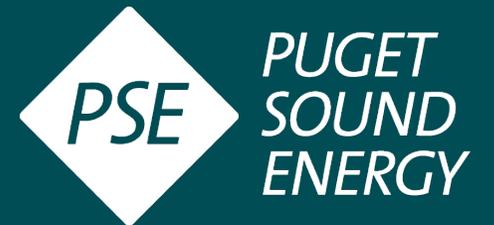


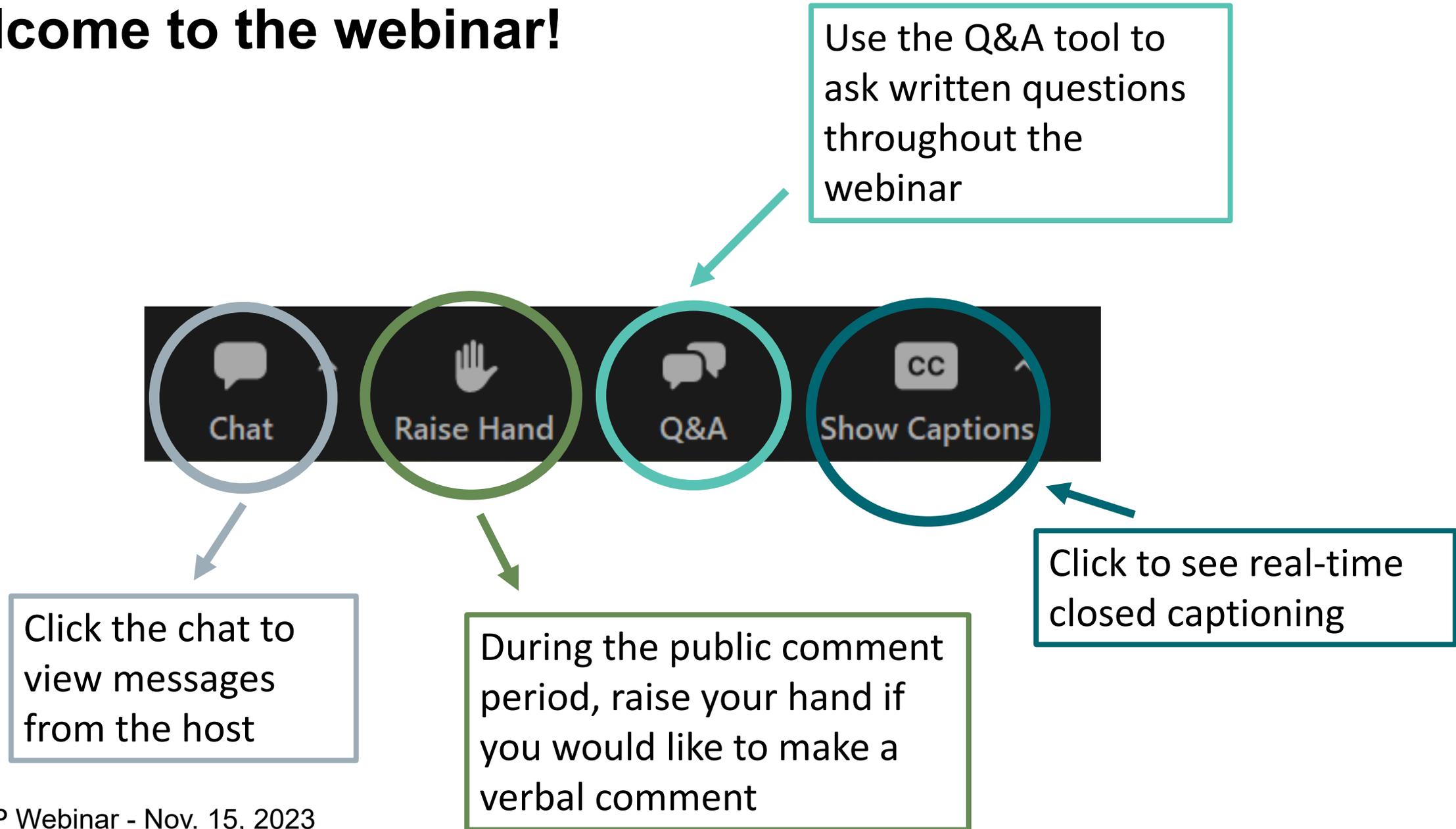
Demand-side Resources

Public Webinar

November 15, 2023



Welcome to the webinar!



Facilitator requests

- Engage constructively and courteously towards all participants
- Respect the role of the facilitator to guide the group process
- Avoid use of acronyms and explain technical questions
- Use the Feedback Form for additional input to PSE
- Aim to focus on the webinar topic
- Public comments will occur after PSE's presentations

Safety moment

Get your vehicle ready for winter!

- Check the tread on your tires
- Service your radiator and maintain antifreeze level
- Add an emergency kit to your vehicle with a phone charger, blanket, jumper cables, flashlight, and first aid kit

Today's speakers

Sophie Glass

Facilitator, Triangle Associates

Mark Lenssen

Manager, Strategy, Planning
& Evaluation, PSE

Patrick Weaver

Manager, Residential Energy
Management and Rebates, PSE

Tom Smith

Product Development Manager, PSE

Heather Mulligan

Manager, Customer Clean Energy
Solutions, PSE

Leslie Wright

Manager, Business Energy
Management, PSE

Today's objectives

- Define demand-side resources
- Discuss customer energy savings and importance in resource planning
- Learn about customer programs including energy efficiency, demand response, and customer generation options
- Gather ideas about energy efficiency, demand response, and customer generation programs for PSE to study

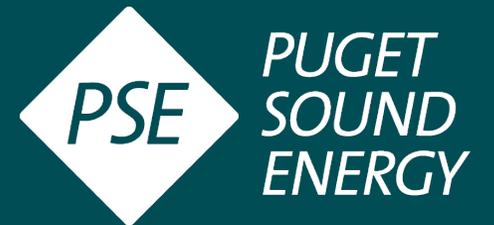
Agenda

Time	Agenda Item	Presenter / Facilitator
3:00 p.m. – 3:05 p.m.	Introduction and agenda review	Sophie Glass, Triangle Associates
3:05 p.m. – 3:20 p.m.	Customer energy management overview	Mark Lenssen, PSE
3:20 p.m. – 3:40 p.m.	Energy efficiency	Leslie Wright, PSE Patrick Weaver, PSE
3:40 p.m. – 4:00 p.m.	Demand response	Tom Smith, PSE
4:00 p.m. – 4:20 p.m.	Customer generation	Heather Mulligan, PSE
4:20 p.m. – 4:30 p.m.	Public comment opportunity	Sophie Glass, Triangle Associates
4:30 p.m.	Adjourn	All

Customer Energy Management

Mark Lenssen, PSE

November 15, 2023



What are demand-side resources?

