BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

UM 1675

In the Matter of Idaho Power Company Annual Smart Grid Report	STAFF'S COMMENTS

These comments are submitted in response to Idaho Power Company's (Idaho Power or "the Company") fourth annual *Smart Grid Report*.

In 2012, the Public Utility Commission of Oregon (Commission) adopted smart-grid reporting requirements 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-gird 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]

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[1] Order No. 12-158, p. 1, Docket No. 1460, May 8, 2012.
[2] Order No. 12-158, p 6.
[3] Order No. 12-158, p. 4.

In Order No. 16-045 the Commission accepted Idaho Power's 2015 Smart Grid Report, with the inclusion of the following recommendations:

1. Idaho Power continue including stakeholder informal comments and the Company's respective responses as an appendix in future Smart Grid Reports.

2. Idaho Power work with Staff to research and implement a TOD pilot that can be offered to Idaho Power residential customers.

3. Idaho Power work with Staff and stakeholders to hold a workshop prior to the annual submission of the Company's Smart Grid Report where Staff and stakeholders can review and offer suggestions to any quantifiable benefits the Company plans to provide.

4. Idaho Power provide the observability methodology document as an attachment to the ensuing Smart Grid Report.

5. Idaho Power provide updates on the LSE and the real-time voltage stability monitoring and control (RT-VSMAC) applications in future Smart Grid Reports.

6. Idaho Power work with Staff to determine possible AMI-related annual cost saving metrics for future smart grid reports.

7. In the 2016 Smart Grid Report, Idaho Power identify possible opportunities for future DSM personalization features in myAccount[4] and what capabilities are needed to deploy them.

8. In the 2016 Smart Grid Report, Idaho Power describe how solar end-of-feeder project benefits other than to infrastructure deferred upgrades can be captured.

9. In the 2016 Smart Grid Report, Idaho Power discuss how technologies like the CRM system can assist the Company in identifying customers who are prime for specific DSM programs.

In these comments, Staff will analyze how Idaho Power addressed Staff's recommendations as adopted in Order No. 16-045. Overall, Staff finds the report to be thorough and responsive to requests of stakeholders, Staff, and the Commission.

[4] myAcount is the online platform through which customers access their energy usage and pay bills.

Analysis of 2015 Recommendations

Recommendation 1: Idaho Power continue including stakeholder informal comments and the Company's respective responses as an appendix in future Smart Grid Reports.

Staff appreciates that the Company has included stakeholder informal comments as Appendix A to the 2016 Smart Grid Report. Staff is satisfied that the Company has responded to Recommendation 1 in this report.

Recommendation 2: Idaho Power work with Staff to research and Implement a TOD pilot that can be offered to Idaho Power residential customers.

The Company's response to this recommendation is that it is currently in the process of "developing appropriate seasonally differentiated time blocks and the associated rates for a TOD (time of day) offering. Once that is complete, Idaho Power plans to share the results and its recommendations with OPUC Staff."[5]

Staff is concerned with this approach and does not believe that the Company has adequately addressed this recommendation. While the Company should certainly be taking initial steps in analyzing TOD programs and goals, Staff is concerned about the implications of not communicating with Staff until after the Company has developed its TOD program.

Staff submitted discovery requests about the Company's TOD program and learned that the Company plans on using historical, aggregated residential customer class usage data as a basis for rate design. The Company also seems to imply that through this data, it will identify which customers would benefit from a TOD offering.[6] Staff is concerned that without bringing preliminary analysis to the attention of Staff, it will be too late for Staff and stakeholders to provide input on the programs. Staff believes the Company should (or should have) conducted workshops or open up a more transparent process for TOD design. In addition, Staff is concerned that the Company's approach may limit certain customers from participating. Staff is still exploring recommendations for a TOD program moving forward and will elaborate in the Public Meeting Memo.

Staff requests that the Company address Staff's concerns about the TOD pilot in its Reply Comments.

Recommendation 3: Idaho Power work with Staff and stakeholders to hold a workshop prior to the annual submission of the Company's Smart Grid Report where Staff and stakeholders can review and offer suggestions to any quantifiable benefits the Company plans to provide.

[5] Idaho Power *2016 Smart Grid Report*, pp. 39-40.
[6] See Staff Attachment 1 – DR 31.

The Company held a workshop earlier this year and includes a list of suggested metrics as Appendix H in the smart grid report. Staff is satisfied that the Company properly responded to Recommendation 3.

Staff appreciates the Company responding to Staff requests regarding quantifying benefits. There were a total of 28 projects listed in Appendix H, under the heading "Smart Grid Metrics." All of the projects described a qualitative benefit and most included a quantifiable metric of the projects' impact on the Company's system. Some of these metrics were benefits while some of them were simply additional information (such as number of customers who logged in to myAccount). A few examples of the benefits captured by the metrics include percentage decreases in kW and kWh from conservation voltage reduction (CVR) feeders, number of remote disconnects and reconnects, and demand reduction (in MW) from DR programs.

