



Portland General Electric Company
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V. Denise Saunders
Associate General Counsel

November 7, 2014

Via Electronic Filing and U.S. Mail

Oregon Public Utility Commission
Attention: Filing Center
PO Box 1088
Salem OR 97308-1088

Re: LC 56 – Portland General Electric Company’s 2013 Integrated Resource Plan

Attention Filing Center:

Enclosed for filing in the above-referenced docket are an original and five (5) copies of **Portland General Electric Company’s (“PGE”) Supplemental Comments.**

This filing is also being made by electronic mail with the Filing Center and simultaneously served upon the Service List for LC 56.

Thank you in advance for your assistance.

Sincerely,

A handwritten signature in blue ink, appearing to read "V. Denise Saunders". The signature is written in a cursive, flowing style.

V. DENISE SAUNDERS
Associate General Counsel

VDS:qal
Enclosures
cc: LC 56 Service List

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

DOCKET NO. LC 56

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY'S

2013 Integrated Resource Plan.

SUPPLEMENTAL COMMENTS

I. Introduction

On October 21, 2014, OPUC Staff issued a Staff Report and proposed Order recommending that the Commission acknowledge Portland General Electric Company's (PGE) 2013 Integrated Resource Plan with certain considerations. While PGE will comment more fully on the Staff Report at the November 12, 2014 Commission meeting, we are submitting these supplemental comments to address two issues:

- (1) **The directive that PGE provide a cost-benefit analysis of joining the CAISO EIM within two months of the issue date of the Commission's Order.** Because this directive was raised for the first time in these proceedings in the Staff Report, PGE is submitting in advance the comments that it intends to make on this issue at the November 12 meeting.

- (2) **The directive that PGE file its next Integrated Resource Plan no later than March 27, 2016.** While the March 27, 2016 date is two years from the date PGE filed its 2013 IRP (March 27, 2014), it is considerably less time than the maximum deadline allowed for in Oregon Administrative Rule 860-027-0400.¹ PGE is concerned that this directive will place undue pressure on our ability to complete the resource planning process required in the next IRP. While the current IRP Action Plan does not include any major new resource additions, PGE expects its next IRP to address increased 2020 RPS requirements, options for replacing output from the Boardman coal plant, and other potential energy and capacity needs. Each of these subjects (on its own) is a complex and important issue and will benefit from a robust stakeholder process. Collectively, they represent a resource planning challenge that may necessitate the full time allowed under Oregon Administrative Rule 860-027-0400.

Specifically, PGE is requesting the following changes, as identified in redline, to the language in the proposed Order:

¹ Under Oregon Administrative Rule 860-027-0400 an energy utility must file an IRP within two years of its previous IRP acknowledgment order or as otherwise directed by the Commission.

In making this acknowledgement, we direct PGE to consider an analysis of the costs and benefits of joining the NWPP MC Initiative or the PacifiCorp-CAISO EIM as it explores its EIM options and to report back to the Commission with its findings ~~within two months of the issue date of this order~~ no later than June 30, 2015.

9. PGE to consider an analysis of the costs and benefits of joining the NWPP MC Initiative or the CAISO EIM as it explores its EIM options and to report back to the Commission with its findings no later than June 30, 2015.

IT IS ORDERED that:

1. The 2013 Integrated Resource Plan filed by Portland General Electric Company on March 27, 2014 is acknowledged with the requirements set forth in this order.
2. Portland General Electric will file its next Integrated Resource Plan no later than ~~March 27, 2016~~ two years from its previous IRP acknowledgment order.

The remainder of our comments focuses on PGE's preparation to participate in a within hour market.

II. Comments on PGE's Preparation to Participate in a Within Hour Market

PGE recognizes that the implementation of an automated within-hour market (e.g., energy imbalance market) could enhance regional transmission system reliability and lower dispatch costs inside the market's footprint. For these reasons, PGE is a foundational participant at the executive and staff level in the Northwest Power Pool (NWPP) Market Assessment and Coordination Committee (MC) Initiative, which seeks to enhance operational tools for the NWPP MC Members and design a within-hour energy market to meet their unique needs.

Additionally, the CAISO EIM has offered to extend its automated within-hour market to PGE and others in the Western interconnect. While a comprehensive qualitative and quantitative cost-benefit analysis of joining the CAISO EIM is a key element in PGE's planning, we believe the results of a cost-benefit analysis will be most useful when appropriately compared to the NWPP MC Initiative. PGE's supplemental comments identify the considerations we are making in our planning in order to appropriately compare our within-hour market options. As discussed below, completion of the activities that we are engaging in over the next several months will allow for more robust and comparable cost-benefit analyses of the two markets. Appendix 1 includes a timeline for our within-hour market assessment. The timeline identifies key activities and milestones during the 2014-2015 timeframe as PGE prepares to participate in a within-hour market, either the CAISO EIM or NWPP MC Initiative.

