
May-37	(96,975)	1,490,865	1,393,890	14,311	97.40
Jun-37	65,877	1,490,865	1,556,742	17,961	86.68
Jul-37	336,988	1,490,865	1,827,852	20,667	88.44
Aug-37	450,573	1,490,865	1,941,438	21,506	90.28
Sep-37	265,081	1,490,865	1,755,946	21,102	83.21

Oct-37	(77,291)	1,490,865	1,413,574	20,214	69.93
Nov-37	(753,598)	1,490,865	737,266	20,178	36.54
Dec-37	(873,978)	1,490,865	616,887	19,857	31.07
Jan-38	(1,012,445)	1,523,510	511,065	16,514	30.95
Feb-38	(726,754)	1,523,510	796,756	13,960	57.08
Mar-38	(373,333)	1,523,510	1,150,177	16,879	68.14
Apr-38	(237,884)	1,523,510	1,285,626	14,505	88.63
May-38	(99,109)	1,523,510	1,424,401	14,311	99.53
Jun-38	67,326	1,523,510	1,590,836	17,961	88.57
Jul-38	344,401	1,523,510	1,867,911	20,667	90.38
Aug-38	460,485	1,523,510	1,983,995	21,506	92.25
Sep-38	270,913	1,523,510	1,794,423	21,102	85.03
Oct-38	(78,991)	1,523,510	1,444,518	20,214	71.46
Nov-38	(770,178)	1,523,510	753,332	20,178	37.33
Dec-38	(893,205)	1,523,510	630,304	19,857	31.74

Appendix B.6

Avoided Cost Prices \$/MWh Utah 2017.Q4 Sch 38

Year	Solar (NonRoutine) Avoided Cost at 85.0% CF (2)	Solar Avoided Cost at 85.0% CF (2)	Difference
2018	\$19.33	\$19.33	\$0.00
2019	\$17.84	\$17.84	\$0.00
2020	\$9.48	\$11.71	(\$2.23)
2021	\$2.60	\$15.12	(\$12.51)
2022	\$4.40	\$16.88	(\$12.48)
2023	\$3.37	\$17.89	(\$14.52)
2024	\$3.97	\$19.63	(\$15.66)
2025	\$6.50	\$20.97	(\$14.47)
2026	\$5.43	\$21.81	(\$16.38)
2027	\$5.35	\$23.51	(\$18.16)
2028	\$8.65	\$23.68	(\$15.03)
2029	\$9.35	\$24.87	(\$15.52)
2030	\$9.79	\$24.97	(\$15.17)
2031	\$11.19	\$26.43	(\$15.24)
2032	\$11.71	\$27.16	(\$15.45)

	15-Year Levelized Prices (Nominal) @ 6.570% Discount Rate (1) (3)			Discount Rate
2018-2032	\$/MWh	\$8.98 (4)	\$19.72 (4)	0.000%
			(\$10.74)	

Footnotes:

- (2) Total Avoided Costs with Capacity, based on stated CF
- (3) 15-Years: 2018 - 2032
- (4) Levelized Monthly

Table 1
Avoided Cost Prices
Utah 2017.Q4_Solar - 80.0 MW and 31.1% CF

Year	Capacity Price \$/kW-yr	Energy Only Price \$/MWh ⁽²⁾	Total Price @ 31.1% Capacity Factor \$/MWh
2018	\$0.00	\$19.33	\$19.33
2019	\$0.00	\$17.84	\$17.84
2020	\$0.00	\$9.48	\$9.48
2021	\$0.00	\$2.60	\$2.60
2022	\$0.00	\$4.40	\$4.40
2023	\$0.00	\$3.37	\$3.37
2024	\$0.00	\$3.97	\$3.97
2025	\$0.00	\$6.50	\$6.50
2026	\$0.00	\$5.43	\$5.43
2027	\$0.00	\$5.35	\$5.35
2028	\$0.00	\$8.65	\$8.65
2029	\$0.00	\$9.35	\$9.35
2030	\$0.00	\$9.79	\$9.79
2031	\$0.00	\$11.19	\$11.19
2032	\$0.00	\$11.71	\$11.71
2033	\$0.00	\$15.66	\$15.66
2034	\$0.00	\$19.01	\$19.01
2035	\$216.12	(\$3.04)	\$83.45
2036	\$221.08	\$0.33	\$89.08
2037	\$225.96	\$0.34	\$91.22

15 Year Starting 2018

15 year Levelized Prices (Nominal) @ 6.57% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$8.98	\$8.98

15 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$0.00		
\$/MWh		\$8.10	\$8.10

20 Year Starting 2019

15 year Levelized Prices (Nominal) @ 0.00% Discount Rate (1) (3)

\$/kW	\$26.20		
\$/MWh		\$7.51	\$17.14

Footnotes:

(1) Discount Rate - 2017 IRP

(2) 'Energy Only' is the GRID calculated costs and includes some capacity costs.

Table 4
Burnertip Natural Gas Price Forecast
Utah 2017.Q4_Solar - 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	\$2.30	\$2.35
2017	\$2.71	\$2.72	\$2.76
2018	\$2.43	\$2.11	\$2.40
2019	\$2.40	\$2.11	\$2.38
2020	\$2.40	\$2.15	\$2.39
2021	\$2.43	\$2.27	\$2.40
2022	\$2.48	\$2.34	\$2.46
2023	\$2.52	\$2.43	\$2.53
2024	\$3.14	\$3.09	\$3.16
2025	\$3.82	\$3.79	\$3.84
2026	\$3.88	\$3.85	\$3.90
2027	\$4.02	\$3.99	\$4.04
2028	\$4.21	\$4.17	\$4.24
2029	\$4.51	\$4.47	\$4.54
2030	\$4.82	\$4.77	\$4.85
2031	\$5.08	\$5.03	\$5.11
2032	\$5.25	\$5.20	\$5.28
2033	\$5.50	\$5.44	\$5.53
2034	\$5.78	\$5.73	\$5.81
2035	\$6.00	\$5.93	\$6.03
2036	\$6.37	\$6.30	\$6.40
2037	\$6.55	\$6.47	\$6.58
2038	\$6.83	\$6.75	\$6.87
2039	\$6.99	\$6.90	\$7.03
2040	\$7.17	\$7.08	\$7.21
2041	\$7.33	\$7.24	\$7.37
2042	\$5.01	\$4.95	\$5.03

Table 5
Utah 2017.Q4_Solar - 80.0 MW and 31.1% CF
January 2018 through December 2037
Nominal Avoided Costs Calculated Monthly

15 Year Starting 2019 \$ 16,442,548 \$ - \$ 16,442,548 \$ 2,029,992 \$8.10

Nominal NPV at 6.57% Discount Rate

15 Year Starting 2018 \$ 18,314,298 \$ - \$ 18,314,298 \$ 2,040,121 \$8.98

20 Year Starting 2019 \$ 17,716,833 \$ 22,713,940 \$ 40,430,773 \$ 2,358,442 \$17.14

Month	Energy	Capacity \$	Total	Total	AC Price
	Avoided \$	30.7% CF	Dollars	MWH	30.7% CF
Jan-18	203,477	-	203,477	10,534	19.32
Feb-18	209,749	-	209,749	11,789	17.79
Mar-18	317,068	-	317,068	18,361	17.27
Apr-18	333,073	-	333,073	21,207	15.71
May-18	401,235	-	401,235	24,549	16.34
Jun-18	411,465	-	411,465	26,080	15.78
Jul-18	714,965	-	714,965	23,606	30.29
Aug-18	563,202	-	563,202	23,644	23.82
Sep-18	375,002	-	375,002	20,842	17.99
Oct-18	290,657	-	290,657	16,897	17.20
Nov-18	196,135	-	196,135	11,381	17.23
Dec-18	191,233	-	191,233	8,780	21.78
Jan-19	221,484	-	221,484	10,481	21.13
Feb-19	216,069	-	216,069	11,730	18.42
Mar-19	322,342	-	322,342	18,269	17.64
Apr-19	321,991	-	321,991	21,101	15.26
May-19	391,205	-	391,205	24,426	16.02
Jun-19	397,548	-	397,548	25,950	15.32
Jul-19	537,538	-	537,538	23,488	22.89
Aug-19	499,259	-	499,259	23,526	21.22
Sep-19	344,820	-	344,820	20,738	16.63
Oct-19	278,016	-	278,016	16,813	16.54
Nov-19	191,565	-	191,565	11,324	16.92
Dec-19	141,348	-	141,348	8,736	16.18
Jan-20	131,780	-	131,780	10,429	12.64
Feb-20	165,505	-	165,505	12,089	13.69
Mar-20	174,148	-	174,148	18,178	9.58
Apr-20	163,716	-	163,716	20,996	7.80
May-20	223,141	-	223,141	24,304	9.18
Jun-20	269,578	-	269,578	25,820	10.44
Jul-20	238,350	-	238,350	23,371	10.20
Aug-20	223,936	-	223,936	23,409	9.57
Sep-20	137,084	-	137,084	20,634	6.64
Oct-20	144,180	-	144,180	16,729	8.62
Nov-20	105,421	-	105,421	11,268	9.36
Dec-20	70,279	-	70,279	8,693	8.09
Jan-21	191,510	-	191,510	10,377	18.46
Feb-21	60,701	-	60,701	11,614	5.23
Mar-21	194,709	-	194,709	18,087	10.77
Apr-21	29,871	-	29,871	20,891	1.43
May-21	(18,164)	-	(18,164)	24,183	(0.75)
Jun-21	(77,556)	-	(77,556)	25,691	(3.02)
Jul-21	(66,052)	-	(66,052)	23,254	(2.84)
Aug-21	(89,437)	-	(89,437)	23,292	(3.84)
Sep-21	28,522	-	28,522	20,531	1.39
Oct-21	68,443	-	68,443	16,645	4.11
Nov-21	114,769	-	114,769	11,211	10.24
Dec-21	120,807	-	120,807	8,649	13.97
Jan-22	172,508	-	172,508	10,325	16.71
Feb-22	169,717	-	169,717	11,555	14.69
Mar-22	198,901	-	198,901	17,997	11.05

