

ORDER NO. 25-387

ENTERED Oct 02 2025

**BEFORE THE PUBLIC UTILITY COMMISSION  
OF OREGON**

UM 1976

In the Matter of

PORTLAND GENERAL ELECTRIC  
COMPANY,

Project Plan Updates in Smart Grid  
Testbed.

ORDER

**DISPOSITION: STAFF'S RECOMMENDATION ADOPTED**

At its public meeting on September 30, 2025, 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:



**Alison Lackey**  
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.

ITEM NO. CA9

**PUBLIC UTILITY COMMISSION OF OREGON  
STAFF REPORT  
PUBLIC MEETING DATE: September 30, 2025**

**REGULAR** \_\_\_\_\_ **CONSENT**   X   **EFFECTIVE DATE** \_\_\_\_\_ **N/A** \_\_\_\_\_

**DATE:** September 22, 2025

**TO:** Public Utility Commission

**FROM:** Peter Kernan

**THROUGH:** Sarah Hall **SIGNED**

**SUBJECT:** PORTLAND GENERAL ELECTRIC:  
(Docket No. UM 1976)  
Project plan updates in Smart Grid Testbed.

**STAFF RECOMMENDATION:**

Approve updates to Portland General Electric's Smart Grid Testbed project plans.

**DISCUSSION:**

Issue

Whether to approve updates to Portland General Electric's (PGE) Smart Grid Testbed project plans.

Applicable Rule or Law

ORS 757.054 requires electric companies to plan for and pursue the acquisition of all available cost-effective demand response resources.

In Order No. 17-386, the Commission acknowledged PGE's action item for demand response with modifications for PGE to establish a Testbed to explore ways to accelerate development of cost-effective demand response to meet PGE's capacity need.<sup>1</sup>

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<sup>1</sup> *In re Portland General Electric Co. 2016 Integrated Resource Plan*, See Docket No. LC 66, Order No. 17-386 at 9 (Oct. 9, 2017), <https://apps.puc.state.or.us/edockets/orders.asp?OrderNumber=17-386>.

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On May 16, 2024, the Commission approved PGE's Vehicle-to-Everything (V2X) study in Order No. 24-144.

In Order No. 21-444, the Commission approved PGE's proposal for Phase II of the Smart Grid Test Bed.

### Analysis

#### *Background*

In this filing, PGE provides a detailed project plan and proposes a \$1.55 million budget for the Commercial and Industrial (C&I), Municipal Flexible Load and Resilience demonstration. PGE introduced the demonstration in the Smart Grid Testbed (Testbed) Phase II Proposal in October 2021. As discussed further below, the detailed project plan signifies PGE's intent to transition the demonstration from planning to implementation. Staff summarizes the plan updates and proposed expenditures below.

#### 1. Implement the C&I, municipal flexible load and resilience demonstration

The C&I, Municipal Flexible Load and Resilience demonstration seeks between five and twenty commercial customers to better understand flexible load and resilience opportunities for the "missing middle." PGE characterizes these mid-sized customers as traditionally too small to have participated in the Energy Partner demand response program, and with a mixture of technology solutions for varying resilience needs. PGE's demonstration will investigate new technologies, primarily building management systems (BMS) and battery microgrid controllers.

PGE plans to launch the C&I demonstration in 2025 and complete the final evaluation by the end of 2028. PGE will first issue a request for information (RFI), sent to technology vendors with controls communication solutions. Concurrently, PGE will engage customers using direct customer outreach and coordination with existing project pipelines. PGE will then merge these pathways to help customers developing resilience projects with their technology platforms.

PGE intends to use three types of incentives to encourage technology adoption and continued participation. Equipment installation incentives will help customers adopt qualifying technologies. Monthly and/or event-based incentives will encourage ongoing participation. Similar to other Testbed demonstrations, PGE will test multiple grid-value use cases: peak time avoidance, peak load reduction, and peak time event grid export.

