DER ENABLEMENT

APPENDIX G

PUGET SOUND ENERGY

Contents

1. Purpose

The 2021 CEIP presents an initial layout of the DER enablement activities needed to efficiently and effectively design, launch and manage a portfolio of DER pilots and programs. The following section provides an update on each work streams and the associated programs/projects.

2. Program updates

In the following sections, PSE establishes guiding principles for how we continue to expect to execute on each work stream, what major enablement activities are needed, and why, and what platforms, tools, and resources are essential to success. We also note an action plan for each of the remaining years of this CEIP and the annualized enablement costs proposed to support the DER portfolio.

2.1. Strategy & portfolio planning workstream

2.1.1. Regulatory and interested party engagement strategy

Product description

Launching the DER programs will require approvals from WUTC and alignment with interested parties. Based on PSE's preferred portfolio selection and the underlying capabilities needed to support certain types of programs. PSE will develop a portfolio-level strategy to engage key external interested parties, including regulators, prior to regulatory filings for specific programs to include different perspectives and feedback during program design.

Specific actions

PSE will be launching a residential battery energy storage system (BESS) program and a solar offering in 2024. As detailed in the product description above, launching these programs will require approvals from WUTC and alignment with interested parties. PSE has proposed the following milestones to ensure that key interested parties are engaged prior to regulatory filings:

Est. Dates	Milestone	Status
	Community Engagement	Completed
June 2023	EAG meeting	Completed
July 26th	CRAG meeting	Completed
Aug 15th	PSE distributes draft tariffs to CRAG	
Aug 15th - Sept 15th	CRAG reviews & provides comments to PSE	
Sept 15th - Sept 28th	PSE synthesizes feedback and makes any necessary updates	

Est. Dates	Milestone	Status
Oct 6th	PSE files tariff schedules with WUTC	
Nov 9th	WUTC Open Meeting	

Future work to be done

As PSE completes the above noted tariff finings it will initiate engagements with interested parties, including the EAG, CRAG and LIAC, as appropriate, to review potential Phase II product concepts, which will include a commercial battery program, as well as residential solar and or battery rent-to-own options. This coordination will help shape the development strategy for those programs to ensure PSE is incorporating insights from those parties into the final product design. This will also include discussions about minimum designations for named communities and developing a targeted approach to identify customers and communities with the deepest need.

2.1.2. Portfolio and product management strategy

The activities previously listed under this strategy are moved to the Customer workstream “Portfolio Marketing Strategy”. Specific product information can be found in Chapter 5: Specific Actions as well.

2.1.3. Innovation project and emerging technology process

Product description

As DER technology evolves rapidly, PSE will need to create a formalized process to identify, select, implement, and manage key innovation projects. The strategy must allow PSE to identify quickly, test, and demonstrate emerging technologies and collaborate with vendors to align products to better support the needs of PSE’s customers and internal operations

Specific actions

In 2021, PSE issued an RFI for DERs, which enhanced PSE’s understanding of DER options available in its service territory and informed the development of the 2022 DER RFP. PSE also developed a roadmap of DER demonstration projects through 2028 to test new technology and customer engagement strategies. Additionally, PSE has continued work on the Samish Island Community Microgrid demonstration project. The microgrid was installed in June 2023 with commissioning on-going at the time of this writing and will test the ability of the microgrid to island during grid outages and load-level a distribution circuit with a high penetration of solar. This project followed a New Technology Framework that facilitates incorporating the learnings from the development and operations of past projects and helps PSE to incorporate new technology with agility and high confidence.

Future work to be done

Through the remainder of 2023, PSE will refine the demonstration project roadmap to prioritize the highest impact projects from customer, equity, and grid benefit lenses. In 2024, PSE plans to begin

development of a grid-interactive efficient building and a community solar and battery microgrid demonstration projects, and in 2025 will begin vehicle-to-grid, smart electric panel, and consumer-scale battery demonstration projects. PSE will continue to monitor new commercially viable technology, and customer and grid needs, and will re-prioritize this project list if needed.

2.1.4. Non-wires alternative (NWA) evaluation tool and methodology

Product description

NWAs are used to replace or defer investment in traditional transmission or distribution infrastructure for electric utilities (poles, wires, and substations) or gas utilities (pipelines, compressor stations, and city gate stations) to meet the needs of the electric transmission and distribution (T&D) systems. NWAs can defer — and sometimes eliminate — the significant infrastructure investments required to improve capacity and reliability. NWA solutions can utilize a combination of DERs, demand response, energy efficiency, utility-scale solar, wind system, and BESS, along with generation dispatch via ADMS and VPP. While NWA projects are meant to defer or eliminate the need for infrastructure improvements, these solutions are made up of the same technology used for DERs meant to provide supply resources. As such, projects that are originally intended to be NWAs have the potential to have additional benefit for supply resource use cases on the electric system, which benefits the system and brings additional value to the projects installed.

