

**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 submitted in response to Portland General Electric Company's (PGE or Company) fourth annual *Smart Grid Report*.

In 2012, the Commission adopted a smart-grid reporting requirement for PacifiCorp, PGE, 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

¹ Order No. 12-158 at 1.

² Order No. 12-158 at 6 (The actual guidelines include more detail regarding each of these requirements).

include incremental additions and updates of all elements in the first report and information that may be required by Commission in a previous order.³

Order No. 15-314 accepted PGE's *2015 Smart Grid Report*, along with adopting Staff's recommendations, and adding a requirement of its own as follows (Order Requirements):

1. In its next smart grid report, PGE provide the results of the dynamic pricing stakeholder process for developing a cost-effective methodology, the exploration of cycling load, tracking of customer fatigue, and the exploration of enabling technologies.
2. In its next smart grid report, PGE include any preliminary results and findings from its dynamic pricing pilot and direct load control (DLC) pilot.
3. PGE should continue the stakeholder process for researching and including additional reliability and operational metrics in its next smart grid report as well to improve existing metrics.
4. In its next smart grid report, PGE include Project-X's scope and timeline as well as the projected costs and benefits.
5. PGE work with Staff and other Salem Smart Power Project (SSPP) stakeholders to produce a comprehensive report with subsequent, recurring updates as work continues on the SSPP.
6. PGE conduct a stakeholder process with Staff and stakeholders when it considers future pricing programs in order to assist and guide pilot and program design and implementation.
7. PGE continue to document and report on efforts related to smart inverters.
8. PGE begin a recurring stakeholder meeting where Staff and stakeholders discuss customer education, outreach, marketing, and related strategies.
9. In its next smart grid report, PGE should include the status of non-wire alternative distribution upgrade research, including possible pilot projects.
10. In future smart grid reports, PGE should provide a summarizing table of all research, development, and pilot projects, their respective descriptions, expected benefits and costs.

³ Order No. 12-158 at page 4, UM 1460, May 8, 2012.

11. PGE should provide an interim update on its efforts to develop a vision and road map as part of its *2016 Smart Grid Report* at a Commission workshop.

In these comments, Staff will analyze how PGE addressed the requirements for subsequent *Smart Grid Reports* for incremental additions and updates of all elements in the first report and how PGE addressed the requirements set forth in Order No. 15-314. Staff reviewed PGE's *2016 Smart Grid Report* that was submitted on May 31, 2016. Staff finds the report overall to be an improvement from previous reports and more responsive to requests of stakeholders, Staff, and the Commission. Staff appreciates PGE's thorough work that went into the *2016 Smart Grid Report's* production.

Below, Staff comments on PGE's responses to the Commission's Order Requirements 2, 3, 5, 8, and 9, as well as providing Staff's comments concerning cyber security, SB 1547 implications, the future of Smart Grid Reporting, and a number of topics that Staff has grouped under the headings "Customer Engagement and Services" and "Grid Services."⁴

Order No. 15-314 Requirements

Requirement #2: Provide preliminary results and findings from its dynamic pricing pilot and DLC pilot

Staff appreciates the status updates on the Company's Net Rush Hour Rewards DLC and Flex Pricing pilot programs. Both programs will continue to expand their respective customer bases and collect data, which Staff looks forward to learning more about as PGE operates the programs.

Staff would like to know what contingency plans the Company may use if customer participation goals are not on track to being met. Furthermore, will PGE be able to produce experimentally sound results if participation levels are less than the amounts originally targeted?

To date, how well has the relationship with Nest, the third party operator of the thermostats, been? Has the Company experienced any operational or data exchange issues?

Regarding the Flex Pricing pilot program, why have no events been called to date?

⁴ Staff finds PGE satisfied requirements 1, 4, 6, 7, 10 and 11 and will provide comments on those recommendations in Staff's final report to the Commission.

Requirement #3: Smart Grid reliability and operational metrics

Staff commends PGE on the expanded smart grid metrics included in the *2016 Smart Grid Report*; the additional data and transparency lays the foundation for optimizing benefits for the grid and customers. In reviewing the data, Staff found a few areas where further information would be helpful. First, what is the methodology behind the Oregon Department of Transportation's (ODOT) electric vehicle data? As electric vehicle numbers continue to increase in PGE's service territory, will the Company continue with the ODOT data or is PGE planning something internally in order to provide more accurate data?

Second, PGE has demonstrated a consistent annual growth rate for the Company's Energy Tracker program. Staff would like to know how the Company has been able to produce these gains, what lessons can be learned from Energy Tracker customer engagement strategies and execution, and what the Company plans to do to maintain customer Energy Tracker use growth.

Finally, what are PGE's plans to begin capturing "system holding risk" and "system risk mitigated?" Has the Company developed methodologies to do so?

Requirement #5: SSPP reporting

Staff appreciates and commends PGE's improvement of the SSPP section of the *2016 Smart Grid Report*. The additional information, including the use case table and the "next steps" section align with what Staff and the Commission had in mind when the previous SSPP recommendation was made. Staff's only question regarding the SSPP at this time is if PGE has any sort of timeline on its ongoing collaborative work with PNNL available?

Staff looks forward to the continued SSPP updates in future *Smart Grid Reports*.

Requirement #8: Recurring stakeholder meetings on customer education, outreach, marketing, and related strategies

Staff met with PGE and stakeholders on February 9, 2016, to discuss customer engagement strategies; the meeting was quite helpful and Staff commends the Company's effort. Moving forward, Staff would like to host additional meetings on topics including lessons learned from the ongoing Flex Pilot study as well as potential crossover for developing projects like community solar. Staff will continue to work the Company and stakeholders to plan these meetings.

