

ORDER NO. 17 076

ENTERED MAR 02 2017

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1675

In the Matter of

IDAHO POWER COMPANY,

2016 Annual Smart Grid Report.

ORDER

DISPOSITION: STAFF'S RECOMMENDATION ADOPTED

This order memorializes our decision, made and effective at our March 2, 2017 Special Public Meeting, to adopt Staff's recommendation in this matter. The Staff Report with the recommendation is attached as Appendix A.

Dated this 2 day of March, 2017, at Salem, Oregon.



Lisa D. Hardie
Chair



Stephen M. Bloom
Commissioner



A party may request rehearing or reconsideration of this order under ORS 756.561. A request for rehearing or reconsideration must be filed with the Commission within 60 days of the date of service of this order. The request must comply with the requirements in OAR 860-001-0720. A copy of the request must also be served on each party to the proceedings as provided in OAR 860-001-0180(2). A party may appeal this order by filing a petition for review with the Circuit Court for Marion County in compliance with ORS 183.484.

ITEM NO. 1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT

PUBLIC MEETING DATE: March 2, 2017

REGULAR X CONSENT _____ EFFECTIVE DATE _____ N/A

DATE: February 9, 2017

TO: Public Utility Commission

FROM: Nadine Hanhan *NH*THROUGH: *E* Jason Eisdorfer and *SC* John CriderSUBJECT: IDAHO POWER COMPANY; (Docket No. UM 1675) Annual Smart Grid Report

STAFF RECOMMENDATION:

Staff recommends the Commission accept Idaho Power Company's ("Idaho Power" or "Company") *2016 Smart Grid Report* as having met the requirements of Order No. 12-158 established in Docket No. UM 1460. Staff also requests the Commission accept Staff recommendations described below for future Idaho Power Smart Grid Reports.

DISCUSSION:

Issue

Whether Idaho Power's *2016 Smart Grid Report* meets the reporting requirement set by Order No. 12-158.

Applicable Law

In 2012, the Commission issued Order No. 12-158 establishing smart-grid policy goals and objectives, utility reporting requirements, and Commission guidelines for utility actions related to smart grid. Under Order No. 12-158, utilities were required to file an initial smart grid report that, at a minimum, included the following main elements:

Docket No. UM 1675
February 9, 2017
Page 2

1. Smart grid strategy, goals, and objectives.
2. Status of smart grid projects, initiatives, and activities that are underway, results of implemented smart grid projects, and planned smart grid investments for the next five years.
3. Smart grid opportunities the company is considering for the next five years and any constraints.
4. Targeted evaluations pursuant to Commission-approved stakeholder recommendations.
5. Related activities.

Thereafter, utilities were required to file an annual smart grid report that, at a minimum, includes incremental additions and updates of all elements of the initial report.¹

After a utility files a smart grid report, Staff and stakeholders have the opportunity to provide written comments, including recommendations on smart-grid investments and applications to be explored by the utility. The process culminates in a public meeting at which stakeholders and the utility have an opportunity for comment and Staff reports on whether the utility's smart grid report meets the requirements of Order No. 12-158 and recommends whether the Commission "accept" the filing. Commission acceptance of a smart grid report "signifies that the report meets the requirements of [Order No. 12-158] and any subsequent related orders."² If the Commission approves any of the recommendations made by Staff and stakeholders, "the Commission may require the utilities to address the recommendations in a subsequent report."³

In February 2016, the Commission accepted Idaho Power's *2015 Smart Grid Report* as having met the requirements of Order No. 12-158.⁴ At the same time, the Commission adopted Staff recommendations for Idaho Power's *2016 Smart Grid Report*.⁵ The recommendations adopted by the Commission were as follows:

¹ Commission Order No. 12-158, at page 4, Docket No. UM 1460, May 8, 2012.

² Commission Order No. 12-158, at pages 4-5, Docket No. UM 1460, May 8, 2012.

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

⁴ Commission Order No. 16-045, Docket No. UM 1675, February 4, 2016.

⁵ Commission Order No. 16-045, Docket No. UM 1675, February 4, 2016.

Docket No. UM 1675
February 9, 2017
Page 3

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 investigate, design and implement a TOD pilot that may include behavioral components that can be offered to Idaho Power residential customers if determined feasible.
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 AML-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 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.