Specific actions

Demonstration projects will be prioritized and evaluated using feedback from the DER Community Engagement report[1] and sites for future projects will be evaluated using the CETA Equity Plan scoring criteria used in the 2023 DSS RFP (see Appendix D: RFP quantitative and qualitative analysis)

- **Bainbridge Island**
  - PSE has completed the RFP to select an Engineering, Procurement, and Construction (EPC) battery vendor and has been working on completing the design for the full NWA solution.
  - Based on the current project timeline, the project is expected to be installed in 2027.
- **Issaquah Area Distribution Capacity**
  - Non-Wire Analysis was completed as part of the Issaquah Area Distribution Capacity Solutions Assessment. This assessment was performed by industry experts and concluded that a Non-Wire Alternative would not be cost competitive when compared with the proposed wires alternatives.
  - Although this Analysis did not result in the installation of a NWA solution, it helped to progress PSE's understanding of NWA solutions and how they can be applied to needs on the system.
- **Sumner Valley Area Distribution Capacity**

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- PSE is currently in the evaluation of feasible NWAs that will meet the needs of the Sumner Valley area. This analysis is being completed in partnership with industry experts and will help to advance PSE's knowledge of NWAs and how they can be applied to meet the needs of the system.

Future work to be done

- **Kitsap Transmission Capacity Upgrade project**
  PSE plans to issue a Non-Wires Request for Proposal (RFP) for Kitsap County in late 2023 to investigate potential non-wires solutions for Kitsap transmission needs. This is consistent with the WUTC requirement for PSE to evaluate non-wires solutions in its solutions development process. Non-wires RFP bid responses will be evaluated and integrated in developing potential transmission solutions to meet Kitsap transmission needs. Potential solutions will be compared in terms of cost, benefits, and risks to determine a final solution that could be a traditional wire, non-wires, or a hybrid solution (combination of wires and non-wires upgrades) to meet Kitsap transmission needs.
- **Future NWA projects**
  PSE will continue to utilize the tools available to evaluate Non-Wire Alternatives as part of the solution alternatives for major projects. These tools include NWA filter criteria, basic analysis, and detailed analysis. PSE will also continue to evaluate the effectiveness of RFP and other NWA methods to evaluate project solutions.

2.1.5. Geospatial load forecasting

Project description

The proliferation of DERs driven by the CETA creates the need for PSE to plan systems to accommodate the upcoming DERs and decide what type of DERs we should install to meet the CETA requirements. To accomplish this, PSE will design a spatial load forecasting tool that will predict load and power changes, where the loads will occur on the grid, how distributed generation (DG) changes the load shape, and when we must supply the load.

A geospatial load forecasting platform allows for analyzing the combined impacts of existing load, forecasted load, existing DERs, forecasted DERs, and matching these needs and impacts to highly impacted communities.

Specific actions

PSE will continue to develop the use of Geospatial Load Forecasting to benefit DER installations through the LoadSEER program and the development of the DER Optimizer tool.

Future work to be done

The joint optimization of different DER resources provides insights into how solar, storage, demand response, and energy efficiency can support each other in ways that are not obvious in energy management schemes. With proper energy management of a DERs optimization tool, PSE can evaluate how to avoid construction upgrades or replacements to substation/feeder. DER optimizer can help determine which DER mix, if any, can cost-effectively defer or avoid this input cost, given additional benefits from the supply side. PSE will continue to develop our knowledge Regarding DER optimizer as more DERs are installed on the system.

2.1.6. Battery interconnection and standards strategy

Project description

As more front of the meter (FTM) and behind the meter (BTM) batteries are being connected to the distribution system, PSE needs to determine an efficient, safe, and reliable way to interconnect small and large scale batteries to the grid. This new strategy, which was added in early 2023, outlines the activities needed to develop and enhance the interconnection process and standards.

Specific actions

The battery interconnection and standards strategy has been broken into three main categories:

The first category is strategy and alignment. SMEs are synchronizing efforts between our DER enablement strategy, other IT initiatives, such as complex billing, and regulatory impacts and policy hurdles. The goal is to ensure outside efforts are being reviewed and aligned with the battery interconnection processes.

The second category outlines the process and analysis methodology for safe and effective interconnection. PSE will develop processes and identify divergent steps for different battery types. Planning teams will also develop an analysis methodology for the current and future influx of battery interconnections. An effort is underway to review best practices for commissioning BTM inverter-based resources of other key utilities by researching current practices and standards of said utilities, and understanding future outlooks of how they are improving their interconnection commissioning processes to enable growth of their BTM DERs. PSE aims to take key findings from this research to embed in our own commissioning practices. The last activity in our process category is to update the GIS mapping and billing setup processes for battery interconnections to reduce the time and effort required.