Apr-22	39,352	-	39,352	20,786	1.89
May-22	(12,407)	-	(12,407)	24,062	(0.52)
Jun-22	(37,755)	-	(37,755)	25,563	(1.48)
Jul-22	(37,192)	-	(37,192)	23,137	(1.61)
Aug-22	(30,772)	-	(30,772)	23,175	(1.33)
Sep-22	82,964	-	82,964	20,429	4.06
Oct-22	103,529	-	103,529	16,562	6.25
Nov-22	137,315	-	137,315	11,155	12.31
Dec-22	152,405	-	152,405	8,606	17.71
Jan-23	156,390	-	156,390	10,273	15.22
Feb-23	147,073	-	147,073	11,498	12.79
Mar-23	150,436	-	150,436	17,907	8.40
Apr-23	1,723	-	1,723	20,682	0.08
May-23	(8,572)	-	(8,572)	23,941	(0.36)
Jun-23	(49,067)	-	(49,067)	25,435	(1.93)
Jul-23	28,305	-	28,305	23,022	1.23
Aug-23	(57,588)	-	(57,588)	23,059	(2.50)
Sep-23	(35,041)	-	(35,041)	20,327	(1.72)
Oct-23	105,854	-	105,854	16,479	6.42
Nov-23	121,489	-	121,489	11,099	10.95
Dec-23	155,418	-	155,418	8,563	18.15
Jan-24	143,111	-	143,111	10,222	14.00
Feb-24	176,378	-	176,378	11,849	14.89
Mar-24	188,402	-	188,402	17,817	10.57
Apr-24	50,746	-	50,746	20,579	2.47
May-24	9,343	-	9,343	23,822	0.39
Jun-24	(59,387)	-	(59,387)	25,308	(2.35)
Jul-24	(36,108)	-	(36,108)	22,907	(1.58)
Aug-24	(39,919)	-	(39,919)	22,944	(1.74)
Sep-24	(32,852)	-	(32,852)	20,225	(1.62)
Oct-24	116,698	-	116,698	16,397	7.12
Nov-24	126,872	-	126,872	11,044	11.49
Dec-24	196,847	-	196,847	8,520	23.10
Jan-25	187,592	-	187,592	10,171	18.44
Feb-25	218,368	-	218,368	11,383	19.18
Mar-25	204,803	-	204,803	17,728	11.55
Apr-25	117,169	-	117,169	20,476	5.72
May-25	29,520	-	29,520	23,703	1.25
Jun-25	(46,619)	-	(46,619)	25,181	(1.85)
Jul-25	78,913	-	78,913	22,792	3.46
Aug-25	(61,340)	-	(61,340)	22,829	(2.69)
Sep-25	53,958	-	53,958	20,124	2.68
Oct-25	167,225	-	167,225	16,315	10.25
Nov-25	224,302	-	224,302	10,989	20.41
Dec-25	192,824	-	192,824	8,477	22.75
Jan-26	267,208	-	267,208	10,120	26.40
Feb-26	194,092	-	194,092	11,326	17.14
Mar-26	197,451	-	197,451	17,639	11.19
Apr-26	89,234	-	89,234	20,374	4.38
May-26	19,244	-	19,244	23,584	0.82
Jun-26	(59,522)	-	(59,522)	25,055	(2.38)
Jul-26	78	-	78	22,678	0.00
Aug-26	(59,814)	-	(59,814)	22,715	(2.63)
Sep-26	(23,577)	-	(23,577)	20,023	(1.18)
Oct-26	149,455	-	149,455	16,233	9.21
Nov-26	173,434	-	173,434	10,934	15.86
Dec-26	187,955	-	187,955	8,435	22.28
Jan-27	266,755	-	266,755	10,069	26.49
Feb-27	202,806	-	202,806	11,269	18.00
Mar-27	215,496	-	215,496	17,551	12.28
Apr-27	93,665	-	93,665	20,272	4.62
May-27	8,143	-	8,143	23,466	0.35

Jun-27	(91,116)	-	(91,116)	24,930	(3.65)
Jul-27	(33,953)	-	(33,953)	22,565	(1.50)
Aug-27	(85,034)	-	(85,034)	22,602	(3.76)
Sep-27	(24,602)	-	(24,602)	19,923	(1.23)
Oct-27	164,433	-	164,433	16,152	10.18
Nov-27	192,391	-	192,391	10,879	17.68
Dec-27	203,290	-	203,290	8,393	24.22
Jan-28	298,583	-	298,583	10,019	29.80
Feb-28	242,632	-	242,632	11,614	20.89
Mar-28	280,506	-	280,506	17,463	16.06
Apr-28	101,813	-	101,813	20,170	5.05
May-28	63,332	-	63,332	23,349	2.71
Jun-28	(64,534)	-	(64,534)	24,805	(2.60)
Jul-28	177,188	-	177,188	22,452	7.89
Aug-28	55,768	-	55,768	22,489	2.48
Sep-28	21,543	-	21,543	19,823	1.09
Oct-28	209,889	-	209,889	16,071	13.06
Nov-28	245,712	-	245,712	10,825	22.70
Dec-28	161,960	-	161,960	8,351	19.39
Jan-29	311,189	-	311,189	9,969	31.22
Feb-29	229,757	-	229,757	11,157	20.59
Mar-29	261,889	-	261,889	17,376	15.07
Apr-29	123,854	-	123,854	20,069	6.17
May-29	81,711	-	81,711	23,232	3.52
Jun-29	(42,039)	-	(42,039)	24,681	(1.70)
Jul-29	153,955	-	153,955	22,340	6.89
Aug-29	26,628	-	26,628	22,376	1.19
Sep-29	31,594	-	31,594	19,724	1.60
Oct-29	201,404	-	201,404	15,991	12.59
Nov-29	312,885	-	312,885	10,771	29.05
Dec-29	233,123	-	233,123	8,309	28.06
Jan-30	346,005	-	346,005	9,919	34.88
Feb-30	234,566	-	234,566	11,101	21.13
Mar-30	314,764	-	314,764	17,289	18.21
Apr-30	123,326	-	123,326	19,969	6.18
May-30	111,241	-	111,241	23,116	4.81
Jun-30	(91,699)	-	(91,699)	24,558	(3.73)
Jul-30	212,219	-	212,219	22,228	9.55
Aug-30	69,453	-	69,453	22,264	3.12
Sep-30	25,465	-	25,465	19,626	1.30
Oct-30	216,125	-	216,125	15,911	13.58
Nov-30	215,619	-	215,619	10,717	20.12
Dec-30	230,166	-	230,166	8,268	27.84
Jan-31	340,433	-	340,433	9,869	34.49
Feb-31	287,184	-	287,184	11,046	26.00
Mar-31	347,742	-	347,742	17,203	20.21
Apr-31	141,320	-	141,320	19,869	7.11
May-31	105,852	-	105,852	23,000	4.60
Jun-31	(62,341)	-	(62,341)	24,435	(2.55)
Jul-31	224,494	-	224,494	22,117	10.15
Aug-31	55,622	-	55,622	22,153	2.51
Sep-31	53,527	-	53,527	19,528	2.74
Oct-31	243,439	-	243,439	15,831	15.38
Nov-31	207,070	-	207,070	10,663	19.42
Dec-31	338,177	-	338,177	8,226	41.11
Jan-32	392,890	-	392,890	9,820	40.01
Feb-32	304,748	-	304,748	11,383	26.77
Mar-32	373,713	-	373,713	17,117	21.83
Apr-32	154,139	-	154,139	19,770	7.80
May-32	113,948	-	113,948	22,885	4.98
Jun-32	(65,326)	-	(65,326)	24,313	(2.69)
Jul-32	251,010	-	251,010	22,006	11.41

Aug-32	55,956	-	55,956	22,042	2.54
Sep-32	65,345	-	65,345	19,430	3.36
Oct-32	256,170	-	256,170	15,752	16.26
Nov-32	228,297	-	228,297	10,610	21.52
Dec-32	249,758	-	249,758	8,185	30.51
Jan-33	371,403	-	371,403	9,771	38.01
Feb-33	307,915	-	307,915	10,936	28.16
Mar-33	388,804	-	388,804	17,031	22.83
Apr-33	208,505	-	208,505	19,671	10.60
May-33	134,859	-	134,859	22,771	5.92
Jun-33	(36,061)	-	(36,061)	24,191	(1.49)
Jul-33	730,179	-	730,179	21,896	33.35
Aug-33	99,799	-	99,799	21,932	4.55
Sep-33	118,459	-	118,459	19,333	6.13
Oct-33	252,539	-	252,539	15,674	16.11
Nov-33	286,786	-	286,786	10,557	27.17
Dec-33	299,463	-	299,463	8,144	36.77
Jan-34	396,954	-	396,954	9,722	40.83
Feb-34	308,965	-	308,965	10,881	28.40
Mar-34	470,175	-	470,175	16,946	27.75
Apr-34	248,929	-	248,929	19,573	12.72
May-34	177,410	-	177,410	22,657	7.83
Jun-34	20,305	-	20,305	24,070	0.84
Jul-34	791,083	-	791,083	21,787	36.31
Aug-34	150,040	-	150,040	21,822	6.88
Sep-34	169,465	-	169,465	19,236	8.81
Oct-34	372,311	-	372,311	15,595	23.87
Nov-34	316,950	-	316,950	10,504	30.17
Dec-34	397,321	-	397,321	8,103	49.03
Jan-35	118,640	1,440,832	1,559,471	9,674	161.21
Feb-35	59,124	1,440,832	1,499,956	10,826	138.55
Mar-35	145,829	1,440,832	1,586,661	16,861	94.10
Apr-35	141,121	1,440,832	1,581,953	19,475	81.23
May-35	(88,623)	1,440,832	1,352,209	22,544	59.98
Jun-35	(212,902)	1,440,832	1,227,930	23,950	51.27
Jul-35	(394,796)	1,440,832	1,046,036	21,678	48.25
Aug-35	(414,872)	1,440,832	1,025,960	21,713	47.25
Sep-35	(164,801)	1,440,832	1,276,031	19,140	66.67
Oct-35	66,422	1,440,832	1,507,253	15,517	97.13
Nov-35	56,293	1,440,832	1,497,124	10,451	143.25
Dec-35	80,036	1,440,832	1,520,868	8,063	188.62
Jan-36	3,094	1,473,845	1,476,939	9,625	153.45
Feb-36	3,002	1,473,845	1,476,847	11,157	132.37
Mar-36	3,731	1,473,845	1,477,576	16,777	88.07
Apr-36	3,654	1,473,845	1,477,499	19,377	76.25
May-36	5,717	1,473,845	1,479,562	22,431	65.96
Jun-36	6,285	1,473,845	1,480,130	23,830	62.11
Jul-36	9,527	1,473,845	1,483,372	21,569	68.77
Aug-36	10,828	1,473,845	1,484,674	21,605	68.72
Sep-36	8,098	1,473,845	1,481,944	19,044	77.82
Oct-36	5,295	1,473,845	1,479,140	15,440	95.80
Nov-36	3,418	1,473,845	1,477,263	10,399	142.06
Dec-36	3,055	1,473,845	1,476,900	8,023	184.09
Jan-37	3,162	1,506,369	1,509,531	9,625	156.83
Feb-37	2,962	1,506,369	1,509,331	10,772	140.11
Mar-37	3,813	1,506,369	1,510,182	16,777	90.01
Apr-37	3,734	1,506,369	1,510,103	19,377	77.93
May-37	5,843	1,506,369	1,512,212	22,431	67.42
Jun-37	6,423	1,506,369	1,512,792	23,830	63.48
Jul-37	9,737	1,506,369	1,516,105	21,569	70.29
Aug-37	11,067	1,506,369	1,517,435	21,605	70.24
Sep-37	8,276	1,506,369	1,514,645	19,044	79.53

