

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1667

In the Matter of

PACIFICORP, dba PACIFIC POWER,
2015 Annual Smart Grid Report.

STAFF COMMENTS

The Public Utility Commission of Oregon Staff (Staff) files these comments in response to PacifiCorp's (PacifiCorp or Company) third annual smart grid report (*2015 Smart Grid Report*).

In 2012, the Public Utility Commission of Oregon (Commission) adopted a smart-grid reporting requirement for PacifiCorp, Portland General Electric, and Idaho Power Company to "ensure that utilities are systematically evaluating promising smart-grid technologies and applications, that the Commission is kept apprised of utilities' progress, and that stakeholders, Commission Staff, and the Commissioners have an opportunity to provide input into utility evaluations of smart-grid technologies and applications, as well as their plans for smart-grid investments."¹

At a minimum, the utility's Smart Grid Report must include:

1. Smart-grid strategy, goals, and objectives.
2. Status of smart-grid investments the utility plans to take in the next five years and of projects already underway.
3. Smart-grid opportunities and constraints.
4. Targeted evaluations of technologies and applications pursuant to Commission-approved stakeholder recommendations.
5. Related activities such as investment to address physical-and cyber-security, privacy, customer outreach and education, etc.²

The Smart Grid Guidelines specify that each utility's first report must include all smart-grid reporting elements identified in Order No. 12-158. Subsequent reports need only include incremental additions and updates of all elements in the first report and information that may be required by the Commission in a previous order.³

¹ Order No. 12-158 at page 1, Docket No. 1460, May 8, 2012.

² *Ibid.*, at 6 (The actual guidelines include more detail regarding each of these requirements).

³ *Ibid.*, at 4.

Order No. 15-050 accepted PacifiCorp's *2014 Smart Grid Report*, with the inclusion of the following recommendations:⁴

1. Conduct at least one stakeholder workshop to review the results of the Oregon Advanced Metering Project [Request for Proposals] RFP, and to discuss the Company's criteria for moving forward, with a focus on the benefit assumptions.
2. Include an update on the Company's use of the two applications of [dynamic line rating] DLR technology described in the 2014 Report, and on any additional applications of DLR technology evaluated.
3. Report on its progress in obtaining and operationalizing the use of synchrophasor data, specifically identifying remaining obstacles to gaining access to the full range of [phasor measurement unit] PMU data on the transmission system.
4. Proposal for a pilot or project that will demonstrate the use of [direct load control] DLC, storage technology, and/or smart inverters in supporting the management of variable distributed resources.

In these comments, Staff analyzes how PacifiCorp addressed the requirements for subsequent Smart Grid Reports for incremental additions and updates of all elements in the first report and how PacifiCorp addressed the requirements set forth in Order No. 15-050. Staff reviewed PacifiCorp's *2015 Smart Grid Report* that was submitted on August 3, 2015. Staff finds the *2015 Smart Grid Report* to be a marginally improved version compared to last year's report. Though some updates were made, most of Staff's requests made in its informal comments were not addressed in the final version of the *2015 Smart Grid Report*. Staff finds PacifiCorp's failure to respond to Staff's informal comments to be detrimental to the smart grid process.

Below are Staff comments on each of PacifiCorp's responses to the Commission recommendations adopted in Order No. 15-050 as well as behavioral demand response, reliability metrics, communicating faulted circuit indicators, distributed automation, "non-wire" alternatives, and customer outreach.

Order No. 15-050 Recommendations

Recommendation #1: Conduct at least one workshop to review the results of the Oregon Advanced Metering Project RFP and to discuss the Company's criteria for moving forward, with a focus on the benefit assumptions.

PacifiCorp held a confidential workshop on June 12, 2015 to discuss the results of the Advanced Metering Project RFP – Staff was the only stakeholder to attend. PacifiCorp first showed a presentation that featured an "RFP sequence of events" and two slides

⁴ Note that recommendation numbers 2-4 were part of a single recommendation in Order No. 15-050. Staff enumerates them separately here to facilitate analysis.

depicting the costs and benefits as determined by PacifiCorp after completing the RFP process. After the presentation, there was a lengthy question and answer session where PacifiCorp responded to most of Staff's concerns and queries. The results of this RFP and workshop were included in the final *2015 Smart Grid Report*. Staff appreciates PacifiCorp taking the time and effort to host this meeting and assist Staff's understanding of the Company's current and future position.

