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State of Utah
DEPARTMENT OF COMMERCE
Office of Consumer Services

MICHELE BECK
Director

To: Utah Public Service Commission

From: Office of Consumer Services
Michele Beck, Director
Béla Vastag, Utility Analyst

Date: August 25, 2015

Re: In the Matter of Rocky Mountain Power's 2015 Integrated Resource Plan
Docket No. 15-035-04

I. Background

On March 31, 2015, Rocky Mountain Power (the Company) filed PacifiCorp's 2015 Integrated Resource Plan (IRP). This IRP filing is the culmination of a 10 month public process which began with an initial meeting with stakeholders on June 5, 2014. When an IRP is completed, Utah IRP Guidelines 5 and 6 require the Company to submit its IRP for public comment, review and acknowledgement providing interested parties the opportunity to make formal comments on the adequacy of the plan. On April 17, 2015, the Public Service Commission of Utah (Commission) issued an order setting the schedule for comments on this IRP filing with initial comments due August 25, 2015. Accordingly, the Office of Consumer Services (Office) submits its initial comments on PacifiCorp's 2015 IRP.

The Office notes that during the development of this IRP, the Company has made significant efforts to involve stakeholders through numerous meetings where the Company asked for input and shared study results and other data. We appreciate the Company's efforts during the 2015 IRP process.

II. Acknowledgment

The requirements for acknowledgement of an acceptable plan are found in a set of IRP standards and guidelines, which the Commission published in 1992.[1] For over 20 years, these IRP guidelines have been used by parties as the basis for preparing IRP recommendations and by the Commission for deciding whether or not to acknowledge the Company's IRP filings. The Office relied on these IRP guidelines to determine whether to recommend acknowledgement of PacifiCorp's 2015 IRP.

[1]PSC Order, June 18, 1992, Docket 90-2035-01.

In light of the uncertainties surrounding the implementation of CO_2 emission regulations by the Environmental Protection Agency (EPA), the Office believes that the Company has developed a preferred portfolio which produces a low cost, low risk and reliable set of resources to meet Utah residential and small business customers' future demand for electricity. Therefore, the Office recommends that the Commission grant acknowledgement of the Company's 2015 IRP.

In addition to the Office's recommendation to acknowledge the 2015 IRP, we also provide comments on several issues. These issues include the acquisition of Class 2 DSM, the reliance on Front Office Transactions (FOTs), insufficient justification for Energy Gateway transmission projects and increasing capacity from Qualifying Facilities (QFs).

III. The 2015 IRP Preferred Portfolio

Tables 1 and 2 below summarize the 2015 IRP preferred portfolio and compare 20-year resource totals between the 2013 IRP Update and the 2015 IRP.

Table 1 – 2015 IRP Preferred Portfolio Summary (MW)[2]

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
New Resources																					
FOTs	727	937	904	870	935	979	769	791	761	754	771	792	835	1,304	1,167	1,253	1,247	1,411	1,360	1,087	n/a
DSM - Energy Efficiency	133	139	146	146	153	135	137	144	146	149	123	126	130	132	128	125	122	122	122	120	2,678
DSM - Load Control	0	0	0	0	0	0	0	5	11	0	0	11	0	0	11	0	0	0	5	0	42
Natural Gas Combined Cycle	0	0	0	0	0	0	0	0	0	0	0	0	0	423	0	1,159	0	0	635	635	2,852
OR Solar Capacity Standard	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Existing Unit Changes																					
Reduction in Owned Coal/Gas	(222)	0	0	(280)	0	0	0	0	0	0	(387)	0	0	(762)	0	(807)	(77)	0	(627)	0	(3,162)
Gas Conversion	0	0	0	337	0	0	0	0	0	0	387	0	0	0	0	(337)	0	0	0	0	387

Table 2 - Comparison of Resources over 20 Years (MW)[3]

	2013 IRP Update	2015 IRP	Diff.
Net Coal	-1,684	-2,775	-1,091
Gas CCCTs	2,706	2,852	+146
DSM	1,617	2,720	+1,103
FOTs	1,205	1,082	-123
Wind	480	0	-480
Other	62	7	-55
Total	4,386	3,886	-500

[2] See PacifiCorp 2015 IRP, Table 1.1, page 2.