Our final category of this strategy is standards. PSE will work to develop design and communication standards for all distribution-interconnected batteries. Additionally, the Schedule 152 Technical Specifications detailing the interconnection requirements will be updated.

Future work to be done

The strategy team is aiming for the standards and interconnection processes to be identified, outlined, and finalized by early Q4, 2023. Customer battery programs will start to enroll in early Q1 of 2024, so all interconnection and standard processes and activities will be finalized before enrollment.

2.1.7. Locational pricing and valuation tool

This project is no longer required and has been removed from the DER enablement workstreams. Leveraging outputs of our Hosting Capacity Analysis platform, quantifying analysis from the DER Resource Acquisition team and the results of the Non-Wires Alternative (NWA) Evaluation Tool & Methodology have collectively covered the requirement of a locational pricing and valuation tool.

2.1.8. Data lake and data analytics

Specific actions

The data lake and data analytics project includes implementation of a data repository capable of bringing together large, complex and isolated data sets and connecting them to analytics tools.

Actions completed or planned to be completed in 2023:

- Submitted a Request for Proposals (RFP) for a data lake and data analytics solution. PSE is currently negotiating contracts.
- Developing configuration, policy, test plan and training plan documents for solution implementation. Currently scheduled to begin installing and configuring the solution in 2023.
- Identified target data sources, interested parties and analytics use cases from electric operations groups. The use cases have been prioritized and requirements are being defined for the first 2 use cases.

Future work

In 2024 and 2025 PSE will connect target data sources to the data lake, develop processes for managing data sets and analytics tools, implement data governance policies, training, and define requirements for and complete prioritized use cases.

2.1.9. Hosting capacity analysis, map, and customer portal

Specific actions

Hosting Capacity results estimate the amount of load or generation that can be accommodated by the electric distribution system at a given time and location without requiring infrastructure upgrades.

In 2021, PSE launched a “proof of concept” Hosting Capacity Heat Map to provide visibility and transparency into the solar generation capabilities of a given area. This was a successful first step to support PSE’s DER resource planning goals. To continue this momentum, a project was kicked off in mid-2023 to expand the map’s capabilities and improve the customer interconnection portal. This project focuses on developing additional hosting capacity capabilities and use cases, such as load-serving hosting capacity for large new customer load requests like fleet EV charging.

Future work

The Hosting Capacity enhancement project consists of three deliverables:

1. **The hosting capacity analysis tool**: this deliverable includes expanding the type of hosting capacity analysis to include both energy production (addition of generation) and consumption (addition of load). The existing process for solar HCA will be updated, and a new process will be established for calculating load-serving capacity (referred to as EV charging capacity). The main hosting capacity analysis tool is Synergi, which takes in data from a variety of other sources including GIS, PI System data, SAP, etc. These data streams and processes will be updated to increase the accuracy of HCA results and streamline the refresh process.

2. **Hosting capacity map**: this deliverable focuses on expanding the usability of PSE’s heat map application for both internal and external interested parties. The web portal will be expanded to include maps for both PV and EV hosting capacity use cases. More relevant data points will be available to end users along with an enhanced user guide for interpreting the results of the map.

3. **Enhanced interconnection portal**: this deliverable focuses on streamlining the interconnection process by prescreening and prioritizing applications. The interconnection portal enhancement effort aims to build out additional functionality in PowerClerk to automatically screen incoming customer applications.

The desired outcome of this project is to produce a self-service portal for distribution system capacity information, primarily for solar (PV) and electric vehicle (EV) use cases. The hosting capacity will in turn be integrated with the customer interconnection portal and business processes at PSE to increase efficiency for project screening and prioritization. Estimated completion for these enhancements is by the end of 2024.

2.2. Operations workstream

2.2.1. Asset management strategy and planning

Project description

PSE's Asset Management Strategy and Planning aims to augment existing asset management processes and systems to support the proper design, acquisition, construction, operation, maintenance, and disposal of these new DER assets.

Specific actions

By establishing a phased gate approach to building a robust asset management strategy, PSE defined roles and responsibilities and outlined a prioritization of DER assets to build upon as PSE scales up our DER portfolio. The first DER asset PSE prioritized and established roles and responsibilities was community solar assets. The asset strategy, which was outlined in Q2 and Q3 of 2023, defined internal processes (maintenance plans, performance testing, planned and unplanned maintenance) while also outlining the scope PSE will contract to Engineering, Procure and Construct ("EPC") vendors. PSE's asset strategy team defined a maintenance plan and standard document which will be utilized for all internal and external (EPC) community solar assets moving forward.

Future work to be done

Once PSE has finalized the community solar strategy, the team will work to outline roles and responsibilities of our larger utility scale solar projects (connected to ADMS/SCADA) in Q4 of 2023. The last phase of the strategy will be for the PSE asset management strategy team to outline roles and responsibilities for front of the meter (FTM) battery projects in Q1 of 2024.

