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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of PacifiCorp's 2015 Integrated Resource Plan	**DOCKET NO. 15-035-04** **Initial Comments of Utah Clean Energy and Southwest Energy Efficiency Project on PacifiCorp's Demand Side Resource Potential Assessment for 2015-2034**

Utah Clean Energy (UCE) and Southwest Energy Efficiency Project (SWEEP) hereby submit joint comments on PacifiCorp's Demand Side Resource Potential Assessment for 2015-2034 and DSM selections under the 2015 Integrated Resource Plan (IRP) Preferred Portfolio. PacifiCorp's 2015 Demand-Side Management (DSM) Assessment shows significant increase in the long term energy efficiency resource potential within the Company's six state service territory. The assessment is a part of the Integrated Resource Plan process, wherein the IRP preferred portfolio selects DSM based on this potential study. The sections below include UCE and SWEEP's comments on both the Company's Demands Side Resource Potential Assessment for 2015-2034 and the DSM selections in the Preferred Portfolio in the 2015 IRP.

1. Achievable Technical Potential for Class 2 DSM

The total system wide 20-year Class 2 DSM shows a significant increase from 648 aMW in the 2013 assessment to 1,248 aMW or 10,861 GWh in the new 2015 study.[1] This achievable technical potential of 11 terawatt-hours accounts for almost 20 percent of projected baseline loads in 2034.[2] The 2015 assessment also shows that among all of the states in the PacifiCorp service territory, Utah possesses the highest potential for all three – Class 1, 2 and 3 energy efficiency resources.[3] As discussed in Utah's DSM technical conference, this is likely and artifact of the costs that are included in the DSM cost curves that are used in the IRP model. In Utah, only the utility costs are included, yet in other states the total costs are incorporated, including the participant's costs. This unfairly burdens DSM programs in states other than Utah with additional costs as compared to utility supply side investments. This issue is addressed further in Section 7, below.

Given this vast DSM potential, the Company should consider energy efficiency as a huge opportunity in terms of meeting their load growth by acquiring all cost-effective DSM.

2. Inclusion of Emerging Technologies under Class 1 DSM

The 2015 potential study considers only existing Class 1 DSM programs as a part of its analysis. Based on the existing programs, the Class 1 DSM total market potential is 678 MW in 2034, of which Utah contributes nearly half (314 MW).[4] Given that the study looks 20

[1] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 1 – Executive Summary, Pages 2-1 to 2-4
[2] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 2 – Class 2 DSM Analysis, Table 5-1, Page 5-2
[3] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 1 – Executive Summary, Pages 2-1 to 2-4
[4] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 3 – Class 1 and 3 DSM Analysis, Table 4-2, Page 4-3

years into the future, we would like to see inclusion of some additional Class 1 DSM resources for direct load control, such as demand response for lighting, thermal energy storage, advanced thermostat control programs using web based applications, smart appliance direct load control, etc. As these technologies mature in the coming years, it would be useful to include them as a part of analysis in future studies. If not these measures explicitly, the next study should include a proxy that accounts for the energy savings that will likely result from these emerging technologies. Further, load control will be an important cost-effective tool for balancing loads and resources in the future.

3. Acquiring Class 3 DSM resources through Advanced Metering Infrastructure

For assessing the Class 3 DSM resource potential through dynamic pricing programs such as Critical Peak Pricing and Real-Time Pricing, the 2015 potential study assumed that Advanced Metering Infrastructure (AMI) will be deployed by the end of 2019. Utah has almost half (166.5 MW) of the total Class 3 DSM potential (325.6 MW) across PacifiCorp's entire service territory in 2034. Of this 166.5 MW of Class 3 DSM resource potential in Utah in 2034, Residential Critical Peak Pricing accounts for 66.3 MW in 2034 - more than a third of the state's total Class 3 DSM potential.[5] While PacifiCorp does not have AMI in place currently in Utah, the Company should consider deploying this advanced infrastructure in new residential developments as pilot programs to acquire and refine Class 3 DSM programs.

4. Class 4 DSM resource neglected in the 2015 DSM Potential Assessment

The 2015 DSM potential study, similar to the 2013 assessment, ignores energy efficiency potential from Class 4 DSM behavioral change-oriented programs such as Home Energy

[5] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 1 – Executive Summary, Pages 2-2 to 2-3

Reports and support for energy managers.[6] PacifiCorp has these programs in Utah either directly or as part of their Strategic Energy Management program for commercial and industrial customers. We believe this is an important resource that should be considered when assessing the potential of energy efficiency resources for the Company. Future studies should account for the energy savings that result from these kinds of programs.

5. Residential Class 2 DSM IRP Selections in Utah by IRP Preferred Portfolio

The cumulative Class 2 DSM resource selections by the preferred portfolio in the IRP for Utah are 6,349 GWh out of the total 7,454 GWh achievable technical potential in 2034,[7] which means that 85 percent of the total achievable potential for Class 2 DSM has been selected by the IRP for Utah. This is an indicator of the fact that DSM resources in Utah are more cost-effective than most other resources and can help the Company to manage their growing load in the state.

