ITEM NO. RA1

PUBLIC UTILITY COMMISSION OF OREGON
STAFF REPORT
PUBLIC MEETING DATE: January 25, 2022

REGULAR X CONSENT ____ EFFECTIVE DATE N/A

DATE: January 18, 2022

TO: Public Utility Commission

FROM: Kacia Brockman

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

SUBJECT: PORTLAND GENERAL ELECTRIC:
(Docket No. UM 2141)
Requests approval of Flexible Load Multi-Year Plan.

STAFF RECOMMENDATION:

1. Approve the following elements of Portland General Electric's (PGE or Company) Flexible Load Multi-Year Plan:
    a. Two-year (2022-2023) portfolio budget of $24.46 million, comprised of:
        i. $6.89 million for the residential Peak Time Rebate pilot operating under Schedule 7;
        ii. $1.39 million for the residential Time of Day program operating under Schedule 7;
        iii. $5.64 million for the residential Smart Thermostat program operating under Schedule 5;
        iv. $8.28 million for the Energy Partner Demand Response program operating under Schedule 26; and
        v. $2.26 million for the Phase II activities of the Smart Grid Testbed approved by the Commission in Order No. 21-444.

2. Require PGE to consolidate these five program budgets under one single deferral authorization.

3. Do not approve, the following elements of the Flexible Load Multi-Year Plan:
    a. Two-year budget of $5.64 million to deliver the Multifamily Water Heater pilot operating under Schedule 4;
    b. Two-year budget of $2.85 million to deliver the Energy Partner Smart Thermostat pilot operating under Schedule 25;
    c. Five new pilot proposals with a total 2022 budget of $2.13 million; or

d. The alternative cost recovery mechanism described in Chapter 8 of the Flexible Load Multi-Year Plan.

DISCUSSION:

Issue

Whether the Commission should approve all or part of PGE's MYP.

Applicable Rule or Law

In Order No. 17-386, the Commission acknowledged PGE's 2016 Integrated Resource Plan (IRP) action item to achieve 77 MW (winter) and 69 MW (summer) of aggregate demand response capacity by 2021, but directed PGE to work more aggressively to achieve the IRP's demand response high-case targets of 191 MW (winter) 162 MW (summer). The Commission also directed PGE to take actions to accelerate demand response acquisition including (i) study the market potential for demand response; (ii) establish a "Demand Response Review Committee" to provide guidance on demand response activities; and (iii) establish demand response testbed.[1]

In Order No. 20-152, the Commission acknowledged PGE's 2019 IRP action item 1B to achieve 141 MW (winter) and 211 MW (summer) of aggregate demand response capacity by 2025. In the order, the Commission highlighted the importance of PGE's upcoming Flexible Load Plan in advancing stakeholder understanding of PGE's approach to acquiring demand-side resources to help meet PGE's increasing capacity needs.[2]

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.[3]

[1] Order No. 17-386 was issued October 9, 2017, in Docket No. LC 66, PGE 2016 Integrated Resource Plan.
[2] Order No. 20-152 was issued May 6, 2020, in Docket No. LC 73, PGE 2019 Integrated Resource Plan.
[3] Order No. 21-158 was issued May 18, 2021, in Docket No. UM 2141, PGE Flexible Load Plan.

Analysis

Summary
In the Flexible Load Multi-Year Plan (MYP), PGE proposes to consolidate the Company's various flexible load program activities under a single portfolio-level budget. PGE seeks approval for a two-year (2022-2023) budget that covers: 1) expansion of six existing pilots/programs; 2) implementation of three demonstration projects approved in Phase II of the Smart Grid Testbed; and 3) development of five new flexible load pilot concepts. PGE also proposes an alternative cost recovery mechanism that includes a performance incentive.

Staff recommends partial approval of PGE's request. In particular, Staff supports the funding requested for four of the six existing pilots/programs and the Smart Grid Testbed demonstrations. At this time, Staff does not support approval of the funding requested for two of the existing pilots, funding requested for the new pilot concepts, or the alternative cost recovery mechanism. In the future, these proposals could be reconsidered if supported by additional details from the Company and significant stakeholder input.

Background
PGE filed the Flexible Load Plan (FLP) on December 24, 2020.[4] The purpose of the FLP was two-fold: 1) to provide significant insight into PGE's flexible load planning process as requested by the Commission in Order No. 20-152; and 2) to propose to consolidate the Company's numerous flexible load activities into a single portfolio-level multi-year plan, budget, and cost recovery mechanism. The Commission accepted the FLP on April 18, 2021.[5] PGE subsequently filed the Flexible Load Multi-Year Plan (MYP) describing the Company's portfolio-level multi-year plan, budget, and cost recovery proposal in Docket No. UM 2141 on November 3, 2021.

In the MYP, PGE seeks approval for a two-year (2022-2023) portfolio budget of $35.1 million. The activities that comprise the portfolio budget are shown in Table 1 below. Activities include scaling up six existing programs and pilots, implementing three new demonstration projects approved by the Commission as part of Phase II of the Smart Grid Testbed, and developing five new pilot concepts into full pilot proposals.

[4] See Docket No. UM 2141, PGE Flexible Load Plan.
[5] See Order No. 21-158 issued May 18, 2021, in Docket No. UM 2141, PGE Flexible Load Plan.