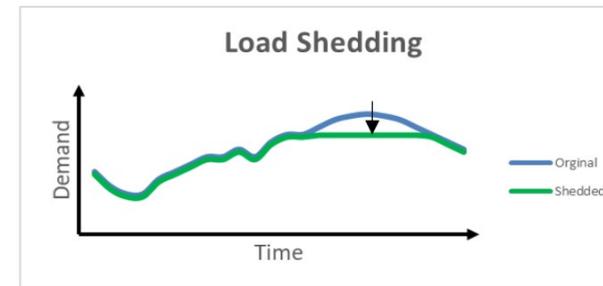
Energy Efficiency & Conservation



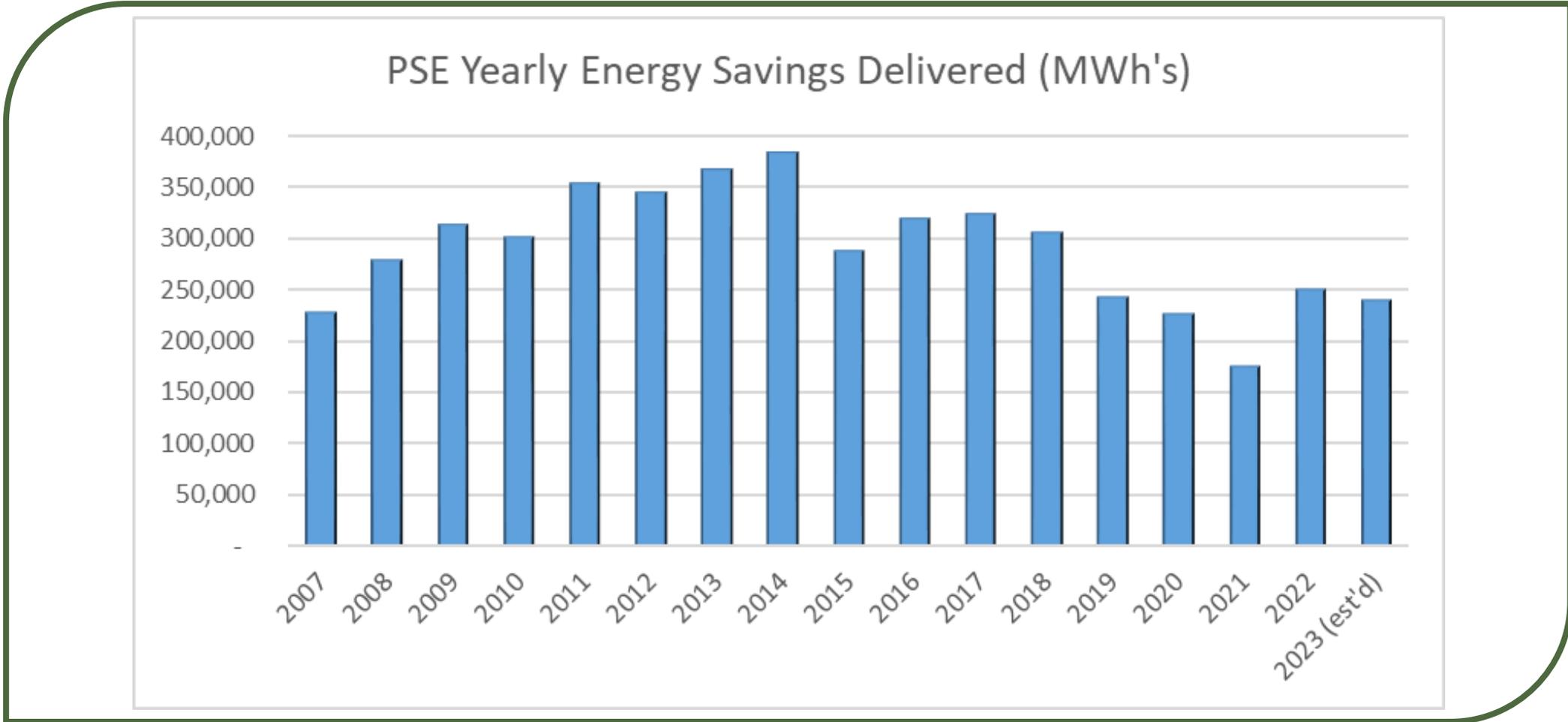
Distributed Generation



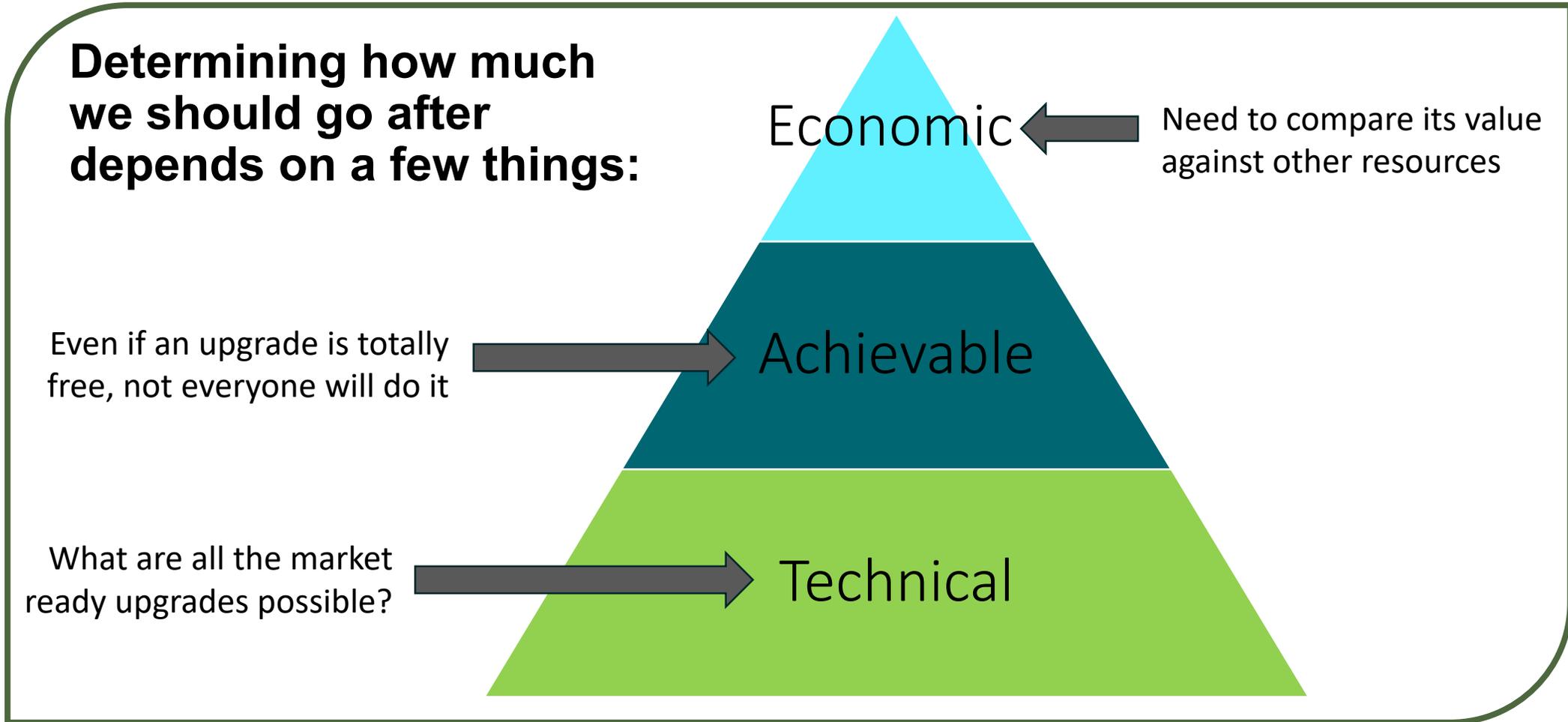
Demand Response



PSE energy savings delivered



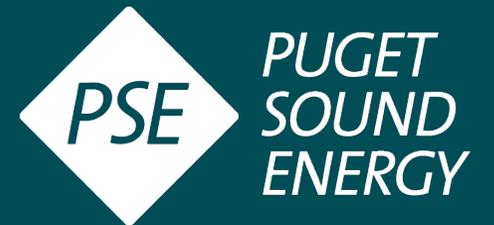
How we determine energy resources targets (Potential)



Energy efficiency

Leslie Wright & Patrick Weaver, PSE

November 15, 2023



Energy Efficiency

We support customers' energy-saving choices through education and incentives on efficiency products across nearly 3 dozen services.

We adapt programs based on customer input, equipment updates, and industry changes.

Adjustments beyond 2026 will continue a focus on supporting customers doing more with less energy by streamlining customer experiences across efficiency, electrification and all other PSE services.



Business Energy Management

- ◆ The Business Energy Management (BEM) team designs and implements energy efficiency programs, custom grants and tools for business customers — including small to medium business, commercial and industrial.

Business, Industrial, and Commercial Programming

Commercial/Industrial Retrofit

- Custom Grants
 - Building Control Systems
 - Building Commissioning
- Business Lighting
- Industrial Energy Management
 - Industrial System Optimization
 - Industrial Strategic Energy Management