Oct-37	5,412	1,506,369	1,511,780	15,440	97.92
Nov-37	3,493	1,506,369	1,509,862	10,399	145.19
Dec-37	3,122	1,506,369	1,509,490	8,023	188.15
Jan-38	3,232	1,539,443	1,542,675	9,625	160.27
Feb-38	3,027	1,539,443	1,542,470	10,772	143.19
Mar-38	3,897	1,539,443	1,543,340	16,777	91.99
Apr-38	3,817	1,539,443	1,543,260	19,377	79.64
May-38	5,971	1,539,443	1,545,415	22,431	68.90
Jun-38	6,565	1,539,443	1,546,008	23,830	64.88
Jul-38	9,951	1,539,443	1,549,394	21,569	71.83
Aug-38	11,310	1,539,443	1,550,754	21,605	71.78
Sep-38	8,459	1,539,443	1,547,902	19,044	81.28
Oct-38	5,531	1,539,443	1,544,974	15,440	100.07
Nov-38	3,570	1,539,443	1,543,014	10,399	148.38
Dec-38	3,191	1,539,443	1,542,634	8,023	192.28

Table 3
2017 IRP Aeolus-Bridger/Anticline Transmission

Year	Retail Revenue Requirement	Months In Service	Total Resource Costs
	\$/kW-yr	#	\$/kW-yr
	(b)	(d)	(h)

2017 IRP Aeolus-Bridger/Anticline Transmission

2020	\$47.36	2	\$7.89
2021	\$48.59	12	\$48.59
2022	\$49.71	12	\$49.71
2023	\$50.85	12	\$50.85
2024	\$52.02	12	\$52.02
2025	\$53.22	12	\$53.22
2026	\$54.44	12	\$54.44
2027	\$55.69	12	\$55.69
2028	\$56.97	12	\$56.97
2029	\$58.28	12	\$58.28
2030	\$59.62	12	\$59.62
2031	\$60.99	12	\$60.99
2032	\$62.33	12	\$62.33
2033	\$63.70	12	\$63.70
2034	\$65.17	12	\$65.17
2035	\$66.67	12	\$66.67
2036	\$68.20	12	\$68.20
2037	\$69.70	12	\$69.70
2038	\$71.23	12	\$71.23
2039	\$72.80	12	\$72.80
2040	\$74.40	12	\$74.40
2041	\$76.04	12	\$76.04
2042	\$77.71	12	\$77.71

Transfer Capacity (MW) 750

Retail Revenue Requirement \$48.59
(\$/kW-year, 2021\$)

Company Official Inflation Forecast Dated December 29, 2017

2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Wyoming Wind Resource
41% Capacity Factor

Year	Estimated Capital Cost	Capital Cost at Real Levelized Rate	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)	(h)
2017 IRP Wyoming Wind Resource - 41% Capacity Factor									
2016	\$1,637	\$115.69	\$37.57	\$42.46	\$0.65	(\$17.76)	\$25.35	\$91.50	\$0.57
2017		\$118.01	\$38.32	\$43.32	\$0.66	(\$18.12)	\$25.86	\$93.31	\$0.58
2018		\$120.25	\$39.05	\$44.14	\$0.67	(\$18.46)	\$26.35	\$95.09	\$0.59
2019		\$122.90	\$39.91	\$45.11	\$0.68	(\$18.87)	\$26.92	\$97.16	\$0.60
2020		\$126.10	\$40.95	\$46.29	\$0.70	(\$19.36)	\$27.63	\$99.70	\$0.62
2021		\$129.13	\$41.93	\$47.40	\$0.72	(\$19.82)	\$28.30	\$102.13	\$0.63
2022		\$132.10	\$42.89	\$48.49	\$0.74	(\$20.28)	\$28.95	\$104.47	\$0.64
2023		\$135.14	\$43.88	\$49.60	\$0.76	(\$20.75)	\$29.61	\$106.87	\$0.65
2024		\$138.25	\$44.89	\$50.74	\$0.78	(\$21.23)	\$30.29	\$109.33	\$0.66
2025		\$141.43	\$45.92	\$51.91	\$0.80	(\$21.72)	\$30.99	\$111.85	\$0.68
2026		\$144.68	\$46.98	\$53.10	\$0.82	(\$22.22)	\$31.70	\$114.42	\$0.70
2027		\$148.01	\$48.06	\$54.33	\$0.84	(\$22.73)	\$32.44	\$117.07	\$0.72
2028		\$151.41	\$49.17	\$55.58	\$0.86	(\$23.25)	\$33.19	\$119.77	\$0.74
2029		\$154.89	\$50.30	\$56.85	\$0.88	(\$23.78)	\$33.95	\$122.54	\$0.76
2030		\$158.45	\$51.46	\$58.16	\$0.90	(\$24.33)	\$34.73	\$125.35	\$0.78
2031		\$162.09	\$52.64	\$59.50	\$0.92	(\$24.89)	\$35.53	\$128.22	\$0.80
2032		\$165.66	\$53.80	\$60.81	\$0.94	(\$25.44)	\$36.31	\$131.04	\$0.82
2033		\$169.30	\$54.98	\$62.14	\$0.96	(\$26.00)	\$37.10	\$133.91	\$0.84
2034		\$173.19	\$56.24	\$63.57	\$0.98	(\$26.60)	\$37.95	\$136.96	\$0.86
2035		\$177.17	\$57.53	\$65.03	\$1.00	(\$27.21)	\$38.82	\$140.10	\$0.88
2036		\$181.24	\$58.85	\$66.52	\$1.02	(\$27.84)	\$39.70	\$143.29	\$0.90
2037		\$185.23	\$60.14	\$67.99	\$1.04	(\$28.45)	\$40.58	\$146.44	\$0.92
2038		\$189.31	\$61.46	\$69.48	\$1.06	(\$29.08)	\$41.46	\$149.64	\$0.94
2039		\$193.47	\$62.81	\$71.01	\$1.08	(\$29.72)	\$42.37	\$152.91	\$0.96
2040		\$197.73	\$64.19	\$72.57	\$1.10	(\$30.37)	\$43.30	\$156.28	\$0.98
2041		\$202.08	\$65.60	\$74.17	\$1.12	(\$31.04)	\$44.25	\$159.70	\$1.00
2042		\$206.53	\$67.04	\$75.80	\$1.14	(\$31.72)	\$45.22	\$163.20	\$1.02

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 41.2%)
	(g)	= (d) + (f)
	(h)	Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming Wind Resource - 41% Capacity Factor			
Wind	Cost and Input Assumptions		
2016 \$	\$1,637	Plant capacity cost	\$/kW-yr IRP2017 Chapter 8, page 220
2016 \$	\$37.57	Fixed O&M, plus on-going capital cost	\$/kW-yr
2016 \$	0.57	Integration Cost	\$/MWh
2016 \$	\$0.65	Variable O&M	\$/MWh
2016 \$	(\$17.76)	Tax Credit \$/MWh	\$/MWh Corrected
	7.067%	Payment Factor	
	41%	Capacity Factor	IRP2017 Chapter 8, page 220

Company Official Inflation Forecast Dated December 29, 2017					
2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Wyoming DJ Wind Resource
43% Capacity Factor

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized	Fixed O&M	Fixed Costs	Variable O&M	Tax Credit	Total Resource Cost	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)
<u>2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor</u>									
2016	\$1,737	\$122.78	\$37.57	\$42.57	\$0.65	-	\$43.22	\$162.79	\$0.57
2017		\$125.24	\$38.32	\$43.42	\$0.66	\$0.00	\$44.08	\$166.05	\$0.58
2018		\$127.62	\$39.05	\$44.25	\$0.67	\$0.00	\$44.92	\$169.19	\$0.59
2019		\$130.43	\$39.91	\$45.22	\$0.68	\$0.00	\$45.90	\$172.90	\$0.60
2020		\$133.82	\$40.95	\$46.40	\$0.70	\$0.00	\$47.10	\$177.41	\$0.62
2021		\$137.03	\$41.93	\$47.51	\$0.72	\$0.00	\$48.23	\$181.67	\$0.63
2022		\$140.18	\$42.89	\$48.60	\$0.74	\$0.00	\$49.34	\$185.86	\$0.64
2023		\$143.40	\$43.88	\$49.72	\$0.76	\$0.00	\$50.48	\$190.14	\$0.65
2024		\$146.70	\$44.89	\$50.86	\$0.78	\$0.00	\$51.64	\$194.53	\$0.66
2025		\$150.07	\$45.92	\$52.03	\$0.80	\$0.00	\$52.83	\$199.00	\$0.68
2026		\$153.52	\$46.98	\$53.23	\$0.82	\$0.00	\$54.05	\$203.59	\$0.70
2027		\$157.05	\$48.06	\$54.45	\$0.84	\$0.00	\$55.29	\$208.27	\$0.72
2028		\$160.66	\$49.17	\$55.71	\$0.86	\$0.00	\$56.57	\$213.07	\$0.74
2029		\$164.36	\$50.30	\$56.99	\$0.88	\$0.00	\$57.87	\$217.97	\$0.76
2030		\$168.14	\$51.46	\$58.30	\$0.90	\$0.00	\$59.20	\$222.99	\$0.78
2031		\$172.01	\$52.64	\$59.64	\$0.92	\$0.00	\$60.56	\$228.12	\$0.80
2032		\$175.79	\$53.80	\$60.95	\$0.94	\$0.00	\$61.89	\$233.13	\$0.82
2033		\$179.66	\$54.98	\$62.29	\$0.96	\$0.00	\$63.25	\$238.26	\$0.84
2034		\$183.79	\$56.24	\$63.72	\$0.98	\$0.00	\$64.70	\$243.72	\$0.86
2035		\$188.02	\$57.53	\$65.19	\$1.00	\$0.00	\$66.19	\$249.32	\$0.88
2036		\$192.34	\$58.85	\$66.69	\$1.02	\$0.00	\$67.71	\$255.03	\$0.90
2037		\$196.57	\$60.14	\$68.15	\$1.04	\$0.00	\$69.19	\$260.63	\$0.92
2038		\$200.89	\$61.46	\$69.65	\$1.06	\$0.00	\$70.71	\$266.34	\$0.94
2039		\$205.31	\$62.81	\$71.18	\$1.08	\$0.00	\$72.26	\$272.19	\$0.96
2040		\$209.83	\$64.19	\$72.75	\$1.10	\$0.00	\$73.85	\$278.16	\$0.98
2041		\$214.45	\$65.60	\$74.35	\$1.12	\$0.00	\$75.47	\$284.27	\$1.00
2042		\$219.17	\$67.04	\$75.98	\$1.14	\$0.00	\$77.12	\$290.50	\$1.02

