



September 11, 2014

UTAH PUBLIC SERVICE COMMISSION
Heber M. Wells Building
160 East 300 South, 4th Floor
Salt Lake City, Utah 84111

UTAH PUBLIC SERVICE COMMISSION
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Re: Docket No. 14-035-80 – In the Matter of Rocky Mountain Power’s 2014 Smart Grid Monitoring Report (LATE COMMENTS)

Dear Public Service Commission,

On July 1, 2014, Rocky Mountain Power/PacifiCorp (the Company) filed its 2014 Smart Grid Monitoring Report (Report) and 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. Although they are being filed after the deadline, Utah Clean Energy submits these late comments in order to recommend additional topics for future investigation.

We appreciate the Company’s ongoing work on Smart Grid technologies and continued research on different programs. The Report is well-representative of PacifiCorp’s stated goals, both short-term and long-term, of their Smart Grid drive. The detailed description on some of PacifiCorp’s pilot projects across different states illustrate the progress that the company is making along Smart Grid. Two of PacifiCorp’s cross-cutting company-wide projects on Distributed and Renewable Resource Enhancement and Customer Communication/Engagement Programs indicate ways in which they are leveraging their well-established network towards promoting renewable resource generation, enhancing customer awareness and giving necessary tools to consumers to take control of their energy use.

We appreciate PacifiCorp’s commitment towards continuing to monitor progress with regard to several Smart Grid related projects and technologies, including Advanced Metering Systems, integration of Smart Inverters, Device Inoperability, Grid Security, etc. We envision that these advancements will optimize their electric systems in the coming years.



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Given the information provided by PacifiCorp in the Report, Utah Clean Energy requests further evaluation and exploration on the following issues in future reports or technical conferences:

1. **Integration of distributed generation.** The report mentions that between 2010 and 2012 the Company acquired 160 MW of renewable resources and is extensively researching several energy efficiency and renewable energy technologies (such as combined heat and power, solar, geothermal, wind, etc.). Effective integration of distributed generation is a critical component of a smarter grid. One of the key goals of Smart Grid is to enable customer generation sources integrate to the grid such that two-way energy flows can exist. We encourage PacifiCorp to investigate opportunities to upgrade its infrastructure in order to incorporate distributed generation while maintaining reliability and power quality and include the results of such investigation in future reports to the Commission. Opportunities for infrastructure upgrades include upgrading distributing and regulating substations, installation of automated sectionalizing switches, microprocessor relays, etc. and examining other similar technological upgrades for transmission and distribution networks.
2. **Demand response for load shaping.** Utah Clean Energy recommends that PacifiCorp further investigate using Ice or Thermal Storage technologies for reducing load ramping. Load flattening technologies and strategies can help achieve long-term viability of renewable generation and thus support grid reliability. For example, San Diego Gas & Electric's Permanent Load Shifting Program offers a one-time upfront incentive to offset and promote investment in Thermal Energy Storage systems.¹ This incentive helps the utility reduce its investment in peak generation and also leads to load flattening as it provides for storage of energy during off-peak periods, thus reducing the likelihood of shortages during peak periods.

Utah Clean Energy also recommends that the Company explore the capabilities of utilizing demand response for spinning reserves and as an ancillary service. . This practice is being developed across the country by several utilities. For example, the Electric Reliability Council of Texas (ERCOT) has in excess of 1 GW of demand

¹ San Diego Gas & Electric. (2014, January). *Permanent Load Shifting, Program Handbook* [Online]. Available: <https://www.sdge.com/sites/default/files/documents/787414072/Permanent%20Load%20Shifting%20Program%20Handbook.pdf?nid=8496>

response participating as responsive reserve service. Industrial and commercial end-users that can respond to dispatch signals serve as effective ancillary reserve resources.²

3. **Time of use rates.** The Report acknowledges that consumer-based savings can be directly attributed to changes in consumer energy use, which can be achieved through changes in pricing models. However, because time-of-use (TOU) pricing structures can be complex, they have been kept outside the scope of the report. Utah Clean Energy recommends further exploration of improved TOU rates for both commercial/industrial and residential sectors, including exploration of TOU rates designed for customers with electric vehicles. Conducting this analysis prior to the next rate case would facilitate timely changes.

An example to showcase the success of TOU pricing structure is Reliant, an NRG subsidiary. Reliant has successfully provided its customers with a three-tiered time-of-use pricing program, which helps them benchmark energy usage against neighboring households and previous use periods³ In addition, NV Energy has a TOU rate in place for customers with electric vehicles.⁴ Utah Clean Energy believes this is a concept that is worth exploring in Utah, as customer interest in EVs grows.

4. **Technical conferences.** Given that technology is changing rapidly it would be helpful to have an informal technical conference(s) on some of the pilot programs that are occurring around the country. As different regions are implementing different strategies it would be useful to facilitate discussions around the growing advancements in Smart Grid and best practices adopted by several other utilities. For example, Green Mountain Power and NRG Energy Inc. have partnered to offer several programs for advancing the distribution grid in Rutland, Vermont.⁵ One of their key highlights is Electric Vehicle Infrastructure, under which they are developing a network of interconnected vehicle charging stations throughout the

² EnerNOC. (2009). *Demand Response: A Multi-Purpose Resource for Utilities and Grid Operators*. [Online]. Available: <http://www.enernoc.com/our-resources/white-papers/demand-response-a-multi-purpose-resource-for-utilities-and-grid-operators>, page 5

³ Reliant Energy. [Weblink]. Accessed 9th Sept 2014. Available: <https://www.reliant.com/en/residential/my-reliant/customer-care/get-answers/reliant-smart-energy-solutions.jsp//topic4>

⁴ Clean Technia. [Weblink]. Accessed 9th Sept 2014. Available: <http://cleantechnica.com/2014/09/03/nevada-utility-leads-way-electric-vehicles/>

⁵ Renew Grid. [Weblink]. Accessed 8th Sept 2014. Available: http://www.renew-grid.com/e107_plugins/content/content.php?content.11256#utm_medium=email&utm_source=LNIH+09-04-2014&utm_campaign=REG+News+Headlines



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state. This could possibly be a good example for PacifiCorp to look into EV integration as part of their Smart Grid drive. Additionally, vehicle-to-grid (V2G) applications are being developed/coordinated by Electric Power and Research Institute (EPRI) in many states in which utilities communicate with a newly created central server that relays information to vehicles. These V2G applications include grid support functions, such as demand response, frequency regulation and modulating power flow to and from EVs.⁶

We submit these late comments in an effort to provide the Commission and PacifiCorp additional information on some existing issues and areas for future investigation. It is our hope that PacifiCorp decide on Smart Grid options that are well-suited for implementation on their systems and strategize their Smart Grid efforts accordingly for the coming years.

Sincerely,

A handwritten signature in cursive script that reads "Mitalee".

Mitalee Gupta
Program and Policy Associate
UTAH CLEAN ENERGY

⁶ Navigant Research. [Weblink]. Accessed 9th Sept 2014. Available: <http://www.navigantresearch.com/blog/ev-makers-and-utilities-unite-to-realize-v2g-potential>



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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing was served by email this 11th day of September, 2014 on the following:

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/s/ Sophie Hayes