

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UM 1657**

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY

Annual Smart Grid Report

STAFF'S COMMENTS

These comments are in response to PGE's second annual smart grid report. The Oregon Public Utility Commission's original Smart Grid Guidelines, Order 12-158, states:

The first report must include all smart-grid reporting elements identified in this order. Subsequent reports need only include incremental additions and updates of all elements in the first report

Prior to submitting this report Staff asked PGE to include enough context in its 2014 and subsequent annual smart grid reports such that someone reading the report for the first time, who had not read previous reports could gain an understanding of the Company's initiatives.

Staff recommended the following be included in the 2014 Smart Grid report:

- Recap the overall strategies, goals and objectives and identify any changes in these items
- Provide an update on work in progress items
- Provide an update on future initiatives
- Provide information on any other incremental additions and updates
- Provide an updated timeline for present and future activities

In Order 13-311 resulting from PGE's 2013 Smart Grid Report, the following requirements were set forth as needing to be addressed in the 2014 Smart Grid Report:

1. Continue to evaluate and explore options for the use of its two-way communication platform and AML.
2. Continue to evaluate and explore the use of Conservation Voltage Reduction (CVR).

3. Seek stakeholder involvement earlier in the process of preparing the next report.
4. Include a roadmap (with dates) that includes how PGE plans to systematically evaluate the myriad of smart grid options available to the company. List and prioritize specific smart grid investments and show how the work plan and any pilot projects will be organized in order to evaluate the smart grid projects.
5. Evaluate traditional non-smart grid investments and applications as alternatives to smart grid investments and seek to identify the most cost-effective options for meeting its objectives and its customers' needs.
6. Provide more information about how traditional demand side management programs can be and are being integrated with smart grid initiatives.
7. Provide more information on the costs and benefits of smart grid initiatives on low income customers.
8. Include a summary of how PGE's smart grid activities relate back to the AMI objectives proposed in the stipulation approved by the Commission in docket UE 189. See Order No. 08-245, Appendix A at 9.
9. Identify investments in smart grid infrastructure and explain what is working and what is not working-and explicitly state whether the two way communication benefits of AMI's will be recognized.
10. Provide an evaluation of the benefits and costs of energy tracker to PGE's ratepayers, including Phase II.
11. Implement a pilot conservation voltage reduction program using the constant implementation method, and evaluate customer side benefits in the overall cost benefit analysis of comparing the peak shaving and constant implementation programs.
12. Accelerate the pilot for smart HVAC and smart thermostats.
13. Provide a more concrete analysis of the qualitative and quantitative benefits related to power quality, reliability, and reduced costs to ratepayers.

Staff has reviewed PGE's 2014 Smart Grid Report. Staff appreciates the quality and readability of the report and the overall responsiveness demonstrated by PGE in the 2014 Smart Grid report. PGE's indicates it will focus its efforts in the following initiatives, which Staff supports:

- Enable Smart Grid capabilities when equipment fails or becomes obsolete.

- Be strategic with regard to the Smart Grid technologies pursued, looking for opportunities to provide customers with more choices, higher reliability, and greater value.
- Use proven and interoperable technology as industry standards emerge (when feasible).
- Work collaboratively to demonstrate technologies in the early stages of commercialization, when those technologies address an immediate need (e.g., renewables integration) or have a particularly strong value proposition.
- Track early stage technologies through industry organizations, such as the Electric Power Research Institute (EPRI) and standards development through working groups, including the National Institute of Standards and Technology (NIST) and the Smart Grid Interoperability Panel (SGIP).

Staff appreciates PGE's responsiveness to items 1, 3, 4, 5, 8, and 9 above. Below Staff makes comments related to items 2, 6, 7, 10, 11, 12 and 13. Staff also provides comments on PGE's Salem Smart Power Project (SSPP) and smart inverters.

#2 & #11 Conservation Voltage Reduction (CVR)

Staff appreciates the Company providing results of its CVR simulation and pilot. Staff remains very interested in these results and will continue to monitor closely how PGE establishes the cost effectiveness of CVR pilots and how PGE plans to proceed post pilot. Staff finds the results very interesting that at the Hogan South substation the total cost to implement CVR was \$70,816 and the projected annual savings for all customers served by the Hogan South WR4 transformer is \$30,811. This suggests to Staff that CVR is cost effective in this situation.

#6 Demand Side Management

The Commission directed that more information be provided about how traditional demand side management programs can be and are being integrated with smart grid initiatives. PGE describes that Energy TrackerSM, which is a tool that provides residential and general business customers access to their smart-meter data through their accounts, is helping customers save energy¹ and is helping to direct customers to Energy Trust Programs.^{2,3} PGE goes on to say that as part of future initiatives, PGE will

¹ PGE reports that customers that are using Energy Tracker have reduced their annual energy consumption 3 percent faster (332 kWh) than non-Energy Tracker customers.

² Energy Tracker connected over 2,200 customers to the Energy Trust's website for energy efficiency programs.

test customer response to several different pricing programs to determine which it wants to pursue on a program basis once the computer system is upgraded. PGE will consider options that combine pricing programs with smart appliances/thermostats and energy management systems to maximize customer benefit and will work with Energy Trust to capture synergies of dynamic pricing with energy efficiency programs offered.⁴

PGE also indicates that if it pursues an HVAC demand-response program, it will seek to engage with Energy Trust to ensure energy efficiency (EE) benefits are incented and captured.