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 43.0%)
(g) = (d) + (f)
(i) Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Wyoming DJ Wind Resource - 43% Capacity Factor			
Wind	Cost and Input Assumptions		

2016 \$	\$1.737	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 \$	\$0.65	Variable O&M	\$/MWH
2016 \$		Tax Credit \$/MWh	\$/MWH
	7.067%	Payment Factor	
	43%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Utah Solar Resource
31% Capacity Factor

Year	Estimated Capital Cost	Fixed Capital Cost at Real Levelized	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)	(h)
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		\$143.42	\$20.09	\$60.02	\$0.00	(\$2.50)	\$57.52	\$156.70	\$0.62
2018		\$146.14	\$20.47	\$61.16	\$0.00	(\$2.55)	\$58.61	\$159.66	\$0.63
2019		\$149.36	\$20.92	\$62.50	\$0.00	(\$2.61)	\$59.89	\$163.17	\$0.64
2020		\$153.24	\$21.46	\$64.13	\$0.00	(\$2.68)	\$61.45	\$167.40	\$0.66
2021		\$156.92	\$21.98	\$65.67	\$0.00	(\$2.74)	\$62.93	\$171.44	\$0.68
2022		\$160.53	\$22.49	\$67.18	\$0.00	(\$2.80)	\$64.38	\$175.39	\$0.70
2023		\$164.22	\$23.01	\$68.72	\$0.00	(\$2.86)	\$65.86	\$179.44	\$0.72
2024		\$168.00	\$23.54	\$70.31	\$0.00	(\$2.93)	\$67.38	\$183.56	\$0.74
2025		\$171.86	\$24.08	\$71.92	\$0.00	(\$3.00)	\$68.92	\$187.77	\$0.76
2026		\$175.81	\$24.63	\$73.57	\$0.00	(\$3.07)	\$70.50	\$192.08	\$0.78
2027		\$179.85	\$25.20	\$75.27	\$0.00	(\$3.14)	\$72.13	\$196.50	\$0.80
2028		\$183.99	\$25.78	\$77.00	\$0.00	(\$3.21)	\$73.79	\$201.02	\$0.82
2029		\$188.22	\$26.37	\$78.77	\$0.00	(\$3.28)	\$75.49	\$205.65	\$0.84
2030		\$192.55	\$26.98	\$80.58	\$0.00	(\$3.36)	\$77.22	\$210.38	\$0.86
2031		\$196.98	\$27.60	\$82.43	\$0.00	(\$3.44)	\$78.99	\$215.21	\$0.88
2032		\$201.31	\$28.21	\$84.25	\$0.00	(\$3.52)	\$80.73	\$219.93	\$0.90
2033		\$205.74	\$28.83	\$86.10	\$0.00	(\$3.60)	\$82.50	\$224.76	\$0.92
2034		\$210.47	\$29.49	\$88.08	\$0.00	(\$3.68)	\$84.40	\$229.93	\$0.94
2035		\$215.31	\$30.17	\$90.11	\$0.00	(\$3.76)	\$86.35	\$235.24	\$0.96
2036		\$220.26	\$30.86	\$92.18	\$0.00	(\$3.85)	\$88.33	\$240.63	\$0.98
2037		\$225.11	\$31.54	\$94.21	\$0.00	(\$3.93)	\$90.28	\$245.94	\$1.00
2038		\$230.06	\$32.23	\$96.28	\$0.00	(\$4.02)	\$92.26	\$251.34	\$1.02
2039		\$235.12	\$32.94	\$98.39	\$0.00	(\$4.11)	\$94.28	\$256.86	\$1.04
2040		\$240.29	\$33.66	\$100.56	\$0.00	(\$4.20)	\$96.36	\$262.51	\$1.06
2041		\$245.58	\$34.40	\$102.77	\$0.00	(\$4.29)	\$98.48	\$268.29	\$1.08
2042		\$250.98	\$35.16	\$105.03	\$0.00	(\$4.38)	\$100.65	\$274.21	\$1.10

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	\$/MWH
	7.716%	Payment Factor	
	31.1%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Yakima Solar Resource
25% Capacity Factor

Year	Estimated Capital Cost \$/kW (a)	Fixed Capital Cost at Real Levelized \$/kW-yr (b)	Fixed O&M \$/kW-yr (c)	Fixed Costs \$/MWh (d)	Variable O&M \$/MWh (e)	Tax Credit \$/MWh (f)	Avoided Cost (before Integration Cost) \$/MWh (g)	Total Resource Costs \$/kW-yr (h)	Wind Integration Cost \$/MWh (h)
2017 IRP Yakima Solar Resource - 25% Capacity Factor									
2016	\$1,762	\$135.94	\$18.74	\$70.91	\$0.00	(\$2.95)	\$67.96	\$148.24	\$0.60
2017		\$138.66	\$19.11	\$72.33	\$0.00	(\$3.01)	\$69.32	\$151.20	\$0.62
2018		\$141.29	\$19.47	\$73.70	\$0.00	(\$3.07)	\$70.63	\$154.06	\$0.63
2019		\$144.40	\$19.90	\$75.32	\$0.00	(\$3.14)	\$72.18	\$157.45	\$0.64
2020		\$148.15	\$20.42	\$77.28	\$0.00	(\$3.22)	\$74.06	\$161.55	\$0.66
2021		\$151.71	\$20.91	\$79.14	\$0.00	(\$3.30)	\$75.84	\$165.42	\$0.68
2022		\$155.20	\$21.39	\$80.96	\$0.00	(\$3.38)	\$77.58	\$169.22	\$0.70
2023		\$158.77	\$21.88	\$82.82	\$0.00	(\$3.46)	\$79.36	\$173.10	\$0.72
2024		\$162.42	\$22.38	\$84.72	\$0.00	(\$3.54)	\$81.18	\$177.08	\$0.74
2025		\$166.16	\$22.89	\$86.67	\$0.00	(\$3.62)	\$83.05	\$181.15	\$0.76
2026		\$169.98	\$23.42	\$88.67	\$0.00	(\$3.70)	\$84.97	\$185.33	\$0.78
2027		\$173.89	\$23.96	\$90.71	\$0.00	(\$3.79)	\$86.92	\$189.58	\$0.80
2028		\$177.89	\$24.51	\$92.79	\$0.00	(\$3.88)	\$88.91	\$193.94	\$0.82
2029		\$181.98	\$25.07	\$94.92	\$0.00	(\$3.97)	\$90.95	\$198.39	\$0.84
2030		\$186.17	\$25.65	\$97.11	\$0.00	(\$4.06)	\$93.05	\$202.96	\$0.86
2031		\$190.45	\$26.24	\$99.34	\$0.00	(\$4.15)	\$95.19	\$207.64	\$0.88
2032		\$194.64	\$26.82	\$101.53	\$0.00	(\$4.24)	\$97.29	\$212.21	\$0.90
2033		\$198.92	\$27.41	\$103.76	\$0.00	(\$4.33)	\$99.43	\$216.89	\$0.92
2034		\$203.50	\$28.04	\$106.15	\$0.00	(\$4.43)	\$101.72	\$221.88	\$0.94
2035		\$208.18	\$28.68	\$108.59	\$0.00	(\$4.53)	\$104.06	\$226.98	\$0.96
2036		\$212.97	\$29.34	\$111.09	\$0.00	(\$4.63)	\$106.46	\$232.21	\$0.98
2037		\$217.66	\$29.99	\$113.54	\$0.00	(\$4.73)	\$108.81	\$237.33	\$1.00
2038		\$222.45	\$30.65	\$116.03	\$0.00	(\$4.83)	\$111.20	\$242.56	\$1.02
2039		\$227.34	\$31.32	\$118.58	\$0.00	(\$4.94)	\$113.64	\$247.88	\$1.04
2040		\$232.34	\$32.01	\$121.19	\$0.00	(\$5.05)	\$116.14	\$253.33	\$1.06
2041		\$237.45	\$32.71	\$123.86	\$0.00	(\$5.16)	\$118.70	\$258.90	\$1.08
2042		\$242.67	\$33.43	\$126.58	\$0.00	(\$5.27)	\$121.31	\$264.60	\$1.10

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 24.9%)
(g) = (d) + (f)
(h) Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Yakima Solar Resource - 25% Capacity Factor	
Solar	Cost and Input Assumptions

2016 \$	\$1,762	Plant capacity cost	\$/kW-yr
2016 \$	\$18.74	Fixed O&M, plus on-going capital cost	\$/kW-yr
2016 \$	0.60	Integration Cost	\$/MWH
2016 \$	\$0.00	Variable O&M	\$/MWH
2016 \$	(2.95)	Tax Credit	\$/MWh
	7.716%	Payment Factor	
	24.9%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP Geothermal PPA West Side Resource
90% Capacity Factor