 - Comprehensive Small Industrial

Commercial Strategic Energy Management

- Pay for Performance

Tools and Resources

- pse.com/mybusiness
- Business Energy Advisor
- Benchmarking Support (EnergyCAP)

Commercial/Industrial New Construction

- EUI Performance Method
- Whole Building Energy Model Approach
- Component Approach
- Post Occupancy Commissioning

Large Power User Self-Directed

Commercial Rebates

- Small Business Direct Install
- Commercial Kitchen
- Lodging
- Commercial HVAC
- Commercial Midstream HVAC and Water Heat
- Lighting to Go

Residential Energy Efficiency



- ◆ PSE designs and implements experiences that support energy-saving behaviors and adoption of more efficient products for residential customers.

Current Residential Efficiency Programs

Single Family New Construction

- Whole-house savings incentives
- Manufactured home incentives

Multifamily New Construction

- Whole-building design
- Higher incentives for qualifying buildings

Multifamily Existing Homes

- Comprehensive whole-building design services
- Strategic Energy Management
- Higher incentives for qualifying buildings

Weatherization Assistance Program

Home Energy Reports

Single Family Existing Homes

- Retail lighting
- Insulation, Air Sealing, and Windows*
- Home heating*
- Water heating*
- Appliances*
- Thermostats*