[3] See Table 5.5 on page 54 of the 2013 IRP Update and Table 1.1 of the 2015 IRP. FOTs are the 20-year average. For comparability purposes, the 2014 Lake Side 2 CCCT (645 MW) is not included in the 2013 Update gas total and 262 MW of micro solar (PV) resources are not included in the 2013 Update Other total because these resources are now counted as a load reduction in the 2015 IRP.

When comparing preferred portfolios between the 2015 IRP and the 2013 IRP Update, one sees a major reduction in coal resources which is offset by a major increase in Demand Side Management (DSM) resources. The first construction of a new generating resource (a 423 MW gas CCCT plant) by the Company is planned for 2028 – 13 years into the 20-year plan. Reliance on market purchases or FOTs is at similar levels as in the 2013 IRP Update as averaged over the 20 year planning horizon. Also notable is that the 2015 IRP has no new wind resources unlike the 2011 and 2013 IRPs. However, not shown in the preferred portfolio resource summary above are QF resources that the Company has under contract and come online in 2015 and 2016. There are 816 MW of these QF resources, mostly wind and solar projects.[4]

IV. Acquisition of Class 2 DSM Resources

As indicated in Table 3 below, the 2015 IRP has the highest amounts of energy efficiency or Class 2 DSM of the last three IRPs. The Company states that Class 2 DSM will meet 86% of forecast load growth from 2015 to 2024.[5]

Table 3 - Preferred Portfolio Annual Class 2 DSM Resource Additions (MW)[6]

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	10-Yr Total
2011 IRP	122	124	126	120	122	125	125	133	133	139	1,269
2013 IRP	103	101	97	92	90	80	79	81	67	70	860
2013 IRP U	99	96	95	88	82	74	74	74	64	66	812
2015 IRP	133	139	146	146	153	135	137	144	146	149	1,428
2015 vs. 2013U	+34	+43	+51	+58	+71	+61	+63	+70	+82	+83	+616

The Office continues to support the Company's pursuit of cost effective Class 2 DSM resources. As we have stated in past IRP comments, however, the Office remains concerned whether these levels of DSM are achievable and if achievable, whether the cost projections used in the IRP are accurate. For example, updated DSM program budgets have already increased 14% from what is reported in Table D.6 on page 69 of Volume II of the 2015 IRP – see Table 4 below.[7]

Table 4 – Updated DSM Program Budgets ($000)[7]

[4] PacifiCorp 2015 IRP, page 189.
[5] 2015 IRP, page 3.
[6] See Table 8.16 of the 2011 IRP, Table 8.7 of the 2013 IRP, Table 5.5 of the 2013 IRP Update and Table 1.1 of the 2015 IRP.
[7] PacifiCorp's response to discovery request OCS 2.2.

State/Year	2015	2016	2017	2018	Total
California	$ 2,387	$ 3,290	$ 4,087	$ 4,220	$ 13,983
Idaho	$ 4,156	$ 4,398	$ 5,499	$ 6,325	$ 20,377
Oregon	$ 42,047	$ 43,616	$ 43,452	$ 40,382	$ 169,498
Utah	$ 64,142	$ 67,542	$ 80,034	$ 85,666	$ 297,384
Washington	$ 11,901	$ 11,506	$ 12,288	$ 13,898	$ 49,593
Wyoming	$ 6,734	$ 11,604	$ 14,444	$ 16,764	$ 49,546
Non-Situs Costs	$ 6,360	$ 6,360	$ 6,360	$ 6,360	$ 25,440
Total	**$ 137,727**	**$ 148,315**	**$ 166,163**	**$ 173,616**	**$ 625,821**

Our concerns over achievability and affordability for Utah DSM are heightened when we review the distribution of IRP-selected Class 2 DSM across the Company's six state territory. As Table 5 below shows, Utah is responsible for 56.2% of the selected Class 2 DSM in terms of GWh and 59.5% in terms of MW capacity in the preferred portfolio.

Table 5 – IRP Selected Class 2 DSM by State[8]

State	GWh Totals (20 yr)		MW Totals (20 yr)	
CA	136,960	1.2%	27	1.0%
OR	2,168,100	19.2%	514	19.2%
WA	754,960	6.7%	183	6.8%
UT	6,348,280	56.2%	1,598	59.5%
ID	343,150	3.0%	91	3.4%
WY	1,548,060	13.7%	271	10.1%
System	**11,299,510**	**100.0%**	**2,684**	**100.0%**

In comparison, Utah represents a much smaller percentage of the overall system. See Table 6 below.