Year	Estimated Capital Cost \$/kW	Fixed Capital Cost at Real Levelized \$/kW-yr	Fixed O&M \$/kW-yr	Fixed Costs \$/MWh	Variable O&M \$/MWh	Tax Credit \$/MWh	Avoided Cost (before Integration Cost) \$/MWh	Total Resource Costs \$/kW-yr
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
2017 IRP Geothermal PPA West Side Resource - 90% Capacity Factor								
2016	\$0	\$0.00	\$0.00	\$0.00	\$77.34	-	\$77.34	\$611.44
2017		\$0.00	\$0.00	\$0.00	\$78.89	\$0.00	\$78.89	\$623.70
2018		\$0.00	\$0.00	\$0.00	\$80.39	\$0.00	\$80.39	\$635.56
2019		\$0.00	\$0.00	\$0.00	\$82.16	\$0.00	\$82.16	\$649.55
2020		\$0.00	\$0.00	\$0.00	\$84.30	\$0.00	\$84.30	\$666.47
2021		\$0.00	\$0.00	\$0.00	\$86.32	\$0.00	\$86.32	\$682.44
2022		\$0.00	\$0.00	\$0.00	\$88.31	\$0.00	\$88.31	\$698.17
2023		\$0.00	\$0.00	\$0.00	\$90.34	\$0.00	\$90.34	\$714.22
2024		\$0.00	\$0.00	\$0.00	\$92.42	\$0.00	\$92.42	\$730.66
2025		\$0.00	\$0.00	\$0.00	\$94.55	\$0.00	\$94.55	\$747.50
2026		\$0.00	\$0.00	\$0.00	\$96.72	\$0.00	\$96.72	\$764.66
2027		\$0.00	\$0.00	\$0.00	\$98.94	\$0.00	\$98.94	\$782.21
2028		\$0.00	\$0.00	\$0.00	\$101.22	\$0.00	\$101.22	\$800.24
2029		\$0.00	\$0.00	\$0.00	\$103.55	\$0.00	\$103.55	\$818.66
2030		\$0.00	\$0.00	\$0.00	\$105.93	\$0.00	\$105.93	\$837.47
2031		\$0.00	\$0.00	\$0.00	\$108.37	\$0.00	\$108.37	\$856.76
2032		\$0.00	\$0.00	\$0.00	\$110.75	\$0.00	\$110.75	\$875.58
2033		\$0.00	\$0.00	\$0.00	\$113.19	\$0.00	\$113.19	\$894.87
2034		\$0.00	\$0.00	\$0.00	\$115.79	\$0.00	\$115.79	\$915.42
2035		\$0.00	\$0.00	\$0.00	\$118.45	\$0.00	\$118.45	\$936.45
2036		\$0.00	\$0.00	\$0.00	\$121.17	\$0.00	\$121.17	\$957.96
2037		\$0.00	\$0.00	\$0.00	\$123.84	\$0.00	\$123.84	\$979.07
2038		\$0.00	\$0.00	\$0.00	\$126.56	\$0.00	\$126.56	\$1,000.57
2039		\$0.00	\$0.00	\$0.00	\$129.34	\$0.00	\$129.34	\$1,022.55
2040		\$0.00	\$0.00	\$0.00	\$132.19	\$0.00	\$132.19	\$1,045.08
2041		\$0.00	\$0.00	\$0.00	\$135.10	\$0.00	\$135.10	\$1,068.09
2042		\$0.00	\$0.00	\$0.00	\$138.07	\$0.00	\$138.07	\$1,091.57

Sources, Inputs and Assumptions

Source: (c)(f) Plant Costs - 2017 IRP - Table 6.1 & 6.2
(a) Plant capacity cost
(b) = (a) x 0.0631141369791985
(d) = ((b) + (c)) / (8.76 x 90.3%)
(g) = (d) + (f)
(h) Plant Costs - 2017 IRP - Table 6.1 & 6.2

2017 IRP Geothermal PPA West Side Resource - 90% Capacity Factor	
Solar	Cost and Input Assumptions

2016 \$	\$0	Plant capacity cost	\$/kW-yr
2016 \$	\$0.00	Fixed O&M, plus on-going capital cost	\$/kW-yr
2016 \$	-	Integration Cost	\$/MWH
2016 \$	\$77.34	Variable O&M	\$/MWH
2016 \$	-	Tax Credit \$/MWh	\$/MWH

6.311%	Payment Factor
90.3%	Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
SCCT Resource Costs - 2017 Integrated Resource Plan
UT N - 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

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

UT N - 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

2016	\$702	\$51.76	\$30.66	\$7.53	\$52.43	\$104.19			
2017		\$52.80	\$31.27	\$7.68	\$53.47	\$106.27			
2018		\$53.80	\$31.86	\$7.83	\$54.49	\$108.29			
2019		\$54.98	\$32.56	\$8.00	\$55.69	\$110.67			
2020		\$56.41	\$33.41	\$8.21	\$57.14	\$113.55			
2021		\$57.76	\$34.21	\$8.41	\$58.52	\$116.28			
2022		\$59.09	\$35.00	\$8.60	\$59.86	\$118.95			
2023		\$60.45	\$35.81	\$8.80	\$61.25	\$121.70			
2024		\$61.84	\$36.63	\$9.00	\$62.65	\$124.49			
2025		\$63.26	\$37.47	\$9.21	\$64.09	\$127.35			
2026		\$64.71	\$38.33	\$9.42	\$65.56	\$130.27			
2027		\$66.20	\$39.21	\$9.64	\$67.08	\$133.28			
2028		\$67.72	\$40.11	\$9.86	\$68.61	\$136.33			
2029		\$69.28	\$41.03	\$10.09	\$70.20	\$139.48	\$4.51	\$43.36	\$91.61
2030		\$70.87	\$41.97	\$10.32	\$71.80	\$142.67	\$4.77	\$45.86	\$95.21
2031		\$72.50	\$42.94	\$10.56	\$73.47	\$145.97	\$5.08	\$48.84	\$99.33
2032		\$74.10	\$43.88	\$10.79	\$75.07	\$149.17	\$5.25	\$50.47	\$102.07
2033		\$75.73	\$44.85	\$11.03	\$76.74	\$152.47	\$5.50	\$52.88	\$105.62
2034		\$77.47	\$45.88	\$11.28	\$78.49	\$155.96	\$5.78	\$55.57	\$109.52
2035		\$79.25	\$46.94	\$11.54	\$80.30	\$159.55	\$6.00	\$57.68	\$112.87
2036		\$81.07	\$48.02	\$11.81	\$82.16	\$163.23	\$6.37	\$61.24	\$117.71
2037		\$82.85	\$49.08	\$12.07	\$83.97	\$166.82	\$6.55	\$62.97	\$120.68
2038		\$84.67	\$50.16	\$12.34	\$85.83	\$170.50	\$6.83	\$65.66	\$124.64
2039		\$86.53	\$51.26	\$12.61	\$87.71	\$174.24	\$6.99	\$67.20	\$127.47
2040		\$88.43	\$52.39	\$12.89	\$89.65	\$178.08	\$7.17	\$68.93	\$130.53
2041		\$90.38	\$53.54	\$13.17	\$91.61	\$181.99	\$7.33	\$70.47	\$133.42
2042		\$92.37	\$54.72	\$13.46	\$93.63	\$186.00	\$5.01	\$48.17	\$112.51

Sources, Inputs and Assumptions

- Source: (a)(c)(d) Plant Costs - 2017 IRP - Table 6.1 & 6.2
- (b) = (a) x 0.0737263117964292
 - (e) = (d) x (8.76 x 33.0%) + (c)
 - (f) = (b) + (e)
 - (g) Table 4 - Burnertip Natural Gas Price Forecast
 - (h) = 9,614 MMBtu/MWH x \$/MMBtu
 - (i) = (f) / (8.76 x 'Capacity Factor') + (h)

Table 3
SCCT Resource Costs - 2017 Integrated Resource Plan
UT N - 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

UT N - 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')
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CCCT Statistics	MW	Percent	Cap Cost	Fixed
SCCT Dry "F" - Turbine	200	100.0%	\$702	\$30.66
	<u>-</u>	<u>0.0%</u>	<u>\$0</u>	<u>\$0.00</u>
Capacity Weighted	200	100.0%	\$702	\$30.66

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
SCCT Dry "F" - Turbine	200	33.0%	66.0	100.0%	\$7.53	9,614
	<u>-</u>	<u>0.0%</u>	<u>-</u>	<u>0.0%</u>	<u>-</u>	<u>-</u>
Energy Weighted	200	33.0%	66.0	100.0%	\$7.53	9,614

Rounded

SCCT	Duct Firing	Plant Costs - 2017 IRP - Table 6.1 & 6.2
	200	MW Plant Capacity
2016 \$	\$702	Plant Capacity Cost
2016 \$	\$16.02	Fixed O&M & Capitalized O&M
2016 \$	<u>\$14.64</u>	Fixed Pipeline
2016 \$	\$30.66	Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)
2016 \$	\$7.53	Variable O&M Costs & Capitalized Variable O&M (\$/MWh)
	9,614	Heat Rate in btu/kWh
	7.373%	Payment Factor
	33%	Capacity Factor
	33.0%	Energy Weighted Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
CCCT Resource Costs - 2017 Integrated Resource Plan
Willamette Valley - 436 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')

Year	Estimated Capital Cost \$/kW	Fixed Capital Cost at Real Levelized \$/kW-yr	Fixed O&M \$/kW-yr	Variable O&M \$/MWh	Total O&M at Expected CF \$/kW-yr	Total Resource Fixed Costs \$/kW-yr	Fuel Cost \$/MMBtu	Total Resource Energy Cost \$/MWh	Total Resource Costs \$/MWh
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Willamette Valley - 436 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')									
2016	\$1,363	\$98.90	\$43.70	\$2.02	\$56.14	\$155.04			
2017		\$100.88	\$44.57	\$2.06	\$57.26	\$158.14			
2018		\$102.80	\$45.42	\$2.10	\$58.35	\$161.15			
2019		\$105.06	\$46.42	\$2.15	\$59.66	\$164.72			
2020		\$107.79	\$47.63	\$2.21	\$61.24	\$169.03			
2021		\$110.38	\$48.77	\$2.26	\$62.69	\$173.07			
2022		\$112.92	\$49.89	\$2.31	\$64.12	\$177.04			
2023		\$115.52	\$51.04	\$2.36	\$65.57	\$181.09			
2024		\$118.18	\$52.21	\$2.41	\$67.05	\$185.23			
2025		\$120.90	\$53.41	\$2.47	\$68.62	\$189.52			
2026		\$123.68	\$54.64	\$2.53	\$70.22	\$193.90			
2027		\$126.52	\$55.90	\$2.59	\$71.85	\$198.37			
2028		\$129.43	\$57.19	\$2.65	\$73.51	\$202.94			
2029		\$132.41	\$58.51	\$2.71	\$75.20	\$207.61			
2030		\$135.46	\$59.86	\$2.77	\$76.92	\$212.38			
2031		\$138.58	\$61.24	\$2.83	\$78.67	\$217.25			
2032		\$141.63	\$62.59	\$2.89	\$80.39	\$222.02	\$5.20	\$33.36	\$69.41
2033		\$144.75	\$63.97	\$2.95	\$82.14	\$226.89	\$5.44	\$34.90	\$71.74
2034		\$148.08	\$65.44	\$3.02	\$84.04	\$232.12	\$5.73	\$36.76	\$74.45
2035		\$151.49	\$66.95	\$3.09	\$85.98	\$237.47	\$5.93	\$38.04	\$76.60
2036		\$154.97	\$68.49	\$3.16	\$87.95	\$242.92	\$6.30	\$40.41	\$79.86
2037		\$158.38	\$70.00	\$3.23	\$89.89	\$248.27	\$6.47	\$41.51	\$81.82
2038		\$161.86	\$71.54	\$3.30	\$91.86	\$253.72	\$6.75	\$43.30	\$84.50
2039		\$165.42	\$73.11	\$3.37	\$93.86	\$259.28	\$6.90	\$44.26	\$86.36
2040		\$169.06	\$74.72	\$3.44	\$95.90	\$264.96	\$7.08	\$45.42	\$88.45
2041		\$172.78	\$76.36	\$3.52	\$98.04	\$270.82	\$7.24	\$46.44	\$90.42
2042		\$176.58	\$78.04	\$3.60	\$100.21	\$276.79	\$4.95	\$31.75	\$76.70