*Efficiency Boost higher incentives

Tools and resources

- pse.com/rebates
- PSE Marketplace
- My Usage on pse.com
- Unusual Usage Alerts

Resources for Customers — Expert Support

Recommended Energy Professionals

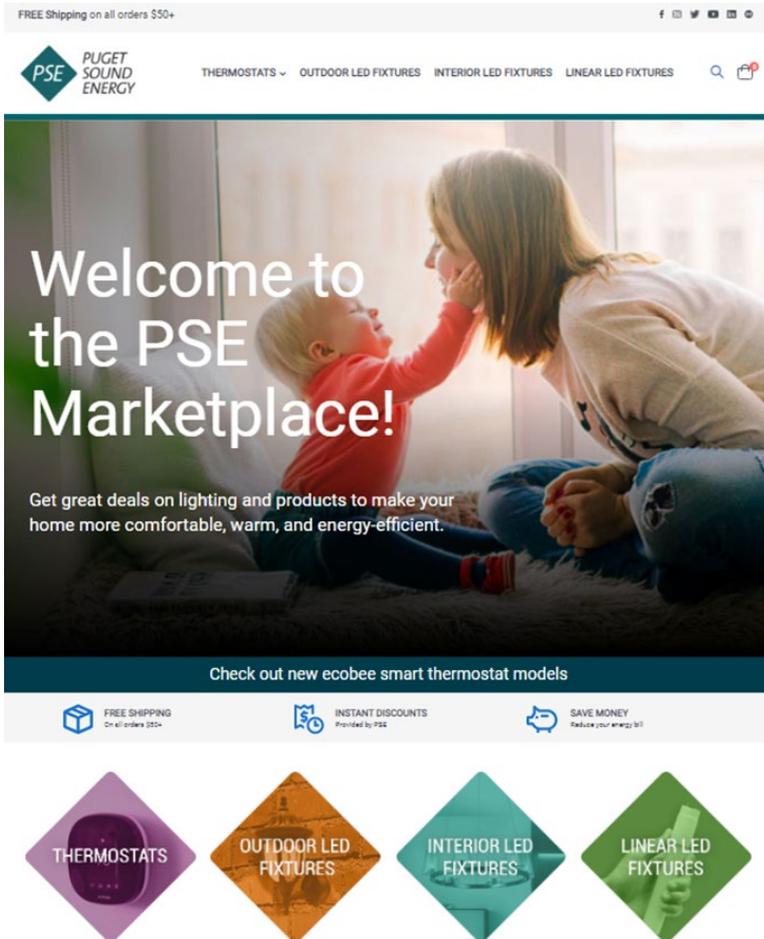
- Licensed, bonded and insured contractors
- Knowledgeable of:
 - current energy codes,
 - high-efficiency equipment, and
 - product applications
- Continually trained on latest technology
- Part of our **Trade Ally Network**
- Over 250 independent contractors



Energy Advisors

- Empower customers to make informed decisions and advise on efficiency
- Call 1-800-562-1482 Monday through Friday from 8 a.m. to 5 p.m. or email energyadvisor@pse.com

PSE Marketplace



PSE Marketplace

The PSE Marketplace is an online shopping experience giving customers easy access to energy efficiency products from the comfort of their own home.

[PSE.com/marketplace](https://www.pse.com/marketplace)

Instant rebates for eligible customers include

- Smart thermostats — \$75 instant rebate
- Line voltage connected thermostats — \$75 instant rebate
- Electric Vehicle chargers – coming in 2024

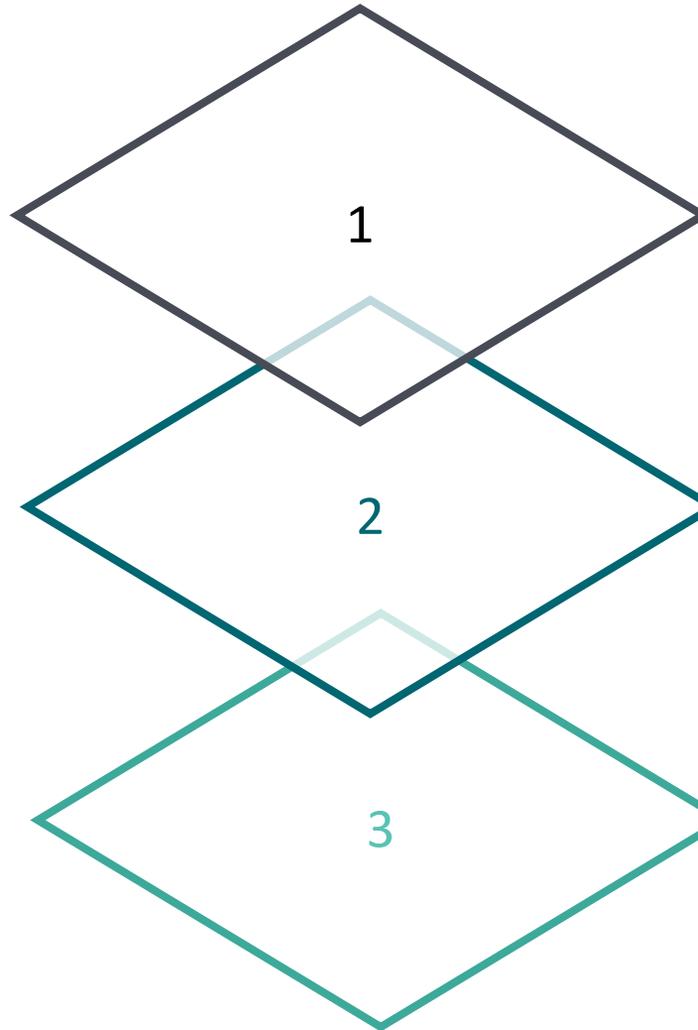
The targeted electrification pilot needs to engage 10,000 customers through at least two of following measures

