

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

**UM 1667**

In the Matter of	)	
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PACIFICORP, dba PACIFIC POWER	)	COMMENTS OF THE OREGON
	)	DEPARTMENT OF ENERGY
2017 Annual Smart Grid Report	)	
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**Introduction**

The Oregon Department of Energy (ODOE, or department) is pleased to submit these comments on the PacifiCorp 2017 Smart Grid Report (report), filed August 1 2017. ODOE commends PacifiCorp (the company) on continued development of a concise and informative Smart Grid Report.

The company’s steady progress this past year in Smart Grid infrastructure and programs is providing value to PacifiCorp customers. The report lists several key efforts:

- Deploying advanced metering infrastructure consistent with the AMI roadmap defined last year (PacifiCorp is on track and will continue with deployment of AMI in the state of Oregon)
- Developing transmission synchrophasor locations and modeling criteria consistent with MOD-033
- Evaluating potential for central energy storage in conjunction with Oregon HB 2193 and UM 1751
- Implementing substation metering pilot program in Bend and Hood River, Oregon
- Evaluating Distribution automation, e.g. Fuse Saving devices, and feasibility study
- Developing demand side management initiatives, e.g. irrigation load control pilot program
- Implementing distribution system analysis application
- Evaluating performance and opportunities in the Energy Imbalance Market
- Developing transportation electrification pilot programs under Senate Bill 1547 (2016)

The department offers comments on the following areas: AMI deployment and subsequent customer-facing program development; transmission enhancements to comply with NERC reliability standard MOD-033-1; continued development of energy storage analysis and tools; and demand response programs in Oregon.

### **Automated Metering Infrastructure: Progress and Future Actions**

ODOE is pleased with the progress the company has made in 2016 and 2017 regarding AMI deployment. In particular, the section on Mitigating Technology Obsolescence Risk<sup>1</sup> shows that the company has undertaken a comprehensive examination of all aspects of AMI deployment, operation and ongoing system maintenance.

One of the Smart Grid Strategies identified by the company is to:

“Ensure that smart grid investments provide service at reasonable and fair prices by comparing products and solutions in a financial model highlighting the most beneficial solution configurations.”<sup>2</sup>

In addition to the activities included under the umbrella of its Oregon AMI project, the company identifies future actions<sup>3</sup> it may take to leverage the investment and capabilities of AMI. ODOE supports this comprehensive view of the future value of the AMI system. We are pleased that the company has scoped the AMI system with the expectation that the eight additional applications it has identified, varying from critical peak pricing to integration with SCADA, will all be feasible.

ODOE recommends that the company perform financial modeling, as described in its Smart Grid Strategies, to begin to prioritize this list of future actions. We look forward to future

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<sup>1</sup> PacifiCorp 2017 Smart Grid Report (August 1, 2017), page 19.

<sup>2</sup> Ibid, page 4.

<sup>3</sup> Ibid, page 12.

smart grid reports describing the outcome of the financial models, comparing products and solutions among the eight applications.

### **Transmission Enhancements**

Transmission reliability is a cornerstone of good utility practice. ODOE commends the company for its efforts to date in deploying synchrophasors and collaborating with the Western Electricity Coordinating Council WECC and Peak Reliability to increase visibility and reliability on the transmission system. Peak Reliability's current focus is identifying and analyzing system vulnerabilities and disturbances on the western grid, in which capacity the group is working with PacifiCorp as well as a number of other utilities and transmission operators.

ODOE appreciates the company's discussion of the lessons it has learned through its collaboration with Peak Reliability to use synchrophasor data to increase real-time situational awareness.<sup>4</sup> ODOE anticipates discussions in future smart grid reports on PacifiCorp's progress in hardening the technology and improvements that provide cost-effective methods to improve data quality.

The company has gained valuable experience with synchrophasor deployment and data management, which ODOE anticipates will be very useful in the deployment of a large number of new synchrophasors to enable compliance with the North American Electric Reliability Corporation (NERC) reliability standard MOD-033-1, effective May 1, 2017.

ODOE requests additional information in future smart grid reports on the evaluation process used by the company in choosing deployment locations for the synchrophasors that will provide the data critical for compliance. The PacifiCorp system is large and complex, with a large number of generating facilities and extensive transmission infrastructure. Understanding

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<sup>4</sup> Ibid, page 22.

the value the company places on getting high-resolution electric system data at specific locations could be instructive for other Oregon Public Utility Commission investigations that are examining location-specific value. These initiatives include energy storage evaluation and the resource value of solar.

### **Energy Storage Analysis and Tools**

ODOE appreciates that the company is on a steep learning curve and continues to be impressed with PacifiCorp’s increase in analytical capabilities regarding energy storage. The company’s engagement of a consultant to produce the Battery Energy Storage Study<sup>5</sup> is a significant step forward in energy storage analysis since the 2016 Smart Grid Report. The exploration of different battery technologies and applications is encouraging. ODOE commends the company on identifying Utility Applications and Value Streams, including eight separate values. The department looks forward to further evaluation of the value streams, including potential to “stack” values, in future smart grid reports.

ODOE recognizes that the company has made significant progress in engagement with research organizations such as Pacific Northwest National Lab and Electric Power Research Institute in the last two years. As the company gains more experience with the tools these research organizations are developing, ODOE looks for a more detailed narrative in future smart grid reports on methods the company is utilizing to value energy storage and how these tools are working to streamline the evaluation process.

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<sup>5</sup> Ibid, pages 29-31.

## Demand Response Programs in Oregon

The 2017 Smart Grid Report includes the results of the PacifiCorp Demand-Side Resource Potential Assessment for 2017-2036,<sup>6</sup> performed by Applied Energy Group, and used as input to the company's 2017 IRP. The 2017 IRP preferred portfolio shows demand response (DR) being deployed as a larger resource than in the 2015 IRP, with a deployment date of 2028 or later. ODOE encourages the company to maintain the customer engagement that is a part of the AMI deployment to assess interest and possible early uptake of DR to meet customer wants and needs.

After AMI deployment is complete, anticipated for 2019, markets in the Northwest and possibly the West as a whole may be significantly different. If a market develops for DR, depending on the market price such a development could change the cost evaluation and result in cost-effective deployment in less than ten years. Solar resource deployment continues at a fast pace in California and other states in the West. In 2017 excess solar generation in the mid-day hours in California, combined with higher levels of power traded between the Northwest and California, have changed the value of summer peak shaving in the Northwest. In the future, the need for load shifting away from the evening generation ramp may drive high-value DR programs different from those currently being explored by the company. ODOE looks forward to discussion of these and other market developments in future smart grid reports.

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<sup>6</sup> Ibid, page 42.

## Conclusion

ODOE is pleased with the progress evident in the 2017 Smart Grid Report. The “Roadmap to Grid Modernization”<sup>7</sup> shows clearly the priorities of the company and a timeline for implementation. ODOE looks forward to continued development of smart grid technologies and programs at PacifiCorp that support state energy and climate goals, benefit customers, and contribute to a safe, clean, reliable and resilient energy system.

DATED this 17<sup>th</sup> day of November, 2017.

Respectfully submitted,

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<sup>7</sup> Ibid, page 56.