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PGE notes the following learning objectives:

- Evaluate methods for dispatch of building management systems and batteries for commercial customers.
  - Identify recommended path for communications.
  - Test alternative customer incentive structures to understand preferences.
  - Evaluate demand response performance under various dispatch protocols.
  - Determine if additional grid services beyond demand response can be provided.
2. Approve the C&I demonstration request and additional changes under the \$11 million budget

PGE proposes a C&I demonstration budget of \$1.55 million, which is \$177,450 less than initially estimated in the original Phase II proposal. In this filing, PGE also updates its expectations for the budgets of other demonstrations. PGE now projects the Testbed Phase II demonstrations will cost \$9.9 million compared to the initial proposal of \$11 million. The updated request of \$9.9 million includes \$727,450 in reserves, which comes from anticipated savings from unspent funds for the two completed demonstrations: solar smart inverters and managed charging. Table 1, below, details the original budget compared to the updated request from this filing.

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**Table 1: Proposed Testbed Phase II Budget (August 2025 Update)**

Research Area	Expected Budget	Budget Requested to Date	Updated Request
Flexible Feeder	\$4,272,550 <sup>2</sup>	\$4,272,550	No change
Managed EV Charging/V2X	\$2,250,000 <sup>3</sup>	\$1,242,200	\$1,150,000
Solar Smart Inverters	\$1,000,000	\$1,000,000	\$450,000
C&I, Municipal Flexible Load & Resiliency	\$1,727,450 <sup>4</sup>	\$0	\$1,550,000
Multifamily Bundle/Connected Water Heaters	\$1,250,000 <sup>5</sup>	\$1,250,000	No change
Single Family New Construction Bundle	\$500,000	\$500,000	No change
Reserve	\$0	\$0	\$727,450
<b>Total</b>	<b>\$11,000,000</b>	<b>\$8,264,750</b>	<b>\$9,900,000</b>

### 3. Extend certain Testbed timelines

PGE requests that outstanding demonstration project timelines be extended to 2028, beyond the end of 2027 which was the initial end date of Phase II. Two demonstrations have already completed evaluation work, the results of which were shared with the Demand Response Review Committee (DRCC) at the September meeting. PGE's extension request does not require any additional budget.

The largest Phase II demonstration is the Flexible Feeder, which is partially funded via the Testbed and also supported by a Federal Department of Energy (DOE) Connected Communities grant. In May 2025, PGE received an extension until August 2028 for the completion of grant-related activities. PGE's request for Flexible Feeder extension is to align with this new deadline. For the remaining demonstrations, PGE notes additional research opportunities and delayed timelines for the extension requests. Outside the two completed demonstrations, PGE requests each remaining demonstration be granted an extension to the end of 2028. Figure 1 details the requests.

<sup>2</sup> Budget reflects funds reallocated per Order No. 23-376.

<sup>3</sup> Budget reflects funds reallocated per Order No. 23-258.

<sup>4</sup> Budget reflects funds reallocated per Order No. 23-376.

<sup>5</sup> Budget reflects funds reallocated per Order No. 23-258.

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**Figure 1: Testbed Demonstration Phases And Timeline**



#### 4. Adjust project plans for previously approved Testbed demonstrations

In addition to introduction of the C&I detailed project plan, PGE proposes revisions to projects plans and seeks approval for the updates to the following project plans. Updated detailed project plans are included in PGE's filing for each demonstration.

##### **Vehicle-to- Everything (V2X)**

PGE removes references to specific vendors and OEMs to provide flexibility to work with multiple entities. The Company also plans changes to its marketing approach to attract customers to the program and proposes revisions to how incentives may be applied. In general, changes provide PGE with more flexibility to recruit customers and study V2X capabilities.

##### **Connected Water Heater**

PGE proposes a name change from "Multifamily Bundle" to Connected Water Heater to clarify that some of the grid-connected water heaters installed will not be in multifamily

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buildings. The Company seeks additional retrofit learning outcomes with this demonstration. Specifically, PGE is researching two additional items.

1. Universal Communication Module (UCM) deployment and testing: PGE will deploy and test up to 500 UCMs that connect to the Ecoport/CTA-2045 port on a water heater. PGE plans to test these across a variety of building types, geographies, and configurations
2. Customer connected water heaters: PGE will research up to 200 applications in residential contexts and 20 in commercial of using API connections to water heaters, and test for reliability and dispatchability of those units.

