



Oregon

Kate Brown, Governor

Public Utility Commission

201 High St SE Suite 100

Salem, OR 97301-3398

Mailing Address: PO Box 1088

Salem, OR 97308-1088

503-373-7394

May 31, 2022



BY EMAIL

Portland General Electric Company

pge.opuc.filings@pgn.com

RE: Advice No. 22-06

At the public meeting on May 31, 2022, the Commission adopted Staff's recommendation in this matter docketed as ADV 1386. The Staff Report and a receipted copy of the sheets in your advice filing are attached.

Nolan Moser

Chief Administrative Law Judge

Public Utility Commission of Oregon

(503) 378-3098

**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.¹ It is forecast to procure in 2023 firm capacity of 30.5 MW in the summer and 24.4 MW in the winter.² 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.³

¹ 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>.

² 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>.

³ 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.⁴ PGE notes the proposed approach avoids creating a new stand-alone pilot, and that it is intended to be cost-effective and scalable.⁵

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.⁶

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

⁵ 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>.

⁶ 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.⁷

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.⁸ 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.⁹ 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

⁷ 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>.

⁸ 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>.

⁹ 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 1.0.¹⁰ 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

¹⁰ 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.

**SCHEDULE 26
NONRESIDENTIAL DEMAND RESPONSE PROGRAM**

PURPOSE

This schedule is an optional supplemental service that provides participating Large Nonresidential Customers incentives for providing utility grid services when called for by the Company. Under this schedule, the Customer provides a Committed Load Reduction that the Company calls at any time according to the conditions detailed below. The Customer may also elect to receive incentives for providing other grid services from qualifying resources, as described below.

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DEFINITIONS

Baseline Load Profile – The average hourly load of the five highest load days in the last ten Typical Operational Days for the Winter Event Season or Summer Event Season.

(D)

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Commissioning Test – An optional test event conducted by the Customer upon initial program enrollment that confirms the Customer's load reduction potential results in the anticipated amount of load (kW) curtailment.

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Committed Load Reduction – A Customer nomination of load that represents the anticipated amount of load (kW) curtailed during an event.

(C)

Contingency Reserve Event – A Load Reduction Event that is called by PGE with no advance notice in response to a critical need for power in the region. These events can occur at any time of year and at any time of day, including Holidays and weekends.

(N)
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Energy Payment – The payment made by the Company to the Customer, as determined by The Mid-Columbia Electricity Index (Mid-C) as reported by Powerdex, adjusted for losses based on the Customer's delivery voltage. The Energy Payment may be up to 120% of the Committed Load Reduction amount.

(N)

Firm Load Reduction – The difference between the Baseline Load Profile and the Customer's measured hourly energy usage during the Load Reduction Event or the Measured Energy Output during the Load Reduction Event.

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SCHEDULE 26 (Continued)

DEFINITIONS (Continued)

Firm Load Reduction Options – Elections that determine the Customer’s incentive levels; which include the maximum event hours per season option, the Notification Option, and the event windows (time period for an event) for which they want to participate.

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Frequency Response Event – An immediate reduction of site load or dispatch of energy at maximum power for a short duration by a Non-Emitting Firm Capacity Resource in response to a disruption that causes the frequency of the electrical system to deviate from a nominal 60 hertz (Hz). These can occur at any time of year and at any time of day, including Holidays and weekends.

(N)

Grid Support - Frequency Response Events and Contingency Reserve Events are the two Grid Support functions that a Non-Emitting Firm Capacity Resource may elect to participate in. Grid Support functions will be dispatched with no advance notice in response to a disruption in the electrical grid or a critical need for power in the region.

(N)

Holidays – The following are holidays for purposes of this schedule: New Year’s Day (January 1), Martin Luther King Day (third Monday in January), President’s Day (third Monday in February), Independence Day (July 4), Labor Day (first Monday in September), Thanksgiving Day (fourth Thursday in November), and Christmas Day (December 25). If a holiday falls on a Saturday, the preceding Friday will be designated the holiday. If a holiday falls on a Sunday, the following Monday will be designated the holiday.

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Load Reduction Event – An event that is called during the Winter Event Season or the Summer Event Season, where customer incentives are offered in exchange for a Committed Load Reduction.

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Load Reduction Plan – Document of record that defines the Committed Load Reduction, Firm Load Reduction Options, Customer payments based on Qualified Load Reductions during a Load Reduction Event, terms of any Grid Support in which the Customer has agreed to participate in, and participation instructions for each enrolled location.

