PUGET SOUND ENERGY

CEIP Public Participation Appendix C-7

Draft CEIP comment period engagement

The draft CEIP was made available for review on October 15, 2021 and for public comment between October 15- November 12, 2021. The draft CEIP comment period engagement included opportunities to participate in community briefings, the online open house website, and advisory group meetings, and providing comments via digital and print surveys, email, voicemail, and web comment form. PSE continued to accept and review comments on the draft CEIP after November 12 and included the feedback in the final CEIP to the best of our ability.

Materials in this appendix include the following:

- Draft CEIP Online Open House layout and analytics
- Vashon-Maury Island Community Council draft CEIP briefing presentation and summary
- Fall 2021 CBO Lunch and Learn presentation
- Fall 2021 CBO information session presentation
- CBO meeting activity notes
- Fall 2021 partner toolkits
- Draft CEIP survey results
- Draft CEIP stakeholder comments

Online Open House

Draft Clean Energy Implementation Plan

Station 1: Welcome

Join us on the path to 100% clean electricity

This Clean Energy Implementation Plan (CEIP) is a four-year roadmap that:

- Moves PSE forward to nearly 60 percent clean electricity by the end of 2025– well on the way to meeting our clean energy goals for 2030 and 2045.
- Removes coal as a source of electricity from our grid by the end of 2025.
- Ramps up our clean electricity resources - like large-scale wind energy and local rooftop and ground solar energy projects that partner with homes and businesses.
- Provides customers with more opportunities to save energy and reduce their costs through improving their energy efficiency.
- Sets a new direction for local rooftop and ground solar and battery storage programs, as well as incentives to reduce energy use during peak periods.
- Ensure the benefits of the clean energy transition are distributed equitably and sets us on the path to building a more inclusive, carbon-free future.

We want to hear from you

This online open house summarizes important pieces of the draft CEIP. To request materials in another form or language, send a message to ceip@pse.com.

Scroll the stations

Scroll through the stations to learn how we developed the draft CEIP and what it means for you

Submit questions or comments

Submit your questions comments using our feedback form or send an email to ceip@pse.com

We will continue to accept and review comments on the draft CEIP, but our ability to include your feedback in the final CEIP becomes less likely as we approach the Dec. 17 filing date.

READ THE DRAFT CLEAN ENERGY IMPLEMENTATION PLAN

PSE is committed to acting on climate change and aspires to become a beyond net zero carbon energy company

by 2045. The CEIP is a key piece of our strategy to make this goal happen.

Station 2: Background

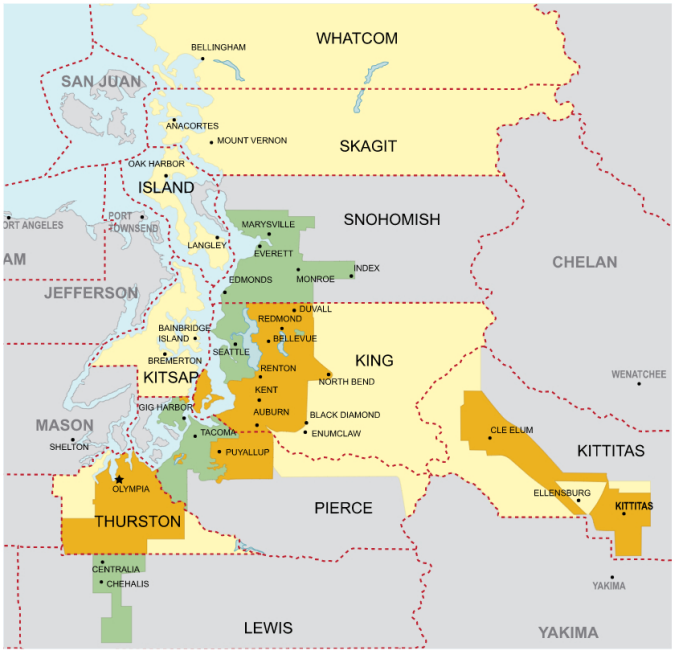
The Clean Energy Implementation Plan (CEIP) is a four-year roadmap that will guide PSE's clean electricity investments for the years 2022-2025. It is the first of many plans that will get us to our goal of 100% clean electricity by 2045 and help ensure all customers benefit from the clean electricity transition.

