



**Portland General Electric Company**  
121 SW Salmon Street • Portland, Oregon 97204  
PortlandGeneral.com

April 19, 2017

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

**RE: Advice No. 17-09, NEW Schedule 4 Multifamily Residential Demand Response Water Heater Pilot Rider**

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 **July 01, 2017**:

Sixteenth Revision of Sheet No. 1-1  
Original Sheet No. 4-1  
Original Sheet No. 4-2  
Original Sheet No. 4-3  
Original Sheet No. 4-4

PGE hereby submits Schedule 4, a Multifamily Residential Demand Response Water Heater Pilot. This pilot is expected to be conducted through December 31, 2019. PGE filed an application for deferred accounting of costs associated with the Schedule 4 Demand Response Water Heater Pilot on April 18, 2017. PGE will seek amortization of the deferred amounts in a future Commission proceeding. PGE proposes to recover incremental costs to implement this pilot through prices in Schedule 135, Demand Response Cost Recovery Mechanism.

PGE proposes to implement this demand response water heater pilot for residential customers in multifamily residential complexes with the objective of informing an effective program design. PGE aims to improve its residential customer experience through water heater demand response because it has a limited customer comfort impact when compared with other forms of demand response. Participating residential customers should observe minimal impacts to their hot water availability during this pilot. While on the pilot participating Residential Customers will remain on Schedule 7.

The pilot is designed to quantify the energy consumption that can be shifted to different times of day using water heaters equipped with communication interfaces that support direct load control events. During the pilot, PGE will integrate and test different technologies while implementing different demand response dispatch strategies. PGE plans to use third-party providers for 4G LTE and radio coverage for communicating direct load control events.

Customers, multifamily residential property managers and property owners are eligible to receive an incentive for their participation in the pilot. Incentives will vary among participants. Customers should also receive other benefits associated with their participation in the pilot including: realized energy efficiency savings, lower maintenance costs and management of ongoing, water heater-related expenses.

At the pilot's conclusion, PGE will generate a pilot evaluation to share with stakeholders; the evaluation will include various metrics on customer participation, demand response capacity, and data gaps that emerge from the pilot.

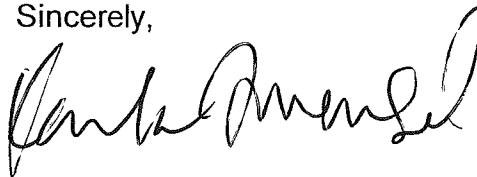
To satisfy the requirements of OAR 860-022-0025, PGE responds as follows:

PGE filed an application for deferred accounting of costs associated with the Schedule 4 Demand Response Water Heater Pilot on April 18, 2017. PGE will seek amortization of the deferred amounts in a future Commission proceeding. PGE proposes to recover incremental costs to implement this pilot through prices in Schedule 135, Demand Response Cost Recovery Mechanism. This Schedule 4 does not increase, decrease or otherwise change existing rates in Schedule 7 or have anything other than a de minimis impact on revenues.

Should you have any questions or comments regarding this filing, please contact Rob Macfarlane at (503) 464-8954 or Peter Davis at (503) 464-8068.

Please direct all formal correspondence and requests to the following email address [pge.opuc.filings@pge.com](mailto:pge.opuc.filings@pge.com)

Sincerely,



Karla Wenzel  
Manager, Pricing and Tariffs

Enclosures

**SCHEDULE 4**  
**MULTIFAMILY RESIDENTIAL DEMAND RESPONSE WATER HEATER PILOT RIDER**

**PURPOSE**

The Multifamily Residential Demand Response Water Heater Pilot Rider is a demand response option for eligible Residential Customers. The objectives of the Multifamily Residential Demand Response Water Heater Pilot are:

- To quantify the energy consumption that can be shifted to different times from:
  - Water heaters equipped with a communication interface that supports Direct Load Control Events, or
  - Water heaters retrofitted with a control switch in the power supply to the tank
- To inform further the program design for a water heater demand response program;
- To determine an appropriate incentive level for Customers who choose to participate in a demand response program for water heaters;
- To integrate and test different technologies; and
- To implement different demand response dispatch strategies.

**DEFINITIONS**

Customer Override – The ability for the customer to temporarily suspend Direct Load Control for a period of 24 hours.

Direct Load Control – The means for a utility to remotely control an appliance. In terms of this pilot, direct load control allows the Company to control when the water heater uses electricity to heat water.

Direct Load Control Event – A period of time in which the Company will provide Direct Load Control.

Conventional Electric Resistance Water Heater – Customers' existing electric resistant water heaters will be retrofitted to be demand response enabled. Water heaters that require replacement will be replaced with advanced electric resistance water heaters with the approval of the Customer.

Heat Pump Water Heater – Models compatible with PGE's available hardware, software, and communication technology that have the ability to engage in direct load control events.

**AVAILABLE**

In all territory served by the Company where PGE's demand response communication networks are available.

**SCHEDULE 4 (Continued)**

**APPLICABLE**

Subject to selection by the Company, Residential Customers may participate in the pilot. Customers in multifamily residences (MFRs) will be the primary target of PGE's pilot. In cases of rental properties, the program will be structured as an opt-out program, meaning Customers will be automatically enrolled in the pilot if their property manager or property owner enrolls in the pilot and the Customer must withdraw from the program if they do not want to participate.