Table 1. MYP flexible load portfolio two-year budget request by program (2022-2023)

	2-year budget requested	Recommended for approval
Existing pilots/programs		
Residential Peak Time Rebates	$ 6,890,000	$ 6,890,000
Residential Time of Day	$ 1,390,000	$ 1,390,000
Residential Smart Thermostat	$ 5,643,925	$ 5,643,925
Energy Partner Demand Response	$ 8,276,883	$ 8,276,883
Energy Partner Smart Thermostat	$ 2,851,311	$ -
Multifamily Water Heating	$ 5,643,454	$ -
Total: Existing pilots/program	$ 30,695,573	$ 22,200,808
Smart Grid Testbed Phase II demonstrations		
Flexible Feeder	$ 985,000	$ 985,000
Managed Charging	$ 872,200	$ 872,200
Smart Inverters	$ 402,800	$ 402,800
Total: Smart Grid Testbed Phase II	$ 2,260,000	$ 2,260,000
New pilot concepts		
Home Energy Bundle	$ 350,000	$ -
Community Microgrids	$ 250,000	$ -
Single Family Water Heater	$ 1,130,000	$ -
Residential New Construction Bundle	$ 200,000	$ -
Commercial Resiliency Solution	$ 200,000	$ -
Total: New pilot concepts	$ 2,130,000	$ -
Portfolio total	**$ 35,085,573**	**$ 24,460,808**

The 2023 load impact goals associated with the six existing pilots and programs are shown in Table 2 below.

Table 2. Flexible load portfolio 2023 load impact goals by program[6]

	2023 load impact goal (MW)	
	Summer	**Winter**
Existing pilots/programs		
Residential Peak Time Rebates	22.4	16.8
Residential Time of Day	4.8	2.2
Residential Smart Thermostat	39.9	9.7
Energy Partner Demand Response	30.5	27
Energy Partner Smart Thermostat	1.8	1.1
Multifamily Water Heating	6.8	10.2
Portfolio total	106.2	67

PGE notes that the proposed two-year budget and goals for the existing pilots and programs are informed by the economically-achievable potential identified in the most recent flexible load potential study. The study, created as part of PGE's Distribution System Planning (DSP) process, used a bottom-up approach that accounted for PGE's customer base and building stock, current program design and participation, and recent program evaluation results.[7] The study identifies approximately 135 MW (summer) and 108 MW (winter) economically-achievable flexible load in 2025. This is less than the 211 MW (summer) and 141 MW (winter) that was identified in PGE's 2019 Integrated Resource Plan (IRP) based on the previous study of flexible load potential, which PGE describes as having relied more on benchmarked data from other jurisdictions.[8]

In the MYP, PGE also proposes an alternative cost recovery mechanism for flexible load costs that includes a single deferral for the entire flexible load portfolio and a performance-based incentive for the Company.[9] Currently, costs for delivering PGE's flexible load programs are deferred through four separate deferral authorization dockets

[6] The total portfolio load impact shown in Table 2 above (106 MW in summer and 67 MW in winter) differs from the total impact shown in Tables 2, 34, and 35 in PGE's MYP (103 MW in summer and 67 MW in winter.) The reason for the difference is that Table 2 above includes only the existing programs/pilots that comprise the proposed portfolio budget, whereas Tables 2, 34, and 35 in the MYP exclude Residential Time of Day and include the Residential Smart Battery pilot and the Residential Smart Charging program.
[7] The recent study performed for PGE's DSP Part 1 filing is "PGE DER and Flexible Load Potential – Phase 1", developed by Cadeo Group, published July 7, 2021, and is available at: https://assets.ctfassets.net/416ywc1laqmd/1sMpwIkeZ0Imb9FuEA7F2i/128e4ffc0bc044f2fde8dcd7cbdc03c6/2021-09-17-pge-der-flex-load-potential-phase1.pdf.
[8] MYP pages 17-18. The previous study performed for PGE's 2019 IRP is "Distributed Resource and Flexible Load Study", developed by Navigant Consulting, published April 2019, and is available at https://downloads.ctfassets.net/416ywc1laqmd/6KTPcOKFILvXpf18xKNseh/271b9b966c913703a5126b2e7bbbc37a/2019-Integrated-Resource-Plan.pdf.
[9] See Chapter 8 of the MYP.

and amortized through supplemental Schedule 135.[10] In the MYP, PGE notes that, as stated in the Company's 2021 general rate case, labor costs associated with flexible load activity are now being accounted and tracked to base rates rather than deferred. Therefore, PGE's alternative cost recovery proposal relates only to non-labor costs of flexible load resource development.

In the next sections, Staff first addresses the pilots, programs, and demonstrations that it recommends including the approved two-year flexible load portfolio budget. Additionally, Staff explains its recommendation for creating one consolidated deferral for the approved portfolio budget. Next, Staff provides its reasoning for not supporting the two-year budget requested for two of the existing pilots, the funding requested to develop new pilot concepts, and the alternative cost recovery mechanism. Staff closes with discussion of cost-effectiveness and reporting expectations.

Approve the Following Portions of the Flexible Load Multi-Year Plan
Staff recommends approving the two-year budget requested for four of the six existing pilots/programs (described in subsection A below) and for the Smart Grid Testbed Phase II demonstrations (described in subsection B below). Staff also recommends that PGE submit a new deferral authorization request for the consolidated budget for these four pilots/programs (described in subsection C below).