A complete DER asset management strategy will speak to the following points for each small scale solar, utility scale solar and FTM batteries:

- Identify process and skill gaps or people skills needed to support field and back-office management functions
- Developed asset data strategy and governance process enhancements for DER products
- Develop engineering standards, operational procedures, job-aids, and quality control for maintenance (planned and unplanned) and retirement processes
- Integrate and test monitoring alarms and asset performance data for real0time equipment tracking with third-party and PSE-owned assets.

2.2.2. Dispatch operations strategy and planning

Project description

PSE expects to enhance and scale our capabilities in dispatch operations so we can use DERs for a variety of grid services. This effort will include defining clear processes to determine where, when, and how to dispatch available DERs reliably.

Specific actions

PSE implemented a Virtual Power Plant (VPP) to manage controllable thermostats and water heaters for demand reduction for targeted demand side management (TDSM) resources in 2022. The targeted customers were in a specific geographic area where a demand reduction program was identified as a non-wired alternative (NWA) to defer the need for a new substation. The 2022 dispatch strategy tested various preheat parameters and demand reduction periods to determine the optimal dispatch parameters for a reduction event.

System Operations used individual event results from the different dispatch parameters to determine a 1-hour preheat with a 3-hour demand response window is the most effective for the TDSM dispatch. Moving forward, we will monitor weather conditions and temperature and event results to determine if changes to the optimal dispatch parameters are warranted. In 2023, PSE will:

- Use the VPP to dispatch a system wide direct control thermostat demand response program through various thermostat manufacturers for summer and winter system peak reduction.
- Use the VPP to dispatch a system wide behavioral demand response program through Oracle (O-Power) for summer and winter system peak reduction.
- Use the VPP to dispatch a system wide behavioral demand response program through Autogrid for summer and winter system peak reduction.
- Use the VPP to dispatch a system wide Commercial and Industrial customer demand response program through EnelX for summer and winter system peak reduction.
- Use the VPP to dispatch a system wide Commercial and Industrial customer demand response program through Autogrid for summer and winter system peak reduction.
- Use the VPP to dispatch residential water heater demand response program through E350 for summer and winter system peak reduction.

Future work to be done

In 2024 and 2025, PSE will build off the dispatch strategies established in the first biennium with the following projects:

- As discussed in Chapter 5, Specific Actions, PSE will launch as residential BESS program in 2024 using the VPP to dispatch events

- Tenino & Bucoda microgrids will be deployed in 2025 with resiliency as their primary use case. They will have an ADMS connection for visibility, alarming, and emergency shutdown, and will be dispatched by the local controller.
- PSE will deploy the batteries acquired through the 2023 DSS RFP as described in Chapter 5 in 2025, and will follow the same dispatch and communication structure as the Poulsbo battery.

2.2.3. DER IT/OT strategy and planning

Project description

Monitoring and controlling DERs will rely on a complex and highly interconnected network of IT/OT systems, including those owned by third parties. Using lessons from previous DER projects, PSE will create new standards, processes, and roles. We will also map critical systems for the reliable operation of a more extensive suite of DER products in the field.

Specific actions

PSE gathered IT/OT SMEs to work through a list of requirements utilized in an early iteration of DER project. With this baseline, PSE worked through establishing IT/OT design principles, integrations, security, and various standards to ensure the baseline for all DER types (solar, battery and demand response) was outlined.

As PSE SMEs' worked to identify gap the IT/OT methodology, SMEs developed a DER Control Strategy (See Dispatch and Operation Section above for Control Strategy Image) which outlines the monitoring and controlling of our various DER systems (SCADA, VPP or both).

PSE finalized the IT/OT requirement list, confirmed SMEs for each requirement, and obtained confirmation that the DER Control Strategy outlined the current assumptions of PSE's DER control systems.

Future work to be done

Having achieved a finalized list of IT/OT requirements, most of the initial strategy and planning has been completed. Moving forward, PSE's project acquisition and procurement teams will own this requirement list and work with the identified SMEs to ensure it remains current with DER best practices.

As PSE matures and looks to grow into a more robust DERMS system, this list will need to be reevaluated and the controlling strategy will be updated.

2.2.4. Distributed Energy Resource management system (DERMS)

Project description

A DERMS is a platform by which DERs can be effectively monitored, managed, capabilities enabled, and optimized. When DERMS is integrated with ADMS, it allows full visibility to the system operator and allows safe and optimal dispatch to be coordinated with other operations activities.

Specific actions

Per the Grid Modernization Strategy & Enablement team's New Technology Framework, the initial work to understanding DERMS technology started in 2023 with the following objectives:

Perform discovery type work to understand utility trends around DERMS business use-cases, DERMS offerings, and internal business needs.

Evaluate system integrations needed for DERMS.

Future work to be done

Following the discovery work, the next step in the process is to narrow down the options and opportunities into an actionable plan that considers different technologies and solutions available. This work is anticipated to occur in early 2024 and prepares the company to launch an RFP for a DERMS solution in 2025.