A. PGE's efforts to modernize tools and standardize decision-making processes will impact the cost-benefit calculation of participating in a within-hour market

PGE is working on several fronts to prepare to participate in a within-hour market. Through our work under (1) company initiatives designed to prepare PGE for frequent use of sub-hourly scheduling and dispatch and (2) the NWPP MC Initiative, we are making progress on tools and processes that can capture EIM-related benefits. In order to fully participate in a within-hour market, PGE is working with the Structure Consulting Group, an industry consulting firm with extensive experience preparing clients for major market changes and new markets, to identify the remaining gaps. Collectively, this work will ensure PGE has identified the full suite of systems and tools necessary to participate in a within-hour market.

Company Initiatives – Dynamic Dispatch Program

Prior to participating in a within-hour market, PGE must also modernize its tools and standardize its operational decision-making processes. PGE has committed a significant number of employees to work with software providers and PricewaterhouseCoopers on multiple projects (many beginning prior to 2014) that will enable PGE to make frequent use of sub-hourly scheduling and dispatch as well as capture additional remaining benefits from within-hour market opportunities in the future. These projects fall under a project plan known as the Dynamic Dispatch Program and include:

1. *Plant Data (PI) Consolidation:* PGE is consolidating its generation data in order to provide a central repository of data that can be easily extracted for operations and analytical work.
2. *Cycling Cost Studies:* PGE is conducting studies on its thermal resources to determine their cycling capabilities and the costs associated with using them to balance load and variable energy resources.
3. *AGC Equipment Installation:* Automatic Generation Control (AGC) allows plants to be remotely controlled. PGE is installing AGC telemetering equipment at the appropriate thermal plants in order to increase their dispatch efficiency while balancing load and variable energy resources.
4. *Generation Operations (Gen Ops) Optimization Tool:* PGE is developing a tool(s) that can simultaneously optimize the PGE system for reliability requirements and economic dispatch of the plants. This will support PGE's ability to (a) integrate variable energy resources, (b) schedule resources sub-hourly, (c) participate in an EIM, and (d) automatically dispatch plants more efficiently to meet system needs.
5. *Fifteen Minute Market Readiness:* PGE is taking a systematic and comprehensive approach to reliably managing its resource portfolio in markets that are evolving and becoming more granular in their scheduling and dispatch. As a part of this approach, PGE is improving tools used for wind forecasting and scheduling, and implementing business practices that align with the evolving markets.

As shown in Appendix 1 (See section labeled 15-Min Market & Wind Integration), these projects will conclude prior to October 1, 2015 when PGE begins to schedule wind resources on a 15 minute (rather than hourly) basis and use our hydro and thermal resources to integrate schedule to schedule changes under BPA's 30/15 Variable Energy Resource Balancing Service (VERBS) committed scheduling rate.

NWPP MC Initiative

As a member of the NWPP MC Initiative, PGE is assisting in the development of data-sharing and infrastructure tools that are in the process of being implemented through early 2015. For example, the NWPP MC Initiative has funded the development of regional data sharing tools and a regional flow forecast tool. The data sharing tools provide Balancing Authorities and merchants with access to selected operational data, while the forecast tool will provide transmission operators with a regional flow forecast on targeted flowgates. The regional flow forecast can be used to resolve potential congestion prior to the operating hour and avoid real-time schedule curtailments. These tools will establish tighter linkages between Peak Reliability (the Western Interconnection's Reliability Coordinator) and the region's Balancing Authority Areas. With the establishment of tighter linkages, Peak Reliability and the Balancing Authority Areas will increase their situational awareness and pre-contingency activities in a manner that enhances reliability. These enhancements provide qualitative benefits often attributed to energy imbalance markets in advance of such a market being installed in the region.

Structure Consulting Group

Using the Dynamic Dispatch Program as its current state, PGE is working with the Structure Consulting Group (Structure) to determine the remaining high-level costs associated with preparing PGE's systems, metering, and processes for participation in a within-hour market. Structure's assessment of PGE's current state will conclude late in 2014 and identify the remaining gaps between PGE's current state and the functional requirements needed to participate in an automated within-hour market. This assessment could result in several projects, including an outage management system for PGE's Generation and Transmission organizations, a bid-to-bill system for within-hour market participation, and metering upgrades. PGE will also likely further redesign business processes and modify interfaces with existing IT systems.