Requirement #9: Include the status of non-wire alternative distribution upgrade research, including possible pilot projects

Amongst a number of purposes, Staff views the *Smart Grid Reports* as a central hub for reporting any smart-grid related efforts occurring in other dockets. Staff requests that PGE continue this purpose as it pertains to non-wire alternatives by documenting updates that occur across smart grid activities, including those in the UM 1751, micro grids, Conservation Voltage Reduction (CVR), and demand response. Specific, pertinent details relating to these topics that otherwise would not be reported in their respective sections in the *Smart Grid Report* should be reported under the non-wire section in future reports.

Staff also would like PGE to further explain the purpose of the paper / report it plans to coordinate with Portland State University and explain generally what it will contain.

Additional Topics

SB 1547 and the role of Smart Grid

As Oregon's electricity sector continues to navigate a new legal landscape shaped by the passing of SB 1547 and HB 2193, Staff is seeking utility and stakeholder input on how the *Smart Grid Reports* can help PGE implement the demand-side management (DSM) and distributed energy resource (DER) efforts that SB 1547 mandates which also have smart grid aspects. Staff asks PGE the broad question of how the Company envisions the *Smart Grid Reports* could have a greater role in the post-SB 1547 and HB 2193 electricity sector.

PGE approached Staff this past year on proposed modifications to the smart grid reporting timeline. Since then, Staff has ruminated on what other possible changes could occur to not only the reporting process, but the reports themselves. *Smart Grid Reports* will arrive at their five-year anniversary next year and each utility's report has grown independently. With SB 1547 providing some foundations for renewable energy, DSM and DER for the foreseeable future, Staff finds the current report a ripe opportunity to solicit PGE's thoughts on revisions to the Smart Grid reporting guidelines approved by the Commission in Order No. 12-158.

Staff appreciates PGE's five-year road map from 2016-2020 and accompanying Company-wide smart grid strategic approach. Staff envisions PGE's responsive comments could provide a constructive setting for designing smart grid strategy and road maps that follow 2020.

Customer Engagement and Services

In the *Smart Grid Reports*, meetings with the Company and stakeholders, and in dockets discussing behavioral pricing and DSM programs, PGE has discussed the importance of its Customer Information System (CIS) and Meter Data Management System (MDMS) to the successful and cost-effective full-scale deployment of these programs. Because of these systems' centrality to future DSM and pricing availability to customers, Staff is seeking a more comprehensive narrative of these systems and their upgraded capabilities. Aspects of PGE's response that Staff is seeking includes, but is not limited to, progress to date, expected completion date with accompanying timeline, capabilities that will be available that are currently not, what types of services that could be offered that have not already been discussed, and the nature and extent of how these systems will enable easier customer access to DSM and pricing programs.

PGE mentioned customer trends in the context of smart grid planning in its *2016 Smart Grid Report*. Staff would like to learn more about this.⁵ Similar to the previous topic under this subsection, Staff is hoping PGE can construct a narrative that includes, but is not limited to, the following questions.

- What are all the ways in which PGE discerns and monitors customer trends?
- What trends are PGE currently monitoring and what understandings have those trends engendered for the Company?
- How does PGE anticipate SB 1547 impacting those customer trends? Will new trends emerge related to the bill?
- What does PGE currently *not* understand about its customers and how does the Company plan to address those gaps in knowledge?

PGE also mentioned "customer voices," which it monitors through call logs, emails, and other communications with customers.⁶

- In what ways do "customer voices" inform customer trends?
- What themes is PGE discovering in recent customer voice analyses?
- Is there any opportunity for smart grid initiatives to address customer voices or trends?

Grid Services

PGE continues to develop and deploy necessary systems and services to support full functionality of the Company's AMI such as MDMS. Staff would like to know what functionality does PGE's current AMI lack that is available in up-to-the-date AMI given that PGE's AMI is approximately seven years old. Specifically:

⁵ PGE's *2016 Smart Grid Report*, at page 15, Docket No. UM 1657, June 1, 2016.

⁶ *Ibid.*, at page 55.

- Are there any customer DSM opportunities that are inaccessible because of this lacking functionality?
- Do components of SB 1547 and HB 2193, such as electric vehicle infrastructure, battery storage, and greater demand response face hurdles in integration into PGE's operations and planning because of PGE's available AMI functions?

Staff also has a few questions regarding PGE's planned strategic deployment of DERs future initiative. Specifically:

- How exactly will PGE assess DER integration as transmission and distribution risk reduction?
- Will such an assessment be a foundational step into a more comprehensive planning document similar to the Distributed Energy Resource Plans (DERP) California utilities develop?
- What system and Company resources would be necessary to successfully develop a PGE DERP?

Cyber Security

Staff appreciates the information it has provided on cyber security practices to date in the Company's *Smart Grid Reports*. As this subject's importance continues to grow as increasing cyber-attacks occur, Staff would like PGE to provide higher-level details on Company efforts. Specifically:

- What regional and national policies, requirements, and best practices are currently in place or being developed in addition to those being developed by the National Institute of Standards and Technology?
- Does PGE plan to adhere to all voluntary practices? If not, why not?
- Is PGE enacting any Company-wide practices or policies that set it above industry standards?

This concludes Staff's Comments.

Dated at Salem, Oregon, this 15th day of July, 2016.



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