Table 6 – PacifiCorp's Six States Share of System Resources[9]

State	SE Factor	SG Factor
CA	1.5%	1.6%
OR	24.5%	25.7%
WA	7.6%	8.0%
UT	42.8%	43.3%
ID	6.3%	5.6%
WY	17.0%	15.4%
FERC	0.4%	0.4%

[8] MW from Table 8.7 - 2015 IRP. GWh from Handout 1 of the July 17, 2015 DSM Technical Conference and also available in PacifiCorp-2015IRP_RH1-SOReportPackage-03162015.xlsx found at http://www.pacificorp.com/es/irp/irpsupport.html.

[9] Rocky Mountain Power, Utah Jurisdiction Results of Operations for period ended December 31, 2014 filed in Utah PSC Docket No. 15-035-51.

The comparison of Utah's actual percentage of the PacifiCorp system compared to its percentage of DSM in the preferred portfolio is important because traditionally the multi-state allocation process has situs assigned Class 2 DSM costs. Thus, if the Class 2 DSM is pursued as indicated in the preferred portfolio, Utah ratepayers will be paying a significantly higher percentage of the DSM costs than ratepayers in PacifiCorp's other jurisdictions. In addition, the divergence between Utah's allocation of system costs and Utah's share of Class 2 DSM resources further calls into question the Company's ability to achieve the IRP-selected levels in Utah. The Office will continue to monitor this issue.

Table 7 below shows in which sectors and end use measures the Utah Class 2 DSM IRP-selected resources are generated. Over the 20 year IRP planning horizon, the Commercial Sector provides 56.9% of the DSM resources. From the perspective of end use, lighting provides 54.1% of the DSM resources.

Table 7 – IRP Selected Class 2 DSM for Utah by Sector & End Use – 20 Year Totals[10]

	Commercial		Industrial		Residential		All Sectors*	
End Use	**GWh**	**% of UT**	**GWh**	**% of UT**	**GWh**	**% of UT**	**GWh**	**% of UT**
Appliances					285	4.5%	285	4.5%
Cooling	625	9.8%	40	0.6%	183	2.9%	**848**	**13.3%**
Electronics					127	2.0%	127	2.0%
Food Preparation	29	0.5%					29	0.5%
Heating	108	1.7%	8	0.1%	132	2.1%	248	3.9%
Lighting - Exterior	440	6.9%	114	1.8%	73	1.1%	652	10.2%
Lighting - Interior	1,934	30.4%	539	8.5%	320	5.0%	2,793	43.9%
subtotal Lighting	**2,374**	**37.3%**	**653**	**10.3%**	**393**	**6.2%**	**3,445**	**54.1%**
Miscellaneous	3	0.0%	15	0.2%	69	1.1%	87	1.4%
Motors			585	9.2%			**605**	**9.5%**
Office Equipment	191	3.0%					191	3.0%
Process			115	1.8%			115	1.8%
Refrigeration	58	0.9%					58	0.9%
Ventilation	162	2.5%	0	0.0%			162	2.5%
Water Heating	72	1.1%			93	1.5%	165	2.6%
TOTALS	**3,622**	**56.9%**	**1,416**	**22.2%**	**1,282**	**20.1%**	**6,365**	**100.0%**

*All Sectors totals include 25 GWh for lighting from the Street Lighting Sector and 20 GWh for motors from the Irrigation Sector.

In Table 7, we have also highlighted the three largest end uses comprising Utah's selected 20-year DSM resources. Together cooling, lighting and motors make up about 77% of these resources. The Office asserts that the types of DSM detail discussed above should be presented and discussed in the main volume of the IRP, e.g., at least in the Portfolio Selection Results chapter. Because DSM is such a major component of meeting future

[10] Handout 4 from the July 17, 2015 DSM Technical Conference.

customer demand, it would be helpful for parties to have this type of additional detail more prominently discussed in future IRPs.

We also request that the Commission require the Company to report on the Company's progress toward achieving the IRP-selected Class 2 DSM in between IRP filings. The Office understands that the Company provides updates to the DSM Steering Committee on its progress toward achieving the DSM goals from the IRP. However, we recommend that the Company host an annual technical conference for IRP stakeholders where the Company's efforts and results toward reaching these goals are presented. The Company should focus on the states, sectors and end uses such as those identified above that provide a majority of the resources. The technical conference should include an update on the costs associated with obtaining these resources and how the costs compare with the assumptions in the IRP.