A. Existing Pilots & Programs

1. Residential Peak Time Rebates

	2023 Goals
Participants	140,000
Summer load impact (MW)	22.4
Winter load impact (MW)	16.8
2-year budget	$6,890,000

Residential Peak Time Rebates (PTR) is a voluntary behavioral pilot that began in April 2019 and operates under Schedule 7. There is no cost to participate, which supports equitable access. Customers are compensated for reducing their consumption during events. Among PGE's flexible load portfolio, PTR has the largest number of participants (127,000) and provides a substantial portion of the portfolio's total savings, as shown in Table 2 above. PGE reports PTR has a current cost-effectiveness of 0.87. PGE describes planned actions to improve cost-effectiveness including targeted

[10] The four deferral authorization dockets include UM 1708 for the residential pilots, UM 1514 for the non-residential pilots, UM 1827 for the multifamily pilot, and UM 1976 for the Smart Grid Testbed.

recruitment of high-impact participants and transition of low-impact customers to the Residential Smart Thermostat pilot.

Staff recommends continuing this mature pilot through 2023, until after Staff has engaged utilities and stakeholders to review and potentially update the cost-effectiveness methodology with additional values such as transmission and distribution deferral, energy, and flexibility. During this pilot extension, PGE should continue to strive for cost-effectiveness, including reviewing the incentive level. Whether PTR should be evaluated for cost-effectiveness as a standalone pilot or as part of the overall flexible load portfolio will be discussed after the cost-effectiveness methodology is updated. PGE's proposed two-year budget and estimated load impact for PTR are reasonable based on historical performance.

Staff recommends approval of the PTR budget and goals. Staff also recommends that PGE roll the PTR budget into the consolidated deferral request.

2. Residential Time of Day

	2023 Goals
Participants	40,000
Summer load impact (MW)	4.8
Winter load impact (MW)	2.2
2-year budget	$1,390,000

Residential Time of Day (TOD) is a voluntary program that offers non-seasonal, time-varying rates to encourage residential customers to shift usage away from periods of peak capacity needs. The rates were established with significant input from Staff. TOD pricing became available under Schedule 7 in April 2021, but PGE has postponed promotion and recruitment until April 2022, when a new online rate comparison calculator will become available to prospective customers. Costs for the online calculator are not included in this budget request. PGE reported to Staff that IT capital costs for the online calculator, online enrollment, billing system, and customer service systems total $888,000 and are included in PGE's 2021 general rate case. The proposed TOD two-year program budget is limited to costs for awareness building, recruitment, and evaluation. PGE expects the program to be cost-effective from the start, with estimated cost-effectiveness of 1.36. The budget appears reasonable compared to similar costs in PTR. The forecasted load impact is based on Cadeo's recent flexible load potential study.

Staff recommends approval of the TOD budget and goals. Staff also recommends that PGE roll the TOD budget into the consolidated deferral request.

3. Residential Smart Thermostat

	2023 Goals[11]
Participants	47,000
Summer load impact (MW)	39.9
Winter load impact (MW)	9.7
2-year budget	$5,643,925

Residential Smart Thermostat is a direct load control pilot that provides PGE with firm capacity by controlling residential heating and cooling loads through smart thermostats. The Smart Thermostat pilot operates under Schedule 5. Participants receive a one-time enrollment incentive or a free thermostat plus additional ongoing incentives for participating in seasonal events. This is a mature pilot with cost-effectiveness of 1.09. It currently provides the majority of PGE's flexible load portfolio summer load impact and still has significant potential to scale, according to PGE's flexible load study. Staff supports continuing the pilot through 2023, until after the cost-effectiveness methodology is updated, and then transitioning it from pilot to program. The proposed two-year budget and estimated load impact are reasonable based on historical performance. The pilot is set to expire June 30, 2022, and will need to be renewed by PGE through a subsequent tariff filing.

Staff recommends approval of the Residential Smart Thermostat budget and goals, and extension of the pilot through 2023. Staff also recommends that PGE roll the Residential Smart Thermostat budget into the consolidated deferral request.

4. Energy Partner Demand Response

	2023 Goals[12]
Participants	-
Summer load impact (MW)	30.5
Winter load impact (MW)	27
2-year budget	$8,276,644

The Energy Partner Demand Response pilot operates under Schedule 26 and provides PGE with firm capacity. Large electricity customers receive incentives for reducing a committed amount of load during an event. Incentives vary based on the customer's choice of notification period, maximum event hours, and seasonal participation. Energy Partner Demand Response contributes the majority of PGE's flexible load portfolio's winter load impact. The latest evaluation identified that the pilot is mature and ready to

[11] 2023 goals are pulled from Tables 34 and 35 in Appendix C of PGE's MYP.

transition to a program, as described in detail in the MYP.[12] The pilot's cost-effectiveness is currently 1.2. PGE proposes to expand the pilot by attracting smaller customers, adding incentives for dispatch of energy storage, ancillary services, and no-notice dispatch, and offering frontloaded incentive payments to help reduce a customer's up-front costs of new technology. PGE will submit a subsequent tariff filing to revise Schedule 26 to reflect these changes. The proposed two-year budget and estimated load impact are reasonable based on historical performance.