In addition, the Company added information that did not necessarily show a benefit but that provided insight. The Company highlights that the 2015 cost for the A/C Cool Credit, Flex Peak, and Irrigation Peak Rewards programs was $9 million, for a total demand reduction of 367 MW. Regardless of whether there is a benefit, Staff is interested in knowing whether a program is utilized and any changes that occur in the program, both positive and negative. This increases substantive content and provides insight about the success or failure of various programs.

Although not all of the projects in Appendix H had clearly quantified benefits, Staff views the list of metrics as a helpful overview of a variety of smart grid projects. Staff also notes that there were a number of "TBDs" in Appendix H. In future reports, Staff would like the Company to update this list of projects in the Appendix, add additional Smart Grid Metrics as appropriate, populate the TBD fields, and populate the fields that are still in ongoing/in progress.

Staff appreciates the direction the Company has taken in adding a clearer picture for smart grid metrics and that it invited stakeholders to engage in this process. Staff expects that the Company will follow through with these suggestions and continue to work towards expanding the information on quantifiable benefits in future smart grid reports.

<u>Recommendation 4: Idaho Power provide the observability methodology document as an attachment to the ensuing Smart Grid Report.</u>

A draft version of a report entitled "Optimal PMU Placement to Achieve Full Observability of Idaho Power Co. System" is included in Appendix I in the Smart Grid report. The draft report contains different approaches to analyzing power system observability and explains that the purpose of the study is to "identify the optimal placement of PMUs such that IPC network becomes fully observable."[7] Staff is satisfied that the Company properly responded to Recommendation 4.

[7] Idaho Power *2016 Smart Grid Report*, Appendix I, p. 3-1.

Staff appreciates the inclusion of this attachment in the *2016 Smart Grid Report*. The study seems to be an academic exercise in finding optimal PMU placement methodology. The study identified 78 PMU locations that are listed in Appendix 3 of Appendix J. While Staff believes this is an appropriate exercise, Staff believes there should be additional context in terms of how the Company is going to use the results. The Company talks about PMUs quite a bit in the report and the Appendices but it is unclear what the Company's next steps are going to be.

Staff requests that in its Reply Comments, the Company clarify what the next steps are after having conducted the Observability study. The Company should clarify whether it intends on installing PMUs in all of these locations or whether it is still in the process of evaluating optimal locations.

Recommendation 5: Idaho Power provide updates on the LSE and the real-time voltage stability monitoring and control (RT-VSMAC) applications in future Smart Grid Reports.

The Company responds to this recommendation by pointing to Appendix J in the *2016 Smart Grid Report*, which is a one-page overview of a Peak Reliability Syncrophasor Program (PRSP) in the second quarter of this year. There is no real context for the information presented, however. The Appendix states that the LSE (linear state estimator) has not yet been installed, but it is unclear what the context is for this (e.g., is there a timeline for the installation, what is the significance of the Quarterly PRSP report). Staff is also unclear how this relates to Appendix B, which is the Peak Reliability Project Plan, which underscores a number of technical requirements for LSE. In addition, Staff is unclear where the Company addresses the RT-VSMAC in the Smart Grid Report.

Staff requests that in its Reply Comments, the Company provide a narrative explaining Appendix J and include any updates as to the RT-VSMAC.

Recommendation 6: Idaho Power work with Staff to determine possible AMI-related annual cost saving metrics for future smart grid reports.

The Company's response to this recommendation is vague:

> Idaho Power's AMI system continues to provide the foundation for Idaho Power's smart grid. The company has identified the metrics used to quantify the benefits for all smart grid projects, including those projects that leverage the AMI system. The benefits and metrics can be found in Appendix H.[8]

Staff is unsure which of the metrics the Company considers "cost-saving." The Company appears to have combined these cost-savings metrics and the quantified

[8] Idaho Power *2016 Smart Grid Report*, p. 41.

benefits metrics into the same Appendix without specifying the differences. Staff is unsure whether the Company specifically discovered new metrics for Recommendation 6 or considers the metrics for 3 and 6 as one and the same.

Staff requests that in its Reply Comments, the Company address whether it differentiated between cost-savings metrics and quantified benefits in Appendix H.

Recommendation 7: In the 2016 Smart Grid Report, Idaho Power identify possible opportunities for future DSM personalization features in myAccount and what capabilities are needed to deploy them.

The Company's response to this recommendation is also vague. The Company took "personalization features" to mean customer online interaction with myAccount, such as logging in and seeing graphs of current-month bill-to-date estimates. Though Staff believes an enhanced customer experience is important, Staff's intention with this recommendation was more an extended application of data acquired through myAccount for DSM purposes. That is, Staff intended to facilitate the possibility of suggesting DSM programs based on a customer's individual (or "personalized") usage.

Staff requests that in the Company in its Reply Comments identify possible opportunities for future DSM personalization features in myAccount.