The additional connected water heater scope will provide additional learnings about applications in a variety of building types, with varying connectivity pathways, and in both urban and rural parts of PGE's territory.

### **Residential New Construction**

PGE proposes minimal changes to the Residential New Construction demonstration. PGE requests flexibility to adjust incentives to meet project learning objectives after engaging new construction builders. With Commission approval of a revised Schedule 13, PGE will propose incentive levels on its website for feedback at least 45 days in advance of implementation.

### **Flexible Feeder**

PGE provides an update to progress on the Flexible Feeder demonstration. Significant progress has been made to date including customer recruitment and installation of distributed energy resources (DERs). The National Renewable Energy Lab (NREL) completed a digital twin of PGE's distribution system in the Flexible Feeder geography and testing of the Distributed Energy Resource Management System (DERMS) which communicates with the DERs. PGE poses no notable project plan revisions outside the request to align the end date with the DOE timeline of August 2028.

### *Staff Recommendations on Testbed Updates*

Staff supports PGE's proposed changes to Testbed demonstration project plans and budgets. Staff finds that the Company continues to make progress against the Testbed's learning objectives, albeit at a slower pace than initially proposed. Staff is encouraged that, despite the slower pace, PGE has been delivering learning outcomes at lower costs than the initial Phase II proposal.

In ADV 1779, PGE proposes to streamline the Schedule 13 tariff to allow flexibility in the implementation of the six Testbed demonstrations. Staff explains in the concurrently-filed ADV 1779 memo that PGE's proposal is designed after Pacific Power's

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Schedule 106 tariff, which covers that Company's Oregon demand response programs. In 2022, the Commission approved Schedule 106 in Docket No. ADV 1383 to enable a flexible change process while maintaining transparent customer information on a website.

Should the Commission approve ADV 1779 with the Company's proposed revisions to Schedule 13, future adjustments to project plans such as changes to customer incentive levels or eligibility and participation requirements will not require a tariff revision. PGE will instead post proposed changes on its website, [www.portlandgeneral.com/SGTB](http://www.portlandgeneral.com/SGTB), and seek feedback at least 45 days in advance of implementation. This will maintain transparency, but reduce the need for Commission involvement on more minor programmatic elements. Any major changes such as addition or removal of a demonstration, or an increase beyond the \$9.9 million requested in this filing will require a filing for Commission approval in UM 1976.

### Conclusion

Staff recommends the Commission approve updates to PGE's project plans. The proposed changes are reasonable and expected to align with the key learning objectives of the Testbed. In addition, Staff supports PGE's lower budget request. Completion of two demonstrations and progress on the others in implementation phase give Staff confidence in PGE's progress.

### **PROPOSED COMMISSION MOTION:**

Approve updates to Portland General Electric's Smart Grid Testbed project plans.

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## Appendix A: Testbed Demonstration Status

With this filing, PGE has submitted detailed project plans and budgets for all six Testbed Phase II demonstrations for Commission approval. Five of six Testbed Phase II demonstrations have submitted an Advice filing to amend Schedule 13 to begin customer implementation. Should the Commission approve ADV 1779, all demonstrations will have tariff approval for implementation. Table 2 documents the status of each Testbed demonstration.

**Table 2: Status of Testbed Demonstrations**

Demonstrations			Detailed Project Plan	Schedule 13 Amendments
1	Flexible Feeder	Years 1-2	Submitted and Approved	N/A
		Years 3-5	Submitted and Approved	Submitted and Approved
2	Managed EV Charging/V2X	Managed EV Charging	Submitted and Approved	Submitted and Approved
		V2X	Submitted and Approved	Submitted and Approved
3	Smart Solar		Submitted and Approved	Submitted and Approved
4	C&I, Municipal Flexible Load & Resiliency		Submitted for Commission Consideration	Pending ADV 1779 Consideration
5	Multifamily Bundle		Submitted and Approved	Submitted and Approved
6	Single Family New Construction Bundle		Submitted and Approved	Submitted and Approved