Analysis

Staff's standard of review

The standard of review utilized by Staff in its review of the utilities' smart grid reports subsequent to their initial reports is set forth below. Staff employed this same standard in reviewing the Company's *2016 Smart Grid Report*:

Docket No. UM 1675
February 9, 2017
Page 4

1. Whether the Company has met the guidelines set forth by the Commission in Order No. 12-158;⁶ and
2. Whether the Company has addressed prior Commission-approved recommendations from prior smart grid report reviews regarding potential smart grid investments and applications.

Background

On August 5, 2016, Idaho Power disseminated a draft version of the *2016 Smart Grid Report* to interested parties and included a window of three weeks for stakeholder input. Staff offered informal comments to aid in the development of the report. Idaho Power filed its third smart grid report on October 1, 2016—the due date prescribed in Order No. 12-158.⁷

Staff and the Oregon Department of Energy (ODOE) filed written comments on November 22, 2016, and Idaho Power filed responsive comments on January 6, 2017.

Discussion

Staff concludes that Idaho Power complied with the guidelines and reporting requirements set forth in Order No. 12-158. The *2016 Smart Grid Report* includes a discussion of each of the major elements identified by the Commission in that order (see pages 1 and 2, above) and substantially addresses the sub-issues of each element.

Staff addresses Idaho Power's compliance with the recommendations for the *2016 Smart Grid Report* that the Commission adopted in Order No. 16-045 below. This discussion includes a brief description of Staff's previous written comments regarding Idaho Power's responses to the recommendations and pertinent intervenor comments where applicable.

Recommendation 1 for 2016 Report:

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

2016 Smart Grid Report Discussion:

Idaho Power included Staff's informal comments and the Company's response to the comments in Appendix A in the *2016 Smart Grid Report*. Staff primarily requested clarification in its informal comments.

⁶ This should also include incremental additions and updates of all elements of the first report. See Order No. 12-158, page 4.

⁷ Commission Order No. 12-158, at page 4, Docket No. UM 1460, May 8, 2012.

Docket No. UM 1675
February 9, 2017
Page 5

Staff Comments: Staff acknowledged the Company's response to Recommendation 1.

Staff Position: Idaho Power's responses to informal comments were thorough. In its informal comments, Staff noted that it was helpful that the Company provided clarification on how certain programs evolved, failed, or succeeded. Staff reiterates that this gave helpful context for the programs described in the report and encourages the Company to continue this approach in the 2017 *Smart Grid Report*.

Recommendation No. 1 for 2017 Report:

Idaho Power should continue to include Staff and stakeholder informal comments and corresponding Company responses in the 2017 *Smart Grid Report*.

Recommendation 2 for 2016 Report: Idaho Power work with Staff to investigate, design and implement a TOD pilot that may include behavioral components that can be offered to Idaho Power residential customers if determined feasible.

2016 Smart Grid Report Discussion: The Company responded to this recommendation by reporting that it is currently in the process of developing a TOD program with seasonally differentiated time blocks. The Company did not elaborate much on the pilot details and explained that once the pilot design is complete, Idaho Power will share it with OPUC Staff.⁸

Staff Comments: Staff was concerned with this approach because it seems the Company is not planning to communicate with Staff about the program until after the Company develops its TOD program. In addition, the Company explained through a discovery request that the Company would attempt to identify which customers would benefit from a TOD offering. Staff explained that this approach was concerning because it seems Staff and stakeholders will not have a chance to add input into the design of the program and could potentially limit certain customers from participating based on the TOD design.

ODOE Comments: ODOE briefly mentioned that the Company should leverage smart grid data to increase customer participation, including demand response and time-of-use (TOU) pilots.

Idaho Power Response: In its Reply Comments, the Company stated that although it has already taken steps to analyze underlying data and understand TOD goals, it "fully intends to work with Staff before finalizing the TOD design."⁹ In the interest of efficiency, the Company expressed a preference for preparing a draft proposal before

⁸ Idaho Power 2016 *Smart Grid Report*, pp. 39-40.

⁹ Idaho Power 2016 *Smart Grid Report Reply Comments*, p. 3.

Docket No. UM 1675
February 9, 2017
Page 6

facilitating discussion and inviting stakeholder input. Idaho Power explained some of its initial steps, such as focusing on hourly net power supply expenses to identify potential time blocks and utilizing new AURORA output¹⁰ it was previously unable to use.