About Puget Sound Energy

PSE is Washington State's largest utility and serves electricity to 1.1 million customers in eight counties of the Puget Sound region. We provide safe, reliable, affordable energy to our customers and help make our communities better places to live and work.

PSE is committed to working with customers to act on climate change and has an aspirational goal of becoming a beyond net zero carbon energy company by 2045.

LEARN HOW ELECTRICITY GETS TO YOU



Transitioning to clean energy

The Clean Energy Transformation Act sets Washington on a path to clean electricity, requiring utilities to serve coal-free electricity by the end of 2025, carbon-neutral electricity by 2030, and 100% clean electricity by 2045.

Clean energy milestones

2025

Coal-free electricity

2030

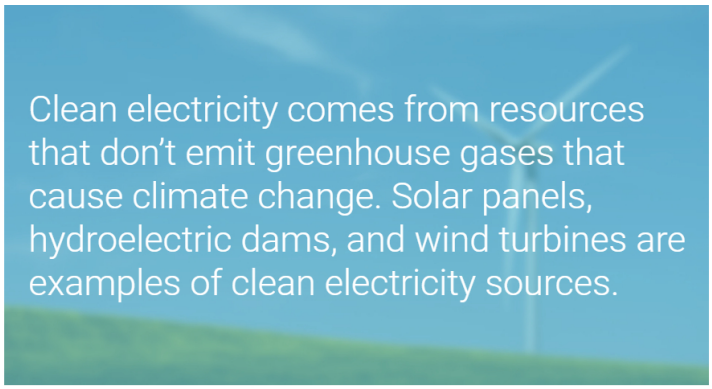
Carbon-neutral electric system

2045

100% clean electricity

Electricity today

The electricity PSE supplies is generated from a mix of resources. Today, more than 30% of PSE's electric energy supply comes from clean sources like wind and hydroelectric facilities that don't emit greenhouse gases.



Published by the Washington Department of Commerce, October 2020, with data reported by PSE in August 2020.

PSE has been an early leader in addressing climate change, making significant investments in renewable resources and energy efficiency for homes and businesses. Now, we are on a path to meet the current and future needs of our customers and to reach Washington's ambitious clean energy transformation milestones.

PSE's four-year CEIP maps out an acceleration of clean electricity strategies in PSE's portfolio, as well as progress toward these milestones based on community input and the needs and strategies identified in other long-range planning documents.

Equity in clean electricity

As we work to create a new, clean electricity future and address climate change, we must do so in a way that ensures all our customers, especially vulnerable and highly impacted communities who shoulder an outsized share of the climate burden, have a voice in and benefit from the transition to clean electricity.

In this work, we embrace the principles of energy equity by addressing accessibility, affordability and accountability.

In 2021, PSE convened our first Equity Advisory Group (EAG) to broaden engagement with communities we serve, representing perspectives from low-income communities and Black, Indigenous, and People of Color.

✔ Clean Energy Transformation Act (CETA)

In 2019, Governor Inslee signed into law the Clean Energy Transformation Act (CETA), committing Washington to provide electricity free of greenhouse gas emissions by 2045. CETA includes three key milestones:

- Remove coal as a source of electricity by 2025
- Serve carbon-neutral electricity by 2030, consisting of at least 80% clean electricity and up to 20% non-clean electricity with alternative compliance actions
- Serve 100% clean electricity by 2045

CETA includes rules to keep electricity affordable, reliable and ensure all customer benefit from the clean electricity transformation.