B. Aligning the timing of cost-benefit study results with other key decision points ensures that results are as comparable as possible

Based on current information, PGE believes the NWPP MC Initiative offers a strong combination of qualitative and quantitative benefits. However, the work taking place during the first part of 2015 will provide additional clarity to PGE.² Additionally, PGE estimates the time necessary for performing a CAISO EIM cost-benefit study to be approximately six months, based on our discussions with CAISO representatives and our understanding of other utilities' experience. Therefore, PGE believes the most appropriate time to complete a comparative analysis between the NWPP MC Initiative and the CAISO EIM is during the first part of 2015, reporting findings to the Commission

² Work listed in Appendix 1; See section labeled NWPP MC Initiative.

in June 2015. This timeline provides PGE with the flexibility to ensure that developments in the NWPP MC Initiative and CAISO EIM during the first part of 2015 are appropriately considered in its comparative analysis.

C. Evolving market design details and PGE’s incremental actions already taken to manage variable energy resources may significantly influence PGE’s analysis of within-hour market solutions

As a part of its comparative analysis, PGE will consider evolving market design details in both the CAISO EIM and the NWPP MC Initiative and the incremental actions it has already taken to manage variable energy resources. These considerations include key elements of the within-hour markets (e.g., design, governance, and size), the impacts from 15-minute scheduling, and PGE’s present efforts to increase its access to California markets.

Within-Hour Market Details

The NWPP MC Initiative includes two key deliverables: (1) enhancements to operational tools for the NWPP MC Members and (2) a fully functioning automated within-hour energy market. The enhancements to operational tools provide near-term benefits to reliability and system integrity, and NWPP MC Members will design the within-hour energy market to meet their unique needs. For example the NWPP MC Initiative is designed to use flow-based (instead of rights-based) transmission in its market design.

Additionally, PGE believes evolving market details such as Governance models, the method of enforcing market power concerns, and the expected market footprint and volume all have the opportunity to significantly influence PGE’s consideration of the benefits resulting from an automated within-hour market solution, whether the NWPP MC Initiative design or CAISO EIM. While these market details may be difficult to quantify, they are material factors in PGE’s decision making process.

15-Minute Scheduling

With respect to base production cost benefits, PGE’s step-wise approach to wind integration will likely capture benefits previously attributed to an energy imbalance market in studies comparing an automated within-hour market to a traditional hourly bilateral market structure. PGE has elected BPA’s 30/15 VERBS committed scheduling rate beginning October 1, 2015. Under VERBS, PGE (both Generation and Transmission) will gain operational experience with moving hydro and thermal resources on a 15-minute (rather than hourly) basis. Therefore, PGE will already be operating under a sub-hourly dispatch and capturing the frequency benefits of moving from a traditional hourly bilateral market structure to a 15-minute market.

Access to California Markets

With respect to resource diversity, PGE, through firm transmission purchases, has increased its access to California markets. In order to manage significant loss of wind events (i.e., generation drops between hours, or across multiple hours) PGE relies on access to markets and flexible resources. Due to wind penetration in the region, Northwest markets in their current form may not be able to meet the power need created

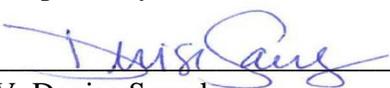
by a loss of wind event. While PGE does not currently have the ability to make intra-hour market purchases and sales in the California market, increased access to firm export capability out of California does mitigate the NW supply risk and provides PGE with another, incremental method of managing variable energy resources. California is also experiencing tremendous growth in solar power. In the future, as solar continues to grow and create greater differences between California's peak and midday hour loads, PGE anticipates a higher need for intraday regional exchanges of energy during midday hours. During these midday hours, surplus energy will place downward pressure on market prices and through bilateral term contracts with California utilities or intraday purchases from the CAISO, PGE will be able to secure these market benefits for our customers.

III. Conclusion

The steps discussed above are meant to demonstrate PGE's systematic and comprehensive approach to reliably managing its resource portfolio in markets that are evolving and becoming more granular in their scheduling and dispatch. While cost-benefit analyses of the CAISO EIM and the NWPP MC Initiative are key elements in PGE's planning, PGE seeks to ensure that the analyses are completed in a time frame which will allow PGE and the Commission to fully consider the differences between the within-hour market options on an "apples to apples" basis. Additionally, we seek to ensure that the next IRP process be afforded the full time to consider the complex resource planning issues of increased 2020 RPS requirements, options for replacing output from the Boardman coal plant, and other potential energy and capacity needs. We therefore respectfully request that the Commission adopt Staff's proposed Order with the changes described in these comments.