PacifiCorp concluded that installation of advanced metering infrastructure (AMI) across the Company's Oregon service territory is premature at this point in time. Upgrades to the Company's customer information system and other IT applications would be necessary to achieve the full suite of benefits from AMI, such as "dynamic pricing, demand response programs and outage management."⁵ To determine the financial and company-resource impacts of the full AMI business plan installation, PacifiCorp identified the specific order of implementation that would maximize benefits to customers as well as mitigate impacts to utility service. From this evaluation PacifiCorp confirmed that key IT upgrades should be completed before an AMI system is installed.

Staff raised concerns in both the workshop and in its informal comments regarding PacifiCorp's assumptions and calculations of total system benefits from AMI implementation and not just the utility benefits. PacifiCorp states that certain benefits, such as reliability improvements, could not be quantified due to the interconnected nature of the IT upgrades.⁶ Staff understands that PacifiCorp believes the best AMI outcome for customers is one where the Company's system is equipped to handle all the benefits of current AMI technology. Staff would like greater transparency into the calculations and methodologies used to determine the costs and benefits presented at the workshop and in the *2015 Smart Grid Report*. Staff will be submitting discovery requests to accomplish this.

Recommendation #2: Include an update on the Company's use of the two applications of DLR technology described in the 2014 Report, and on any additional applications of DLR technology evaluated.

In its 2014 Staff Report, Staff requested PacifiCorp include any updates on additional implementation on two distinct uses of DLR: 1) verification of line thermal capacity from light detection and ranging (LiDAR) surveys and 2) validation of static ambient weather assumptions on portions of the system where thermal constraints have been identified.⁷

Staff reiterated this request in its 2015 informal comments after no mention of these two applications was found in the Company's *2015 Smart Grid Draft Report*.⁸ Staff explicitly requests that PacifiCorp in its reply comments address whether the Company has conducted any additional work related to the two aforementioned DLR-related activities,

⁵ PacifiCorp *2015 Smart Grid Report*, at page 21, Docket No. UM 1667, August 3, 2015.

⁶ Ibid.

⁷ Commission Order No. 15-050, Appendix A, at page 6, Docket No. UM 1667, February 20, 2015.

⁸ PacifiCorp does mention use of LiDAR once (see page 10), but not in the capacity that Staff requested.

and provide a full explanation if it has not done so. Additionally, Staff requested in its 2015 informal comments that PacifiCorp include “the specific analyses used and conclusions reached, such as potential candidate lines and cost metrics, related to DLR in the IRP process” in the *2015 Smart Grid Report*. This information is not present as requested and Staff would like the Company to rectify this in its reply comments.

Additionally, Staff appreciates PacifiCorp including new information regarding the use of DLR in remedial action schemes (RAS) to mitigate post-contingency transmission constraints. PacifiCorp is currently evaluating whether to incorporate DLR data into a Jim Bridger RAS. Staff looks forward to reading about any developments of this effort in future smart grid reports.

Recommendation #3: Report on its progress in obtaining and operationalizing the use of synchrophasor data, specifically identifying remaining obstacles to gaining access to the full range of MPU data on the transmission system.

PacifiCorp continues to state that Western Electricity Coordinating Council (WECC) and Peak Reliability are continuing to develop data access for utility participants. The “wide area view” tool that WECC is currently developing only allows limited data from a small number of sites, but PacifiCorp continues to work with Peak Reliability to determine the best course of action moving forward.⁹ PacifiCorp indicated that the Company is starting to use the available data to conduct some evaluation of system planning models.

In its informal comments, Staff asked the Company to clarify the meaning of the statement “benchmarking, validation, and fine tuning of system planning models” through use of synchrophasors. No additional information was provided in the final *2015 Smart Grid Report*. Staff asks for any additional granularity regarding synchrophasors and efforts surrounding benchmarking, validation, and fine tuning that are promised to be described in the Company’s *2016 Smart Grid Report*.

Recommendation #4: Proposal for a pilot or project that will demonstrate the use of DLC, storage technology, and/or smart inverters in supporting the management of variable distributed resources.

PacifiCorp currently operates an irrigation direct load control program in the Company’s Rocky Mountain Power Idaho and Utah service territories. The Company states that “a seven megawatt pilot program is under consideration for...Oregon.”¹⁰ The consideration is due to the Company’s 2015 Integrated Resource Plan indicating a need for a capacity resource beginning in 2022. The Company is evaluating whether or not to offer irrigation customers in Oregon a pilot of this intended program to determine “whether its current program design and approach operating in Utah and Idaho will be effective.”¹¹ PacifiCorp would implement a possible pilot sometime in 2016.

⁹ PacifiCorp *2015 Smart Grid Report*, at page 14, Docket No. UM 1667, August 3, 2015.

