

**PUBLIC UTILITY COMMISSION OF OREGON  
STAFF REPORT  
PUBLIC MEETING DATE: May 31, 2022**

REGULAR  CONSENT  EFFECTIVE DATE June 1, 2022

**DATE:** May 23, 2022

**TO:** Public Utility Commission

**FROM:** Nick Sayen

**THROUGH:** Bryan Conway, JP Batmale, Sarah Hall **SIGNED**

**SUBJECT:** PORTLAND GENERAL ELECTRIC:  
(Docket No. ADV 1386/Advice No. 22-06)  
Revises nonresidential demand response program in Schedule 26 to better accommodate non-emitting resources such as battery energy storage.

**STAFF RECOMMENDATION:**

Approve Portland General Electric's (Company or PGE) Advice No. 22-06, authorizing revisions to Schedule 26.

**DISCUSSION:**

Issue

Whether the Oregon Public Utility Commission (Commission) should approve revisions to Schedule 26 to better accommodate non-emitting resources such as energy storage in the nonresidential demand response (DR) program.

Applicable Rule or Law

In Order No. 20-152, the Commission acknowledged PGE's 2019 IRP action item 1 B to achieve 141 MW (winter) and 211 MW (summer) of aggregate demand response capacity by 2025.

In Order No. 21-158, the Commission accepted PGE's Flexible Load Plan, including the Company's proposal to move to portfolio-level multi-year planning, budgeting, reporting, and cost recovery for PGE's flexible load activities.

In Order No. 21-115, adopting PGE's Flexible Load Multi-Year Plan, the Commission approved funding for and the expansion of the Energy Partner Program.

ORS 757.205 requires public utilities file to all rates, rules, and charges with the Commission.

ORS 757.210 establishes a hearing process to address utility filings and requires rates be fair, just, and reasonable.

ORS 757.220 provides that no change shall be made in any schedule, except upon 30 days' notice to the Commission prior to the time the changes are to take effect.

OAR 860-022-0025 requires that filings revising tariffs include statements showing the change in rates, the number of customers affected and resulting change in annual revenue, and the reasons for the tariff revision

### Analysis

This memo discusses background, PGE's estimate of participation and market size, and summarizes the Company's proposed changes as presented in Advice No. 22-06. The memo concludes with Staff's recommendation to approve the Company's filing.

### *Background*

Schedule 26 is a nonresidential DR program known as Energy Partner. The program provides incentives to large nonresidential customers during seasonal peak time events for capacity reduction, reducing their load. As outlined in PGE's November 2021 Flexible Load Multi-Year Plan, Energy Partner is mature and meets the criteria for a program based on Staff's "Pilot to Programs" guidance issued in Q4, 2020. Energy Partner is popular with participants, stable and cost-effective.<sup>1</sup> It is forecast to procure in 2023 firm capacity of 30.5 MW in the summer and 24.4 MW in the winter.<sup>2</sup> This represents a large percentage of PGE's entire DR portfolio accounting for nearly 30 percent of summer capacity and over 35 percent of winter capacity.<sup>3</sup>

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<sup>1</sup> TRC of 0.82, TRC of 1.20 adjusted for Without Value of Service Lost, See Docket No. UM 2141, Flexible Load Multi-Year Plan 2022-2023, November 2021, Table 20, p. 118,

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAD&FileName=um2141had16243.pdf>.

<sup>2</sup> See Docket No. UM 2141, Flexible Load Multi-Year Plan 2022-2023, November 2021, p. 70,

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAD&FileName=um2141had16243.pdf>.

<sup>3</sup> Summer: 30.5 MW / 103.4 MW = 29.5%, Winter: 24.4 MW / 66.8 MW = 36.5%,

See Docket No. UM 2141, Flexible Load Multi-Year Plan 2022-2023, November 2021, Table 2, p. 11,

<https://apps.puc.state.or.us/edockets/edocs.asp?FileType=HAD&FileName=um2141had16243.pdf>.

Energy Partner does not specify a specific technology, but instead develops participant Load Reduction Plans customized to each participant's processes and energy use. The Plans allow the participant to choose the notification period, seasons, time of day for dispatch, and number of hours for the events they elect to participate in. This allows the program to work with a variety of unique types of businesses.