- Define business use-cases needed for operationalization
- Define technical requirements
- Leverage external expertise to facilitate procurement of a DERMS platform

2.2.5. ADMS advanced apps

Product description

ADMS advanced applications features automation capabilities for distribution optimization. The two applications being piloted are volt-var optimization (VVO) and fault location, isolation, and supply restoration (FLISR). These two applications are being piloted to understand and operationalize their capabilities to enhance grid operations. The advanced applications pilots lay out the groundwork to integrate and operationalize DERMS by creating a network model that is scalable.

Specific actions

In 2023, multiple actions were taken to prepare for the design phase of advanced applications. This required intensive coordination amongst various business units to define business requirements and contract external technical expertise to develop a feasible design as highlighted below:

- Began design phase for advanced applications and established contracts to leverage external technical expertise to accelerate technical requirement development, testing strategy, and negotiations with product vendor.
- Procured and lab-tested new field devices needed for advanced applications.
- Built-out communication infrastructure to support software and hardware integrations.

Future work to be done

In early 2024, design work will continue. In Q2 of 2024, design shall transition to execution with initial documentation of learnings and familiarizing business units with the new technology. The following activities highlights the execution tasks:

- Transition from design to execution phase to implement advanced applications.
- Build out distribution infrastructure.
- Integrate distribution infrastructure to advanced applications.
- Document processes (i.e., modifying existing processes and/or to-be processes).
- Document learnings from pilots to determine how best to operationalize and scale systems post-pilot.
- Determine next potential substations for deployment.

2.2.6. Virtual power plant (VPP)

A virtual power plant (VPP) is a cloud-based scheduler and controller that aggregates distributed energy resources for system peak capacity management. This technology capability is focused on behind the meter resources. PSE began working on a VPP in 2021 to provide a centralized application for enrolling, forecasting, dispatching, and assessing the performance (measurement & verification) of the individual and combined programs across PSE's portfolio. Included in the portfolio are programs that support Residential Demand Response (thermostats, batteries, EV/EVSE, water heaters), Flex Events, Commercial & Industrial Response, Residential and Commercial Batteries and more.

Program timeline

In 2021 PSE selected AutoGrid as the VPP vendor. The following year, PSE and AutoGrid worked together to design and implement a functional VPP platform. The platform allowed the manual enrollment, monitoring, aggregation, forecasting, dispatch, reporting, and management of DER's. Utilizing the VPP, the team successfully executed a series of Demand Response events supporting a Pilot Program for Bainbridge Island and some selected areas in Duvall, WA.

This year the VPP platform is being expanded and scaled to support the System Peak Demand Response use case in alignment with PSE's IRP. Customers will have the option to enroll in a variety of programs from anywhere in the PSE service area. The VPP will be enhanced to provide automated enrollment, validation, aggregation monitoring, reporting, and management of customers for all participating programs.

Future work

The PSE vision of a fully integrated VPP will require additional platform development. Future efforts include the development and execution of programs that support additional capabilities beyond Demand Response, integration with the Trade Floor and supporting Transportation Electrification efforts. VPP enhancements will also extend automation capabilities to include the forecasting, scheduling, and dispatch of DER's. Given that VPP's are a trending technology in the industry, PSE is working to establish the primary driving use case of System Peak Capacity Management. In addition, PSE is tracking industry developments of VPPs to maintain awareness of potential future opportunities.

Benefits

Many utilities have gone through growing pains because they built disjointed DER and DR programs that were managed by a variety of internal teams, vendors, and applications. PSE is building a common platform that will manage all the programs under one umbrella as one "power plant." This approach results in significant operational efficiencies, maximization of participation and visibility of DER/DR programs. PSE is expecting up to 100 MW to be managed by this platform over the next few years; equivalent to large scale traditional thermal power plant or wind farm providing a significant contribution to PSE's CEIP. Per Condition 30 in Order 08, the costs of this project was removed from the CETA portfolio. Therefore, no further updates will be provided.

2.3. Resource acquisition workstream

Since our original filing in 2021, the DER Enablement SME's have decided to break our resource acquisition workstream into two key strategies, project and site selection and business partners and vendor management. This further helps define our resource acquisition development and our ongoing relationship with DER asset vendors and partners.

2.3.1. Project and site selection

Project description

To achieve the DER targets identified in the CEIP, PSE is looking to broaden its tactic for resource procurement outside the traditional request for proposals (RFP) approach it has historically done. PSE is currently standing up a new procurement approach of directly soliciting for sites open to development by property owners. (PSE's Host an Energy Project website.) This new site solicitation approach will not be a replacement to our traditional RFP approach, but just another way to help identify and develop DERs. However, as PSE stands up this new site solicitation process and collects more property to lease for DER development, we plan to lean on it more for procuring the bulk of our MW targets.