Staff recommends approval of the two-year Energy Partner Demand Response budget and goals. Staff also supports its conversion from pilot to program, but does not recommend any change to cost recovery at this time. The question of appropriate cost recovery treatment of flexible load pilots and programs must first be discussed with the Company and stakeholders. Staff will work with PGE to facilitate such a discussion in 2022. At this time, Staff recommends that PGE roll the Energy Partner Demand Response budget into the consolidated deferral request.

B. Smart Grid Testbed Phase II activities and budget

The MYP includes a two-year budget of $2,264,635 for the first three Smart Grid Testbed (Testbed) Phase II demonstration projects: Flexible Feeder, Managed EV Charging, and Smart Inverters. The Commission approved these demonstration projects and their budgets when it approved PGE's Testbed Phase II proposal in December 2021 in Order No. 21-444.[13] Based on the experimental nature of demonstration projects in the Testbed, there are no load impact goals associated with this budget.

Staff recommends approving the two-year Testbed Phase II budget. Staff recommends that PGE roll the Testbed Phase II budget into the consolidated deferral.

C. Use of a single consolidated deferral

Staff supports PGE's shift to portfolio-level planning to make it easier for Staff, stakeholders, and the Commission to keep track of the cumulative performance relative to IRP goals and cumulative rate impact of the full suite of PGE's flexible load activities. Moving to a portfolio-level budget will allow, over time, the consolidation of the current four separate deferral authorizations into one, which will streamline the filing and review process for Staff, stakeholders, and the Commission. This transition will take place over time because not all of the flexible load activity is ready to be included in a two-year portfolio budget. As described in the next section, Staff recommends that two pilots

[12] See PGE's MYP, Appendix B.
[13] See Docket No. UM 1976.

continue under their current budget and deferral authorization until they are approved for extension or transition them to program. Table 3 summarizes the deferral docket transition plan if the Commission adopts Staff's recommendation. One of the existing deferrals (Docket No. 1708) could be closed in 2022, and the remaining three deferrals could be closed in 2023.

Table 3. Deferral docket transition plan

Docket No.	Action
UM 1708	Move budgets for PTR, TOD, Residential Smart Thermostat into portfolio budget under new consolidated deferral. Close UM 1708.
UM 1514	Move budget for Energy Partner Demand Response into portfolio budget under new consolidated deferral. Retain Energy Partner Smart Thermostat budget in UM 1514 in 2022 (awaiting approval of pilot redesign and extension.) Move to portfolio budget under consolidated deferral in 2023 and close UM 1514 at that time.
UM 1827	Retain Multifamily Water Heater budget in UM 1827 in 2022 (awaiting approval of pilot expansion). Move to portfolio budget under consolidated deferral in 2023 and close UM 1827 at that time.
UM 1976	Place budget for Testbed Phase II activities into portfolio budget under new consolidated deferral. Retain Testbed Phase I budget in UM 1976 until those activities are completed in 2022, then close UM 1976.

Do not Approve the Following Portions of the Flexible Load Multi-Year Plan
Staff recommends that the Commission not approve, without prejudice, the two-year budget for two of the six existing pilots/programs, funding for the five new pilot proposals, and the alternative cost recovery mechanism. Staff begins by addressing the role of stakeholder engagement in its recommendation not to approve these portions of the MYP.

A. Lack of stakeholder engagement

Staff appreciates the information provided by PGE in the MYP, and the substantial effort required by the Company to publish it concurrent with PGE's DSP Part 1 filing and PGE's General Rate Case negotiations. Staff is disappointed, however, that PGE did not conduct any stakeholder engagement during the development of the MYP prior to its filing. PGE had previously committed to review its program plans, market strategies,

and proposed budget with stakeholders during the development of the MYP.[14] This absence of stakeholder input is a major consideration in Staff's recommendation not to approve, without prejudice, the five new pilot concepts and the alternative cost recovery mechanism proposed in the MYP. PGE could bring those proposals back to the Commission for approval after demonstrating that stakeholder perspectives have been considered.

B. Existing Pilots and Programs

1. Energy Partner Smart Thermostat

	2023 Goals
Participants	-
Summer load impact (MW)	1.8
Winter load impact (MW)	1.1
2-year budget	$2,851,000

The Energy Partner Smart Thermostat pilot operates under Schedule 25 and provides PGE with firm capacity by controlling non-residential heating and cooling loads through smart thermostats. It was created to complement the Energy Partner Demand Response pilot, offering a participation option for small and medium-sized businesses. The Energy Partner Smart Thermostat pilot has low participation and has never been evaluated as a standalone pilot. In preparation for the Energy Partner Demand Response pilot's transition to a program, in 2021 PGE began assessing the potential for the Energy Partner Smart Thermostat pilot to stand on its own.

At the Q3 2021 Demand Response Advisory Group meeting, PGE reported that it has conducted market potential analysis, identified potential high-impact customers, and created a plan to improve cost-effectiveness by leveraging Energy Trust's trade ally network. PGE committed to submit a detailed pilot proposal in Q2 2022 when it files a tariff update to extend the pilot, which is currently set to expire May 31, 2022. PGE's detailed pilot proposal should conform to the "pilot to program" guidance Staff provided to PGE in 2020.[15]

In the MYP, PGE proposes a two-year budget for the Energy Partner Smart Thermostat Pilot. Staff recommends not approving that two-year budget, and instead waiting to receive the detailed pilot proposal that PGE plans to submit to justify extending the pilot beyond its current expiration date. Staff recommends that PGE continue to operate the

[14] See FLP sections 3.4.2 and 3.4.3 and PGE's Reply Comments in Docket No. UM 2141, filed April 16, 2021, page 2.
[15] Staff's "pilot to program" guidance is included with this memo as Attachment A.

pilot under its current budget and deferral authorization in Docket No. UM 1514 until the Company submits its request to extend the pilot. If the Commission approves PGE's future pilot extension request, PGE should request reauthorization of that deferral in UM 1514 through 2022, and then roll the pilot's budget into the next annual consolidated deferral.