Staff appreciates these connections made between Energy Tracker, potential future dynamic pricing programs, and potential future HVAC demand response programs with Energy Trust programs. Staff would like to see PGE continue to engage with Energy Trust on smart grid initiatives going forward and report on those in future reports.

#7 Low Income Customers

The Commission adopted a recommendation made by Northwest Energy Coalition that more information be provided on the costs and benefits of smart grid initiatives on low income customers. PGE reports that it has provided information and demonstrations on Energy Tracker to Community Action Agencies (CAAs) that serve PGE customers. PGE also offered to train low-income weatherization auditors on Energy Tracker so they could walk through the information with a customer during the course of an audit.⁵

Relative to prepaid metering, PGE indicates it is monitoring the activities of utilities that offer prepaid metering. If PGE were to offer a prepaid metering pilot, it would actively engage with CAA's and low-income advocates on pilot design.

Staff appreciates the Company considering low income customers relative to Energy Tracker and prepaid metering. Staff recommends the Company continue to look at how low income customers can benefit from smart grid and ensure that low income customers are not inadvertently harmed by smart grid initiatives, including AMI. Staff is aware that AMI allows for remote disconnect for some customers. Going forward, Staff believes it would be helpful for PGE to provide specific information about how customers are being provided adequate notice and opportunities for payment prior to being remotely disconnected.

#10 Energy Tracker

PGE was asked to provide an evaluation of the benefits and costs of Energy Tracker to PGE's ratepayers, including Energy Tracker Phase II. In Section 3.1.1 PGE described Energy Tracker and the benefits in terms of increased energy savings of customers using Energy Tracker. The only mention of the future of Energy Tracker is on page 18,

³ PGE 2014 Smart Grid Report, page 14

⁴ PGE 2014 Smart Grid Report, page 17

⁵ PGE's 2014 Smart Grid Report pages 14-15

in Section 3.3.5 where Green Button 2.0 is being discussed and it's mentioned that PGE will monitor Green Button 2.0 and the program will be considered when it updates Energy Tracker (currently planned post-CET). There is no other mention of Phase II Energy Tracker. Going forward, PGE should be clearer about the future plans for Energy Tracker and the costs and proposed benefits on those plans. Because Energy Tracker is such a key part of the customer communications piece of smart grid for PGE, information on the status and future plans of Energy Tracker should be forthcoming.

#12 HVAC Demand Response and Smart Thermostats

PGE was asked to accelerate the pilot for smart HVAC and smart thermostats. In page 17 of the report, PGE notes that it is currently considering a demand-response pilot via smart thermostats for 2015. In future reports or updates, Staff would like to understand a) more about what is being considered, b) what criteria PGE plans to use to determine whether or not it will pursue such a pilot in 2015, and c) if a pilot is pursued, specifically what will be tested and how success will be measured.

#13 Analysis of benefits

In the Commission Order resulting from PGE's 2013 Smart Grid Report, it was suggested that PGE provide a more concrete analysis of the qualitative and quantitative benefits related to power quality, reliability, and reduced costs to ratepayers. Staff is not satisfied that this suggestion has been accomplished because the analysis is not clearly presented. In most cases qualitative benefits are described, but not in a systematic and clear way. For the most part, quantitative benefits are not presented. Staff believes PGE could do better at providing this analysis, both qualitative and quantitative, in a clear and direct manner.

Salem Smart Power Project (SSPP)

Staff commends PGE for their efforts on the Salem Smart Power Project (SSPP). PGE has regularly described what is being tested in the SSPP but has not yet talked in detail about results, learnings, and next steps. Staff notes that according PGE's 2014 Smart Grid Report, the Pacific Northwest Smart Grid Demonstration Project, of which the SSPP is a part, will conclude at the end of this year.⁶ Staff encourages the Company to be very clear about how the learnings from the SSPP will be: a) documented and shared, b) built upon going forward, and c) evaluated in terms of cost effectiveness. Staff is very curious about how the project will go forward once the demonstration project ends and more broadly, how PGE plans to incorporate the learning of the SSPP into future resource planning and program offerings.

Smart Inverters

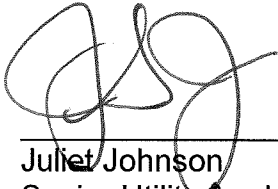
PGE describes how it is experimenting with enhanced inverter functionality at its Baldock Solar Station to manage the voltage within an allowed operating range through

⁶ PGE 2014 Smart Grid Report, page 21

dynamic reactive power control.⁷ PGE notes that enhanced inverter functionality also helps to achieve voltage and frequency ride-through capability so that distributed PV generators contribute to grid stability during system disturbances instead of disconnecting and exacerbating the problem. Staff requests PGE continue to document and report on efforts related to smart inverters and how they fit into the PGE's smart grid vision and roadmap.

This concludes Staff's Comments.

Dated at Salem, Oregon, this 1st day of July, 2014



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⁷ PGE 2014 Smart Grid Report, page 18

CERTIFICATE OF SERVICE

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I certify that I have, this day, served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-001-0180, to the following parties or attorneys of parties.

Dated this 1st day of July, 2014 at Salem, Oregon



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