The Company also attempted to clarify the discovery response mentioned above, stating that Idaho Power will develop rates based on aggregated customer data, then apply the rate to customer billing data in order to estimate the impact on customer bills and “identify which types of customers based on usage may benefit from a TOU offering.”¹¹ In addition to the Company’s Reply Comments, Idaho Power engaged with Staff in phone calls on January 25, 2017, and February 14, 2017, to discuss the TOD pilot.

Staff appreciates that the Company engaged with Staff and answered Staff’s questions. In the January phone call, the Company reassured Staff that stakeholders would have an opportunity to provide input on the TOD rates and behavioral design. The Company discussed its Idaho TOD pilot and implied that it would use some of the design from the Idaho pilot in Oregon. In the February phone call, the Company presented more details on its program design via a “strawman” proposal for rate structure, peak times, off-peak times, and months of the year when the rates would change. The Company explained how it arrived at its program proposal, pointing to its Idaho pilot and lessons learned from the Idaho pilot. Staff expressed some of its concerns, described below, but the Company expressed that it would continue to work with Staff on developing an Oregon TOD pilot.

Staff Position: Staff reviewed previous *Smart Grid Reports* and realized that Idaho Power discussed and attached the results of its Idaho TOD pilot in the *2014 Smart Grid Report*. The results of the pilot demonstrate that overall energy usage did not change by a statistically significant amount, but that energy usage from peak to off-peak did have a statistically significant difference. The TOD pilot implemented a quasi-experimental design in which it sent invitations to 132,000 customers. Over 1,600 customers enrolled in the pilot.¹² In the *2013 Smart Grid Report*, the Company explains that the Company used actual data to estimate potential benefits to customers. Customers were also able to go online to view how much they could benefit from enrolling in a TOD plan.¹³ All of this is consistent with what the Company explained in the January 25 phone call regarding the pilot design.

¹⁰ AURORA is Idaho Power’s electric resource dispatch modeling software.

¹¹ Idaho Power 2016 Smart Grid Report Reply Comments, p. 3.

¹² Idaho Power 2014 Smart Grid Report, p. 18.

¹³ Idaho Power 2013 Smart Grid Report, Appendix D-6.

Docket No. UM 1675
February 9, 2017
Page 7

While Staff is excited that the Company was able to shift some of the on-peak usage to off-peak usage via the pilot, Staff notes that ultimately, only 1.3 percent of its customers enrolled in the pilot.¹⁴ The Company estimates that if it had sent invitations out to all of its customers, it estimates that about 4,000 people would have enrolled.¹⁵

Staff expressed to Idaho Power its concerns with the Company's use of current ratepayer usage to estimate customer benefits from TOD rates. First, in Staff's view, the point of TOD rates is to incent behavioral change. If customers enroll in the program based on savings garnered from current usage, Staff does not believe the program will incent users to change their demand patterns and ultimately shift their load, which could benefit the system. Second, Staff is concerned about the messaging; if customers are told there are no savings in a program, the likelihood of them enrolling decreases.

In the January 25 phone call, the Company indicated that, due to the average income levels of its customers in Oregon, economics would be an important motivating factor in enrolling in such a program. Staff agrees that it is important to help customers save money but also notes that the goal of a TOD pilot should also be to manage load. In the February 14 phone call, the Company expressed that it agreed with Staff's concerns regarding shifting load and incenting behavioral change. The Company indicated that one of the primary drivers to the lack of load shifting or change in behavior rests in the fact that this is an opt-in program.

The Company is currently working with Staff in addressing these concerns and receiving additional input as to the structure of the TOD program. Staff appreciates that the Company has been responsive in working with Staff to craft an effective TOD pilot.

Recommendation No. 2 for 2017 Smart Grid Report: The Company should continue to host additional workshops with Staff and include other stakeholders for input in finalizing the program design of the TOD pilot. Staff encourages the Company to complete its design of the TOD pilot and file a tariff proposal with the Commission by Jan 1, 2018

Recommendation 3 for 2016 Report: 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.

¹⁴ Idaho Power 2014 Smart Grid Report, p. 20.

¹⁵ Idaho Power 2014 Smart Grid Report, p. 20.