✔ Utilities and Transportation Commission (UTC)

✔ Long range energy planning

Station 3: Engaging Customers

Improving our communities while fighting climate change

The transition to clean electricity creates opportunities to improve our communities through benefits like cleaner air, better public health, new jobs, or different ways for customers to get their electricity.

As PSE thinks about clean energy, we must accelerate equity in the transition. Part of accelerating equity is identifying specific communities or customers who disproportionately share a more significant burden.

We're designing our CEIP to address the challenges faced by vulnerable and highly impacted communities, who are most at risk to the effects of climate change. Knowing the geographic locations and factors shaping these communities will help us identify gaps in services provided, design programs that meet the needs of these communities, and help us distribute benefits more equitably.

PSE is committed to a public participation process that strengthens community ties and creates solutions that reflect those values.

Who we're seeking to involve

- ✔ Vulnerable populations

People who are at higher risk of experiencing environmental impacts due to social, economic and other conditions. The Equity Advisory Group has advised this definition specifically include economic stress, housing costs, race/ethnicity, historically redlined communities, disability, seniors, language, mental health and home care.

- ✔ Highly impacted communities
- ✔ Residential customer
- ✔ Business customers
- ✔ Equity Advisory Group
- ✔ Other PSE advisory groups
- ✔ Community-based organizations (CBOs)

How customers and stakeholders want to benefit from clean electricity

In spring 2021, PSE gathered input from customers and stakeholders on their clean electricity values and the benefits they want to see from the clean electricity transformation. PSE collected input via customer surveys, advisory group meetings, and "go to you" meetings with community-based organizations.

921	194	8	9	13
General customer surveys submitted	Business customer surveys submitted	Meetings with community-based organizations	Equity Advisory Group meetings	Meetings with PSE's other advisory groups

We summarized the comments into several topics below. Click on a comment to read more details.

- ✔ Environment: Reduce greenhouse gas emissions and fossil fuel extraction.

Stakeholders called for benefits that result in lower greenhouse gas emissions and reduced fossil fuel extraction. In addition to reducing the impacts of climate change, stakeholders wanted actions to also produce benefits in other categories, such as job creation, cleaner air, improved public health, energy independence, and long-term cost savings.

- ✔ Public health: Increase air quality and improve community wellness.
- ✔ Affordability: Decrease the amount of income spent on electricity and empower low-income populations to participate in clean electricity programs.
- ✔ Economic: Increase the number of local clean energy jobs and make them accessible to vulnerable populations.
- ✔ Accessibility: Empower customers to participate in all clean electricity programs regardless of income level.
- ✔ Clean electricity participation: Make the benefits of solar energy available to vulnerable and highly impacted populations. Find opportunities to reduce customer costs through solar.
- ✔ Resiliency: Ensure a resilient clean electricity system.
- ✔ Comfort and satisfaction: Build a clean electricity system that customers know they can depend on and reflects their environmental stewardship.

LEARN MORE IN CHAPTER SIX: PUBLIC PARTICIPATION

Station 4: Customer benefits

Using customer benefits to shape our plan

To ensure our clean electricity actions create the benefits our customers want to see, we have used community input to develop customer benefit indicators (CBIs). CBIs are qualities or outcomes customers want to result from our clean electricity actions.

are qualities or outcomes customers want to result from our clean electricity actions.

How we use customer benefit indicators:

- To guide our choice of actions and investments to reach our clean electricity targets
- To measure our progress toward the benefits our customers want to see

Improved participation from vulnerable and highly impacted populations

How we'll measure progress: Measurement of participation by PSE customers within vulnerable and highly impacted populations

Increase in clean energy jobs

How we'll measure progress: Tracking the number of jobs created by PSE programs, including for vulnerable and highly impacted populations

Improved home comfort and indoor air quality for vulnerable and highly impacted populations

How we'll measure progress: Calculating the economic benefits of air temperature, indoor air quality, and lighting quality

Reduced cost impacts for vulnerable and highly impacted populations

How we'll measure progress: Calculating the percentage of income spent on electricity bills for PSE customers in vulnerable and highly impacted populations

Improved outdoor air quality

How we'll measure progress: Measurement of regulated pollutant emissions and reduction of pollution from PSE resources.