Recommendation 8: In the 2016 Smart Grid Report, Idaho Power describe how solar end-of-feeder project benefits other than to infrastructure deferred upgrades can be captured.

In its direct response to this recommendation, the Company states that putting a small generator at the end of a feeder may flatten voltage and therefore facilitate CVR implementation.[9] However, the Company does not go into additional detail about this and does not explain how this benefit would be captured. Staff notes that this recommendation was in response to an ODOE request that the Company did not respond to in its 2015 Reply Comments.[10]

Staff requests that the Company in its Reply Comments address the issue of capturing additional benefits of an end-of-feeder project, if such a process exists.

Recommendation 9: In the *2016 Smart Grid Report*, Idaho Power discuss how technologies like the CRM system can assist the Company in identifying customers who are prime for specific DSM programs.

The Company briefly included a couple sections in the *2016 Smart Grid Report* discussing expectations for CRM (Customer Relationship Management). From the report, it appears CRM will allow the Company to monitor customer data and

[9] Idaho Power *2016 Smart Grid Report*, p. 41.
[10] Staff Public Meeting Memorandum (January 12, 2015) re: Idaho Power *2015 Smart Grid Report,* p. 12.

preferences to "better market its customer programs and service offerings."[11] The Company plans on integrating CRM in early 2017. However, for a program that is meant to be implemented so soon, specifics are not included in the Smart Grid Report.

Staff requests that in its Reply Comments, the Company provide more details about the CRM pilot program.

Electric Vehicle Charging Impacts Project

Staff found the Electric Vehicle Charging Impacts Project Report ("EVCI Report") to be very informative. Staff appreciates the creativity and analysis the Company presented in this section of the *2016 Smart Grid Report*. While Staff recognizes that the data set was not expansive, there were a number of interesting elements to consider in the EVCI Report, namely the impact of EVs on the system's load and how it coincides with peak. There was even a little bit of data on EV ownership coupled with a time-of-use rate schedule.[12] Staff found the results of the report exciting and commends the Company for being proactive with its EV analysis.

In light of the transportation electrification requirements under SB 1547, Staff believes the report provides a good initial framework for analyzing future data. Staff believes the Company is considering good and reasonable scenarios and looks forward to the Company's additions in the future.

Summary

The Company addressed all of Staff's recommendations, but some of them would be better clarified through its Reply Comments. To reiterate, Staff requests that the Company address the following issues when it responds to Staff:

- **Staff requests** that the Company address Staff's concerns about the TOD pilot in its Reply Comments.
- **Staff requests** that the Company clarify what the next steps are after having conducted the Observability study. The Company should clarify whether it intends on installing PMUs in all of these locations or whether it is still in the process of evaluating optimal locations.
- **Staff requests** that the Company provide a narrative explaining Appendix J and include any updates as to the RT-VSMAC.
- **Staff requests** that the Company address whether it differentiated between cost-savings metrics and quantified benefits in Appendix H.
- **Staff requests** that the Company identify possible opportunities for future DSM personalization features in myAccount.
- **Staff requests** that the Company address the issue of capturing additional benefits of an end-of-feeder project.

[11] Idaho Power *2016 Smart Grid Report*, p. 35.
[12] See *2016 Smart Grid Report,* Appendix G, p. 7.

- **Staff requests** that the Company provide more details about the CRM pilot program.

Overall, Staff believes the Company has provided a robust smart grid report and has provided Staff with useful information about the progress of its projects. Staff will present further analysis in its Staff Report.

This concludes Staff's Comments.

Dated at Salem, Oregon, this 22nd day of November, 2016.

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STAFF'S DATA REQUEST NO. 31:

Please see page 40 of the 2016 Smart Grid Report, regarding Recommendation 2.

a. What kind of customer data is the Company planning on using for this pilot (e.g., is the Company going to assume a load shape for customers based on end usage)?

b. Has the Company decided on a range of TOD prices? If so, about what would the range be?

c. What type of preliminary analysis has the Company done? Is the Company planning on outsourcing any of the analysis?

d. Is the Company considering this pilot for commercial customers as well?

IDAHO POWER COMPANY'S RESPONSE TO STAFF'S DATA REQUEST NO. 31:

a. Idaho Power will use historical, aggregated residential customer class usage data to design the Time of Use ("TOU") rates. Once the TOU rate design is finalized, Idaho Power will use actual, hourly customer billing data to assess potential customer bill impacts and identify customers that may benefit from a TOU rate offering.

b. The Company has not finalized rates for its TOU pilot.

c. Idaho Power has completed its analysis to determine the hourly variable power supply costs and has begun developing seasonally differentiated time blocks and the associated rates for a TOU offering. The Company is not planning to outsource any of the analysis.

d. No. The Company is not considering this pilot for commercial customers. Commercial customers in Oregon taking service under Idaho Power's Schedule 9, Large General Service, and Schedule 19, Large Power Service, already have time-differentiated rates.