Targeted Electrification Pilot

Pilot implementation timeframe is June 2023-June 2024

Results will inform PSE strategy

Includes focused efforts in named communities



Home Electrification Assessments

In-home/remote electrification assessments for PSE gas customers

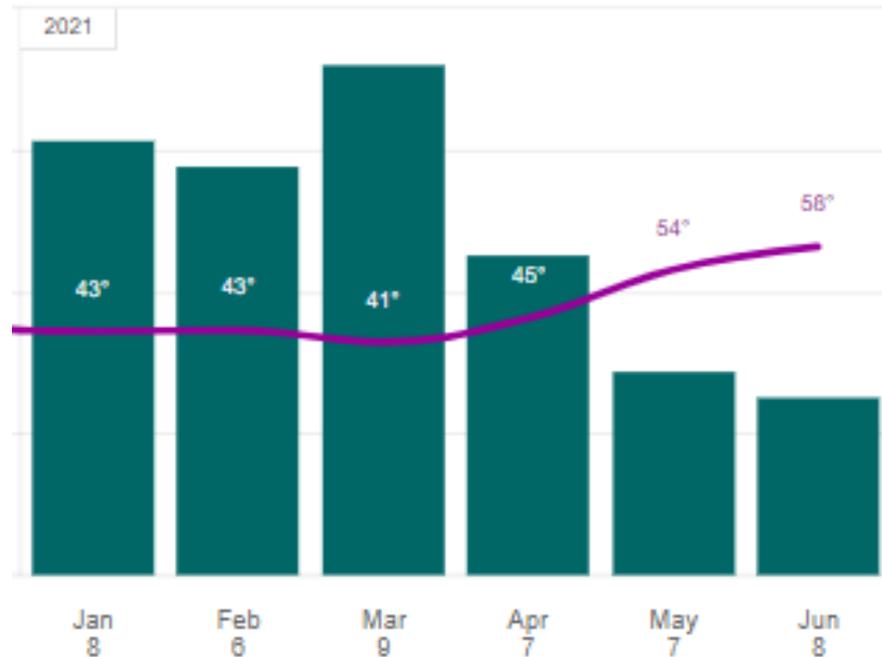
Rebates / Incentives

Provide rebates for dual fuel customers when switching from a gas furnace to a heat pump

Education / Awareness

What is a heat pump
What are carbon emissions
What rebates are out there

Resources for Customers — Digital Tools



Unusual Usage Alerts

- Email when energy usage is trending to use 30% more compared to same bill cycle from the previous year

Virtual Home Self-Assessment

Usage Analysis and Tips

- Via their myPSE account, customers can see:
 - energy usage graphs and analysis
 - customized energy-saving tips and targets for home upgrades

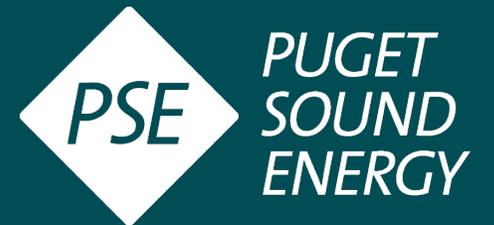
Seasonal Readiness Emails

- Sent to customers at the start of summer and winter
- Shows how weather may impact bills based on personal usage the prior year

