

ORDER NO. 21-225

ENTERED Jul 15 2021

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

UM 1827(4)

In the Matter of

PORTLAND GENERAL ELECTRIC  
COMPANY,

Requests Reauthorization to Defer Costs  
Associated with the Demand Response  
Water Heater Pilot.

ORDER

DISPOSITION: STAFF'S RECOMMENDATION ADOPTED

At its public meeting on July 13, 2021, the Public Utility Commission of Oregon adopted Staff's recommendation in this matter. The Staff Report with the recommendation is attached as Appendix A.



BY THE COMMISSION:

A handwritten signature in blue ink, appearing to read "Nolan Moser".

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**Nolan Moser**  
Chief Administrative Law Judge

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.

**PUBLIC UTILITY COMMISSION OF OREGON  
STAFF REPORT  
PUBLIC MEETING DATE: July 13, 2021**

REGULAR \_\_\_ CONSENT \_\_\_ EFFECTIVE DATE April 18, 2021

**DATE:** July 5, 2021

**TO:** Public Utility Commission

**FROM:** Mitchell Moore and Kacia Brockman

**THROUGH:** Bryan Conway, John Crider, and Matt Muldoon **SIGNED**

**SUBJECT:** PORTLAND GENERAL ELECTRIC:  
(Docket No. UM 1827(4))  
Requests reauthorization to defer costs associated with the PGE Demand Response Water Heater Pilot.

**STAFF RECOMMENDATION:**

Staff recommends the Commission approve Portland General Electric's (PGE, or Company) request for reauthorization to defer costs associated with its Demand Response Water Heater Pilot for the 12-month period beginning April 18, 2021.

**DISCUSSION:**

Issue

Whether the Commission should reauthorize PGE's request to defer for later ratemaking treatment the costs associated with its Demand Response Water Heater pilot program.

Applicable Law

PGE submitted its deferral application on April 12, 2021, pursuant to ORS 757.259 and OAR 860-027-0300. ORS 757.259 provides the Commission with authority to authorize the deferral of utility revenues and expenses for later inclusion in rates. OAR 860-027-0300 is the Commission's rule governing the use of deferred accounting by energy and large telecommunications utilities.

PGE Docket No. UM 1827(4)  
July 5, 2021  
Page 2

## Analysis

### *Background*

On June 28, 2017, the Commission approved the original deferral filing for PGE's Demand Response Water Heater Pilot. The purpose of the pilot is to retrofit existing water heaters in multifamily residences (MFRs) with demand response technology in order to help inform an effective design for a water heater demand response program, quantify energy consumption that can be shifted to different times, determine appropriate incentive levels for customers, integrate and test different technologies, and implement different demand response dispatch strategies.

PGE's 2016 Integrated Resource Plan (IRP) discussed various types of demand response, including those that utilize smart water heaters. Smart water heaters (installed with digital controls and the ability to readily attach communications equipment) are an important demand resource for PGE and present a wide array of use cases such as load shedding, load shifting and providing ancillary services.

The pilot targets MFR housing because of its high concentration of electric water heaters. The pilot, in addition to installing demand response-enabled technology on existing water heaters, also provides a monetary incentive to MFR property managers to replace aging water heaters with demand response capable water heaters (i.e., smart water heaters).

MFR demand response water heaters address a hard-to-reach segment of the residential market where few demand response technologies are currently feasible. Water heater demand response also supports PGE's mid-term demand-side management initiatives by allowing the researching of synergies between water heater demand response and smart thermostat programs. Further, water heaters represent a distributed resource, which supports PGE's long-term smart grid initiatives, as each water heater can be controlled to meet specific demand response needs. Finally, water heater demand response is a more flexible resource compared to other forms of demand response because it requires no notification, is a year-round resource, and has minimal customer comfort impact.

In 2018, PGE selected both a vendor for implementation and a Demand Response Management System (DRMS) vendor. Since May 2018, PGE has been successfully testing integration between the water heater retrofit switch and the DRMS.