2. Multifamily Water Heater

	2023 Goals[16]
Participants	18,000
Summer load impact (MW)	6.8
Winter load impact (MW)	10.2
2-year budget	$5,643,454

The Multifamily Water Heater pilot allows PGE to control a geographically dense aggregation of electric water heating load. The pilot operates under Schedule 4 and provides participation incentives to both the multifamily property owner and the residents. PGE reports that cost-effectiveness is currently 0.66. In January 2021, the Commission approved PGE's request for an extension of the pilot to July 31, 2023, based on PGE's strategy to achieve cost-effectiveness over time by reducing certain program costs and increasing load impact. In the MYP, PGE proposes a two-year budget through 2023, but does not acknowledge that the pilot expires prior to the end of that two-year period and did not justify continuing the pilot beyond its expiration. Additionally, the MYP's proposed two-year Multifamily Water Heater budget is significantly higher than previous years' budgets without adequate justification.

Staff recommends <u>not</u> approving the MYP's two-year budget for the Multifamily Water Heater pilot. Instead, Staff recommends that PGE continue to operate the pilot under its current budget and deferral authorization in Docket No. UM 1827 until the Commission decides on treatment of the pilot after its 2023 expiration date.

C. <u>New pilot proposals</u>

In the MYP, PGE seeks funding to develop the following five new flexible load pilot concepts into pilot proposals.

1. Single-Family Water Heater would incentivize installation of controllable heat pump water heaters to provide capacity, intra-hour load following, and frequency response. PGE requests $1,130,000 for market research, IT development, trade

[16] 2023 goals are pulled from Tables 34 and 35 in Appendix C of PGE's MYP.

ally engagement, project management, Demand Response Management System integration, and incentives.

2. Home Energy Bundle would incentivize bundling of solar and storage by frontloading net metering credits. PGE requests $350,000 for market research, technology scoping, and product development.
3. Community Microgrids would incentivize and/or provide building-level resiliency at facilities that serve as public hubs during emergency events, while offering flexible load during non-emergency times. PGE requests $250,000 for project management, product development, and grant writing assistance.
4. Residential New Construction Bundle would incentivize home builders to build all-electric homes ready for solar and EV charging and equipped with demand response-enabled devices. PGE requests $200,000 for market research, technology scoping, project management, and product development.
5. Commercial Resilience Solutions would offer resilience and power quality solutions as a PGE-provided service for a fee to commercial, industrial, and municipal customers that are sensitive to electricity service interruptions. PGE requests $200,000 for market research, product development, and project management.

Staff does not recommend approval of any of these five concepts at this time. Staff understands that it is essential to explore new concepts to expand the flexible load portfolio over time. While each of these concepts may have merit, none was described in the MYP with sufficient detail and justification to warrant approval. Additionally, PGE has not demonstrated how the product development and project management costs are incremental to PGE staff currently serving those functions.

The Single Family Water Heater concept is the most developed of the five, but it lacks the detail and rigor necessary to justify its approval. PGE proposes additional rebates for heat pump water heaters, but does not describe how those incentives would interact with Energy Trust's existing incentives. The budget calls for outsourcing project management and IT services without justification, especially given that PGE identified in the general rate case significant staffing increases to support flexible load. The list of 12 learning objectives is unfocused. The trade ally education component of the proposal does not clearly leverage similar research in the Testbed. The proposal lacks an implementation plan with milestones.

For the remaining four concepts, PGE did not provide detailed pilot proposals. Instead, PGE requests funding to develop those concepts into proposals. That approach is inconsistent with how PGE's flexible load pilots have been approved to date. In 2020, Staff shared with PGE its "pilot to programs" guidance that defined the essential elements of a pilot proposal. Since then, Staff has demanded, and PGE has provided,

detailed project proposals that have undergone stakeholder review for all new demonstration activity in the Smart Grid Testbed and extension of the previously struggling Multifamily Water Heater pilot. Staff expects the same level of rigor for all future pilot proposals.

OSSIA comments that stakeholders were not engaged in the development of the MYP and that PGE's new pilot concepts include ideas that may be controversial. For example, PGE proposes to engage in functions that appear to duplicate Energy Trust program offerings such as incentives for customers and homebuilders, trade ally management, and project development assistance. PGE also proposes to front-load net metering credits, offer resilience as a service, and provide financing to customers. OSSIA requests more information and dialog with PGE, Staff, and stakeholders about these PGE proposals prior to Commission approval.

Staff notes that PGE describes the financing and "as a service" ownership-lease models as part of a "Customer Energy Services Platform" that PGE envisions as a new business model providing a "one-stop shop" for customers. In the MYP, PGE also suggests using the Line Extension Allowance to offset the customer's or homebuilder's cost of behind-the-meter equipment and electrical upgrades. Staff agrees with OSSIA that such concepts need to be discussed with stakeholders before the Commission approves PGE spending ratepayer funds to develop these concepts into business models. PGE should convene such a stakeholder discussion prior to resubmitting the proposals.