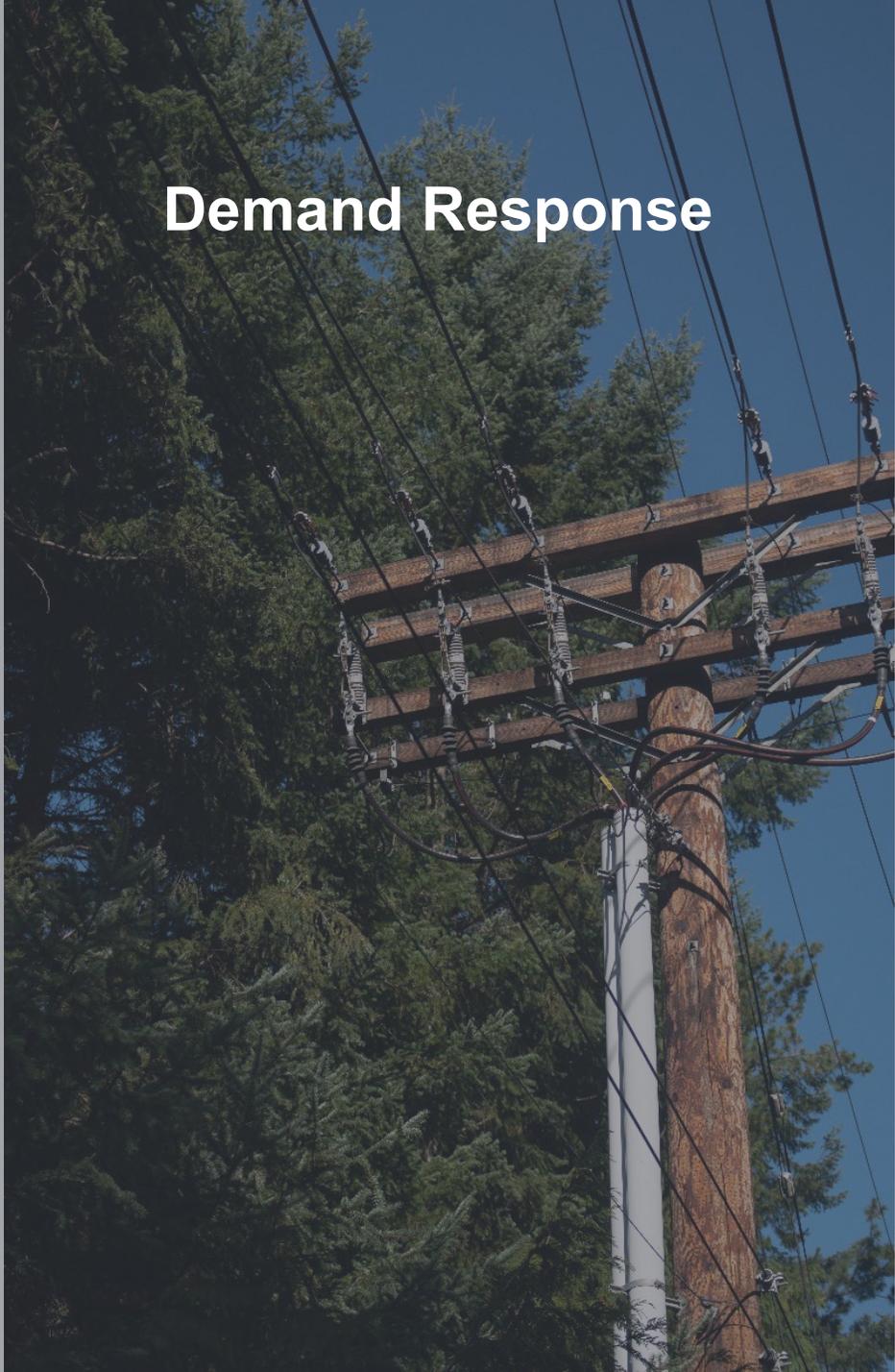
Demand response

Tom Smith, PSE

November 15, 2023

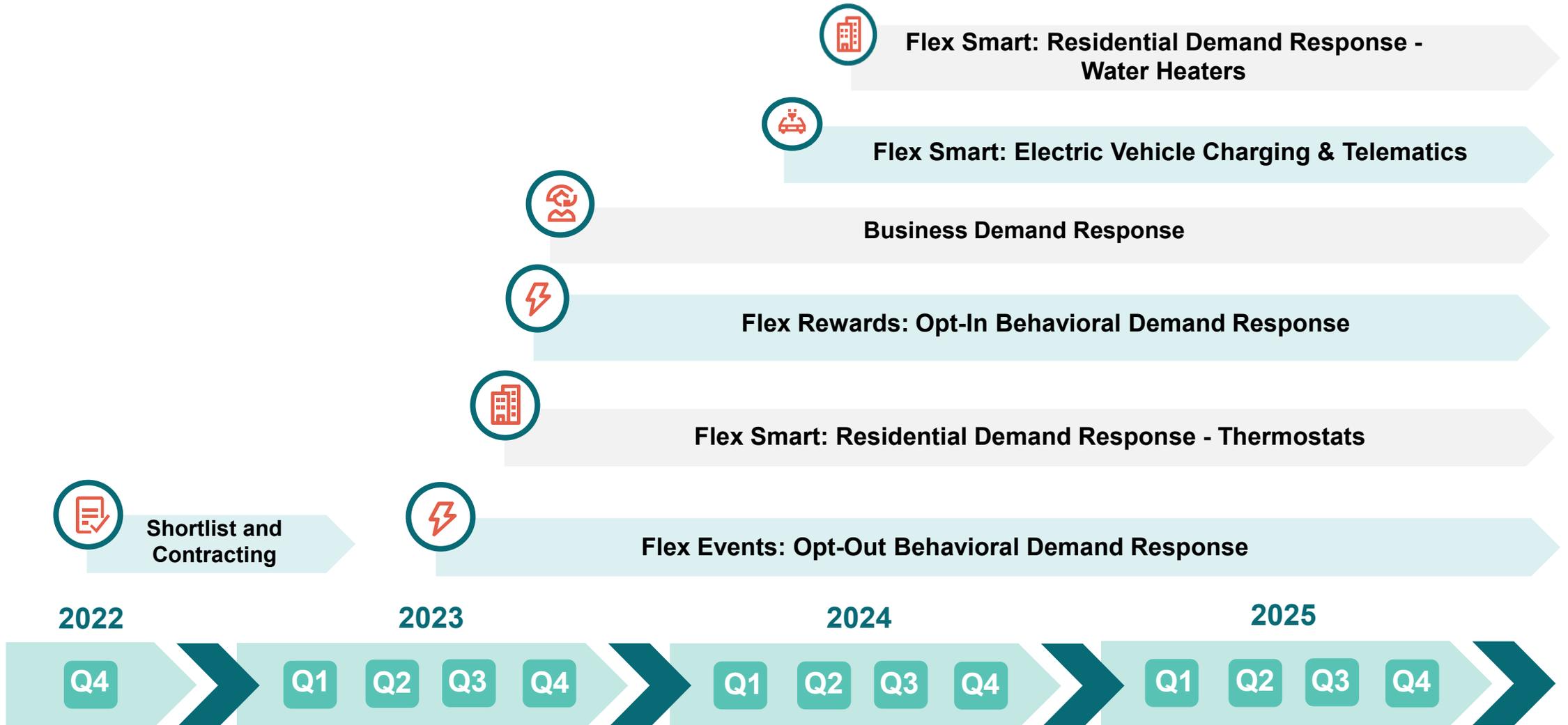


Demand Response



- ◆ Demand response (DR) is broadly defined as a measure for reducing energy load in response to supply constraints, generally during periods of peak demand.
- ◆ DR provides an opportunity for consumers to play a significant role in the operation of the energy grid by reducing or shifting their energy usage during peak periods in response to time-based rates or other forms of financial incentives.

Demand Response Rollout Timeline



Demand Response Benefits

- **Rewards:**
 - Enrollment
 - Seasonal
 - Participation
 - Program & DER-dependent
- **Energy Savings:**
 - Adjusting behavior
 - Automating reduction
- **Grid Resiliency**
 - Balanced demand
 - Foundational for clean energy success

How to Enroll in Demand Response

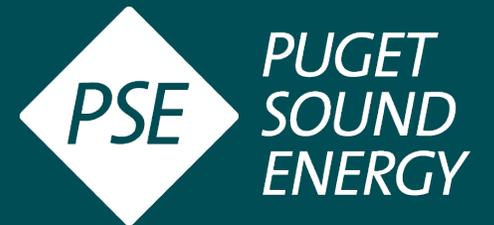
- **PSE.com**
 - Now: Thermostats & Behavioral Demand Response
 - Later: EVs, EV Chargers, Water Heaters, Batteries
- **Manufacturer Apps & Websites**
- **Requirements**
 - PSE electric customer*
 - AMI Smart Meter
 - Compatible demand response equipment

*Eligibility requirements vary by device type. Visit pse.com/flex for additional details.