Sources, Inputs and Assumptions

Source: (a)(c)(d)

- (b) Plant Costs - 2017 IRP - Table 6.1 & 6.2
- (c) = (a) x 0.0725628795024555
- (e) = (d) x (8.76 x 70.3%) + (c)
- (f) = (b) + (e)
- (g) Table 4 - Burnertip Natural Gas Price Forecast
- (h) = 6,415 MMBtu/MWh x \$/MMBtu
- (i) = (f) / (8.76 x 'Capacity Factor') + (h)

Table 3
CCCT Resource Costs - 2017 Integrated Resource Plan
Willamette Valley - 436 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')

Willamette Valley - 436 MW - CCCT Dry "G/H", 1x1 - West Side Resource (1,500')

CCCT Statistics	MW	Percent	Cap Cost	Fixed
CCCT Dry "G/H", 1x1 - Turbine	385	88.3%	\$1,484	\$44.50
CCCT Dry "G/H", 1x1 - Duct Firing	51	11.7%	\$443	\$37.67
Capacity Weighted	436	100.0%	\$1,363	\$43.70

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
CCCT Dry "G/H", 1x1 - Turbine	385	78.0%	300.6	98.0%	\$2.06	6,362
CCCT Dry "G/H", 1x1 - Duct Firing	51	12.0%	6.1	2.0%	0.15	9,012
Energy Weighted	436	70.3%	306.7	100.0%	\$2.02	6,415

Rounded

	CCCT	Duct Firing	Plant Costs - 2017 IRP - Table 6.1 & 6.2
	385	51	MW Plant Capacity
2016 \$	\$1,484	\$443	Plant Capacity Cost
2016 \$	\$21.71	\$5.39	Fixed O&M & Capitalized O&M
2016 \$	<u>\$22.79</u>	<u>\$32.28</u>	Fixed Pipeline
2016 \$	\$44.50	\$37.67	Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)
	\$2.06	\$0.15	Variable O&M Costs & Capitalized Variable O&M (\$/MWh)
	6,362	9,012	Heat Rate in btu/kWh
	7.256%	7.256%	Payment Factor
	78%	12%	Capacity Factor
		70.3%	Energy Weighted Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017

2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
CCCT Resource Costs - 2017 Integrated Resource Plan
WYNE DJohns - 477 MW - CCCT Dry "J/HA.02", 1x1 - East Side Resource (5,050')

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

WYNE DJohns - 477 MW - CCCT Dry "J/HA.02", 1x1 - East Side Resource (5,050')

2016	\$1,203	\$87.29	\$57.97	\$2.22	\$71.45	\$158.74			
2017		\$89.04	\$59.13	\$2.26	\$72.85	\$161.89			
2018		\$90.73	\$60.25	\$2.30	\$74.21	\$164.94			
2019		\$92.73	\$61.58	\$2.35	\$75.85	\$168.58			
2020		\$95.14	\$63.18	\$2.41	\$77.81	\$172.95			
2021		\$97.42	\$64.70	\$2.47	\$79.69	\$177.11			
2022		\$99.66	\$66.19	\$2.53	\$81.55	\$181.21			
2023		\$101.95	\$67.71	\$2.59	\$83.43	\$185.38			
2024		\$104.29	\$69.27	\$2.65	\$85.36	\$189.65			
2025		\$106.69	\$70.86	\$2.71	\$87.31	\$194.00			
2026		\$109.14	\$72.49	\$2.77	\$89.31	\$198.45			
2027		\$111.65	\$74.16	\$2.83	\$91.34	\$202.99			
2028		\$114.22	\$75.87	\$2.90	\$93.47	\$207.69			
2029		\$116.85	\$77.62	\$2.97	\$95.65	\$212.50			
2030		\$119.54	\$79.41	\$3.04	\$97.86	\$217.40			
2031		\$122.29	\$81.24	\$3.11	\$100.12	\$222.41			
2032		\$124.98	\$83.03	\$3.18	\$102.33	\$227.31			
2033		\$127.73	\$84.86	\$3.25	\$104.59	\$232.32	\$5.53	\$35.35	\$73.62
2034		\$130.67	\$86.81	\$3.32	\$106.96	\$237.63	\$5.81	\$37.14	\$76.28
2035		\$133.68	\$88.81	\$3.40	\$109.45	\$243.13	\$6.03	\$38.54	\$78.59
2036		\$136.75	\$90.85	\$3.48	\$111.98	\$248.73	\$6.40	\$40.91	\$81.88
2037		\$139.76	\$92.85	\$3.56	\$114.46	\$254.22	\$6.58	\$42.06	\$83.94
2038		\$142.83	\$94.89	\$3.64	\$116.99	\$259.82	\$6.87	\$43.91	\$86.71
2039		\$145.97	\$96.98	\$3.72	\$119.56	\$265.53	\$7.03	\$44.94	\$88.68
2040		\$149.18	\$99.11	\$3.80	\$122.18	\$271.36	\$7.21	\$46.09	\$90.79
2041		\$152.46	\$101.29	\$3.88	\$124.84	\$277.30	\$7.37	\$47.11	\$92.79
2042		\$155.81	\$103.52	\$3.97	\$127.62	\$283.43	\$5.03	\$32.15	\$78.84

Sources, Inputs and Assumptions

Source: (a)(c)(d) Plant Costs - 2015 IRP - Table 6.1 & 6.2 - Page 92
 (b) = (a) x 0.0725628795024555
 (e) = (d) x (8.76 x 69.3%) + (c)
 (f) = (b) + (e)
 (g) Table 4 - Burnertip Natural Gas Price Forecast
 (h) = 6,392 MMBtu/MWh x \$/MMBtu
 (i) = (f) / (8.76 x 'Capacity Factor') + (h)

Table 3
CCCT Resource Costs - 2017 Integrated Resource Plan
WYNE DJohns - 477 MW - CCCT Dry "J/HA.02", 1x1 - East Side Resource (5,050')

WYNE DJohns - 477 MW - CCCT Dry "J/HA.02", 1x1 - East Side Resource (5,050')

CCCT Statistics	MW	Percent	Cap Cost	Fixed
CCCT Dry "J" - Turbine	414	86.8%	\$1,334	\$57.93
CCCT Dry "J" - Duct Firing	<u>63</u>	<u>13.2%</u>	<u>\$342</u>	<u>\$58.21</u>
Capacity Weighted	477	100.0%	\$1,203	\$57.97

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
CCCT Dry "J" - Turbine	414	78.0%	322.6	97.7%	\$2.27	6,326
CCCT Dry "J" - Duct Firing	<u>63</u>	<u>12.0%</u>	<u>7.6</u>	<u>2.3%</u>	<u>0.16</u>	<u>9,211</u>
Energy Weighted	477	69.3%	330.1	100.0%	\$2.22	6,392

Rounded

CCCT	Duct Firing	Plant Costs - 2015 IRP - Table 6.1 & 6.2 - Page 92
414	63	MW Plant Capacity
\$1,334	\$342	Plant Capacity Cost
\$21.29	\$4.86	Fixed O&M & Capitalized O&M
<u>\$36.64</u>	<u>\$53.35</u>	Fixed Pipeline
\$57.93	\$58.21	Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)
\$2.27	\$0.16	Variable O&M Costs & Capitalized Variable O&M (\$/MWh)
6,326	9,211	Heat Rate in btu/kWh
7.256%	7.256%	Payment Factor
78%	12%	Capacity Factor
	69.3%	Energy Weighted Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
SCCT Resource Costs - 2017 Integrated Resource Plan
WYNE DJohns- 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

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

WYNE DJohns- 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

2016	\$589	\$43.42	\$71.70	\$7.53	\$93.47	\$136.89			
2017		\$44.29	\$73.13	\$7.68	\$95.33	\$139.62			
2018		\$45.13	\$74.52	\$7.83	\$97.15	\$142.28			
2019		\$46.12	\$76.16	\$8.00	\$99.29	\$145.41			
2020		\$47.32	\$78.14	\$8.21	\$101.87	\$149.19			
2021		\$48.46	\$80.02	\$8.41	\$104.33	\$152.79			
2022		\$49.57	\$81.86	\$8.60	\$106.72	\$156.29			
2023		\$50.71	\$83.74	\$8.80	\$109.18	\$159.89			
2024		\$51.88	\$85.67	\$9.00	\$111.69	\$163.57			
2025		\$53.07	\$87.64	\$9.21	\$114.26	\$167.33			
2026		\$54.29	\$89.66	\$9.42	\$116.89	\$171.18			
2027		\$55.54	\$91.72	\$9.64	\$119.59	\$175.13			
2028		\$56.82	\$93.83	\$9.86	\$122.33	\$179.15			
2029		\$58.13	\$95.99	\$10.09	\$125.16	\$183.29			
2030		\$59.47	\$98.20	\$10.32	\$128.03	\$187.50			
2031		\$60.84	\$100.46	\$10.56	\$130.99	\$191.83			
2032		\$62.18	\$102.67	\$10.79	\$133.86	\$196.04			
2033		\$63.55	\$104.93	\$11.03	\$136.82	\$200.37	\$5.53	\$53.17	\$122.48
2034		\$65.01	\$107.34	\$11.28	\$139.95	\$204.96	\$5.81	\$55.86	\$126.76
2035		\$66.51	\$109.81	\$11.54	\$143.17	\$209.68	\$6.03	\$57.97	\$130.50
2036		\$68.04	\$112.34	\$11.81	\$146.48	\$214.52	\$6.40	\$61.53	\$135.74
2037		\$69.54	\$114.81	\$12.07	\$149.70	\$219.24	\$6.58	\$63.26	\$139.10
2038		\$71.07	\$117.34	\$12.34	\$153.01	\$224.08	\$6.87	\$66.05	\$143.56
2039		\$72.63	\$119.92	\$12.61	\$156.37	\$229.00	\$7.03	\$67.59	\$146.81
2040		\$74.23	\$122.56	\$12.89	\$159.82	\$234.05	\$7.21	\$69.32	\$150.28
2041		\$75.86	\$125.26	\$13.17	\$163.33	\$239.19	\$7.37	\$70.86	\$153.60
2042		\$77.53	\$128.02	\$13.46	\$166.93	\$244.46	\$5.03	\$48.36	\$132.92

