

Thought Leaders Speak Out 2024

ENGAGING CUSTOMERS WITH TECHNOLOGY

Key Takeaways: Customer-Driven Approach to Scaling Virtual Power Plants

A Fireside Chat with Puget Sound Energy and Uplight
(March 2024)

The Institute for Electric Innovation's *Thought Leaders Speak Out 2024: Engaging Customers with Technology* series brings together electric company executives with customer responsibilities to share lessons learned and the results of successful customer engagement strategies.

This dialogue focused on how Puget Sound Energy (PSE) is partnering with Uplight to achieve a 100 MW virtual power plant (VPP) by 2025 to support a clean, more resilient, and cost-effective grid and featured a discussion between Aaron August of PSE and Gisela Glandt of Uplight. Adam Cooper of IEI provided welcome remarks, and Mary Kipp of PSE moderated the discussion. Key takeaways are summarized and highlighted below.

[Click Here for the Agenda and Speaker Bios](#)

[Watch Puget Sound Energy's Opening Remarks Here](#)

Achieving ambitious clean energy goals through customer partnerships.

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PSE explains that leveraging distributed energy resources (DERs) through a VPP will help them meet the goals of the Clean Energy Transformation Act (CETA) in Washington state, which requires electric companies to achieve greenhouse gas emission neutrality by 2030 and 100% carbon-free energy supply by 2045. PSE will need to add roughly 6,700 MW of renewable energy capacity by 2030, which is more than double its current generating capacity, and 15,000 MW of renewable energy by 2045.

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PSE aims to scale its VPP capacity to 100 MW by 2025. Since the VPP program launched in the fall of 2023, PSE quickly increased customer participation, and now the VPP capacity stands at 32MW, one-third of the way to meet the goal. Roughly 80% of the capacity currently comes from smart thermostats, heat pump water heaters, and behavioral-based demand response programs. PSE recently launched EV managed charging initiatives and demand response programs for C&I customers to further scale VPP capacity.

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PSE emphasizes the importance of a customer-centric mindset to leverage customers as a resource. It is essential to understand each customer's unique needs and offer personalized solutions. Customer experience is the last competitive differentiator and foundational pillar for earning customer acceptance and trust.

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Uplight anticipates accelerated growth of DER adoption, which can create enormous constraints on the grid, but also opportunities for electric companies to partner with customers and leverage DERs to manage system peaks and intermittent renewable energy coming online cost-effectively.

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PSE and Uplight explain the importance of building trust and confidence for VPPs among system operators. System operators need predictability and consistency. Data helps refine the VPP model and makes VPP resources more reliable and accurate over time.

Customer-centric mindset to scale VPP programs.

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PSE describes four pillars to drive customer participation in demand response programs – the programs have to be obvious, easy, relevant, and satisfying to customers. This allowed PSE to engage approximately 300,000 customers, which is about 1/3 of its customers, within just a few months of the program launch.

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Keeping customers engaged in the demand response and VPP programs is a crucial part of program success. Uplight explains the key elements of effective customer engagement are to ensure customers maintain a sense of control and comfort throughout program participation. Customer data insights help electric companies understand customers' needs and keep them engaged through tailored messages delivered via channels of customer preference.

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PSE describes its role as the conductor of energy orchestration. Customers want a simplified and streamlined experience. PSE works behind the scenes to orchestrate and optimize multiple DER assets while offering customers various incentive schemes to scale customer participation and create value for the customers and the grid.

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PSE explains the importance of equity in scaling VPP programs. Under CETA and the Clean Energy Implementation Plan, PSE is committed to dedicating a minimum of 30% of the energy benefits from DERs, demand response, and energy efficiency programs to highly impacted and vulnerable populations. PSE is creating accessible programs by lowering the barriers to entry and working with community organizations to meet customers where they are.

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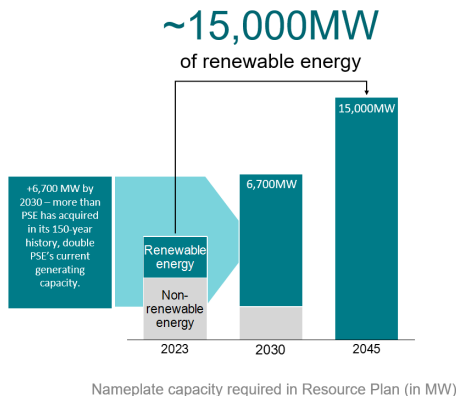
Uplight explains VPP programs can create a positive cycle to keep investment flowing into communities. Roughly 60 to 70% of VPP program costs go toward incentive payments for participating residential and C&I customers.

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Uplight elaborates on its Distributed Energy Resource Management System (DERMS) platform Flex, which allows electric companies to aggregate and orchestrate multiple DERs to address customer and grid needs.

Figure 1. PSE’s Clean Energy Implementation Goals

We need to acquire clean energy at an unprecedented pace and scale



For scale – that is equivalent to

- 700K residential solar panel systems
- + 50K residential battery storage systems
- + 8 peaking plants
- + 1,250 wind turbines
- + 45 solar plants
- + 15 hybrid generation & storage plants
- + 10 battery storage plants
- + 1,250 MW savings from conservation, demand response

Source: 2023 Electric Progress Report; Form 10-Q, period ending September 30, 2022; equivalent measures are illustrative and not indicative of what may be included in the resource roadmap.