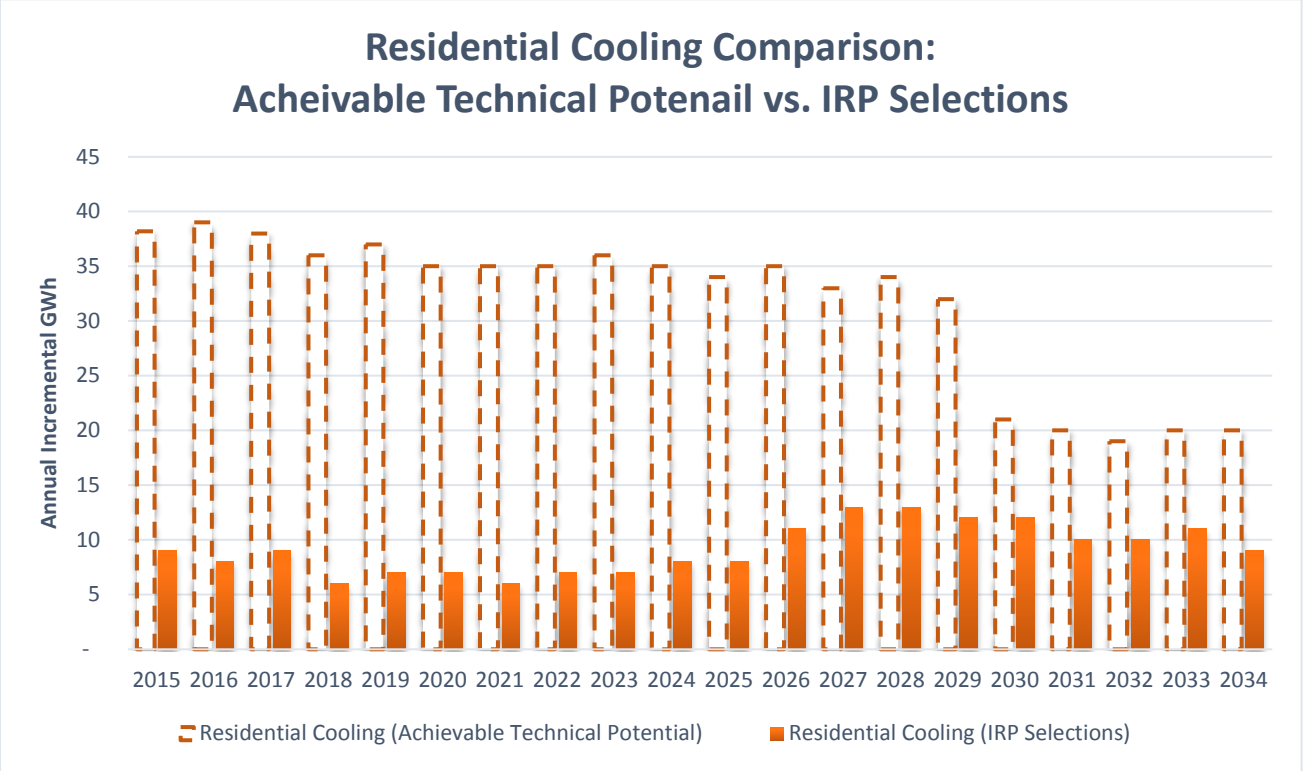
Looking at the Class 2 DSM by sector, the numbers selected for different end-uses under the preferred portfolio in the IRP for the commercial and industrial sectors are comparable to their achievable technical potential assessed in the DSM potential Study. For the commercial sector Class 2 DSM IRP selections represent 90 percent of the achievable technical potential on average by 2034, while for the industrial sector the selections by the preferred portfolio are almost 100 percent of the achievable technical potential on average by 2034.[8] We are pleased to see such high proportions of the technical potential selected in the 2015 IRP.

However, for the residential sector, the DSM potential study identified cooling as having the largest potential for savings, with most of the potential located in Utah. But looking at the

[6] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 1 – Executive Summary, Page 1-2
[7] PacifiCorp 2015 IRP Vol. II, Appendix D – DSM & Supplemental Resources, Page 64
[8] Data presented at RMP DSM technical conference on July 17, 2015, Handouts no. 2 and no. 4

residential cooling selections by the IRP preferred portfolio in Utah, the amount selected by the IRP represents a mere 20 percent of achievable technical potential selected by 2024 and 32 percent of achievable technical potential selected by 2034, on average (see the Figure 1 below). Given Utah's large cooling load, and the fact that residential cooling represents the highest achievable technical potential in the Class 2 residential sector,[9] the IRP's selection of only 20percent over the next 10 years in Utah seems to be a significant lost opportunity for PacifiCorp and its ratepayers.