Sources, Inputs and Assumptions

- Source: (a)(c)(d) Plant Costs - 2017 IRP - Table 6.1 & 6.2
- (b) = (a) x 0.0737263117964292
 - (e) = (d) x (8.76 x 33.0%) + (c)
 - (f) = (b) + (e)
 - (g) Table 4 - Burnertip Natural Gas Price Forecast
 - (h) = 9,614 MMBtu/MWH x \$/MMBtu
 - (i) = (f) / (8.76 x 'Capacity Factor') + (h)

Table 3
SCCT Resource Costs - 2017 Integrated Resource Plan
WYNE DJohns- 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')

WYNE DJohns- 200 MW - SCCT Frame "F" x1 - East Side Resource (5,050')						
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CCCT Statistics	MW	Percent	Cap Cost	Fixed
SCCT Dry "F" - Turbine	200	100.0%	\$589	\$71.70
	-	0.0%	\$0	\$0.00
Capacity Weighted	200	100.0%	\$589	\$71.70

CCCT Statistics	MW	CF	aMW	Percent	Variable	Heat Rate
SCCT Dry "F" - Turbine	200	33.0%	66.0	100.0%	\$7.53	9,614
	-	0.0%	-	0.0%	-	-
Energy Weighted	200	33.0%	66.0	100.0%	\$7.53	9,614

Rounded

SCCT	Duct Firing	Plant Costs - 2017 IRP - Table 6.1 & 6.2
	200	MW Plant Capacity
2016 \$	\$589	Plant Capacity Cost
2016 \$	\$16.02	Fixed O&M & Capitalized O&M
2016 \$	<u>\$55.69</u>	Fixed Pipeline
2016 \$	\$71.70	Fixed O&M Including Fixed Pipeline & Capitalized O&M (\$/kW-Yr)
2016 \$	\$7.53	Variable O&M Costs & Capitalized Variable O&M (\$/MWh)
	9,614	Heat Rate in btu/kWh
	7.373%	Payment Factor
	33%	Capacity Factor
	33.0%	Energy Weighted Capacity Factor

Company Official Inflation Forecast Dated December 29, 2017						
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

Table 3
2017 IRP ID Wind Resource
38% Capacity Factor

Year	Estimated Capital Cost \$/kW (a)	Fixed Capital Cost at Real Levelized \$/kW-yr (b)	Fixed O&M \$/kW-yr (c)	Fixed Costs \$/MWh (d)	Variable O&M \$/MWh (e)	Tax Credit \$/MWh (f)	Total Resource Costs \$/MWh (g)	Total Resource Costs \$/kW-yr (h)	Wind Integration Cost \$/MWh (h)
2016	\$1,811	\$127.99	\$37.57	\$49.74	\$0.00	-	\$49.74	\$165.56	\$0.57
2017		\$130.55	\$38.32	\$50.73	\$0.00	\$0.00	\$50.73	\$168.87	\$0.58
2018		\$133.03	\$39.05	\$51.69	\$0.00	\$0.00	\$51.69	\$172.08	\$0.59
2019		\$135.96	\$39.91	\$52.83	\$0.00	\$0.00	\$52.83	\$175.87	\$0.60
2020		\$139.49	\$40.95	\$54.21	\$0.00	\$0.00	\$54.21	\$180.44	\$0.62
2021		\$142.84	\$41.93	\$55.51	\$0.00	\$0.00	\$55.51	\$184.77	\$0.63
2022		\$146.13	\$42.89	\$56.78	\$0.00	\$0.00	\$56.78	\$189.02	\$0.64
2023		\$149.49	\$43.88	\$58.09	\$0.00	\$0.00	\$58.09	\$193.37	\$0.65
2024		\$152.93	\$44.89	\$59.43	\$0.00	\$0.00	\$59.43	\$197.82	\$0.66
2025		\$156.45	\$45.92	\$60.79	\$0.00	\$0.00	\$60.79	\$202.37	\$0.68
2026		\$160.05	\$46.98	\$62.19	\$0.00	\$0.00	\$62.19	\$207.03	\$0.70
2027		\$163.73	\$48.06	\$63.62	\$0.00	\$0.00	\$63.62	\$211.79	\$0.72
2028		\$167.50	\$49.17	\$65.09	\$0.00	\$0.00	\$65.09	\$216.67	\$0.74
2029		\$171.35	\$50.30	\$66.59	\$0.00	\$0.00	\$66.59	\$221.65	\$0.76
2030		\$175.29	\$51.46	\$68.12	\$0.00	\$0.00	\$68.12	\$226.75	\$0.78
2031		\$179.32	\$52.64	\$69.68	\$0.00	\$0.00	\$69.68	\$231.96	\$0.80
2032		\$183.27	\$53.80	\$71.22	\$0.00	\$0.00	\$71.22	\$237.07	\$0.82
2033		\$187.30	\$54.98	\$72.78	\$0.00	\$0.00	\$72.78	\$242.28	\$0.84
2034		\$191.61	\$56.24	\$74.46	\$0.00	\$0.00	\$74.46	\$247.85	\$0.86
2035		\$196.02	\$57.53	\$76.17	\$0.00	\$0.00	\$76.17	\$253.55	\$0.88
2036		\$200.53	\$58.85	\$77.92	\$0.00	\$0.00	\$77.92	\$259.38	\$0.90
2037		\$204.94	\$60.14	\$79.63	\$0.00	\$0.00	\$79.63	\$265.08	\$0.92
2038		\$209.45	\$61.46	\$81.38	\$0.00	\$0.00	\$81.38	\$270.91	\$0.94
2039		\$214.06	\$62.81	\$83.17	\$0.00	\$0.00	\$83.17	\$276.87	\$0.96
2040		\$218.77	\$64.19	\$85.00	\$0.00	\$0.00	\$85.00	\$282.96	\$0.98
2041		\$223.58	\$65.60	\$86.87	\$0.00	\$0.00	\$86.87	\$289.18	\$1.00
2042		\$228.50	\$67.04	\$88.78	\$0.00	\$0.00	\$88.78	\$295.54	\$1.02

2017 IRP ID Wind Resource - 38% Capacity Factor

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	\$/MWH
	7.067%	Payment Factor	
	38%	Capacity Factor	

Company Official Inflation Forecast Dated December 29, 2017					
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2017	2.0%	2026	2.3%	2035	2.3%
2018	1.9%	2027	2.3%	2036	2.3%
2019	2.2%	2028	2.3%	2037	2.2%
2020	2.6%	2029	2.3%	2038	2.2%
2021	2.4%	2030	2.3%	2039	2.2%
2022	2.3%	2031	2.3%	2040	2.2%
2023	2.3%	2032	2.2%	2041	2.2%
2024	2.3%	2033	2.2%	2042	2.2%
2025	2.3%	2034	2.3%	2043	2.3%

ROCKY MOUNTAIN POWER

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

STEP STUDY BETWEEN PRIOR FILING AND CURRENT FILING

2017.Q4 – FEBRUARY 2018

Appendix C

Utah Quarterly Compliance Filing Step Study between 2017.Q4 and 2017.Q3 Compliance Filing Baseload Avoided Cost Impact of Changing Assumptions \$/MWH (1)

Year	OFPC Routine	Generic Routine	Queue Routine	Commission Ordered Routine	Trapped Energy Non-Routine	Total Impact
2018	\$ (1.13)	\$ (0.18)	\$ 0.00	\$ (0.01)	-	\$ (1.31)
2019	\$ 0.12	-	\$ 0.05	\$ 0.04	-	\$ 0.20
2020	\$ (1.09)	-	\$ 0.33	\$ (0.01)	\$ (0.85)	\$ (1.63)
2021	\$ (2.88)	\$ (0.45)	\$ (0.20)	\$ 2.63	\$ (4.64)	\$ (5.55)
2022	\$ 0.09	\$ 0.04	\$ (0.38)	\$ 0.12	\$ (5.12)	\$ (5.26)
2023	\$ (1.14)	\$ (0.54)	\$ (0.27)	\$ 1.22	\$ (5.74)	\$ (6.46)
2024	\$ (1.43)	\$ (0.06)	\$ (0.20)	\$ (0.17)	\$ (5.83)	\$ (7.70)
2025	\$ (1.43)	\$ 0.03	\$ (0.42)	\$ (0.34)	\$ (5.68)	\$ (7.83)
2026	\$ (0.90)	\$ 0.02	\$ (0.44)	\$ (0.37)	\$ (6.38)	\$ (8.07)
2027	\$ (0.89)	\$ (0.02)	\$ (0.42)	\$ (0.46)	\$ (6.96)	\$ (8.75)
2028	\$ (0.45)	\$ (0.18)	\$ (0.39)	\$ 0.16	\$ (5.67)	\$ (6.52)
2029	\$ (0.17)	\$ (0.56)	\$ (0.18)	\$ 0.89	\$ (6.16)	\$ (6.19)
2030	\$ 0.38	\$ (0.33)	\$ (0.30)	\$ 1.00	\$ (6.03)	\$ (5.28)
2031	\$ 0.68	\$ (0.15)	\$ (0.90)	\$ 1.41	\$ (6.29)	\$ (5.26)
2032	\$ 0.94	\$ (0.35)	\$ (0.32)	\$ 1.24	\$ (6.23)	\$ (4.71)
2033	\$ 1.97	\$ (0.32)	\$ 0.75	\$ 0.95	\$ (5.28)	\$ (1.93)
2034	\$ 2.41	\$ (0.30)	\$ 0.88	\$ 1.20	\$ (4.49)	\$ (0.30)
2035	\$ 2.68	\$ (0.39)	\$ 0.58	\$ 1.65	\$ (0.74)	\$ 3.78

Nominal Levelized Payment at 6.57% Discount Rate (3)

2018 - 2032	\$ (0.76)	\$ (0.17)	\$ (0.22)	\$ 0.45	\$ (4.24)	\$ (4.93)
2019 - 2033	\$ (0.60)	\$ (0.17)	\$ (0.20)	\$ 0.52	\$ (4.73)	\$ (5.20)
2020 - 2034	\$ (0.55)	\$ (0.20)	\$ (0.19)	\$ 0.60	\$ (5.23)	\$ (5.57)

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated December 2017
- (3) Discount Rate - 2017 IRP