Docket No. UM 1675
February 9, 2017
Page 8

Idaho Power 2016 Report Discussion: The Company held the recommended workshop in 2016 and included a list of projects and suggested metrics as Appendix H in the 2016 *Smart Grid Report*. All of the projects included a qualitative benefit and most included a quantifiable metric of the projects' impact on the Company's system. 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. The company did not specify which metrics it would use for future projects but stated that it would report the cost-saving metrics for future smart grid reports when available.¹⁶

Staff Comments: Staff highlighted the usefulness of knowing the status of the programs and the changes that occurred in the programs, both positive and negative. Staff also mentioned that although not all of the projects in Appendix H had clearly quantified benefits, the list of metrics was a helpful overview of a variety of smart grid projects. Staff noted that Appendix H included a number of "TBDs" whose metrics were not quantified. Staff noted that in future reports, the Company should update the metrics as applicable, add additional Smart Grid Metrics and projects as appropriate, populate the TBD fields, and populate the fields that are still ongoing/in progress.

Staff Position: Staff is satisfied that the Company properly responded to Recommendation 3.

Recommendation No. 3 for 2017 Smart Grid Report:

Staff recommends that Idaho Power populate the TBD fields in its Appendix H as applicable and continue to include any updates to the appendix in next year's report.

Recommendation 4 for 2016 Report: Idaho Power provide the observability methodology document as an attachment to the ensuing smart grid report.

Idaho Power 2016 Smart Grid Report Discussion: The Company submitted a draft report entitled "Optimal PMU Placement to Achieve Full Observability of Idaho Power Co. System" as Appendix I. The Company examined different approaches to analyzing power system observability and explained that the purpose of the study was to "identify the optimal placement of PMUs [phasor measurement units] such that IPC network becomes fully observable."¹⁷

Staff Comments: Staff stated that it felt the Company met the requirements of this recommendation but also requested additional context about how the Company is planning on using the results. Staff pointed to the 78 PMU locations identified in the

¹⁶ Idaho Power 2016 *Smart Grid Report*, p. 40.

¹⁷ Idaho Power 2016 *Smart Grid Report*, Appendix I, p. 3-1.

Docket No. UM 1675
February 9, 2017
Page 9

study and the lack of explanation on the results. Staff requested that Idaho Power clarify its next steps regarding the observability study and whether it intends to install PMUs in all locations identified in the study or whether it is still in the process of evaluating optimal locations.

Idaho Power Reply Comments: The Company offered additional insight as to the application of its PMU data, stating that it uses the information from the observability study to pinpoint possible installation locations. The Company's eventual goal is to have a PMU at each one of its transmission stations across the portion of its system that is 230 kilovolts and above. In addition, the Company is planning on installing a PMU at each of its power plants that exceed 20 MW. The Company provided a table of five PMUs to be installed by May 2017 as part of its Transmission Situational Awareness Oscillation Monitoring Pilot and generator model validation program.

Staff Position: Staff concludes the Company met the requirement in Recommendation 4 for the 2016 Smart Grid Report.

Recommendation No. 4 for 2017 Smart Grid Report:

The Company provide the final Observability study and explain the final implications of the study as it applies to PMU installations, the cost of the PMU installations, and how those PMU installations will benefit the Idaho Power system.

Recommendation 5 for 2016 Report: Idaho Power provide updates on the LSE and the real-time voltage stability monitoring and control (RT-VSMAC) applications in future Smart Grid Reports.

Idaho Power 2016 Smart Grid Report Discussion: As Appendix J, Idaho Power provided a one-page overview of a Peak Reliability Synchrophasor Program (PRSP) for the second quarter of 2016.

ODOE Comments: ODOE did not specifically mention the RT-VSMAC tool but did mention its interest in transmission situational awareness. ODOE stated that it supports efforts to increase grid reliability through improved use and quality of data streams. In particular, ODOE requested that the Company discuss what information it gained from collaboration with other utilities and through a USDOE (U.S. Department of Energy) grant for synchrophasor-based software applications. ODOE also stated its interest in any attempt by the Company to address both the increased acceptance of the new data it is collecting and any changes to the Company's reliability protocols.