(N)

Measured Energy Output – An alternative measurement to using a Baseline Load Profile to determine a customer’s Firm Load Reduction. Available for resources with their own metrology that can be made available to PGE for remote reading.

Non-Emitting Firm Capacity Resource – A continuously available electrical load or continuously available energy storage resource that can be dispatched with no notice and respond to a PGE signal within five seconds to provide Grid Support. This cannot be a resource identified in Special Condition 1.

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SCHEDULE 26 (Continued)

DEFINITIONS (Continued)

Nonresidential Demand Response Program Agreement – An agreement between the Company and Customer that defines the enrollment terms by which each party agrees to participate.

Notification Option – The notification period in which the Company will alert the Customer prior to a Load Reduction Event; options include 18 hours, 4 hours, 10 minutes, and no notice.

Participation Month – The current calendar month during a Winter Event Season or the Summer Event Season.

Qualified Load Reduction – The average load reduction percentage for all Load Reduction Event hours during the Participation Month must be 70% of the Committed Load Reduction or greater to be qualified.

Reservation Payment – The payment made by the Company to the Customer, where the Customer's Qualified Load Reduction (kW) is multiplied by the sum of each applicable reservation price (\$/kW) based on the options selected by the Customer adjusted for losses based on the Customer's delivery voltage.

Summer Event Season – Includes the successive calendar months June through September.

Typical Operational Days – Represents the 10 applicable days closest to the Load Reduction Event.

Winter Event Season – Includes the successive calendar months November through February.

AVAILABLE

In all territory served by the Company.

APPLICABLE

To qualifying Nonresidential Customers served under Schedules 32, 38, 47, 49, 75, 83, 85, 89, and 90. Participating Nonresidential Customers must execute a Nonresidential Demand Response Program Agreement to participate in this program.

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SCHEDULE 26 (Continued)

CUSTOMER ENROLLMENT

Customers must be fully enrolled at least five business days prior to the Participation Month.

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At the time of enrollment, the Customer chooses the Firm Load Reduction Options, which includes the Firm Load Reduction Option, Grid Support Option, the maximum event hours per season, the Notification Option, and the event windows (time period for an event) for which they want to participate. Customer elections are documented in the Load Reduction Plan. All options must be agreed to by the Customer and the Company. First-time participants can also opt-in for a Commissioning Test.

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Customers wishing to opt into no notice dispatch or Grid Support with a Non-Emitting Firm Capacity Resource must utilize equipment or facilities that are directly dispatchable by PGE.

(N)
(N)

Within five business days of enrollment, or for Customers completing a Commissioning Test, within five days following the completion of such Commissioning Test, the Company will confirm receipt of the Service Point ID (SPID) the Customer intends to enroll under this schedule and the Company or its representatives will send a signed Agreement to the Customer's representative. The Customer may choose to aggregate SPIDs.

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Upon completion of the initial term each Agreement will automatically renew for successive annual terms on January 1st of subsequent calendar years unless the Customer elects to terminate such Agreement by notifying PGE prior to January 1st or this Schedule is withdrawn, revoked or otherwise terminated.

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CUSTOMER PARTICIPATION OPTIONS

Customers are offered three Firm Load Reduction Options for the contracted program year: Option 1, the Customer participates for both event seasons; Option 2, the Customer participates in only the Summer Event Season; and Option 3, the Customer participates in only the Winter Event Season.

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Customer Option	Participation Months	Event Seasons
1	Nov, Dec, Jan, Feb, Jun, Jul, Aug, Sep	Both event seasons
2	Jun, Jul, Aug, Sep	Summer Event Season only
3	Nov, Dec, Jan, Feb	Winter Event Season only

FIRM LOAD REDUCTION OPTIONS

Several Firm Load Reduction Options are available to Customers in the reservation price section of this schedule. Options include differing maximum event hours per season, Notification Options, and event windows.