Specific actions

The new site solicitation process will be a continuously rolling submission process. PSE collects information and evaluates sites, both rooftop and ground from an online "Host an Energy Project"

portal, and determines feasibility including potential for energy production, cost effectiveness, and equity considerations. By using PSE's resources and broad outreach abilities, we can mitigate one of the harder issues of project development, which is site identification.

Future work to be done

As the internal processes for the site solicitation process are solidified and additional customer products are developed, PSE will more actively promote the portal and spur site owner activity to collect more sites for DER development.

2.3.2. Business partners and vendor management

Project description

To develop and construct distributed generation projects more quickly and efficiently, PSE is working to hone and better manage our business partner and vendor relationships. PSE has developed an ongoing process to recruit and maintain a cadre of qualified contractors and vendors with a commitment to workforce development in the local community, and that are ready to bid on jobs as they become available.

Specific actions

PSE has implemented three touch points for third party management including direct resource procurement, ancillary service procurement, and the operational management that occurs post procurement. Direct resource procurement relates to PSE's solicitations and products, to procure and promote additional renewable energy onto the grid, such as the 2023 Distributed Solar and Storage RFP. Ancillary service procurement is the acquisition of tools needed to make renewable energy projects properly operate with our grid, such as our implementation of a virtual power plant. Operational management represents the management of vendors and contractors to help PSE maintain commercially operable projects.

For direct resource procurement, PSE is focusing on contracting with developers that are small businesses and minority, women, and veteran owned business enterprises (SMWVBE), or subcontracting with them; ensuring they comply with labor standards, provide project benefits to named communities, as well as other equity centric initiatives. For ancillary services, PSE is partnering with more SMWVBE vendors and target local businesses. For operational management, PSE is working to better enforce the equity commitments and goals vendors initially propose in their bids through tougher contract language and tracking metrics.

Future work to be done

PSE is working to continuously improve its vendor management strategy as it expands into new products and services to meet its CEIP goals.

2.4. Customer care workstream

To deliver affordable clean energy programs that are accessible to everyone in PSE's diverse communities, we continue to apply the following principles to guide the DER customer experience.

- Program enrollment is simple and easily accessible. Create one streamlined enrollment process that is simple to use and provides a positive customer experience.
- Be a clean energy partner of choice for PSE customers. Provide education and support for customers along their journey, including available energy solutions, program participation requirements, costs, and benefits.
- Easily pair a customer with the right program design to meet their needs. Ensure DER programs are accessible for all customers and help them select the appropriate program.

2.4.1. Market engagement and benchmarking

Project description

PSE continues to assess DER technology with an aim to provide value to Customers. PSE is knowledgeable in the latest market trends, best practices, emerging needs, and technologies to incorporate into our product portfolio and innovation activities. Applying best practices and incorporating DER enabling technologies is vital to the value and continuous improvement of the DER portfolio. PSE will scale DER programs most effectively by using commercially viable technology and successful utility proven solutions. PSE will engage with utility peers, perform benchmarking analysis, and understand the broader DER/aggregator marketplace to align products to PSE and customer needs.

Specific action

Since the inaugural CEIP, PSE has pursued secondary research and benchmarking to inform DER product development. The residential and non-residential market segmentation has been evaluated from a DER perspective. PSE has connected with federal, state, local, and utilities to assess programs and enablement. PSE continues to participate in key industry organizations and meet with vendors and emerging technology providers. Demonstration projects continue to inform standards, process, and technology enablement. Benchmarking has also been obtained through the DER, DSS, and Community Solar RFPs.

Per condition 27 of Order 08, PSE will develop and implement a DER Public Engagement Pilot to gain experience with and understanding of engaging Named Community members at the "Empowerment" level on the International Association for Public Participation's Public Spectrum. The Pilot will inform future DER development offerings specifically for Named Communities.

Future work to be done

In the next biennium, PSE will continue to assess and adjust plans according to the evolving DER market. PSE will continue to build on specific actions and include customer, environmental, regulatory, technology, commercial, and interested party engagement and benchmarking.

2.4.2. Portfolio customer care strategy

Project description

PSE will establish a comprehensive strategy across the DER product line that outlines an approach to manage customer inquiries, educate customers, drive program enrollment, and resolve customer issues or concerns. This customer care strategy will be critical to maintaining positive experiences as PSE begins to offer many new customer options.

Specific actions

Although the specific features of the DERs will vary, PSE will offer a consistent, multi-channel customer experience across the DER portfolio. PSE will offer digital self-service on the pse.com website for product/service information, enrollment, management, and unenrollment. Customers can also call PSE customer care to take the same actions with a live agent's help. Similarly, PSE will offer customer support for DER products or services through the pse.com website, such as FAQs, and live agent assistance when customers call PSE customer care.