Figure 1: Comparison between Residential Cooling Class 2 DSM IRP selections Achievable Technical Potential



Source: Data presented at RMP DSM technical conference on July 17, 2015, Handouts no. 2 and no. 4

[9] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 2 – Class 2 DSM Analysis, Pages 4-3 to 4-4

PacifiCorp should explore the opportunity to promote and/or modify their existing wattsmart programs and incentives for residential cooling so the Company can acquire maximum amount of cost-effective savings identified in the potential study. Specifically, evaporative cooling represents a highly cost-effective technology for Utah's residential sector due to our arid climate. This and other residential cooling technologies can play a key role in achieving the tremendous energy and demand savings identified in the potential study.

6. Residential Direct Load Control under Class 1 DSM selections in Utah by the IRP Preferred Portfolio

The residential Direct Load Control (DLC) selections under the IRP for Utah remain constant at 115 MW for 20 years, with no new resources being added.[10] However, the potential study estimates that Class 1 residential DLC in Utah represents 163 MW in 2034 (the highest amongst any another state's residential DLC program).[11] Therefore, it is important for PacifiCorp to consider acquiring more residential DLC, as residential cooling loads are extremely high and tend to drive the system to its peak during summer months. Since Class 1 DSM resources can help lower the ratio between peak and average load, more acquisition of these resources can help drive down the peak energy demand and costs for all ratepayers.[12]

7. DSM Cost Curve Inputs

[10] PacifiCorp 2015 IRP Vol. II, Appendix D – DSM & Supplemental Resources, Page 65
[11] PacifiCorp Demand-Side Resource Potential Assessment for 2015-2034, Vol. 3 – Class 1 and 3 DSM Analysis, Table 4-2, Page 4-3
[12] Reulet S., Presentation on *Demand Side Management and Peak Load Reduction.* New York State Public Service Commission. Available at: http://www.naruc.org/international/Documents/SandraReulet_Demand_Side_Management_and_Peak_Load_Reduction_-Sep28_1.30.pdf

As discussed in the introduction, the DSM selected in the preferred portfolio is much greater in Utah than in other states. Part of this may be attributable to Utah's potential, but it is likely that the way the cost curves for DSM are developed in the IRP has a significant impact. The preferred portfolio is currently modeled to include participant costs in the DSM cost curves for all states other than Utah. In these states, the inclusion of participant costs unfairly burdens DSM programs as compared to supply side resources. It is understood that different states have different cost test thresholds for approval of their DSM programs and this creates a challenge for DSM modeling in the IRP. For states that use the Total Resource Cost test for approval of their DSM programs, modeling will take an additional step. The first step will be to determine the cost effectiveness of the programs at various incentive levels and then extract the information on the utility costs to include in the IRP cost curves. This would correct the DSM cost curves so they do not include participant costs in the IRP modeling.

8. Conclusion and Recommendations

Overall PacifiCorp's Demand Side Resource Potential Assessment 2015-2034 has improved significantly as compared to the 2013 assessment, especially in terms of the achievable technical potential for Class 2 DSM as well as the selections by the Preferred Portfolio in the 2015 IRP. However, below are recommendations for future analysis and implementation:

1. Future DSM potential studies should expand the range of load control programs analyzed.
2. There is still a significant amount of savings potential in Utah's residential sector that can be harnessed through both Class 1 and Class 2 DSM programs.

3. PacifiCorp should assess opportunities to further unlock the potential within Class 3 and 4 DSM resources through more thorough modeling and incorporation into the next IRP.
4. As part of the IRP process, the DSM price curves need to be corrected for states that use the total resource cost test for approving programs.
5. Finally, newer emerging technologies and measures should be considered in future potential assessments.

Utah Clean Energy and SWEEP applaud PacifiCorp for its DSM programs that have continued to grow and capture cost effective savings, bringing it to 1 percent electric savings as a percentage of retail sales in 2014.[13] While recognizing that PacifiCorp continues to move its DSM programs in a positive direction, we recommend that PacifiCorp considers the DSM resources selected in the 2015 IRP as a "floor" and work to acquire all cost-effective DSM. Given the huge resource potential that DSM represents and the fact that energy efficiency is a means to reduce regulatory risk and a pathway for the State of Utah to comply with the recently-released Clean Power Plan, the Company should follow the trajectory of leading utilities and set a goal to achieve 2 percent electricity savings as a percentage of retail sales.[14] This level of energy efficiency represents significant economic benefits for Utahns. As SWEEP's *$20 Billion Bonanza* study estimates, implementation of best practice energy efficiency programs between 2010 and 2020 in Utah can avoid as many as 3 power plants and generate $1.7 billion in net economic benefits for Utah households and businesses.[15]

[13] *Electric Utility Efficiency Programs in Utah: A Success Story*. May 2015. UCE, SWEEP Available at: http://swenergy.org/Data/Sites/1/media/documents/publications/factsheets/ut-dsm-factsheet.pdf
[14] A. Gilleo et. al. *The 2014 State Energy Efficiency Scorecard*. October 2014. ACEEE
[15] H.Geller et al. *The $20 Billion Bonanza: Best Practice Utility Energy Efficiency Programs and Their Benefits for the Southwest.* SWEEP. Oct. 2012. Available at: http://www.swenergy.org/programs/utilities/20BBonanza.htm