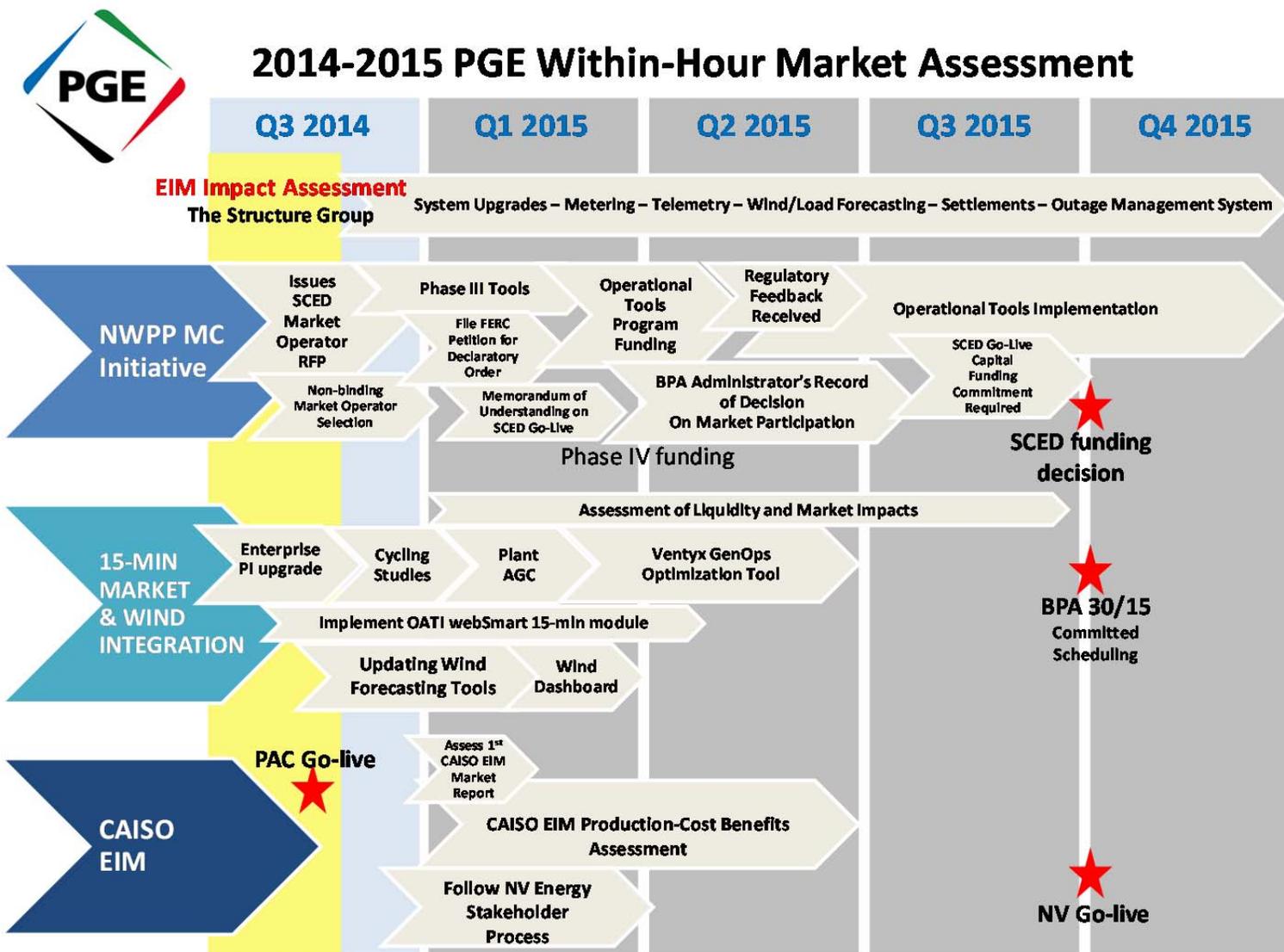
DATED this 7th day of November, 2014.

Respectfully submitted,



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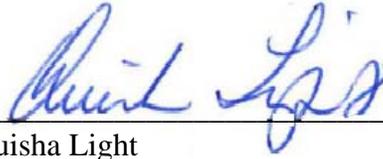
Appendix 1



CERTIFICATE OF SERVICE

I hereby certify that I have this day caused an **Portland General Electric Company's Supplemental Comments** to be served by electronic mail to those parties whose email addresses appear on the attached service list from OPUC Docket No. LC 56.

Dated at Portland, Oregon, this 7TH day of November, 2014.



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