V. Market Reliance – Front Office Transactions (FOTs)

As shown in Table 8 below, the amount of FOTs in the preferred portfolio has in general declined from the 2013 IRP Update – especially in 2023 and 2024. However, FOTs in the 2015 IRP are still at significant levels and comparable to levels in the 2011 IRP.

Table 8 - **Preferred Portfolio Annual Front Office Transactions - FOTs (MW)**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
2011 IRP	1,149	775	822	967	695	995	700	750	750	750
2013 IRP	845	983	1,102	1,209	1,323	1,420	1,191	1,333	1,427	1,112
2013 IRP U	583	701	831	931	1,027	1,261	1,042	1,098	1,210	1,302
2015 IRP	727	937	904	870	935	979	769	791	761	754
2013 IRP U vs. 2015 IRP	+144	+236	+73	-61	-92	-282	-273	-307	-449	-548

In support of its reliance on market purchases, the Company provides an analysis (see Appendix J) of WECC's 2014 Power Supply Assessment (PSA). The Company also limits the availability of FOTs in the four market hubs used in the IRP[11]. These FOT limits are developed based on the Company's knowledge of the specific regional market and a consideration of the physical delivery constraints. The Company concludes that there is

[11] Mid-Columbia, California Oregon Border (COB), Southern Oregon/Northern California (NOB) and Mona, page 129 of the 2015 IRP.

adequate market depth in these regional markets to maintain the targeted reserve margin for several years.

The Office has also reviewed the WECC 2014 PSA and arrived at a similar conclusion concerning sufficient market liquidity for FOTs, especially in the first 5 years of the IRP planning horizon. Power supply margins do become reduced in 2023 and 2024.[12] However, because the IRP is refreshed annually, the Company should monitor market liquidity closely and be ready to make adjustments to the plan if liquidity changes.

VI. Justification for Energy Gateway Transmission Projects

In Chapter 4 of the IRP, Transmission Planning, the Company discusses the history and necessity of the Energy Gateway Transmission project. The core components of this project are the Gateway West and South segments that connect eastern Wyoming with Idaho, Utah and Washington. See Table 9 below. These are very long transmission lines and massively expensive, costing billions of dollars.

Table 9 - Current Status of Selected Gateway Transmission Projects[13]

	Segment	Length	Connection Points	2013 IRP U. In-Service	2015 IRP In-Service
Gateway West	D	400 mi	Windstar-Populus	2019-2021	2019-2024
Gateway West	E	500 mi	Populus-Hemmingway	2020-2023	2019-2024
Gateway South	F	400 mi	Aeolus-Mona	2020-2022	2020-2024

In the 2015 IRP, the Company is seeking regulatory acknowledgement for a small part of the Energy Gateway project – the Wallula to McNary line.[14] This line is 30 miles long and projected to cost less than $40 million.[15] The Company plans to offer service on this new line charging customers embedded transmission rates rather than incremental rates.[16] This means that the cost of the Wallula to McNary line is shared among all of PacifiCorp Transmission's customers – including PacifiCorp Energy serving PacifiCorp's retail customers. In the calculation of the Company's Open Access Transmission Tariff (OATT) rates, PacifiCorp's retail business shoulders about 85% of the load divisor.[17] This means that PacifiCorp's retail customers will pay for 85% of the cost of the Wallula to McNary line. The costs to retail ratepayers are not substantial for this line but costs could become very significant if Gateway West and Gateway South are put in service. Because these costs would have a significant impact on retail rates, the Office would expect the IRP to provide

[12] See Figure J.1, page 147 of Appendix J in the 2015 IRP.
[13] See page 21 of the 2013 IRP Update and page 57 of the 2015 IRP.
[14] 2015 IRP, page 49. The Office is unclear what "regulatory acknowledgement" of a transmission line in an IRP means. However, Utah IRP Guideline 7 states that acknowledgement of an IRP will not guarantee favorable ratemaking treatment of future resource acquisitions.
[15] PacifiCorp's response to discovery request DPU 3.6.
[16] Ibid.
[17] Go to: http://www.oasis.oati.com/ppw/, then folder PacifiCorp OASIS Tariff/Company Information, then OATT Pricing.

a robust discussion of the need for these Gateway projects well in advance of asking for explicit acknowledgement.