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SCHEDULE 26 (Continued)

RESERVATION PRICE

20 Event Hours Maximum per Season

Monthly Payment per kW

	Notification Option			
	18 hours	4 hours	10 minutes	No Notice
Summer (June – September)				
11 am – 4 pm	\$1.68	\$1.80	\$1.91	\$2.00
4 pm – 8 pm	\$1.95	\$2.08	\$2.22	\$2.32
8 pm – 10 pm	\$0.39	\$0.42	\$0.45	\$0.47
All summer windows	\$4.02	\$4.30	\$4.57	\$4.78
Winter (November – February)				
7 am – 11 am	\$1.27	\$1.35	\$1.44	\$1.51
11 am -4 pm	\$0.73	\$0.78	\$0.83	\$0.87
4 pm – 8 pm	\$2.07	\$2.22	\$2.36	\$2.47
8 pm – 10 pm	\$0.73	\$0.78	\$0.83	\$0.87
All winter windows	\$4.80	\$5.13	\$5.46	\$5.71

40 Event Hours Maximum per Season

Monthly Payment per kW

Windows	Notification Option			
	18 hours	4 hours	10 minutes	No Notice
Summer (June – September)				
11 am – 4 pm	\$2.52	\$2.69	\$2.87	\$3.00
4 pm – 8 pm	\$2.92	\$3.12	\$3.32	\$3.47
8 pm – 10 pm	\$0.59	\$0.63	\$0.67	\$0.70
All summer windows	\$6.04	\$6.45	\$6.86	\$7.17
Winter (November – February)				
7 am – 11 am	\$1.90	\$2.03	\$2.16	\$2.26
11 am – 4 pm	\$1.09	\$1.17	\$1.24	\$1.30
4 pm – 8 pm	\$3.11	\$3.32	\$3.54	\$3.70
8 pm – 10 pm	\$1.09	\$1.17	\$1.24	\$1.30
All winter windows	\$7.20	\$7.70	\$8.19	\$8.56

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SCHEDULE 26 (Continued)

RESERVATION PRICE (Continued)

80 Event Hours Maximum per Season

Monthly Payment per kW

	Notification Option			
	18 hours	4 hours	10 minutes	No Notice
Summer (June – September)				
11 am – 4 pm	\$3.35	\$3.58	\$3.81	\$3.98
4 pm – 8 pm	\$3.89	\$4.16	\$4.42	\$4.62
8 pm – 10 pm	\$0.79	\$0.84	\$0.89	\$0.93
All summer windows	\$8.03	\$8.58	\$9.12	\$9.53
Winter (November – February)				
7 am – 11 am	\$2.53	\$2.70	\$2.87	\$3.00
11 am - 4 pm	\$1.46	\$1.56	\$1.65	\$1.72
4 pm - 8 pm	\$4.14	\$4.42	\$4.70	\$4.91
8 pm - 10 pm	\$1.46	\$1.56	\$1.65	\$1.72
All winter windows	\$9.58	\$10.23	\$10.89	\$11.36

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COMMITTED LOAD REDUCTION

If a Customer has completed a test event, but not participated in actual events, their Committed Load Reduction will be based on committed load identified in the Load Reduction Plan. If Customer has completed only one event, their Committed Load Reduction will be the higher of either their committed load or their first event performance. If Customer has participated in more than one event, their Committed Load Reduction will be based on an average of actual load reductions during event hours. The Customer, at its discretion, may choose to increase its nomination above the levels described above.

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QUALIFIED LOAD REDUCTION

If no events are called in a Participation Month, the Customer qualifies for the full Reservation Payment; the Qualified Load Reduction is the Committed Load Reduction.

In order to qualify for the full Reservation Payment during a month with Load Reduction Events, the Customer must provide a minimum of 90% of the Committed Load Reduction on average over each event for which the Customer is enrolled during events in that month. If the Customer qualifies for the full Reservation Payment; the Qualified Load Reduction is the Committed Load Reduction.

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SCHEDULE 26 (Continued)

QUALIFIED LOAD REDUCTION (Continued)

To qualify for a proportional Reservation Payment during a month with Load Reduction Events, the Customer must deliver a minimum of 70% of the Committed Load Reduction on average over each Load Reduction Event for which the Customer is enrolled in that month. If the Customer qualifies for a reduced Reservation Payment; the Qualified Load Reduction is the average load reduction percentage for all Load Reduction Event hours during that month.

If the Customer fails to deliver a minimum of 70% of the Committed Load Reduction on average during any single event for which the Customer is enrolled during events in that month, the Customer is not eligible for the Energy Payment for that Load Reduction Event nor the Reservation Payment for that month. If other Load Reduction Events are called in the same month, and the Customer delivers a minimum of 70% of the Committed Load Reduction during such events, the corresponding Energy Reduction Payments are paid for each Load Reduction Event that the Customer delivers a minimum of 70% of the Committed Load Reduction on average over each event for which the Customer is enrolled during events in that month.