With this filing PGE seeks to revise Energy Partner to better accommodate customer owned and sited non-emitting dispatchable resources such as energy storage technologies. The program would utilize customers' energy storage technology to provide grid support, frequency response and contingency reserve, in addition to capacity reduction. The Company's intent is to maintain the overall structure of the successful program, and simply expand participation options to better partner with additional technologies.<sup>4</sup> PGE notes the proposed approach avoids creating a new stand-alone pilot, and that it is intended to be cost-effective and scalable.<sup>5</sup>

PGE filed revisions to its Dispatchable Standby Generation (DSG) tariff in tandem with this proposal. The DSG program currently consists of backup diesel generators (largely) at approximately 60 customer sites with a cumulative nameplate generation capacity of approximately 130 MW. The program currently provides PGE contingency reserve. Advice No. 22-05 (Docket No. ADV 1385) seeks to add customer owned and sited battery systems greater than 250 kW to the DSG program. The proposal would allow customers' battery systems to provide contingency reserve, similar to the program's current fleet of generators, while adding provisions to provide frequency response and demand response. These are services that the current fleet of generators cannot provide. PGE's two filings reference each other, were filed on the same day, and have the same effective date. Staff has coordinated its review of these filings and Public Meeting Memos.

PGE states in both filings that the proposed changes are designed to allow the Company to meet the policy goals laid out in Oregon House Bill 2021 (HB 2021):

*HB 2021 requires electricity providers to rely on non-emitting electricity and eliminate greenhouse gas emissions associated with serving Oregon retail electricity consumers by 2040 in a way that also provides the direct benefit of resiliency.<sup>6</sup>*

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<sup>4</sup> See Docket No. ADV 1386, Initial Utility Filing, p. 2, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

<sup>5</sup> See Docket No. ADV 1386, Initial Utility Filing, Attachment A, p. 3, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

<sup>6</sup> See Docket No. ADV 1386, Initial Utility Filing, p. 1, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

### *Estimate of Participation and Market Size*

PGE provides in the Advice No. 22-06 filing a short-term estimate of customer participation, a five-year forecast of enrollment, and a long-term forecast of energy storage adoption in the PGE service territory. Regarding the short-term estimate of customer participation, the filing states there are currently seven nonresidential battery systems with a cumulative capacity of 200 kW that may be eligible to enroll upon approval of the tariff revisions. Additionally, there are two nonresidential battery systems with a cumulative capacity of 93 kW in the interconnection queue that may be eligible to enroll. PGE notes that should half of this capacity enroll in the Energy Partner in the next twelve months it would bring approximately 150 kW of capacity to the Program.<sup>7</sup>

PGE's modeling is forecasting an enrollment of 2.87 MW of capacity over the next five years based on market projections of energy storage uptake within PGE's service territory.<sup>8</sup> PGE cites the DER forecast in its Distribution System Plan (DSP) Part 1 filing for a long-term projection of the energy storage market in its service territory: the reference case forecast for 2030 is 21 customers with 250 kW battery systems, totaling 5.3 MW of capacity. The high case forecast is for 70 customers, totaling 17.4 MW.<sup>9</sup> To be clear, the Company presents the long-term projection as market size, but does not estimate program enrollment.

### *Summary of Proposed Changes*

The Company proposes numerous changes to Energy Partner, including: adding a no-notice dispatch reservation payment, adding grid support events, allowing front-loaded payments, enabling stand-alone storage to participate, and revising definitions pertinent to non-emitting resources. Staff addresses these proposals below.

#### 1. Adding a no-notice dispatch reservation payment

Energy Partner currently offers participants three notification time options for Load Reduction Events, with each option providing the participant a different dispatch reservation payment. The three notification time options are intended to provide participants flexibility to best match their processes in responding to Energy Partner events, while also appropriately valuing the participant's capacity reduction to PGE. The 18-hour notification time provides the smallest incentive, the 4-hour notification time provides a larger incentive, and the 10-minute notification time provides the largest

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<sup>7</sup> See Docket No. ADV 1386, Initial Utility Filing, Attachment A, p. 6, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

<sup>8</sup> See Docket No. ADV 1386, Initial Utility Filing, Attachment A, p. 6, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

<sup>9</sup> See Docket No. ADV 1386, Initial Utility Filing, Attachment A, Table 3, p. 12, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

incentive. PGE is proposing a fourth time option: a no-notice dispatch reservation payment. The no-notice notification incentive would be the largest participant incentive and would reflect the value of frequency response and contingency reserve to the grid, in addition to capacity reduction.

