



State of Utah
Department of Commerce
Division of Public Utilities

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ACTION REQUEST RESPONSE

To: Utah Public Service Commission

From: Utah Division of Public Utilities

Chris Parker, Director

Artie Powell, Energy Section Manager

Charles Peterson, Technical Consultant

Abdinasir Abdulle, Technical Consultant

Sam Liu, Utility Analyst

Date: September 4, 2014

Re: **Acknowledge Smart Grid Report**

Docket No. 14-035-80. Rocky Mountain Power's 2014 Smart Grid Monitoring Report.

RECOMMENDATIONS (Acknowledge)

The Division of Public Utilities ("Division") recommends that the Commission acknowledge Rocky Mountain Power's ("Company") 2014 Smart Grid Monitoring Report (Report) that was filed with the Commission on July 1, 2014.

ISSUE

Pursuant to the Commission Orders in Docket 08-999-05 dated on December 17, 2009 and November 30, 2011, the Company filed its 2014 Smart Grid Monitoring Report (Report) on July 1, 2014. On the same day July 1, 2014, the Commission issued an Action Request for the

Division to review the Report for compliance and make recommendations. On July 8, 2014, the Commission issued a Notice of Filing and Comment Period asking any interested party may submit comments on PacifiCorp's Report on or before September 4, 2014, and reply comments may be submitted on or before September 18, 2014. This memorandum is the Division's response to the Commission's Action Request.

REVIEW OF COMMISSION DIRECTION

In its Order in Docket No. 08-999-05 dated December 17, 2009, the Commission directed the Company to monitor the development of smart grid technologies and to consider their implementation as technologies mature and cost effectiveness analyses demonstrate appropriate benefits to the Company and its customers. The Company was also directed to file an annual report that outlines the findings of this monitoring effort.

In its Order dated November 30, 2011 in Docket No. 08-999-05, the Commission directed the Company to include a discussion in the Report seven items:

1. All smart-grid related projects and activities the Company is actually engaged in throughout its system;
2. Smart grid-like activities the Company is either considering or has implemented which accrue some of the benefits of smart grid;
3. Upgrades or changes the Company is making relative to potential smart grid implementation and the related benefit-cost analyses;
4. Provide a list and description of smart grid pilot projects across the country being monitored by the Company;
5. Smart grid related activities and requirements in the Company's other jurisdictions;
6. The interaction of smart grid, rate structure, and customer behavior; and
7. Vehicle to grid applications. The Commission also directed the Company to file its annual report in July of each year.

The Commission also Ordered the Company to explain the relationship between the analysis provided in the Financial Summary and the demand side resource performance standards approved by the Commission in Docket No. 09-035-27, and to report to the DSM advisory group.

In its November 28, 2012 correspondence to the Company, the Commission directed the Company to provide additional information regarding the dynamic line rating projects in its annual Smart Grid Monitoring Report.

DISCUSSION

In compliance with Commission Orders, on July 1, 2014, the Company filed its 2014 Smart Grid Monitoring Report. The Division reviewed this Report in light of the Commission's requirements set forth above. The Division believes that the content of the Report complies with previous Commission direction.

The Company reviewed the interoperation of relevant technologies for transmission, substation and distribution systems, smart metering, and home area network and determined that the most critical infrastructure decision to be made during smart grid design is the communication network. However, the Company focused on those technologies that are easily integrated with the existing system without major changes to the system. These technologies include advanced metering systems with demand response programs, distribution management systems, outage management systems, and transmission synchrophasors.

The Company also studied self-healing distribution system, distributed energy systems (including electric vehicles) and direct load control programs. Direct load control programs are part of the Company's DSM initiatives in Utah. Distributed energy systems, excluding electric vehicles, are studied in the Company's integrated resource plan process. The Company did not include these technologies in its financial analysis.

The Company provided a detailed description of the technologies that it has considered in its report. (See pages 37 – 52). The Company’s report detailed the requirements of smart grid and reported on the smart grid-related projects and programs that the Company is actually engaged in. In Appendix B, it also provided a description of the smart grid technologies at other companies that it has implemented in the past and present as well as those it is monitoring nationwide.

The Company acknowledged that it has included an analysis that compared the Company’s financial analysis with the demand side performance standards approved by the Commission in “confidential Attachment A”.

