

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UM 1856

In the Matter of

PORTLAND GENERAL ELECTRIC
COMPANY,

Draft Storage Potential Evaluation and
Coffee Creek Pilot

Staff Comments
Informational Filing Only

The Public Utility Commission of Oregon Staff (Staff) offers these comments as a status update and for informational purposes.

BACKGROUND

On August 13, 2018, the Commission issued Order No. 18-290 in this docket, adopting a partial stipulation (Stipulation)¹ that outlined an agreed approach to the development of five energy storage projects, as well as revisions to the Storage Potential Evaluation (SPE) methodology, proposed by Portland General Electric Company (PGE) pursuant to HB 2193 and corresponding Commission orders.

In particular, the adopted Stipulation required that the following additional analyses and filings be made by PGE:

- **SPE Improvements:** PGE is required to file a detailed written explanation of a plan to improve its energy storage modeling capability to estimate all of the energy storage benefits as directed in Order Nos. 17-118 and 17-375. The parties agreed that Staff would review and approve PGE's revised modeling plan for compliance with Order Nos. 17-118 and 17-375. Additionally, the Stipulation requires all future energy storage projects proposed by PGE to credibly estimate the value of all listed benefits in Order Nos. 17-118 and 17-375, and PGE must explain how the locational value of energy storage resources are considered in

¹ Docket No. UM 1856, Partial Stipulation filed May 22, 2018.

the IRP planning process.

- **Coffee Creek:** To proceed with this project, the parties agreed that PGE must first present an analysis to Staff, supported by adequate evidence, that Coffee Creek is the best site for the Energy Storage System (ESS) based on the universe of available substation sites within PGE's system.²
- **Baldock:** Similarly, to proceed with this project, the parties agreed that PGE must first present an analysis to Staff demonstrating that Baldock is the best site to locate the energy storage system given the universe of available feeders on PGE's system.³
- **Residential Project:** Last, the Stipulation requires PGE to present a revised project design to Staff with evidence demonstrating that PGE will manage risk and optimize learnings.⁴ PGE's revised project proposal must include specificity on how the individual energy storage systems will be aggregated and dispatched as outlined in PGE's original application.

In the comments below, Staff responds to PGE's plan to improve its energy storage modeling capability and PGE's justification for the selection of the Coffee Creek location.

STORAGE POTENTIAL EVALUATION

In the summer of 2018, PGE began working with Staff to develop a revised SPE methodology. In August 2018, Staff received a draft of PGE's updated SPE, which included changes to the methodology and software. On October 25, 2018, PGE filed a final version of their revised SPE in UM 1856.

A key component to PGE's revised SPE is the use of the Electric Power Research Institute's (EPRI) StorageVet modeling tool. The StorageVet model is a publicly available, open-source energy storage valuation tool that has been used nationally and by the California Public Utilities Commission. StorageVet's development was partially funded by the California Energy Commission. It functions as a price-taker model (values are given to it) and can be run to co-optimize benefits, evaluate hourly data and benefits, and evaluate location-specific benefits. These capabilities found in StorageVet addressed Staff's concerns regarding the shortcomings of PGE's originally proposed SPE approach. Based on the information provided by PGE, a conversation with PGE staff on March 15, 2019, and additional supporting materials provided by PGE, it

² In the event that Staff does not agree that adequate evidence has been provided, the Parties agree that the Commission should determine whether PGE can move forward with the project.

³ In the event that Staff does not agree that adequate evidence has been provided, the Parties agree that the Commission should determine whether PGE can move forward with the project.

⁴ In the event that Staff does not agree that adequate evidence has been provided, the Parties agree that the Commission should determine whether PGE can move forward with the project.

appears that the StorageVet model should allow PGE to effectively estimate the energy storage benefits required by Commission Order Nos. 17-118 and 17-375.

Staff is satisfied that EPRI's StorageVet model positions PGE to meet the requirements of applicable Commission orders and the adopted Stipulation in UM 1856. Staff plans to continue to be engaged with PGE on the values and data used by the SPE model and how it is applied.

Sometime later this year, Staff recommends that PGE provide a demonstration of the StorageVet for Staff. Additionally, because the Stipulation calls for any future proposed energy storage project to include an estimate of all benefits, Staff requests that the demonstration occur prior to any new storage proposal submissions. Further, Staff suggests that the StorageVet tool be used to analyze the benefits of the Coffee Creek and Baldock projects as test cases.

COFFEE CREEK LOCATION

On January 4, 2019, Staff received PGE's analysis to justify the selection of the Coffee Creek substation for an energy storage pilot. This analysis was called for by Commission Order No. 18-290 and also included a feasibility assessment of third-party operation and ownership of the energy storage system at this site. As part of the Stipulation for this docket, all parties agreed that PGE must first present an analysis to Staff, supported by adequate evidence, that Coffee Creek is the best site for the Energy Storage System (ESS) based on the universe of available substation sites within PGE's system, before it could proceed with the project.

In Staff testimony, we expressed reservations regarding PGE's rationale for selecting the Coffee Creek substation for an energy storage system pilot. Staff's position centered on three main concerns:

- Not meeting the required project and proposal guidelines per Order No. 16-504;
- Indeterminate reasoning for the size of project given the location; and
- Unknown scoring metrics.⁵

Based on the information that PGE originally submitted with its filing on July 14, 2017, it was unclear why Coffee Creek – among PGE's 140 potential substation locations – was selected as the optimal location for a 17 MW ESS project at a cost of over \$30 Million.

Site selection is a crucial component to an ESS pilot. A pilot's location and size determine the extent to which ESS operations can both test and subsequently co-optimize the multiple potential end-use case benefits of an ESS.⁶ Improper location and size limit the learnings that can be more broadly applied. Therefore, Staff pushed for

⁵ See UM 1856 Staff Reply Testimony, Staff/100 Wiggins, 2/16/18, pgs. 5, 21, 22, and 32.

⁶ Using data from PNNL, Staff testimony established 14 end-use cases for an ESS and pushed for pilots that could test and co-optimize these multiple benefits so as to apply "lessons learned" in the evaluation of ESS investments by PGE or in the market signals given by the Company in rates to third-parties.

supporting evidence for this project location, which was incorporated into the multi-party Stipulation and adopted by the Commission.

In PGE's January 2019 filing to address the location choice, they addressed Staff's concerns in two ways. First, PGE made their selection criteria more transparent. Staff was better able to understand how implementation risks tempered and shaped the original substation rankings from PGE's Integrated Planning Tool (IPT) outputs. Second, PGE explained in more detail why other substation sites that received a higher IPT ranking than Coffee Creek were eliminated from consideration.

Staff is satisfied, based on the information provided by PGE, that Coffee Creek is a satisfactory site for the proposed ESS project and does not object to PGE moving forward with the project.

Staff does not take a position on third-party ownership at the Coffee Creek location at this time.⁷

OTHER PROJECTS

Staff's review of the remaining outstanding requirements of the adopted Stipulation is forthcoming.

This concludes Staff's status update and informational filing.

Dated at Salem, Oregon, this 9th of May, 2019



JP Batmale
Division Administrator
Energy Resource Planning Division

⁷ A position on this issue is not required by the Stipulation.