¹⁰ *Ibid.*, at page 29.

¹¹ *Ibid.*

Staff appreciates this development and anticipates status updates in the Company's next Report.

Additional Comments

Behavioral Demand Response Pilot

PacifiCorp has indicated to Staff through the Company's Smart Grid Reports and in discussions that current metering technology installed in Oregon will not accommodate conventional demand response programs, such as the Company's HVAC or irrigation DLC offered in other states. Staff would like to know the potential of implementing a small-scale "behavioral demand response" (BDR) pilot to accomplish a number of goals, including gaining understanding of customer participation, load changes and facilitation of customer engagement in demand-side management programs. Staff's research into BDR indicates that AMI or advanced meter reading are not necessary to implement BDR and achieve successful results.

Reliability Metrics

Staff would like all three investor-owned utilities to begin reporting reliability metrics as well as other benchmarks in the companies' respective annual Smart Grid Report filings. PacifiCorp stated in its reply comments to Staff's comments regarding its *2014 Smart Grid Report* that SAIFI, SAIDI and CAIDI should be used to evaluate reliability-initiated smart grid investments.¹² Staff agrees and believes that at least those three and other metrics should be included in a table in an appendix of future PacifiCorp Smart Grid Reports. Staff would like PacifiCorp to discuss in its reply comments what the Company believes is the most appropriate way to determine what other metrics should be included in future reports, beginning with the *2016 Smart Grid Report*.

Communicating Faulted Circuit Indicators (CFCI)

PacifiCorp stated in its *2014 Smart Grid Report* that it had installed 48 CFCI devices in early 2014 and that future actions, including "integration with PacifiCorp's outage management system, validation, and cost/benefit analysis," should be completed in spring of 2015.¹³ PacifiCorp indicates that no update is available in the *2015 Smart Grid Report*. Staff would like PacifiCorp to discuss the reasons for the delay in anticipated information regarding CFCI, and if results are pending, if any preliminary results and/or conclusions can be provided at this time.

¹² PacifiCorp's Reply Comments, at page 6, Docket No. UM 1667, January 6, 2015.

¹³ PacifiCorp's *2014 Smart Grid Report*, at page 15, Docket No. UM 1667, October 31, 2014.

Distribution Automation

Staff in the 2014 Staff Report recommended the Commission

“suggest that PacifiCorp conduct a study of its distribution automation potential including a cost-benefit analysis and based on cost and distribution system assumptions that will enhance reliability and yield benefits to customers.”¹⁴

Staff made this recommendation in order to address Staff’s concern regarding PacifiCorp’s suggestion that “distributed automation” (DA) be viewed only holistically, i.e., the Company can only entertain DA if it installs necessary devices at each existing switch and reclosing device in the state. The Company indicated in its *2014 Smart Grid Report* that such an endeavor would cost approximately \$730,000,000.¹⁵ PacifiCorp repeats this project cost estimation in the *2015 Smart Grid Report*.¹⁶

Staff is concerned that this “all or nothing” approach is denying PacifiCorp customers benefits whereas if DA technology were implemented incrementally such that outage-prone areas are addressed first, and ultimately better, served, improved cost/benefit ratios would be produced. Staff would like PacifiCorp to discuss the feasibility of the study recommended by Staff in its 2014 Staff Report.¹⁷

“Non-wire” Alternatives

Staff in its 2015 informal comments requested PacifiCorp include more information regarding the three applications of battery technology for use in distribution infrastructure deferral upgrades in the *2015 Smart Grid Report*. The requested information was not included; therefore, Staff requests PacifiCorp address this request in the Company’s reply comments.

Customer Outreach

Staff asked in its informal comments that PacifiCorp explain why customer participation in time-of-use (TOU) programs is so low – less than 1 percent. PacifiCorp did not address this request in the Company’s *2015 Smart Grid Report*. Staff asks that PacifiCorp present its reasoning for the continued low participation of customers in TOU programs offered in Oregon.

¹⁴ Commission Order No. 15-050, Appendix A, at page 8, Docket No. UM 1667, February 20, 2015.

¹⁵ PacifiCorp’s *2014 Smart Grid Report*, at page 16, Docket No. UM 1667, October 31, 2014.

¹⁶ PacifiCorp *2015 Smart Grid Report*, at page 16, Docket No. UM 1667, August 3, 2015.

¹⁷ Commission Order No. 15-050, Appendix A, at page 8, Docket No. UM 1667, February 20, 2015.

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This concludes Staff's Comments.

Dated at Salem, Oregon, this 18th day of September, 2015.

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