In Chapter 4 of the 2015 IRP, the Company continues to cite planning initiatives which provide justification for the construction of this system because: "new capability is necessary to enable new resource development" and "move constrained energy resources to regional load centers". These planning initiatives typically also include the need to access renewable power as justification for this new transmission. However, the Company has no plans to build any type of electricity generator in Wyoming – no new coal, no new gas CCCTs, nor any new wind or solar. In fact as Table 10 shows below, the Company has actually eliminated all Wyoming wind from the IRP Preferred Portfolio.

Table 10 - Wyoming Wind Resources in the Preferred Portfolio (MW)

Year	2011 IRP	2011 IRP Update	2013 IRP	2013 IRP Update	2015 IRP
2018	300	0	0	0	0
2019	300	225	0	0	0
2020	200	225	0	0	0
2021	200	0	0	0	0
2022	200	150	0	0	0
2023	200	100	0	0	0
2024	200	75	432	184	0
2025	100	200	218	296	0
2026	100	200	0	0	0
2027	100	200	0	0	0
2028	100	200	0	0	0
2029	100	250	0	0	0
2030	0	250	0	0	0
2031	-	-	0	0	0
2032	-	-	0	0	0
2033	-	-	-	-	0
2034	-	-	-	-	0
Total	**2,100**	**2,075**	**650**	**480**	**0**

The Office understands that the justification for new transmission is a complex analysis. For example, in addition to connecting new generation, there are reliability and FERC OATT requirements that new transmission addresses. However, many of the planning initiatives cited in the IRP are now stale. The Office recommends that in future IRPs, the Company provide a fresh discussion on Transmission Planning, especially for the need of the large Energy Gateway projects.

VII. Capacity from Qualifying Facilities

As stated earlier in our comments, the modeling of the preferred portfolio includes 816 MW of executed QF power purchase agreements (PPAs) for projects coming online in 2015 and 2016. As discussed on page 189 of the IRP, most of these QF resources are in addition to what was included when IRP modeling assumptions were locked down in September 2014. The Office is also aware of another 260 MW of solar QF PPAs signed in Utah in March 2015[18] that would be in addition to the ones considered in the Company's modeling.

Figure 8.19 on page 189, shows the impact of the 816 MW of QF resources on the preferred portfolio. In the first 10 years, the main effect is that FOTs are reduced but in the second 10 years of the plan, DSM and renewable resources are also displaced. The Office notes that the substantial addition of QF resources (in this case well over 1,000 MW) are affecting the composition of the Company's planned generation portfolio yet they are not vetted through any extensive review process such as the IRP, an RFP or a Significant Energy Resource Decision proceeding. The Company's 2015 Supply Side Resource Table lists wind capital costs at about $2,000/kW and tracking solar at about $3,000/kW.[19] Using the $2,000/kW figure, the capital costs for 1,000 MW of renewable QFs would be around $2 billion. This investment is financed by ratepayers through the PPAs the Company signs with these QFs. Although the Office acknowledges that the QF contracts have been obtained consistent with state and federal laws and regulations, we continue to have some unease that this level of investment in new resources is being made outside of the IRP process.

VIII. Recommendations on PacifiCorp's 2015 IRP

The Office believes that the Company has developed a preferred portfolio which produces a low cost, low risk and reliable set of resources and recommends that the Commission grant acknowledgement of the Company's 2015 IRP.

The Office submits the following recommendations to the Commission for future IRPs:

- The Company should include additional detail and expand the discussion in the main volume of the IRP on preferred portfolio selected Class 2 DSM such as providing information by state, sector and end use.
- The Company should be required to hold an annual technical conference for IRP stakeholders to present its progress in achieving the IRP selected Class 2 DSM and include the additional detail discussed above and updates on actual DSM costs and budgets.
- The Company should update the Transmission Planning chapter of the IRP to include more detailed justification for Energy Gateway projects.

[18] Pavant Solar II, Iron Springs Solar and Granite Mountain Solar East & West, see Utah PSC Docket Nos. 15-035-40, -41, -42 & -43 at http://www.psc.utah.gov/utilities/electric/dockets.html#2015.
[19] 2015 PacifiCorp IRP, Table 6.1, page 93.

CC: Chris Parker, Division of Public Utilities
Jeffrey K. Larsen, Rocky Mountain Power