The filing states that the reservation payments of this new option were created using values from the 2019 IRP calculated to solve for a Total Resource Cost (TRC) of 1.0.<sup>10</sup> The utility provided electronic workpapers demonstrating these calculations. Staff reviewed these workpapers and met with PGE to discuss them; the workpapers appear reasonable and accurate. In sum the proposed change represents progress in valuing grid services newly provided through Energy Partner and is projected to be a cost-effective means to procure additional capacity. As a result, Staff supports this change.

## *2. Adding grid support events*

PGE proposes Energy Partner participants be able to participate in Grid Support Events. Grid Support Events are not currently feasible through Energy Partner as even the shortest dispatch notice, 10 minutes, is not fast enough to respond to grid needs. To participate in Grid Support Events a participant must provide a qualified resource, such as a battery system, which may be automatically dispatched by PGE year-round with no advance notice provided.

Such resources provide two services to the grid: contingency reserve and frequency response. As discussed previously, DSG already provides PGE contingency reserve through the current fleet of generators, and PGE is proposing to expand on the DSG contingency reserve services through Advice No. 22-05. By proposing that Energy Partner also provide contingency reserve, PGE further expands the programmatic options for customers to enroll qualified resources. As the filing states, such qualified resources, whether enrolled in DSG or Energy Partner, have the potential to decarbonize PGE's contingency reserve resources and avoid the need for additional generators to meet these requirements.

In simple terms frequency response refers to an injection of power to the grid. Such injections are needed should the frequency of the electrical system drop below the standard nominal 60 hertz (Hz). These power injections, if needed, must be delivered within seconds of receiving a dispatch signal, and help raise the frequency back to nominal 60 Hz. Battery systems are particularly effective at providing frequency response due their ability to discharge very fast. PGE states in the filing that by using customer-sited resources as proposed, the Company can free up its other existing

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<sup>10</sup> See Docket No. ADV 1386, Initial Utility Filing, Attachment A, p. 4, <https://apps.puc.state.or.us/edockets/edocs.asp?FileType=UAA&FileName=uaa15220.pdf>.

frequency response resources (mostly hydro-electric power plants) to generate clean energy.

PGE proposes a payment to participants opting into Grid Support Events of \$29.38 per nominated kW per year. It should be noted that each participant's Load Reduction Plan spells out whether and under what circumstances the firm will participate in Load Reduction Events, Grid Support Events, or both, as well as the firm's resulting incentives. The filing states this payment was calculated using PGE's 2019 IRP valuation for ancillary services. As with the first proposed change, the electronic workpapers demonstrated these calculations; Staff reviewed these workpapers and met with PGE to discuss them; the workpapers appear reasonable and accurate. In sum this second proposed change also represents progress in valuing grid services newly provided through Energy Partner and is projected to be a cost-effective means to procure additional capacity. Staff supports this change.

Separately, Staff notes that the Grid Support Event payment proposed for Energy Partner is different than what PGE is proposing for similar services in DSG. While the resource pricing is based on consistent, published IRP values, the two offerings utilize different assumptions for PGE usage and access to the energy storage technology. For example, DSG allows PGE immediate access to the resource, while Energy Partner allows participants through their Load Reduction Plan to select highly customizable windows for PGE to access the resource. The proposed Energy Partner payment is decremented to reflect these access restrictions.

Additionally, Staff recognizes valuation processes are involved in several different proceedings underway at this time including in Docket Nos. UM 2225 (Clean Energy Plans), UM 1856 (Energy Storage), and UM 2005 (Distribution System Planning). Staff supports valuation approaches that are consistent, transparent, locally useful, and able to evolve as technology and value streams change over time.

Similar benefits should be extended to all resources that comprise integrated portfolios, including battery systems and other distribution connected technologies, in order not to favor certain technologies or customers. Such examples may include participants in PGE's residential DR pilot, or IEEE 1547-2018 "smart inverters" installed on new or existing solar systems, and other provisions under HB 3141 distribution-system connected technologies in future. Staff looks forward to working with PGE to ensure all distribution technologies capable of providing support to the grid have an equal opportunity to be compensated accordingly in the future.

3. Allowing front-loaded payments, enabling stand-alone storage to participate

Through language added to the Reservation Payments section of the tariff, PGE proposes to offer front-loading for participant incentives, specifically for Reservation Payments and any elected Grid Support Event payments. This proposal is intended to address significant upfront capital costs of energy storage technology, which the Company understands to be a major barrier to adoption for some customers. Participants will have the option to choose front-loaded incentives or the current approach of a monthly payment stream. The program's Energy Payments will continue to be provided in the current format: on a monthly basis, as they are earned.