Improved community health

How we'll measure progress: Calculating health factors like mortality, hospital admittance, work loss days

Reduced greenhouse gas emissions

How we'll measure progress: Calculating carbon dioxide (CO_2) emissions from PSE resources

Reduction of climate change impacts

How we'll measure progress: Reducing peak electricity demand

Affordability of clean energy

How we'll measure progress: Calculating the percentage of income spent on electricity bills for PSE customers

Decrease in frequency and duration of outages

How we'll measure progress: Measuring the number of outages, total hours of outages and total backup electricity served during outages

Increased resiliency

How we'll measure progress: Calculating the number of customers who have access to emergency power at home or at community centers

LEARN MORE IN CHAPTER THREE: CUSTOMER BENEFIT INDICATORS, HIGHLY IMPACTED COMMUNITIES AND VULNERABLE POPULATIONS

Station 5: Targets and actions

We're working to move further, faster with the clean electricity transition. PSE's goal is to serve coal-free electricity by end of 2025, carbon neutral electricity by 2030, and 100 percent clean electricity by 2045. These goals require an incremental approach to ensure we also continue to serve our customers with safe, dependable and affordable electricity.

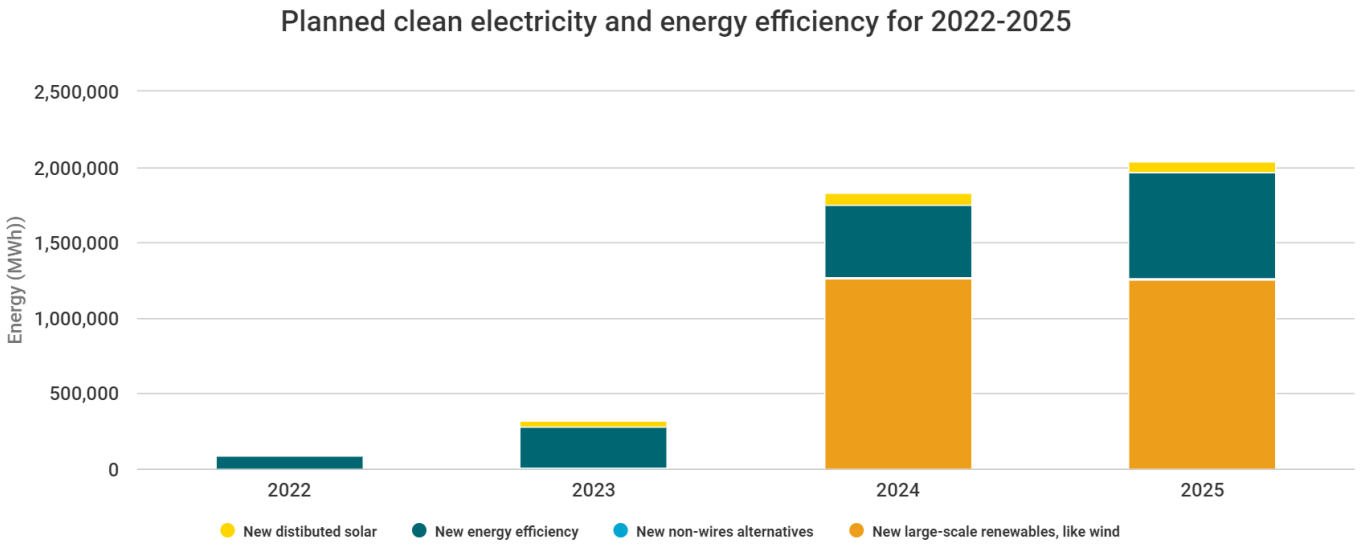
Over the next four years, PSE will increase our mix of clean electricity from **35% to 59%.**

To achieve this target, we will pursue specific actions through programs and investments in the following areas:

- ✔ Energy efficiency programs that lower the amount of energy we use

  Programs like rebates for energy efficient appliances, grants for retrofits and upgrades in energy-intensive buildings, income-based weatherization.