TeMix comments that PGE's MYP does not seek flexible load aggressively enough to support Oregon's emissions reduction goals. TeMix recommends that the Commission hold a workshop on how to create new retail markets and supportive tariffs, or require the utility to demonstrate a new, dynamic rate plan.

D. Cost recovery proposal

PGE's cost recovery proposal is described in Chapter 8 of the MYP. In the MYP, PGE argues that flexible load non-labor costs are not yet suitable for forecasting in base rates, even for a mature pilot like Energy Partner Demand Response that is cost-effective and ready to transition to a program. PGE argues that after transition from pilot to program, the resource must then be incorporated into Power Operations for dispatch to become a fully operational and planning resource. This creates another ramp period as Power Operations learns to predict the flexible resource value, which relies on actions of a collection of customers rather than on a single technology.

PGE argues that flexible load resources, in the near term, are more appropriate for alternative cost recovery treatment. Today's deferred accounting provides PGE with alternative cost recovery treatment in which PGE receives full cost recovery for its actual costs, subject to prudence review. PGE describes the MYP's cost recovery proposal as an alternative to today's deferred accounting. In follow-up conversations with PGE, however, Staff understands that PGE's proposal still involves deferred accounting, cost recovery through a supplemental rate adjustment schedule, and, in one scenario, a balancing account, as is the case today.

PGE's proposal places a cap on the amount that can be recovered based on the approved budget, which could transfer some risk to PGE. However, Staff does not yet fully understand the distinction between PGE's proposal and current practice including the details of how it would be implemented. Staff imagines the same is true for stakeholders. Staff is eager to learn more about PGE's proposal and hear stakeholders' perspectives.

A second element of the cost recovery proposal is a performance incentive that would reward PGE for underspending the portfolio budget and/or exceeding the portfolio load impact goal. Staff has concerns that this incentive could encourage PGE to inflate the budget to avoid the penalty of overspending and does not put enough emphasis on performance compared to goal. Staff is interested in hearing stakeholder input on the potential to incorporate performance incentives and, again, will coordinate with PGE to convene a stakeholder discussion about the proposal. Staff would like to better understand the cost-effectiveness of the flexible load resource before considering a performance incentive. Therefore, Staff proposes to delay any decision about performance incentives until after the cost-effectiveness methodology is updated.

Staff recommends not approving PGE's cost recovery at this time, but looks forward to further work with PGE and stakeholders on this topic.

Cost-effectiveness

PGE devotes Chapter 7 of the MYP to discussion of its work to evaluate and improve cost-effectiveness of flexible load resources. PGE is developing a cost-effectiveness tool based on the *National Standard Practice Manual*[17] to enable economic analysis of non-wires solutions in Distribution System Planning. PGE reports that it is also assessing the potential to include in the cost-effectiveness evaluation the transmission and distribution deferral value, market wholesale price of energy, flexibility services, greenhouse gas emissions reductions, and resiliency. PGE is also revising capacity

[17] National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources, published by the National Energy Screening Project, August 2020. Can be found at: https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/.

value based on declining costs of avoided non-emitting resources. Staff is encouraged by PGE's work on the cost-effectiveness methodology and appreciates the information shared in the MYP. PGE is not requesting, and Staff is not recommending, any change to the cost-effectiveness methodology at this time. However, Staff invites PGE to share its findings and recommendations with Staff and stakeholders as soon as practicable rather than waiting to address it in the DSP Part 2 filing in August 2022.

Reporting
PGE proposes to provide the Commission with an annual flexible load report that includes expenditures, incentives, program costs, program performance, and costs recovered. Staff recommends including the flexible load performance of PGE's EV charging and residential battery pilots in the annual report, as well.

In order to encourage greater stakeholder engagement in PGE's ongoing flexible load planning, Staff recommends inviting stakeholders to join the quarterly Demand Response Advisory Committee (DRAG) meetings, similar to Energy Trust's Conservation and Renewables Advisory Committees. Staff will raise this for discussion with PGE at the next DRAG meeting.

Conclusion

Staff finds that the proposed two-year budgets for four existing pilots – PTR, TOD, Residential Smart Thermostat, and Energy Partner Demand Response – as well as the previously approved budget for Phase II of the Testbed are reasonable and in the public interest, and should be approved in the flexible load portfolio budget.

In order to benefit from the consolidated rate recovery envisioned in the original FLP, staff recommends that PGE consolidate the budgets for these four pilots and the Testbed Phase II into a single, new deferral authorization request for the flexible load portfolio.

Staff finds that the remaining two existing pilots – Energy Partner Smart Thermostat and Multifamily Water Heating – should continue under their current budget and deferral authorizations until the pilots reach their scheduled expiration dates or are extended. PGE may request an extension by presenting a detailed pilot proposal and justification with the appropriate tariff revision.

Staff is disappointed by the lack of stakeholder engagement in the MYP development. PGE's new pilot concepts lack detail needed to justify approval. PGE's cost recovery proposal needs to be discussed with and understood by Staff and stakeholders so those parties can respond effectively to PGE's proposal. Staff invites PGE to further develop

the proposals with stakeholders and either include those proposals again in the next MYP update or file a separate docket seeking Commission direction to stakeholders and Staff on performance-based regulation beginning with the Flexible Load Plan.