PGE states in its filing that as of March 2021, the pilot has deployed 10,035 water heater retrofit switches across 29 property management companies representing 99 distinct sites. In addition to these 10,035, PGE has 16 contracted properties with

PGE Docket No. UM 1827(4)  
 July 5, 2021  
 Page 3

approximately 925 switches scheduled to be installed by year-end 2021. The Pilot has two types of retrofit switches in the field, those connected via Wi-Fi and those connected via cellular signal. Evaluation data has identified that cell-enabled switches have a higher connectivity rate (94% season average) than Wi-Fi connected switches (89% season average). PGE intends to test a second cell-enabled switch vendor to verify connectivity rates.

PGE met with Staff twice in November 2020 to discuss plans for the pilot in 2021. In January 2021, the Commission approved a 30-month pilot extension, through July 31, 2023, and an expansion from 10,000 to 18,000 participating water heaters with an incremental budget of \$4.96 million.<sup>1</sup> PGE will use the extension to try to achieve cost-effectiveness for the pilot by implementing strategies to lower the per-unit cost and increase the per-unit performance. The pilot's current cost-effectiveness is 0.82 using the Total Resource Cost method.

#### *Description of Expense*

Expenses for this deferral include: the cost of implementing the communication interface; managing defaults or repairs; and managing new participant enrollment; software licensing; data plan subscription; and PGE marketing.

#### *Reason for Deferral*

The use of deferred accounting for this pilot will minimize the frequency of rate changes and match appropriately the costs borne by and benefits received by customers.

#### *Proposed Accounting*

PGE proposes to record the deferred amount as a regulatory asset in FERC Account 182.3, Other Regulatory Assets, with a credit to FERC Account 456, Other Revenue.

#### *Estimate of Amounts*

PGE estimates the incremental costs of the pilot will be approximately \$2.1 million through the end of 2021, as illustrated in the following table:<sup>2</sup>

Year	2018 Actual	2019 Actual	2020 Actual	2021 Forecast	Total
Pilot Cost	\$1,073,623	\$2,028,199	\$2,658,525	\$2,057,455	\$7,878,385

<sup>1</sup> See Docket No. ADV 1097, PGE Advice No. 20-46, approved by the Commission at the January 26, 2021 public meeting.

<sup>2</sup> 2019 and 2020 actuals shown here reflect PGE corrections in work papers accompanying this filing.

PGE Docket No. UM 1827(4)  
July 5, 2021  
Page 4

*Information Related to Future Amortization*

- Earnings review – An earnings review is generally required prior to amortization of deferrals, pursuant to ORS 757.259(5). However, because this is associated with the Schedule 135 automatic adjustment clause, an earnings review will not be performed.
- Prudence Review – A prudence review is required prior to amortization and should include the verification of the accounting methodology used to determine the final amortization balance. In addition, PGE will submit a pilot evaluation report in August of 2021 that will provide detailed cost summaries, estimated kW shifting and the result of customer surveys.
- Sharing – There is no sharing under the filed mechanisms.
- Rate Spread/Design – The demand response pilot amortizations will be spread as specified in Schedule 135.
- Three Percent Test (ORS 757.259(6)) – The three percent test measures the annual overall average effect on customer rates resulting from deferral amortizations. The three percent test limits (exceptions at ORS 757.259(7) and (8)) the aggregated deferral amortizations during a 12-month period to no more than three percent of the utility's gross revenues for the preceding year. Because PGE is an electric utility, ORS 757.259(8) allows the Commission to consider up to a six percent limit. The limit for these deferrals will be determined at the time of amortization.

Conclusion

The proposed multifamily residential demand response pilot is testing a path to cost-effectiveness for necessary demand side resource and associated communication infrastructure. The pilot is expected to produce benefits to ratepayers while advancing PGE's long term demand response capabilities. Staff recommends approval of the request for reauthorization of incremental program costs.

PGE Docket No. UM 1827(4)  
July 5, 2021  
Page 5

**PROPOSED COMMISSION MOTION:**

Approve PGE's request for reauthorization to defer costs associated with its Demand Response Water Heater Pilot for the 12-month period beginning April 18, 2021.

PGE UM 1827(4) – DR Water Heater Pilot Deferral