Customers will be given notice about this pilot at the time of installation of the communication interface. PGE will provide tenants with contact information and instructions on how to opt out of the pilot at the time of installation. If a Customer chooses to opt out of this pilot, the installed communication interface and any other installed PGE equipment will remain on the water heater. A Customer that has elected to opt out will be removed from the dispatch of direct load control events. A new Customer in a residence will be automatically enrolled in the pilot and will receive information and instructions on how to opt out of the pilot. PGE will be aware of a new tenant based on customer data from PGE's Customer Information System (CIS). The number of eligible Customers to participate in the pilot is 8,000 customer households. Customers will remain on Schedule 7 and will be eligible for the incentives described in this schedule.

**ELIGIBILITY**

For MFRs, PGE will initially select large complexes, negotiating with property manager or owners for the installation of retrofit devices as well as new demand response enabled water heaters. At PGE's discretion, the Company will select qualifying properties based on number of apartments, size of apartments, occupancy, and size of existing water heater.

**DIRECT LOAD CONTROL EVENT**

During the pilot there will be no limitation on the hours of Direct Load Control Events. This pilot will offer the ability for the Customer to override a direct load control event, under the terms listed in Special Condition 4 of this pilot. Residential Customers living in MFRs may opt out of the program at their discretion.

**ENROLLMENT**

The Customer enrollment period will be through December 31, 2019. PGE will enroll MFR Customers by contracting with the property manager or property owner. Unless this pilot is otherwise terminated, participating Customers will be enrolled for the entire pilot term.

**SCHEDULE 4 (Continued)**

**INCENTIVES**

A MFR property manager or property owner will receive an annual incentive in the form of: a monetary payment, and/or a specified number of replacement water heaters and/or, a monetary contribution towards water heater servicing/replacement costs. PGE will negotiate specifics with participating property management companies and/or owners based on the Customers' preferences.

PGE will also incentivize the costs for new smart electric water heaters for multifamily property managers or property owners in situations when the existing water heater is too old to be retrofitted cost effectively and/or when an existing electric water heater fails. PGE will pay the incremental cost between a water heater with a standard six year warranty and a qualifying smart water heater. Incentives should cover all or most of the cost difference between a standard electric water heater and a smart electric water heater. The incentive will substantially reduce the costs of making the water heater demand response enabled.

The Customer of the MFR property manager or property owner will also receive an incentive. The incentive that the Customer receives may differ from the incentive of the MFR property manager or property owner. The incentive amounts for each property manager, property owner and MFR complex made available will be determined based on the total number of demand response enable water heaters installed or active participation levels in demand response events.

**SCHEDULE 4 (Concluded)**

**SPECIAL CONDITIONS**

Customer

1. The Customer may terminate service under this pilot voluntarily. The Customer will not receive a participation incentive if they withdraw or are removed from the pilot. The Customer must notify PGE to withdraw from the pilot.
2. If a Customer withdraws or is removed from the pilot, the Customer is not eligible for reenrollment during the pilot.
3. If the Customer moves from the enrolled residence during the term of the pilot, they are no longer eligible for the pilot.
4. The Customer may activate a 24-hour suspension from the pilot by notifying the Company through a Customer specific log-in page on the PGE website. A Customer may be removed from the pilot if they implement the override option excessively; an example of excessive is override use for more than 100 days, or more than 15 days in any 30 day period.
5. To receive a participation incentive, the Customer must respond to weekly surveys regarding the pilot.

PGE

6. PGE has the right to remove a Customer from the pilot at any time, for any reason.
7. PGE is not responsible for any direct, consequential, incidental, punitive, exemplary, or indirect damages to the participating Customer or third parties that result from Direct Load Control Events.
8. Communication interfaces installed onto the water heater will remain the property of the Company before, during and after the conclusion of the pilot. The customer shall return the device in a pre-paid postage box provided by PGE.
9. The provisions of this schedule do not apply for any time period that the Company interrupts the Customer's load for a system emergency or any other time that a Customer's service is interrupted by events outside the control of the Company.

**TERM**

The duration of this pilot is through December 31, 2019.

**PORTLAND GENERAL ELECTRIC COMPANY  
TABLE OF CONTENTS  
RATE SCHEDULES**

**Schedule   Description**

Table of Contents, Rate Schedules

Table of Contents, Rules and Regulations

**Standard Service Schedules**

- 3 Residential Demand Response Water Heater Pilot Rider
- 4 Multifamily Residential Demand Response Water Heater Pilot Rider
- 5 Direct Load Control Pilot Rider
- 6 Residential Pricing Pilot
- 7 Residential Service
- 15 Outdoor Area Lighting Standard Service (Cost of Service)
- 32 Small Nonresidential Standard Service
- 38 Large Nonresidential Optional Time-of-Day Standard Service  
(Cost of Service)
- 47 Small Nonresidential Irrigation and Drainage Pumping Standard Service  
(Cost of Service)
- 49 Large Nonresidential Irrigation and Drainage Pumping Standard Service  
(Cost of Service)
- 75 Partial Requirements Service
- 76R Partial Requirements Economic Replacement Power Rider
- 77 Firm Load Reduction Program
- 81 Nonresidential Emergency Default Service
- 83 Large Nonresidential Standard Service (31 – 200 kW)
- 85 Large Nonresidential Standard Service (201 – 4,000 kW)
- 86 Nonresidential Demand Buy Back Rider

(N)