Finally, Staff appreciates PGE's efforts to evaluate cost-effectiveness and looks forward to hearing PGE's recommended changes to the methodology.

PROPOSED COMMISSION MOTION:

1. Approve the following elements of PGE's Flexible Load Multi-Year Plan:
    a. Two-year (2022-2023) portfolio budget of $24.46 million, comprised of:
        i. $6.89 million for the residential Peak Time Rebate pilot operating under Schedule 7;
        ii. $1.39 million for the residential Time of Day program operating under Schedule 7;
        iii. $5.64 million for the residential Smart Thermostat program operating under Schedule 5;
        iv. $8.28 million for the Energy Partner Demand Response program operating under Schedule 26; and
        v. $2.26 million for the Phase II activities of the Smart Grid Testbed approved by the Commission in Order No. 21-444.

2. Require PGE to consolidate these five program budgets under one single deferral authorization.

3. Do not approve the following elements of the Flexible Load Multi-Year Plan:
    a. Two-year budget of $5.64 million to deliver the Multifamily Water Heater pilot operating under Schedule 4;
    b. Two-year budget of $2.85 million to deliver the Energy Partner Smart Thermostat pilot operating under Schedule 25;
    c. Five new pilot proposals with a total 2022 budget of $2.13 million; or
    d. The alternative cost recovery mechanism described in Chapter 8 of the MYP.

OPUC Energy Resources and Planning
Utility Guidance: Pilots to Programs

1 Purpose

In reviewing utility proposals to conduct pilots or to extend existing pilots, OPUC Staff has noted a need for consistent guidance, as some pilot proposals lack key components that Staff needs in order to provide a proper review of the proposal. Staff believes that it would be beneficial to provide guidance on proposal expectations so that utilities have a better understanding of what to file, and Staff receives this information up-front, leading to a more timely review.

The guidance in this document addresses existing or new pilots, and new programs. It is not an attempt to retroactively restrict well-established utility activities but rather to address emerging practices.

2 Definitions

Staff uses the following definitions when reviewing utility pilot proposals.

A pilot is a project of limited scope and duration that tests an idea for broader adoption, and is expected to provide benefits to the ratepayer.

Pilots are a way to test a new idea believed to provide potential benefits to ratepayers, in a manner that minimizes risk. If the pilot is successful, it can be rolled out for wider adoption and incorporated into base rates. If the pilot is unsuccessful, it can be discontinued, or redesigned. Pilots, as covered in this document, include projects such as research studies, product demonstrations, “field tests”, etc. A pilot is not a required step before adopting a service or practice.

This process does not cover research activities paid for through existing R&D budgets. R&D budgets, O&M budgets, and other such sources that are determined as part of base rates can be utilized to fund research projects, initial market research, tests, or “demonstrations.”

Pilots are intended to test an idea for the potential to be widely rolled out to customers, if learnings from the pilot indicate this is appropriate. It is not the place to *perfect* the stability and certainty of a concept or practice. The pilot tests the core concept and comes with a strategy for implementation. If appropriate, a transition plan for roll-out can be discussed.

A program is a sustained offering of a product or service that benefits the ratepayer.

Programs should deliver a product or service at scale. Since a program is a sustained and discrete offering, the program should have well-defined scope. Like pilots, programs can also have, to a lesser degree, restrictions or parameters, such as the number of subscribers, the total spend, requirements to avoid shifting costs, etc. The key feature that distinguishes a program from other activities is its ongoing nature. Staff reiterates that this guidance addresses new and emerging programs, and does not apply to well-established, existing practices.

3 Pilots

3.1 Pilot Review Considerations

When reviewing pilot proposals, Staff will, at a minimum, ask the following questions.

- Is this research valid and valuable for the ratepayer?

  - How does this new research fit into existing services and other ongoing research?
  - Is this new research, or has it been conducted already?
  - Does this pilot have the potential to result in wider adoption?
- Will this research result in the desired information?
  - Will this research provide the information needed to answer the research question?
  - Is the pilot structured such that it will further the intended policy objective?
  - At the end of this research, the pilot will: a) end, b) be redesigned as a new pilot, or c) transition into wider adoption (through a program, upgrade or other). Will this research lead to this decision point?
- Will this research be conducted in a way that limits the risk to the ratepayer? Including:
  - A scope with a clearly stated research question
  - An appropriate number of units required to do the research
  - A duration that is limited but sufficient to conduct the research and evaluation
  - A budget of appropriate size

Overall, the purpose of these questions is to reduce risks to ratepayers while allowing the utility to test a concept in a pilot framework.

3.2 Pilot Proposal Components

Staff requests that utilities submit the following items with each pilot proposal.