Due to this work needing input from the Portfolio Marketing Strategy (below) and Digital Experience (both outlined below below), this work will start in mid-2024 and continue through the end of 2024 and 2025.

Future work to be done

Due to this work needing input from the Portfolio Marketing Strategy and Digital Experience, this work will start in mid-2024 and continue through the end of 2024 and 2025.

2.4.3. Portfolio marketing strategy

Project description

Effective customer outreach will be critical for PSE to achieve the enrollment volume needed to meet our CEIP DER goals. Since PSE will offer more DER products, we must be cautious not to overload customers with too many marketing communications. A portfolio marketing strategy will reveal opportunities for synergies and cost savings for our marketing efforts.

Specific actions

PSE has identified that to design a holistic portfolio and product management strategy, SME's will need to review all PSE products, program, and service offerings, not just DERs. Product and program owners collaborated to design a list of over 100 PSE products and services with the end goal of building a holistic portfolio marketing strategy. PSE will partner with a consultant to help with two phases of work to complete a prioritization effort for our strategy.

PSE will work to enable the mechanics to prioritize our customer programs, products, and services. The team will assess customer personas, segmentations, regulatory requirements, CETA, and equity goals. The team will identify opportunities where cross-promotion and co-enrollment for products and programs are and are not desirable based on data, benefits (both customer and PSE), co-enrollment capability, and /or regulatory constraints.

Further, PSE will define customer acquisition and conversation data strategy, consider product positioning across PSE portfolio to support and inform coordinated planning and execution. Finally, the strategy will determine 'next best product/program' strategy for subsets of programs.

The second phase of the strategy will focus on outlining the governance structure to manage ongoing prioritization efforts. Based on the prioritization mechanics listed above, PSE will outline a governance structure and provide best practices to deploy and ensure synergies between teams and roles.

Future work to be done

The work teams, alongside a consultant, will begin this effort in 2023 and will be completed in 2024. Governance and ongoing prioritization efforts will continue as more products and services are added to our portfolio.

2.4.4. Digital experience (formerly known as DER customer care & experience strategy)

Product description

Although the specific features of the DERs will vary, PSE will offer a consistent, multi-channel customer experience across the DER portfolio. PSE will offer digital self-service on the pse.com website for product/service information, enrollment, management, and unenrollment. Customers can also call PSE customer care to take the same actions with a live agent's help. Similarly, PSE will offer customer support for DER products or services through the pse.com website, such as FAQs, and live agent assistance when customers call PSE customer care.

Specific actions

By the end of 2023, the PSE Digital Experience program will enable a multi-channel customer experience by building: (1) A product/service landing page on the pse.com website that allows customers to search and/or browse products and services and (2) consistent detail pages on the

pse.com website for access to product/service education information, eligibility criteria, enrollment, and management, and (3) enhancements on the My Account and My Bill pages on the pse.com website that present products/services, including DERs, to customers.

Future work to be done

In 2024, the PSE Digital Experience project will expand the work completed in 2023 by:

- Adding the ability to "personalize" DER product/service recommendations to customers on the pse.com website based on account data
- Enhancing the business/commercial customer experience to display DER product/service recommendations on the pse.com website
- Expanding the customer preference center to include additional communication consent categories
- Making it easier for returning customers to manage their communications and product/service enrollments by adding customer communication consent and program enrollment to the start service transaction flow
- Implementing role-based access to give customers more flexibility to manage their products/services through their online account or when contacting PSE customer care

2.4.5. Customer relationship management (CRM) platform

Project description

As PSE's portfolio grows in the number of product options and total customer participation, a CRM platform will provide critical support to generate leads and manage program enrollment and customer support. PSE Customer Service Representatives and Energy Advisors will provide meaningful program information efficiently and help the customer understand the status of their enrollment application on our CRM platform. The PSE CRM system will also easily provide necessary technical details to quickly register the customer's DER device or complete transactions when PSE provides the DER solution on our CRM platform. We will enhance our current CRM capabilities to address multiple program engagement workflows, such as capturing device information and allowing third parties to send and receive appropriate customer information for program operations. We will also design, implement, and test interfaces that send participant information to relevant IT/OT, billing, and reporting systems.

Specific actions

In 2023, the CRM project will complete platform and vendor selection, the system requirements and solution design. These efforts will ensure that the system delivers all the business requirements needed to support our customers. In 2024 the project will complete the system build and launch. The 2024 scope will include proper training of our staff to ensure that customers receive the best possible service.

As part of the CRM project, PSE will implement an industry leading marketing platform to enable more data-driven marketing tactics to support the DER program outreach, resulting in increased program participation per dollar spent.

Future work to be done

In 2023, the project will complete the product selection, select an implementation partner, and define the business requirements. In 2024, the system build and launch will complete providing the ability to better communicate with our customers.

2.4.6. Customer notification platform

Product description

PSE has decided to provide customer notification through work being performed and scoped within other active projects, including Customer Relationship Management (CRM) and Virtual Power Plant (VPP). As a result, PSE has no expected need for any outcome/result with this the Customer Notification Platform.