PGE's proposal includes several conditions to address the risk of paying for load reduction and other services that don't materialize as originally modeled:

- This option would only be available for customers enrolling battery systems or other highly predictable resources that can be dispatched by PGE.
- PGE will monitor participation as outlined in the tariff and deduct reservation payments not earned from future energy payments, with the eventual option of recouping the investment if the customer does not participate according to the contract.
- PGE is creating a policy document separate from the schedule in which it will set standards for customers to be granted front-loaded payments. This document shall include: 1) credit requirements; 2) an obligatory commissioning test; 3) restrictions on the age of the unit/remaining life of the unit when signing up; 4) and additional requirements such as "commercially viable," "permitted," or "deemed appropriate by PGE engineers," to address Staff concerns about front-loaded payments being provided for non-proven technologies.

Staff understands that upfront capital costs may represent an adoption barrier for some customers, and with these risk reduction conditions in place, Staff supports this proposed change. Staff also notes that consideration should be given to extending front-loading of participant incentives to all battery systems capable of providing such services.

4. Enabling stand-alone storage to participate

PGE proposes a revision to allow stand-alone energy storage resources to export power back to the grid when dispatched by PGE. This proposal is captured in new language in Special Condition 13 in the tariff. By completing an interconnection agreement, and with approval from PGE's Interconnection Team, participants with a qualified resource capable of providing energy capacity in excess of the current site

load that are not otherwise eligible for PGE Schedule 203 may receive a bi-directional meter. These participants would be credited at the Customer's retail rate of electricity for energy provided to the grid only when dispatched by PGE as part of this schedule. Staff supports this change as it provides another opportunity for customers with qualified resources to participate in a program should they choose.

*5. Revising definitions pertinent to non-emitting resources*

The filing proposes revising seven of the twelve definitions in the current tariff, adding ten new definitions, and removing three definitions. These proposals revise or replace existing language, and add new language, to reflect the addition of non-emitting resources and how they will be dispatched and compensated. Staff appreciates the Company providing a red-line version of the tariff to assist proposal review. Staff supports these changes.

*Interactions with Other Programs*

Staff notes two programmatic interactions. First, Energy Partner is part of the Company's broader Flexible Load Plan, and this filing does not affect that. The Flexible Load Plan will continue to provide cadence and structure to Energy Partner reporting, budgeting, evaluations, and management.

Second, while customers with qualified resources smaller than 250 kW are able to participate only in Energy Partner, customers with qualified resources 250 kW or greater may participate in either Energy Partner or DSG. Staff understands from discussions with PGE that an interested customer may engage the Company to develop a participation agreement and estimated incentive for DSG, while also evaluating the benefits of participating in Energy Partner, before selecting the program that best aligns with their energy goals. Staff also understands from discussions with PGE that the programs provide sufficiently different value propositions that interested customers are likely to select a program before incentive "comparison shopping" occurs. At Staff's suggestion, PGE committed to more clearly presenting this information to customers through a document that will compare and contrast the value proposition of each program, and programmatic features. PGE estimates document completion by September 1, 2022.

*Stakeholder Involvement*

PGE has established and begun to engage the Flexible Load Advisory Stakeholder (FLASH) Group. The first FLASH meeting, April 15, 2022, included brief discussion of these proposed changes.

Given the nascent state of energy storage, Staff suggests PGE continue to engage stakeholders regularly on programs including this technology. This suggestion is pertinent for concept and pilot development, as well as pilot and program implementation.

Staff recommends approval of this filing with the following condition:

1. PGE develop and make broadly available to potential Schedule 200 and Schedule 26 customers a comparison document. The document should enable the customer to compare the value proposition of each program, and programmatic features of either tariff, by September 1, 2022.

### Conclusion

Staff finds that PGE's proposed revisions represent progress in valuing grid services newly provided through Energy Partner. The revisions are projected to be a cost-effective means to procure additional capacity from non-emitting resources such as energy storage. PGE's proposal to front-load incentives to overcome capital costs includes reasonable risk reduction conditions. PGE states that the proposed changes do not increase, decrease, otherwise change existing rates, or impact revenues.

### **PROPOSED COMMISSION MOTION:**

Approve PGE's Advice No. 22-06, authorizing revisions to Schedule 26.