



Portland General Electric
121 SW Salmon Street · Portland, Ore. 97204

April 21, 2020

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

RE: Advice No. 20-08, NEW Schedule 14 Residential Battery Energy Storage Pilot

Portland General Electric Company (PGE) submits this filing pursuant to Oregon Revised Statutes 757.205 and 757.210, and Oregon Administrative Rule (OAR) 860-022-0025, for filing proposed tariff sheets associated with Tariff P.U.C. No. 18, with a requested effective date of **August 1, 2020**:

Twenty Fifth Revision of Sheet No. 1-1
Original Sheet No. 14-1
Original Sheet No. 14-2
Original Sheet No. 14-3
Original Sheet No. 14-4

PGE hereby submits Schedule 14, a Residential Battery Energy Storage Pilot. This pilot is expected to be conducted through July 31, 2025. Contemporaneous with this filing, PGE filed an application for deferred accounting of costs associated with the Schedule 14 Residential Battery Energy Storage Pilot. PGE will seek amortization of deferred amounts in a future Commission proceeding.

Pilot Description

The pilot targets 525 (2-4 MW or 6-8MWh) controllable behind-the-meter energy storage systems in residential homes. The pilot's purpose is to explore the ability of distributed assets to provide grid services, learn how to deploy assets with benefit streams shared between participants and all PGE customers, and develop best practices for integrating distributed resources into existing assets control systems. The pilot will test customer acceptance of utility operation of batteries, explore hurdles to adoption, and help to understand residential resiliency needs. As PGE's decarbonization plan identified the need to plan and resource nearly 900MW of flexible load, this initial behind-the-meter battery program investment will inform how these assets can supply grid services needed to decarbonize and operate a more dynamic decentralized grid.

This residential storage pilot also fits within the governor's Executive Order No. 20-04's call for rapid actions and investments by Oregon's utility sector to reduce greenhouse gas emissions and improve the resilience of the energy system in the face of climate change.

For their participation in the pilot, customers are eligible to receive an incentive. The Company is also offering a rebate to customers in PGE's Test Bed (as defined in PGE's Rate Schedule 13) who purchase a qualifying battery. Situating this early resource development in the Testbed, where customer engagement and the attendant demand response resource build is accelerated, will allow a series of modeling scenarios to inform distribution resource development and control in accordance with PGE's integrated grid evolution. Additionally, a higher up-front rebate will be provided to customers participating in the Energy Trust's Solar Within Reach program who also install a qualifying battery.

PGE will dispatch the energy storage systems in aggregate for grid services including; but not limited to; autonomous volt/var support, autonomous frequency response, generation capacity, energy resource optimization, and contingency reserves. These valuation items are the same found in Commission Order No. 16-504 and those used to guide PGE's activity outlined in the Flexible Load Plan. This will inform PGE's cost effectiveness approach to flexible loads. Results of the testing will also inform future valuation for a series energy services provided by behind-the-meter energy storage expected to be present on PGE's system. Finally, the program will inform distribution system planning giving insight into items like locational benefits. The pilot provides flexibility for participants to utilize the battery for resiliency during an outage for added power reliability. While on the pilot participating Residential Customers will remain on Schedule 7.

During the Pilot PGE will file an annual compliance evaluation report, a comprehensive evaluation after year 3, and a final comprehensive pilot evaluation after the pilot concludes in year 5.

History and Background

The Commission opened Docket No. UM 1751, in September 2015, to implement House Bill (HB) 2193. This HB requires large Oregon electric companies (i.e., Pacific Power or Pac, and PGE) to submit proposals by January 1, 2018, to develop qualifying energy storage systems with the capacity to store at least five megawatt hours of energy. In UM 1751, the Commission adopted specific guidelines and requirements for energy storage project proposals, in late 2016, and a framework for Pac's and PGE's Energy Storage Potential Evaluations (Potential Evaluations) in March 2017.

PGE filed its Energy Storage Proposal and Final Potential Evaluation on November 1, 2017, investigated in the subsequently opened UM 1856. Following multiple rounds of testimony, numerous data requests, workshops, and a settlement conference;

stakeholders and the company reached a Partial Stipulation and submitted Joint Testimony in support, approved in Commission Order No. 18-290. Pursuant to the terms and conditions of the stipulation related to the Residential Storage Pilot, PGE filed an addendum to the energy storage proposal on January 25, 2019. After meeting in July, PGE and Staff agreed that PGE would revise the pilot design, under the terms of the stipulation, to address Staff concerns. PGE met with Staff on January 27, 2020 and February 14, 2020 to present and discuss a draft of the revised proposal. In accordance with the stipulation approved in Order No. 18-290 PGE submitted the final proposal to Staff on March 12, 2020 which included the following aspects of the pilot: objectives, benefits, detailed design, costs for customers and PGE, use cases, and a description of the evaluation reports. On April 9, 2020 Staff indicated support for PGE's Residential Battery Storage Pilot Proposal. Staff's suggestions will be incorporated into the implementation and evaluation of the Pilot.

To satisfy the requirements of OAR 860-022-0025, PGE responds as follows:

PGE will seek amortization of the deferred amounts in a future Commission proceeding. This Schedule 14 does not increase, decrease or otherwise change existing rates in Schedule 7 or have anything other than a de minimis impact on revenues.

Please direct any questions or comments regarding this filing to Chris Pleasant at (503) 464-2555.

Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com

Sincerely,

\s\ Robert Macfarlane

Robert Macfarlane
Manager, Pricing and Tariffs

Enclosures

cc: UM 1856 Service List
Nicholas Colombo, OPUC

**PORTLAND GENERAL ELECTRIC COMPANY
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**SCHEDULE 14
RESIDENTIAL BATTERY ENERGY STORAGE PILOT**

PURPOSE

This residential battery energy storage pilot will evaluate the ability of residential batteries to deliver services in support of PGE's electrical system. The battery energy storage pilot offers incentives to allow the Company to manage the charging and discharging of customer batteries with the option for a customer override. The pilot is expected to be conducted from August 1, 2020 through July 31, 2025.

AVAILABLE

In all territory served by the Company.

APPLICABLE

This program is applicable to Residential (Schedule 7) Customers that own a qualifying battery¹ and elect to enroll and participate in the pilot. Customers will remain on Schedule 7 and will be eligible for the incentives described in this schedule. The pilot is optional and limited to 525 residential customers.

ELIGIBILITY

Customers must submit an interconnection application which must be approved by PGE, purchase or already own a qualifying battery, proceed with installation, and apply for acceptance into the pilot.

ENROLMENT

Customers will be allowed to enroll in this pilot until the pilot reaches its maximum enrollment of 525 residential customers. Unless this pilot is otherwise terminated, participating Customers will be enrolled for the entire pilot term.

INCENTIVES

Basic Offering

1. Available to customers who have a qualifying battery and allow PGE to manage the charging and discharging of such equipment for the benefit of PGE's electric system.
2. For customers with a battery that is able to charge from the electrical grid, PGE will pay the customer \$40 monthly for the duration of the pilot or until the customer disenrolls, whichever is earlier.

1. A list of approved qualifying battery storage systems for this pilot is available on PortlandGeneral.com

SCHEDULE 14 (Continued)

INCENTIVES (Continued)

3. For customers with a battery that is unable to charge from the electrical grid (restricted to charging with onsite solar only), PGE will pay the customer \$20 monthly for the duration of the pilot or until the customer disenrolls, whichever is earlier.

Test Bed Rebate

1. Available only to customers who are served by the Delaware, Island, or Roseway substations, who purchase a new qualifying battery, and allow PGE to manage the charging and discharging of such equipment for the benefit of PGE's electric system.
2. In addition to the Basic Offering, PGE shall provide a rebate for the new purchase and installation of a qualifying battery storage system.
3. The new purchase rebate is limited to 200 customers. The rebate amount shall be \$3,000 for the first 67 customers that have a pilot application approved by PGE, \$2,000 for customers 68 through 134, and \$1,000 for customers 135 through 200.
4. The rebate level will be reserved for a customer for six months from when the pilot application is approved to when the battery storage system is operable by PGE and enrolled in this pilot. If the battery storage system does not begin communications with PGE within six months of pilot application approval, the customer's reserved rebate will be released. When communications are established the customer may receive the incentive at the currently available level, if still available.
5. A developer or builder is eligible to receive the rebate if purchase and installation of a qualified battery storage system occurred prior to occupancy by a residential customer and enroll the battery in the Pilot.

Income Qualified Rebate

1. Available to customers receiving incentives from the Energy Trust of Oregon's Solar Within Reach program that purchase a new qualifying battery storage system and allow PGE to operate such equipment for the benefit of PGE's electric system.
2. In addition to the Basic Offering, PGE shall provide a rebate of \$5,000 for the new purchase and installation of a qualified battery storage system. The rebate is limited to the first 25 customers.

SCHEDULE 14 (Continued)

SPECIAL CONDITIONS

1. Participants are responsible for any equipment, installation, and associated costs of the battery storage system, including any upgrades identified in the PGE interconnection process.
2. The participant will retain ownership of the battery storage system and is responsible for all maintenance, replacement, and disposal costs.
3. In the event of non-payment of electricity bill charges or disconnection for non-payment, for Electricity Service rendered, PGE will discontinue credit payments and battery storage system operation until the participant is current on all past-due balances. The participant will be removed from the pilot if basic service electricity charges are not current after two consecutive months.
4. The participant is required to maintain reliable communications with the battery storage system. If communications to the battery storage system are not restored in a timely manner PGE may discontinue paying the monthly incentive until communications are reestablished, or PGE may remove the customer from the pilot.
5. A participant that only receives the Basic Offering and did not receive a Test Bed or Income Qualified rebate may disenroll from the pilot at any time, upon which PGE will cease monthly payments.
6. If the participant has received a Test Bed or Income Qualified rebate, the customer may be required to repay the unamortized portion of the rebate in the event that the customer voluntarily disenrolls prior to the end of the pilot, or if the battery storage system is removed from the pilot due to lapses in communications. This is defined as the proportion of the months left until the end of the pilot divided by the months the customer has participated in the pilot.
7. Participants must agree to the contractual terms laid out in the Residential Battery Energy Storage Pilot contract.
8. PGE will have full control of the battery storage system for grid services that override any manufacturer programming.
9. PGE will never discharge the battery storage system below 20% of capacity or below the manufacturer's warranty recommendation, whichever is higher.

SCHEDULE 14 (Concluded)

SPECIAL CONDITIONS (Continued)

10. The participant may override PGE's control up to ten times per calendar year for a period of 24 hours per time.
11. During times of severe weather, defined as any time PGE has placed emergency operators on Standby status, PGE will allow the battery storage system to fully charge.
12. In the event of a power outage, the customer will have full use of the battery storage system until grid service is restored. Power outages are not considered a customer override.
13. Customers enrolled in Solar Payment Option may not participate in this Pilot offering.
14. A customer may only receive one rebate or bill credit per service meter.

TERM

This pilot began on August 1, 2020 and ends on July 31, 2025