Staff Comments: Staff noted the lack of context for the information in Appendix J, and while the Company did mention that the LSE (linear state estimator) has not yet been

Docket No. UM 1675
February 9, 2017
Page 10

installed, there was no additional comment about what that means for the Company's system. Staff was also unclear how Appendix J related to Appendix B, which is the Peak Reliability Project Plan that underscored technical requirements for LSE. Staff requested that the Company provide a narrative explaining Appendix J and include any updates as to the RT-VSMAC.

Idaho Power Reply to ODOE: In a series of bullet points, Idaho Power summarized a series of insights it gained through the USDOE grant.

Idaho Power Reply to Staff: The Company explained that Appendix J was a progress report that provided an update as to the Company's LSE and RT-VSMAC application but that there were no new developments with either the LSE or the RT-VSMAC.

Staff Position: Staff feels that though the Company met the minimum requirement for this recommendation by providing the progress report in Appendix J, additional details should be included as to how the results of the report fit in with the overall goal of improving situational awareness. Staff also notes that because of the technical nature of smart grid literature, the Company should consider establishing a library of background smart grid material on its website for people newly interested in smart grids.

Recommendation No. 5 for 2017 Smart Grid Report:

In addition to providing updates on the LSE and the RT-VSMAC via a similar appendix, the Company should provide a narrative explaining the elements of the appendix and explain how updates related to the PRSP are benefiting the Idaho Power system.

Recommendation 6 for 2016 Report: Idaho Power work with Staff to determine possible AMI-related annual cost saving metrics for future smart grid reports.

Idaho Power 2016 Smart Grid Report Discussion: Idaho Power combined the cost-saving metrics with the list of quantifiable benefits from Recommendation 3 in Appendix H, stating that "AMI's system continues to provide the foundation for Idaho Power's smart grid."¹⁸ Each "benefit" listed in Appendix H included a brief explanation of the nature of the benefit.

Staff Comments: Staff found that Appendix H presented an unclear distinction between "benefits" and "metrics." Staff felt that the Company combined responses to both Recommendation 3 (regarding benefits of smart grid projects) and 6 (regarding AMI-related annual cost saving metrics) without specifying the differences. Staff asked the

¹⁸ Idaho Power 2016 Smart Grid Report, p. 41.

Docket No. UM 1675
February 9, 2017
Page 11

Company to address whether it differentiated between cost-savings metrics and quantified benefits in Appendix H.

Idaho Power Reply Comments: The Company explained that it did not identify additional AMI-related cost-savings metrics, but if a quantifiable benefit existed after determining the benefits and costs of a smart grid project, the quantifiable benefit (measured in dollars) was classified as a cost-savings metric and was reflected in Appendix H.

Staff Position: Staff believes that Idaho Power complied with Recommendation 6 for the 2016 report, but believes additional reporting should be required in the 2017 report. See Recommendation 3 for the 2017 *Smart Grid Report* above. The request for improved reporting of cost-savings metrics, qualitative benefits, and quantifiable benefits in Appendix H will address Staff's comments regarding Idaho Power's compliance with Recommendation 6 of the 2016 Report.

Recommendation 7 for 2016 Report: 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.

Idaho Power 2016 Smart Grid Report Discussion: The Company gave an overview of myAccount in its report,¹⁹ generally focusing on customer online interaction with myAccount, such as logging in and seeing graphs of current-month bill-to-date estimates.²⁰ The Company redesigned myAccount, launching a new landing page in May 2016. With myAccount's new icon-based features, the Company indicated that customers have easier access to "robust energy advising tools."²¹ A description of the new features can be found in Appendix K.

ODOE Comments: Though ODOE applauded the Company's efforts to reach out to more customers and in different ways, ODOE also stated that it wanted to see increased efforts in targeting customers to participate in more programs like demand response and time-of-use pilots. ODOE also indicated a desire to see more sophisticated programs that could shift load in real time.

Staff Comments: Staff indicated that the Company's response to this recommendation misinterpreted what Staff took to mean as "personalization features." While Idaho Power's myAccount does possess more personalized features at this point in time, Staff indicated that its intention with Recommendation 7 was for more of a Company effort to leverage smart grid data acquired through myAccount for DSM purposes. Staff

¹⁹ Idaho Power 2016 *Smart Grid Report*, pp. 27 & 28.

²⁰ Idaho Power 2016 *Smart Grid Report*, p. 41.

²¹ Idaho Power 2016 *Smart Grid Report*, p. 41.