2.4.7. Complex billing functionality

Project description

Many DER products will require implementing billing system changes, including some which will require the support of new tariffs with differing levels of transaction complexity. With planned strategic IT billing system upgrades, PSE will save substantial costs to implement the new DER products and programs.

Specific actions

PSE will use a coordinated approach to IT billing system upgrades to enable multiple DER programs with common billing functionality such as fixed monthly payments, event-based compensation, time-of-use periods, and interconnection billing/payment to benefit. By bringing multiple programs online simultaneously, PSE can execute this plan quickly and save money. PSE must make substantial changes to the current billing system to allow for the different payment structures required for our DER programs. PSE will also enhance features for online billing and paper bill design. This project will incrementally deliver new functionality and services to support DER programs, as well as new products and services supporting CETA goals.

Future work to be done

In 2023, the project will deliver several billing products including: Fleet Charging Incentives, Time-of-Use Incentives, Bill Discount Rates, and Demand Response Incentives. In 2024, the project will deliver Peak-Time-Rebate Billing, Net Metering 2.0 Billing, and Community Solar Billing.

All new billing and incentive capabilities will enable benefits for names communities, including recently implemented tiered reductions through Bill Discount Rate. Community Solar will provide new, non-traditional solar opportunities for named communities.

2.4.8. Marketing platform

Project description

To better align resource allocations and reflect system integration requirements, the Marketing Platform project has been merged with the CRM project. This will allow for more efficient delivery of the project and a more integrated experience for PSE customers.

2.4.9. Device marketplace

Project description

PSE has removed this project as the scope of work is already captured in either the existing energy efficiency marketplace, DER programs, or continued enrollment in our Virtual Power Plant vendor or OEMs. No specific request or requirement has been outlined for an additional device marketplace.

3. Equity

3.1. Investment Decision Optimization Tool

Investment Decision Optimization Tool ("iDOT") is System Planning's terminology for any optimization software. iDOT is a project portfolio optimization and multi-variable attribute value-based decision analysis tool. iDOT compares the relative costs and benefits of various project solutions and makes it easier to conduct side-by-side comparison of projects and programs of diverse types that will be in service for 10 to 70 years. The tool optimizes benefits and costs for a given financial portfolio and selects the best set of feasible projects against a set of constraints and dependencies.

In April 2023 PSE updated its Investment Decision Optimization Tool (iDOT) with new benefits and costs related to equity in response to General Rate Case (GRC) Settlement paragraph 26 as follows:

- PSE must, at minimum, collaborate with its Equity Advisory Group, Integrated Resource Plan ("IRP") Advisory Group, and its customers, particularly in Named Communities. Engagement with these groups will occur at least at the "Collaboration" level on the International Association for Public Participation Spectrum.
- New benefits and costs in the iDOT should include, but are not limited to, societal impacts, non-energy benefits and burdens, and the Social Cost of Greenhouse Gases, as well as any other benefits and costs deemed appropriate after engagement with PSE's advisory groups.
- PSE will establish a process for including new iDOT benefits and costs within the Solutions Assessment of projects.

- Once PSE has completed its pilot distributional equity analysis, participated in the Commission Staff-led process, and has received approval from the Commission for its methods (and updated its analysis as necessary to reflect the approved methods), PSE will incorporate such analyses as a decision making tool alongside the Benefit/Cost Analysis ("BCA"), which is currently performed in the Optimization step and the Alternatives and Solutions Analysis step.

These requirements culminated in PSE's first effort of adding an additional equity benefit category for ability to consider distributional effects in the optimization step.

All projects optimized in iDOT are evaluated for how customer equity is addressed in each alternative. Equity considerations include evaluation of the four core tenets of energy justice: Distributional Justice, Procedural Justice, Recognition Justice, and Restorative Justice. To align with broader company objectives and programmatic analysis, PSE leverages Customer Benefit Indicators (CBI) and information established as part of the 2023 Clean Energy Implementation Plan (CEIP) to identify an equity framework to evaluate system projects. The CBI approach was developed through an iterative process coordinated with the Equity Advisory Group. These CBI span the core tenets of energy justice and provide a framework to evaluate the comparative equity benefit of each solution alternative considered. PSE will continue to adjust and refine equity consideration in specific projects when necessary as the process continues to mature.

3.2. Digital experience

Digital Experience will deliver enhancements to PSE.com and the myPSE app that support presentation, enrollment, and management of clean energy, demand response, and assistance programs/products/services to meet PSE's clean energy and equity goals

3.3. Customer relationship management platform

The project will serve PSE equity goals by improving identification and segmentation of names communities and enhancing marketing campaigns and new opportunities for those communities. Overall, the CRM project will provide more opportunities and a better experience for names communities specific to DERs.