Appendix C

Utah Quarterly Compliance Filing Step Study between 2017.Q4 and 2017.Q3 Compliance Filing Total Avoided Cost Prices \$/MWH (1) (4)

Year	2017.Q3 As Filed	OFPC Routine	Generic Routine	Queue Routine	Commission Ordered Routine	Trapped Energy Non-Routine
2018	\$20.69	\$19.56	\$19.38	\$19.38	\$19.38	\$19.38
2019	\$18.84	\$18.95	\$18.95	\$19.00	\$19.04	\$19.04
2020	\$16.93	\$15.84	\$15.84	\$16.17	\$16.16	\$15.31
2021	\$18.86	\$15.98	\$15.53	\$15.32	\$17.96	\$13.31
2022	\$19.91	\$20.00	\$20.04	\$19.66	\$19.77	\$14.65
2023	\$20.74	\$19.60	\$19.06	\$18.80	\$20.02	\$14.28
2024	\$24.26	\$22.82	\$22.76	\$22.56	\$22.39	\$16.56
2025	\$27.64	\$26.21	\$26.25	\$25.83	\$25.49	\$19.81
2026	\$27.39	\$26.50	\$26.51	\$26.07	\$25.70	\$19.32
2027	\$28.40	\$27.51	\$27.49	\$27.07	\$26.61	\$19.65
2028	\$30.41	\$29.97	\$29.78	\$29.39	\$29.55	\$23.89
2029	\$32.53	\$32.37	\$31.81	\$31.62	\$32.51	\$26.35
2030	\$34.99	\$35.37	\$35.04	\$34.74	\$35.74	\$29.72
2031	\$36.43	\$37.10	\$36.95	\$36.05	\$37.46	\$31.17
2032	\$37.70	\$38.64	\$38.30	\$37.98	\$39.22	\$32.99
2033	\$40.59	\$42.57	\$42.25	\$42.99	\$43.94	\$38.66
2034	\$41.92	\$44.32	\$44.02	\$44.90	\$46.10	\$41.61
2035	\$45.02	\$47.70	\$47.30	\$47.88	\$49.54	\$48.80

Nominal Levelized Payment at 6.57% Discount Rate (3)

2018 - 2032	\$24.67	\$23.92	\$23.75	\$23.53	\$23.98	\$19.74
2019 - 2033	\$25.75	\$25.15	\$24.98	\$24.77	\$25.29	\$20.56
2020 - 2034	\$27.15	\$26.60	\$26.40	\$26.22	\$26.81	\$21.58

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated December 2017
- (3) Discount Rate - 2017 IRP
- (4) Capacity costs are allocated assuming an 85% capacity factor.

Appendix C

Utah Quarterly Compliance Filing Step Study between 2017.Q4 and 2017.Q3 Compliance Filing GRID Calculated Energy Avoided Cost Prices \$/MWH (1)

Year	2017.Q3 As Filed	OFPC Routine	Generic Routine	Queue Routine	Commission Ordered Routine	Trapped Energy Non-Routine
2018	\$20.69	\$19.56	\$19.38	\$19.38	\$19.38	\$19.38
2019	\$18.84	\$18.95	\$18.95	\$19.00	\$19.04	\$19.04
2020	\$16.93	\$15.84	\$15.84	\$16.17	\$16.16	\$15.31
2021	\$18.86	\$15.98	\$15.53	\$15.32	\$17.96	\$13.31
2022	\$19.91	\$20.00	\$20.04	\$19.66	\$19.77	\$14.65
2023	\$20.74	\$19.60	\$19.06	\$18.80	\$20.02	\$14.28
2024	\$24.26	\$22.82	\$22.76	\$22.56	\$22.39	\$16.56
2025	\$27.64	\$26.21	\$26.25	\$25.83	\$25.49	\$19.81
2026	\$27.39	\$26.50	\$26.51	\$26.07	\$25.70	\$19.32
2027	\$28.40	\$27.51	\$27.49	\$27.07	\$26.61	\$19.65
2028	\$30.41	\$29.97	\$29.78	\$29.39	\$29.55	\$23.89
2029	\$32.53	\$32.37	\$31.81	\$31.62	\$32.51	\$26.35
2030	\$34.99	\$35.37	\$35.04	\$34.74	\$35.74	\$29.71
2031	\$36.43	\$37.10	\$36.95	\$36.05	\$37.46	\$31.17
2032	\$37.70	\$38.64	\$38.30	\$37.98	\$39.22	\$32.99
2033	\$40.59	\$42.57	\$42.25	\$42.99	\$43.94	\$38.66
2034	\$41.92	\$44.32	\$44.02	\$44.90	\$46.10	\$41.61
2035	\$45.02	\$47.70	\$47.30	\$47.88	\$49.54	\$48.80

Nominal Levelized Payment at 6.57% Discount Rate (3) (4)

2018 - 2032	\$24.67	\$23.92	\$23.75	\$23.53	\$23.98	\$19.74
2019 - 2033	\$25.75	\$25.15	\$24.98	\$24.77	\$25.29	\$20.56
2020 - 2034	\$27.15	\$26.60	\$26.40	\$26.22	\$26.81	\$21.58

- (1) Studies are sequential. The order of the studies would affect the price impact.
- (2) Official Forward Price Curve Dated December 2017
- (3) Discount Rate - 2017 IRP
- (4) 15-Year Nominal Levelized Payment (2018-2032)

Appendix C
Utah Quarterly Compliance Filing
Step Study between 2017.Q4 and 2017.Q3 Compliance Filing
Capacity Avoided Cost Prices

Year	\$/kW-Year		\$/MWH (1)	
	2017.Q3 (3)	2017.Q4 (3)	2017.Q3 (3)	2017.Q4 (3)
2018	-	-	-	-
2019	-	-	-	-
2020	-	-	-	-
2021	-	-	-	-
2022	-	-	-	-
2023	-	-	-	-
2024	-	-	-	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030	-	-	-	-
2031	-	-	-	-
2032	-	-	-	-
2033	-	-	-	-
2034	-	-	-	-
2035	-	-	-	-

Nominal Levelized Payment at 6.570% Discount Rate (2)

2018 - 2032	\$0.00	\$0.00	\$0.00	\$0.00
2019 - 2033	\$0.00	\$0.00	\$0.00	\$0.00
2020 - 2034	\$0.00	\$0.00	\$0.00	\$0.00

- (1) Capacity costs are allocated assuming an 85% capacity factor.
- (2) (3) Discount Rate - 2017 IRP
- (3) No Capacity costs-All of the 2017 IRP Thermal resources are deferred due to the size of the

ROCKY MOUNTAIN POWER
DOCKET 03-035-14 AND DOCKET 17-035-37
PROPOSED TARIFF SHEET
2017.Q4 – FEBRUARY 2018

ELECTRIC SERVICE SCHEDULE NO. 38 - Continued

I. B. Procedures (continued)

- a) A material change in the point of interconnection;
- b) A change in design capacity of 10% or more of the original specified design capacity;
- c) A change in generation technology (i.e. solar, wind, thermal), including a change between fixed tilt and tracking solar projects. Changes in the quantity and timing of monthly power deliveries will not cause removal from the QF pricing queue so long as the basic generation technology and design capacity have not changed;
- d) A change in the online date specified in the information provided under Section I.B.2.f of more than three (3) months earlier or later; or
- e) A PPA has not been executed by both parties within five (5) months after the proposed PPA was provided by the Company to the Developer, except to the extent delays are caused by Company actions or inactions.

11. **Standard PPA Terms.** Absent Commission approval to the contrary for good cause shown, a power purchase agreement executed under this Schedule shall include the following terms and conditions, among others:

- a) The scheduled commercial operation date must not be greater than thirty (30) months after the execution date of the power purchase agreement;
- b) The QF Developer must sign a System Impact Study Agreement with PacifiCorp Transmission (refer to Section 42.2 or Section 51.4 of PacifiCorp's OATT) within 120 days of the date a Commission Order approving the agreement has become final and non-appealable; and
- c) The QF Developer must provide 100% of the project development security within 30 days of the date a Commission Order approving the PPA has become final and non-appealable.

d) The Company will retain the Renewable Energy Credits (RECs) associated with a QF's output during the portion of the contract term that the avoided cost price is based on the costs of a renewable resource.

II. Process for Negotiating Interconnection Agreements

In addition to negotiating a power purchase agreement, QFs intending to make sales to the Company are also required to enter into an interconnection agreement that governs the physical interconnection of the project to the Company's transmission or distribution system. The Company's obligation to make purchases from a QF is conditioned upon all necessary interconnection arrangements being consummated.

It is recommended that the owner initiate its request for interconnection as early in the planning process as possible, to ensure that necessary interconnection arrangements proceed

(continued)

Issued by authority of Report and Order of the Public Service Commission of Utah in Docket No. ~~14-035-~~
~~14017-035-37~~

FILED: ~~July 9, 2015~~ February 22, 2018
2015 March 1, 2018

EFFECTIVE: ~~August 8,~~

in a timely manner on a parallel track with negotiation of the power purchase agreement. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's power delivery function, PacifiCorp Transmission Services.

(continued)

Issued by authority of Report and Order of the Public Service Commission of Utah in Docket No. ~~14-035-~~
~~14017-035-37~~

FILED: ~~July 9, 2015~~ February 22, 2018
~~2015~~ March 1, 2018

EFFECTIVE: ~~August 8,~~

ELECTRIC SERVICE SCHEDULE NO. 38 - Continued

I. B. Procedures (continued)

- a) A material change in the point of interconnection;
- b) A change in design capacity of 10% or more of the original specified design capacity;
- c) A change in generation technology (i.e. solar, wind, thermal), including a change between fixed tilt and tracking solar projects. Changes in the quantity and timing of monthly power deliveries will not cause removal from the QF pricing queue so long as the basic generation technology and design capacity have not changed;
- d) A change in the online date specified in the information provided under Section I.B.2.f of more than three (3) months earlier or later; or
- e) A PPA has not been executed by both parties within five (5) months after the proposed PPA was provided by the Company to the Developer, except to the extent delays are caused by Company actions or inactions.

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- d) The Company will retain the Renewable Energy Credits (RECs) associated with a QF's output during the portion of the contract term that the avoided cost price is based on the costs of a renewable resource.

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It is recommended that the owner initiate its request for interconnection as early in the planning process as possible, to ensure that necessary interconnection arrangements proceed in a timely manner on a parallel track with negotiation of the power purchase agreement. Interconnection agreements (both transmission and distribution level voltages) are handled by the Company's power delivery function, PacifiCorp Transmission Services.

(continued)

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 February 22, 2018.

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