1. The purpose of the research (including, if applicable, which legislative or Commission order it supports, and how it supports the implementation of the directives contained therein)
2. The research question.
3. The overall pilot design strategy: What is the theory behind this strategy? The major design components should address the research question.
4. The potential benefits to the ratepayer if the pilot succeeds.
   a. Portfolio consideration: A description of how this pilot complements or adds to related utility activities and addresses a market gap/opportunity not currently addressed by current operations or ongoing research, and how overlap with existing work is minimized.
   b. In support of EO 20-04: Will there be any positive or negative impact in reducing GHG emissions as a direct result of this pilot, or if applied to wider adoption?
   c. In support of EO 20-04: Will there be any positive or negative impact on any “vulnerable populations or impacted communities” as a direct result of this pilot, or if applied to wider adoption?
5. Context: Prior research and relevant market research supporting this strategy. What are the major barriers that stand between this concept and wider adoption? What is the technical/conceptual viability of what is being tested, i.e. how market-ready is it? Has this been implemented elsewhere?
6. A research plan that includes:
   a. The learning objectives that will inform the research question(s) and how these objectives will be achieved.
   b. Participation target: Who or what will this pilot target?
   c. Potential scale: what is the ultimate potential?

   d. Number of participants or test subjects: include statistical rationale for this number.
   e. Evaluation strategy: A description of how the evaluation will be conducted. How will we know if it worked? The evaluation plan should answer whether or not the idea should be rolled out for broader adoption. Include what is necessary to measure results at the needed level of statistical certainty.
7. Schedule: A timeline that shows when each component of the plan will be implemented. What is the timeframe? The duration of the pilot must be limited, yet sufficient to answer the question. The schedule should include time for conducting the evaluation, final reporting, and any necessary activities to wind down the research.
8. Budget: What will this cost? The budget should be sufficient to answer the question, and limited in scope and costs to reduce risk to the ratepayer. Budget should include O&M expenses and revenues, broken down by FERC account, capital costs, number of FTE employees, and number of contractors.
9. Decision points: Built-in milestones or dates where the pilot is evaluated against project objectives to determine if the pilot requires a change in scope, or should end early.
10. Reporting requirements: The proposed cadence of utility reporting on progress and results. This may include GHG emissions reductions if applicable.

4 Transition

As part of Staff's role in pilot oversight, Staff will monitor new and existing pilots for the appropriateness of transitioning out of the pilot phase and into wider adoption—whether through a program offering, or other utility practice. Once evaluation results are available, Staff will make a recommendation for next steps—whether to end the pilot, reformulate into a new pilot, or transition to wider adoption.

4.1 Transition Review Considerations

When a pilot comes to an end, Staff will ask these questions to determine if the concept is ready for adoption.

1. Was the pilot run successfully? Were the research objectives accomplished and did the pilot answer the research question? If the pilot was successful, Staff can review results. If it was not, the concept may be worth revisiting in a new pilot, or it may be best to cease research on the topic.
2. Did the results of the pilot indicate that the idea is worth adopting? The evaluation results will play a key role in Staff's assessment. If there are positive results with quantifiable ratepayer benefits, this indicates that the concept is worth pursuing for the goal of broader adoption.
3. Did new, pressing questions or obstacles arise as a result of this research? If a significant barrier is identified, there may be a benefit in running another pilot or some other form of research to prepare for roll-out. If no new, serious challenges arise, it is time to plan for transition into wider implementation, whether that be as a program, or other form of implementation.

If it is determined that the pilot should transition into wider adoption, Staff may work with the utility on a transition plan to apply learnings from the pilot in a timely and effective manner.

Staff believes that applying a framework to review pilot results will help roll out beneficial ideas more quickly, so that the risks taken on by ratepayers will turn into benefits sooner, and shared with ratepayers.

5 Programs

5.1 Program Review Considerations

Staff expects a program to provide benefits to ratepayers year after year for an extended duration with relatively stable costs and benefits, understanding that there may be a predictable band of fluctuation in productivity. As a sustained offering, Staff will be reviewing program proposals for these considerations:

1. Predictable outcomes.
2. Discrete offerings.
3. A repeatable process to deliver the program offering.
4. Just and reasonable rates.
5. Measurable benefits.
6. Ongoing implementation.
7. Periodic evaluations.

Staff understands that there will be more fluctuations and learning in the early stages of a program, which makes the above considerations important in creating a stable, lasting offering.

5.2 Program Proposal Components

These are the key components to a program proposal:

1. The purpose of the program (including, if applicable, which legislative or omission order it supports, and how it supports the implementation of the directives contained therein)
2. Program goals.
3. Expected benefit to the ratepayer.
    a. Portfolio consideration: A description of how this program complements or adds to related utility activities and addresses a market gap/opportunity not currently addressed by current operations or ongoing research, and how overlap with existing work is minimized.
    b. In support of EO 20-04: Will there be any positive or negative environmental or carbon impact?
    c. In support of EO 20-04: Will there be any positive or negative impact on any “vulnerable populations or impacted communities”?
4. The overall design strategy: What is the theory behind this strategy? How is this going to work? The major design components should lead to the program’s goals.
5. Prior research and market research that supports this strategy (including learnings from past pilots if applicable).
6. Participation target: Who or what will this program target?
7. Potential scale, and other relevant market research.
8. Schedule: A timeline that shows when each component of the plan will be implemented. What is the timeframe?
9. Budget: What will this cost? Budget should include expenses and revenues, costs by FERC account, FTE of employees and of contractors, and any anticipated capital costs.
10. Reporting requirements: The proposed cadence of utility reporting on progress and results. This may include GHG emissions reductions if applicable.

11. Evaluation plan: This plan includes what will be measured, how it will be measured, and how the results will be verified. This evaluation is typically conducted by a third-party unless the utility has a persuasive reason to conduct it in-house.

6 Follow-Up

Staff understands that there may be questions on the process and guidance presented here. Staff offers to meet with interested parties to discuss this process and its potential impact on current work.