RESERVATION PAYMENTS

The Reservation Payment is the Qualified Load Reduction (kW) multiplied by the sum of each applicable Reservation Price (\$/kW) based on the Firm Load Reduction Options selected by the Customer adjusted for losses based on the Customer's delivery voltage. For each event window (time period for an event) per season, only one price is applicable. The Reservation Payment is made to the Customer no later than 60 days after the month in which they participated.

Customers meeting PGE's eligibility criteria as defined in a separate policy document and incorporated into the Agreement may be eligible to receive at the time of commissioning the net present value of any Reservation Payments and Grid Support options elected in the Load Reduction Plan for the duration of the Agreement with PGE. If a Customer fails to deliver a minimum of 70% of the Committed Load Reduction on average over each event during a month for which the Customer is enrolled, the Customer must reimburse PGE the Reservation Payment for that month.

* PGE will not call Load Reduction Events on Holidays. If a Holiday falls on Saturday, Friday is designated a Holiday. If a Holiday falls on Sunday, the following Monday is designated a Holiday. Grid Support events are in response to a grid emergency and may occur at any day or time, including Holidays.

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SCHEDULE 26 (Continued)

ENERGY PAYMENTS

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The Energy Payment is equal to the Mid-Columbia Electricity Index (Mid-C) as reported by the Powerdex, adjusted for losses based on the Customer's delivery voltage. The Firm Energy Reduction amount can be up to 120% of the Committed Load Reduction.

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The monthly energy prices (per MWh) for the months in which the events are called* are:

Jan 2022	Feb 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Nov 2022	Dec 2022
\$87.20	\$70.30	\$38.60	\$90.00	\$122.80	\$97.00	\$59.00	\$72.80

The Energy Payment rates will be updated by December 1st for the next year beginning in January. Assessment and settlement of the Energy Payment will occur within 60 days of the Firm Load Reduction Event. Energy Payments are not eligible to be paid up-front at the time of commissioning.

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LINE LOSSES

Losses will be included by multiplying the applicable price by the following adjustment factors:

Subtransmission Delivery Voltage	1.0356
Primary Delivery Voltage	1.0496
Secondary Delivery Voltage	1.0685

LOAD REDUCTION MEASUREMENT

Load reduction is measured as a reduction of load from a customer baseline load calculation during each hour of the Load Reduction Event. Although the Load Reduction Plan shall specify the customer baseline load calculation methodology to be used, PGE generally uses the following baseline methodology:

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Baseline Load Profile

The Baseline Load Profile is based upon the average hourly load of the five highest load days in the last ten Typical Operational Days for the event season period. For Customers choosing the four-hour or 10-minute notification options there is an adjustment to the amounts above to reflect the day-of operational characteristics leading up to the Firm Load Reduction Event if the Firm Load Reduction Event starts at 11 am or later. This adjustment is the difference between the Firm Load Reduction Event day load and the average load of the five highest days used in the Baseline Load Profile during the two-hour period ending four hours prior to the start of the Firm Load Reduction Event.

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SCHEDULE 26 (Continued)

LOAD REDUCTION MEASUREMENT (Continued)

Measured Energy Output

For Firm Load Reduction provided by a resource that can be measured with its own metrology, load baselining is not required. Customers using devices with Measured Energy Output who opt out of a Baseline Load Profile must utilize equipment or facilities that are directly dispatchable by PGE so the Company can view the measured Firm Load Reduction.

Typical Operational Days

Typical Operational Days exclude days that a Customer has participated in a Load Reduction Event or pre-scheduled opt-out days as defined in the Special Conditions. Typical Operational Days for the Baseline Load Profile calculation are defined as the ten applicable days closest to the Load Reduction Event. Typical Operational Days may include or exclude Saturdays, Sundays and Western Electricity Coordinating Council (WECC) holidays. Grid Support events may occur at any day or time.

The Company may decline the Customer's enrollment application if the Company determines the Customer's energy usage is highly variable and the Company is not able to verify that a reduction will be made when called upon.

LOAD REDUCTION EVENT

The Company, at its discretion, initiates a Load Reduction Event by providing the participating Customer with the appropriate notification consistent with the Customer's selected Firm Load Reduction Option. The Customer reduces its load served by the Company, for each hour of the Load Reduction Event to achieve its Committed Load Reduction. Each Load Reduction Event will last from one to five hours in duration and the Company will call at least one event per season.