Finally, as mentioned above, in compliance with the Commission direction in Docket 08-999-05, the Company provided PacifiCorp 2014 Smart Grid Report Index for review. In compliance with the Commission direction in Docket 12-035-888, the Company provided status reports for the dynamic line rating projects all addressed in this report “Confidential Utah 2014 Addendum”.

Using the best available data, the Company performed a high level benefit/cost analysis of the smart grid project. The results of this analysis show a negative present value for the implementation of a comprehensive smart grid system throughout PacifiCorp’s territory. Hence, under the current economic outlook of the smart grid, implementation of comprehensive smart grid system throughout PacifiCorp territory is cost prohibitive. The Company noted, though, that “[d]uring the last year there have been improvements in the cost of smart grid technology;”¹ The Company indicated that, for future improvement of the operation and management of transmission and distribution systems, some smart grid technologies show promise. These areas include “[Meter Data Management] for the emerging EIM, [Dynamic Line Rating] for specific constrained transmission pathways and direct load control to manage seasonal peaks in the Wasatch Front Area.”²

¹ Report, page 71.

² Ibid.

The Company has developed a roadmap for implementing the smart grid throughout its service territory. This roadmap shows the progress required to reach a full smart grid by aligning the relative start dates for various system components of a smart grid. The roadmap is presented at a high level, and as yet the Company has no start dates for implementing any of the technologies.

The Company indicated that it will continue to monitor activities throughout the country as more advanced technologies and smart grid related projects are developed.

During a meeting with the Company in 2012, the Company indicated that it believed that it would be two or three more years before there would be enough information from various smart grid pilot projects around the country in order for the Company to be able to decide which, if any, of these technologies would be beneficial to the Company and its customers. In its report last year, the Company said it would be a “few years” before the Company will be able to tell what technologies are beneficial (see 2013 Report, pages 4 and 12). In the current report the Company continues to indicate that such a determination of technologies is still a “few years” away. (2014 Report, page 4). The Division recommends that in its 2015 report that the Company indicate with more specificity when it believes conclusions about certain smart grid-related technologies will be forthcoming.

The Commission directed the Company to present its smart grid report to the DSM advisory group. The Division understands that there has been no formal DSM advisory group meeting since June 6, 2014 with the next DSM Steering Committee meeting scheduled for October 14, 2014; however, there is no Advisory Group meeting currently scheduled. It is therefore uncertain when the Company will be able to comply with this directive. The Division recommends that the Company file a notice with the Commission when it has complied with this directive.

Last year the Division recommended a brief review and analysis of microgrids. The Division believes that microgrids represent emerging technologies closely related to smart grid concepts. The Company has included a brief review and comment on this subject at the end of the “Confidential 2014 Addendum” with the Report. The Company included some examples of

microgrid developments in California, Oregon and Utah. The Division appreciates the Company's inclusion and analysis of the microgrid issue.³

CONCLUSION

Based on the above discussion, the Division believes that, with the exception of not yet reporting to the DSM group, the Report complies with the above Commission Orders. Therefore, the Division recommends that the Commission acknowledge the Company's 2014 Smart Grid Report. The Division believes that with the 2015 report, the Company should indicate when it expects to make conclusions about at least some smart grid technologies that have been under study for several years in other states and companies. The Division recommends that the Company provide a notice to the Commission when it has presented the Smart Grid Report to the DSM advisory group. The Division also recommends that the Commission order the Company continue to monitor and briefly report on microgrid technologies.

CC: Dave Taylor, RMP
Michele Beck, OCS

³ The development of microgrids may be proceeding at a faster pace than the Company seems to indicate. In a white paper on microgrids dated April 14, 2014, the staff of the California Public Service Commission said this in its conclusion:

Microgrids are being investigated across the country as a solution to support greater reliability, resiliency, and security of supply, but microgrids can be much more. We need to take care not to pigeon-hole microgrids as only a set of technologies capable of keeping the lights on [in] specific locations. Rather, microgrids can provide far more benefits, not only to the customers of the microgrid, but to the grid as a whole. Encouraging and realizing these benefits should be investigated and considered as beneficial to the state and its customers. (page 25).

<http://www.cpuc.ca.gov/NR/rdonlyres/01ECA296-5E7F-4C23-8570-1EFF2DC0F278/0/PPDMicrogridPaper414.pdf>
last accessed August 29, 2014.