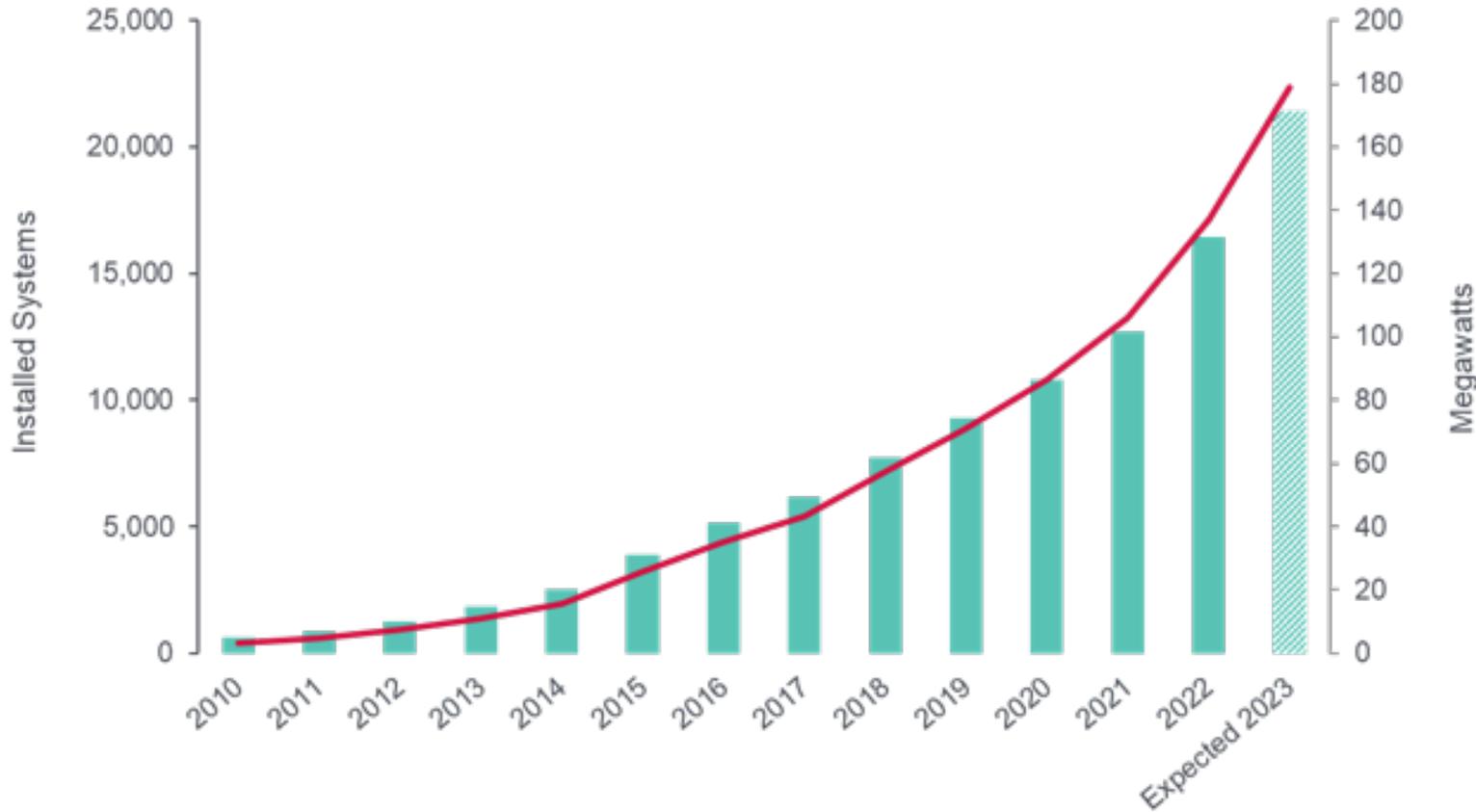
Customer generation

Heather Mulligan, PSE

November 15, 2023



Customer Generation Continues to Grow



- Over 20,000 systems
- Over 165 Megawatts of capacity
- Nearly 180 megawatts installed by year-end
- 3-4 megawatts added each month

We Are Expanding on Our DER Product Offerings



NET METERING

- Net Metering allows customers to receive credits against their electric usage, for excess energy sent to the grid.



SMALL POWER PRODUCERS

- Off the shelf 15-year Power Purchase Agreement for projects up to 5 MWs and interconnected to PSE's Distribution System.



COMMUNITY SOLAR

- Replace some, or all, of your regular electricity use with renewable solar energy generated by one of 6 current projects.



SOLAR PURCHASE RATE

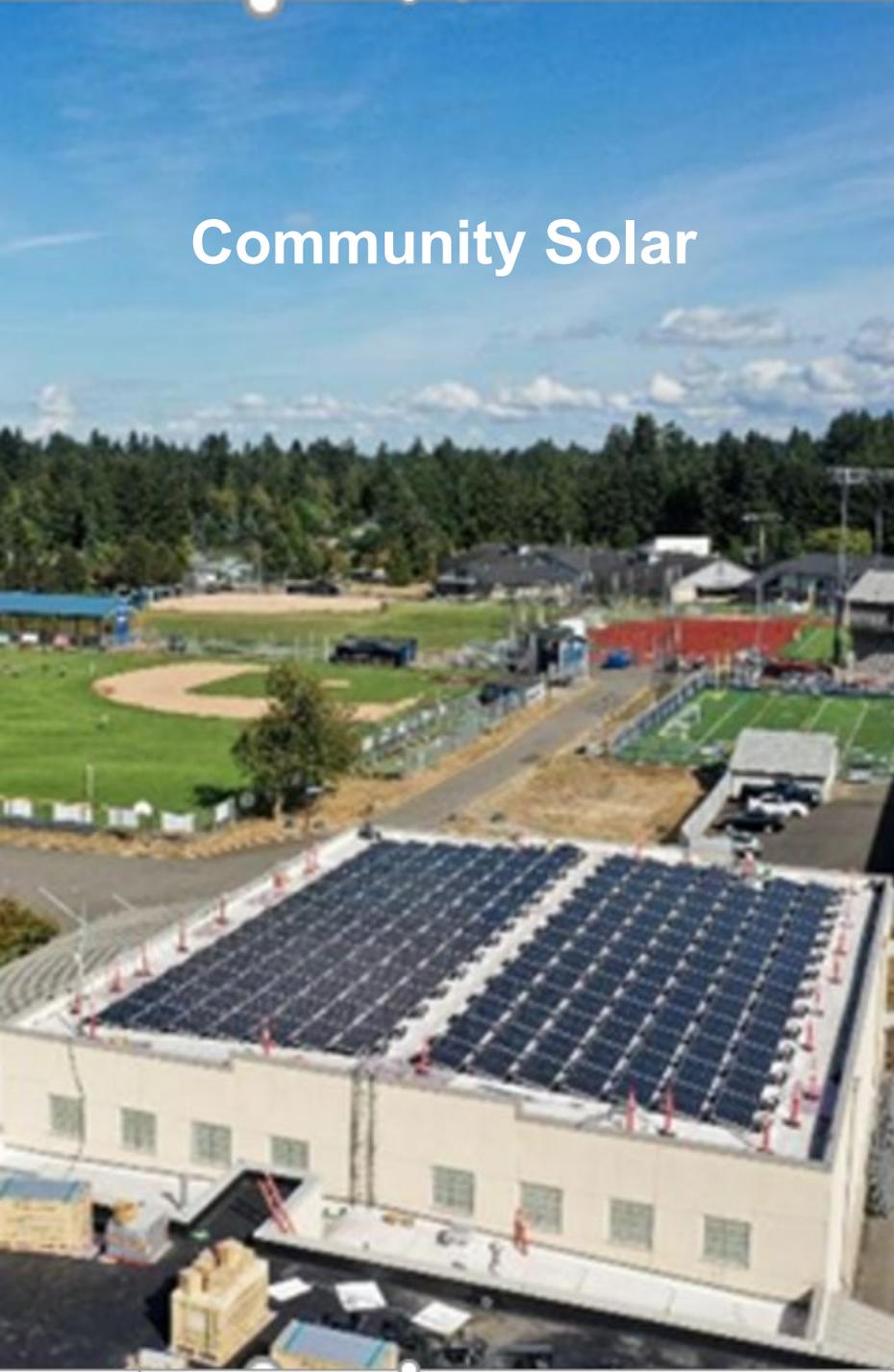
- PSE offers distributed solar PV projects 100 kw-AC to 1,000 kw-AC a monthly payment for exported energy