The Company initiates Load Reduction Events during the Winter Event Season and Summer Event Season.

GRID SUPPORT EVENTS

A Non-Emitting Firm Capacity Resource may elect to participate in Grid Support Events only, or in addition to, participating in Firm Load Reduction. A qualified resource for Grid Support must be available year-round and capable of responding to a signal from the Company with no advance notice within five seconds. The resource must be integrated with the Company's dispatch software.

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SCHEDULE 26 (Continued)

GRID SUPPORT EVENTS (Continued)

Grid Support includes Frequency Response Events and Contingency Reserve Events, and are only dispatched in response to a grid disturbance or critical need for power in the region. Participating Customers will be compensated \$29.38 per year per committed kW as a Reservation Payment. In addition, Energy Payments for load reduction will be paid to Customer for each Contingency Reserve Event. Due to the short duration of Frequency Response Events (less than 15 minutes), Energy Payments will not be paid to Customer if dispatched.

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EVENT NOTIFICATION

The Company notifies the participating Customer of a Load Reduction Event using a mutually agreed upon method at the time of enrollment. The Company's notification includes a time and date by which the Customer must reduce the committed load for each period of the Load Reduction Event. Customers enrolled in the "No Notice" option for Firm Load Reduction will still receive notification for events that are pre-planned. No Event Notification is required for Grid Support Events.

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The Customer is responsible to notify the Company if the Customer's contact information specified at the time of the enrollment changes as soon as such change occurs.

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SPECIAL CONDITIONS

1. Customers cannot use on-site diesel, pipeline natural gas or propane or other carbon emitting generation equipment for load reductions to meet load reduction commitments under this schedule.
2. Customers that choose to take service under Schedules 86, 485, 489, 490, 532, 538, 549, 575, 583, 585, 589, 590, or 689 will be withdrawn from this program.
3. Firm Load Reduction by Schedule 75 Customers will not exceed the Customer's baseline load as specified in the Agreement between the Customer and the Company. Customer cannot use purchases under Schedule 76 to meet load reduction commitments under this schedule.
4. In the case of Customers participating on Schedule 76R – Partial Requirements Economic Replacement Power Rider – at the time of the event, the energy imbalance will not apply during event hours and for the event energy amount.
5. This schedule is not applicable when the Company requests or initiates Load Reduction affecting a Customer SPID under system emergency conditions described in Rule N or Rule C(2)(B).

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SCHEDULE 26 (Concluded)

SPECIAL CONDITIONS (Continued)

6. The Company will not cancel or shorten the duration of a Firm Load Reduction Event once notification has been provided.
7. Participating Customers are required to have interval metering and meter communication in place prior to participation in this schedule. The Company will provide and install necessary equipment which allows the Company and the Customer to monitor the Customer's energy usage.
8. If the Customer experiences operational changes or a service disconnection that impairs the ability of the Customer to provide the Firm Load Reduction as requested under this schedule, the Agreement will be terminated.
9. If the Company is not allowed to recover any costs of this program by the Commission, the Company may, at its option, and with 30-day notice, end service under this Schedule and terminate the Agreement.
10. The Customer may pre-schedule four opt-out days per season as indicated in the Agreement. If the Company calls a Firm Load Reduction Event on a pre-scheduled opt-out day, the Customer is exempt from providing Firm Load Reduction and will receive no Energy Payment, whether or not they choose to operate. The Customer will receive the Reservation Payment if otherwise eligible. An opt-out day will not be included in the calculation of the Baseline Load Profile.
11. Customers who participate in this schedule may be placed on a calendar monthly billing cycle.
12. Inverter based Non-Emitting Firm Capacity Resources must be IEEE 1547-2018 compliant, built and installed in compliance with UL 1741SA with interoperability features unlocked.
13. Non-Emitting Firm Capacity Resources capable of providing energy capacity in excess of the Customer's current site load that are not otherwise eligible for PGE Schedule 203 may receive a bi-directional meter and 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. An interconnection agreement and approval by PGE's Interconnection Team is required prior to installation of such bi-directional meter. The terms and conditions for such credits will be set forth in the agreement.
14. Except as otherwise provided in this schedule, Customers nominating resources and receiving compensation through this schedule may participate in other schedules, but may not receive compensation for the resources nominated in this schedule through another schedule.

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