Docket No. UM 1675
February 9, 2017
Page 12

requested that the Company identify possible opportunities for DSM personalization via my Account in its Reply Comments.

Idaho Power Reply Comments: The Company pointed towards its Customer Relationship Management (CRM) application as possibly addressing Staff's interest. myAccount could be used to inform customers about CRM. Idaho Power indicated that customers already have access to viewing their energy consumption online and "can manage their demand for energy."²² The Company indicated it was working on implementing customized usage and threshold alerts for its customers and also pointed to its Savings Center, where customers who fill out a profile in the Savings Center will be able to access personalized energy savings recommendations.

Staff Position: Staff recommends the Company expand the capabilities of its CRM application to include personalization of DSM related actions. See below: Recommendation 6 for the *2017 Smart Grid Report*.

Recommendation 8 for 2016 Report: 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.

Idaho Power 2016 Smart Grid Report Discussion: The Company indicated that putting a small generator at the end of a feeder may flatten voltage and therefore facilitate conservation voltage reduction (CVR) implementation. The Company describes a project it is implementing in which it will install 15 kW of solar PV at the end of a feeder near Shoshone, Idaho in an attempt to reduce low voltage.²³ The Company expects that the results of the pilot will provide an opportunity to learn more about the possibilities of CVR implementation.

ODOE Comments: ODOE indicated that it was pleased to see the Company undertake the solar feed-in project but also wanted the Company to further explore potential cases for administering distributed battery storage. ODOE also indicated that it was interested in seeing a cost-benefit analysis for the solar end-of-feeder projects for which it did not find cost-effective.

Staff Comments: Staff felt that additional detail was needed about how to capture the additional benefits of an end-of-feeder project. Staff requested that the Company elaborate on measuring these potential benefits in its Reply Comments.

Idaho Power Reply Comments to ODOE: The Company explained that the solar end-of-feeder candidate projects were not cost-effective because the Company was able to

²² Idaho Power 2016 Reply Comments, p. 8.

²³ Idaho Power 2016 Smart Grid Report, p.11.

Docket No. UM 1675
February 9, 2017
Page 13

mitigate low voltage through more cost-effective means such as rebalancing load or adding a regulator. Since the cost to install the solar end-of-feeder was lower than it would have been to reconductor the feeder. The Company provides a table of candidate feeders which it did not find cost-effective to install solar PV on.

Idaho Power Reply Comments to Staff: The Company explains that its current solar end-of-feeder project was optimized to 18 kW, and because of this system size, additional benefits beyond deferring conductor replacement are not available.

Staff Position: Staff finds that the Company has met the requirement for this recommendation.

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

Idaho Power 2016 Smart Grid Report Discussion: Idaho Power points to its customer relationship and billing (CR&B) upgrade it is currently adopting as a way to improve internal marketing applications, analytics, reporting, and communication. It plans to integrate CRM into its CR&B upgrade in early 2017. The Company states that the goal of integrating CRM is to "manage and track customer interactions related to energy efficiency." The Company asserts that the CRM application will retrieve, among other forms of data, meter usage data, customer data, demographics, and program data to market its programs more effectively.

Staff Comments: Staff noted that though Idaho Power did describe how CRM will allow it to monitor and use customer data to improve service offerings, the report has little discussion about a program that is to be deployed in early 2017. Staff requested that the Company provide more details about the CRM pilot program.

Idaho Power Reply Comments: Idaho Power went into additional detail on CRM, explaining that before integrating CRM into its CR&B system, it must first install a CR&B enhancement package, with expected completion date in early 2017. The Company states that it will take a while before it can populate its system with enough data to take advantage of the program. Additionally, the Company's Customer Service Center is already making use of some of the CRM functions.

Staff Position: Staff is very interested in being apprised of personalized customer experiences like the Company has described. In particular, the Company has pointed to CRM for internal marketing applications, analytics, reporting, communication, tracking

Docket No. UM 1675
February 9, 2017
Page 14

and managing "customer interactions related to energy efficiency,"²⁴ and potential personalized DSM applications.²⁵ In addition, where the Company indicated that myAccount would be the platform for communicating to customers about CRM and energy efficiency opportunities, Staff finds that it is reasonable to assume that myAccount will also be used to communicate to customers about TOD programs. Staff agrees that the new CR&B upgrades coupled with CRM integration has the potential for offering new services to customers that were not otherwise available. However, with that comes the responsibility of the Company in tracking the progress of the products that the Company is offering and addressing whether the personalized products will come to fruition. In addition, Staff is concerned by the Company's statement that customers "can manage their demand for energy" by looking at their consumption online. Staff's original intent in Recommendation 7 (from the 2015 Smart Grid Report) is that the Company go beyond what is already available to customers.