SINGLE-FAMILY BATTERY STORAGE

- PSE incentivizes residential customer battery installations in exchange for use of batteries to manage system / local peaks.

Community Solar

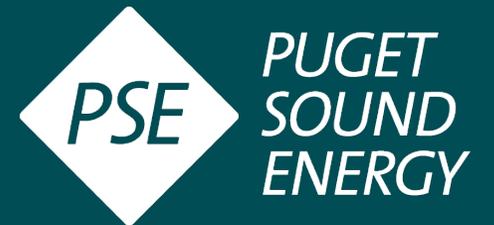


- ◆ Projects hosted on schools, municipal buildings, and private land that generate energy to benefit surrounding community
- ◆ Participants enroll to receive energy from a specific solar project
 - ◇ \$20/share for general participants
 - ◇ \$0/share for income eligible customers
- ◆ Participants receive a set monthly credit and a one-time per year true-up based on actual generation

Next steps

Sophie Glass, Triangle Associates

November 15, 2023



Informing resource planning

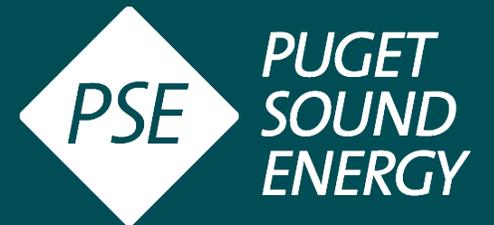
- **Review conservation potential measures and products list**
- **Includes:**
 - Energy efficiency
 - Electrification
 - Demand response
- **Send us your feedback on the list by Dec. 1, 2023 (extended)**
 - *Should we change or add anything to this list?*
- **Watch for an opportunity to dive deeper into demand-side resource planning during an upcoming RPAG discussion**

Next steps

- **December 1, 2023** Feedback form for Energy Efficiency and Demand-side Resources public webinar closes
- **December 7, 2023** Emerging Resources: Hydrogen public webinar

Public comment opportunity

Please raise your “hand” if you would like to make a comment



Thanks for joining us!



Appendix



Demand Response Offerings Targeting 86 MW by 2025

Behavioral Demand Response – Flex Events & Flex Rewards:

- Flex Events: Up to 515,000 residential customers in the summer and 225,000 residential customers in the winter
- Flex Rewards: ~16,000 residential customers per year, additive
- No customer costs or device requirements

Residential Automated Demand Response – Flex Smart:

- Thermostats | Water Heat | EV Charging | EV Telematics
- Enrollment and performance-based incentives
- Combined customer count of 100,000 customers

Business Demand Response:

- Launched 11/7
- ~250 customers by 2025
- Customized curtailment plans | performance-based incentives

Other Programs



Collaboration with the Northwest Energy Efficiency Alliance (NEEA)

We sponsor and actively participate in gas and electric Market Transformation Programs.



PSE Energy Efficiency

Technical support for energy efficiency measures implemented within PSE's own offices and generation facilities.



Conservation Voltage Reduction (CVR)

Implements phase balancing and voltage regulation on distribution feeders to reduce energy usage.



Targeted Demand Side Management

Based on local needs & constraints. Defers or delays local capacity upgrades to keep power delivery efficient.

- Business Energy Management

Proposed Residential Battery Storage Program



PROGRAM DESIGN

- “Bring your own battery” (BYOB)
- PSE accesses battery 30 times per season*
- No opt-out or notifications



INCENTIVES

- \$1K one-time enrollment incentive
- \$500 annual participation incentives



SITE ELIGIBILITY AND TECHNICAL REQUIREMENTS

- Customer owns premise or has landlord approval
- Interconnected to PSE’s grid
- Battery compatible with PSE’s virtual power plant provider



NAMED COMMUNITIES

- Limited, upfront incentives
- Eligibility criteria:
 - Income eligible customers (up to \$10k)
 - Customers with reliability needs (up to \$5k)
- Targeted marketing, education, and outreach

**Winter Season is 11/1 – 3/31 and Summer Season is 5/1 – 9/31; Events are anticipated to occur between the 7am – 10 pm, Monday through Sunday, including holidays and be between 1-4 hours in duration.*

Proposed Solar Purchase Rate



PROGRAM DESIGN

- Project size not to exceed 120% of historical annual load
- New or Existing projects
- Schedule 91 projects ineligible



BENEFITS

- Rate of \$0.067/kwh for exported distributed solar energy



SITE ELIGIBILITY AND TECHNICAL REQUIREMENTS

- Project interconnected to PSE (schedule 152)
- Electric Service schedules 7 through 49 eligible



NAMED COMMUNITIES

- Limited upfront incentives (up to \$250k)
- Customers or site must directly serve and/or benefit named communities