Staff is also interested in learning more about the Company's Savings Center, where the Company has described a number of different applications, such as the ability to set thresholds, be notified when they exceed such thresholds, receive personalized energy savings recommendations, and "drill down to very specific savings opportunities."²⁶

Recommendation No. 6 for the 2017 Smart Grid Report: The Company should track the progress of the CRM application and the CR&B upgrade and provide a robust narrative, complete with costs and benefits, describing how it intends to utilize CRM for personalized DSM purposes beyond what is already available to customers. The Company should also provide a robust narrative describing how its Savings Center will or won't help achieve new DSM offerings or energy management abilities, if any.

Additional ODOE Comments

ODOE provided additional comments regarding electric vehicle deployment, smart grid data, and distributed resources.

EVs: ODOE indicated that the Company should evaluate more advanced functionality by reaching out to its own employees to participate in vehicle-to-grid or controlled-charging applications. ODOE was also interested in a combined time-of-use and electric vehicle program.

The Company responded to ODOE by clarifying that the goal of its employee EV workplace charging pilot is to gain experience with workplace charging. Idaho Power

²⁴ Idaho Power 2016 Reply Comments, pp. 11&13.

²⁵ Idaho Power 2016 Reply Comments, p. 8.

²⁶ Idaho Power 2016 Reply Comments, p.8.

Docket No. UM 1675
February 9, 2017
Page 15

stated that it would track the total number of charging events and use data from its pilot to inform future assessments of EV demand and fees.

Real-time Smart Grid Data: ODOE explained that it was interested in opportunities to deliver real-time data to end-use customers. ODOE requested that the Company address whether its AMI infrastructure was capable of delivering customer data in real time.

Idaho Power responded to ODOE by explaining that its AMI infrastructure does not have the wireless communication capability to support real-time data delivery. If customers have a secondary service, at an additional charge, customers can opt to purchase pulse output data on their own.

Non-South Facing PV: ODOE requested that the Company provide a graph or table depicting the results of its non-south facing PV. The Company provided the requested graphics on pages 14 and 15 of its Reply Comments.

Conclusion

Overall, Staff found the report to be robust, detailed, and a good showcase of how Idaho Power is advancing smart grid efforts.

Recommendations

Staff recommends the Commission accept Idaho Power's 2016 *Smart Grid Report* and acknowledge that it meets the requirements of Order No. 12-158. Staff recommends that the Company take or implement the following actions for its 2017 *Smart Grid Report*:

1. Continue to include Staff and stakeholder informal comments and corresponding Company responses in the 2017 *Smart Grid Report*.
2. Host additional workshops with Staff and other stakeholders for their input in finalizing the program design of the TOD pilot.
3. Provide updated information on quantifiable benefits by populating the TBD fields in its Appendix H as applicable and continue to include any updates to the appendix in next year's report.
4. Provide the final Observability study and explain the final implications of the study as it applies to PMU installations, the cost of the PMU installations, and how those PMU installations will benefit the Idaho Power system.

Docket No. UM 1675
February 9, 2017
Page 16

5. In addition to providing updates on the LSE and the RT-VSMAC via an appendix similar to that in the 2016 report, provide a narrative explaining the elements of the appendix and explain how its updates related to the PRSP are benefiting the Idaho Power system.
6. Track the progress of the CRM application and the CR&B upgrade and provide a robust narrative, complete with costs and benefits, describing how it intends to utilize CRM for personalized DSM purposes beyond what is already available to customers. The Company should also provide a robust narrative describing how its Savings Center will or won't help achieve new DSM offerings or energy management abilities, if any.

PROPOSED COMMISSION MOTION:

Idaho Power's *2016 Smart Grid Report* be accepted with Staff's recommendations set forth immediately above in the "Recommendations" part of this memorandum.

UM 1675 - Idaho Power 2016 Smart Grid Report