- ✔ Demand response programs that reduces demand for energy during peak periods
- ✔ Renewable energy programs
- ✔ Battery storage programs



LEARN MORE IN CHAPTER FOUR: SPECIFIC ACTIONS

Using customer benefits to shape our decisions

A new component of our energy resource planning is to use customer benefits to inform our program and investment decisions. PSE will use customer benefits to evaluate the types of electricity investments we'll make over the next four years.

As part of the CEIP development process, PSE used customer benefits to identify potential program concepts for distributed energy resources – those local rooftop and ground solar and battery programs for homes and businesses. Shown below are local solar and battery storage programs that we've initially identified as having the opportunity to benefit our different types of customers. Additional programs will be available for energy efficiency and demand response.

All distributed energy resources concepts will seek inclusive opportunities for vulnerable populations and highly impacted communities.

Vulnerable and highly impacted populations

Battery storage

- Residential PSE battery (income-eligible) leasing: PSE leases space on private property to install a battery and the people who live on the property may be able to use the battery during some power outage events

Rooftop and ground solar

- Residential roof-top solar (income-eligible) leasing: PSE leases private space on a roof or other area to install solar panels that create electricity for the power grid
- Multifamily Community Solar: PSE electric customers who are renters subscribe to locally generated solar energy
- Income-eligible Community Solar (income-eligible): PSE income-eligible electric customers subscribe to locally generated solar energy
- Multifamily solar partnership program: PSE partners with multifamily properties like apartments to install solar panels to produce electricity for people who live on the property
- Multifamily unit rooftop solar incentive: PSE incentivizes customers to install solar panels

Residential customers

Battery storage

- Residential PSE battery leasing: PSE leases space on private property to install a battery and the people who live on the property may be able to use the battery during some power outage events

Rooftop and ground solar

- Residential roof-top solar leasing: PSE leases private space on a roof or other area to install solar panels that create electricity for the power grid
- Customer Connected Solar (existing program): PSE decreases a customer's electric bill when they install their own solar panels and produce energy to send back to the grid (net metering).
- Community Solar (existing program): PSE electric customers subscribe to locally generated solar energy

Hybrid

- PSE Customer-sited solar + storage offering: PSE incentivizes customers to install solar panels and battery storage and PSE pays to use them

Commercial and industrial customers

Battery storage

- Commercial and industrial space leasing for batteries: PSE leases space on private property to install a battery and the people who live on the property may be able to use the battery during some power outage events

Rooftop and ground solar

- Commercial and industrial roof-top solar incentive: PSE incentivizes customers to install solar panels
- Distributed solar power purchase agreement (PPA): A third-party builds and manages solar panels and PSE purchases power from the system

Maintaining affordability in the transition

We know customers want to move further, faster to a clean electricity future. Transitioning to clean electricity and continuing to provide safe, reliable, and efficient energy are priorities for PSE. Growing our portfolio of clean resources so rapidly will increase customer's bills.

We're working to balance the transition to clean electricity while maintaining affordability for customers and avoid placing unfair burden on vulnerable populations. We estimate electricity rates will increase by an average of two percent per year (e.g., by about $6/month by 2025 for average residential customers and $37/month by 2025 for average business customers).

Although this aggressive path to a clean electricity will increase the average customer bill over time, the CEIP includes opportunities for customers to reduce their energy bills through energy efficiency, new demand response, and distributed energy resource programs.

LEARN MORE IN CHAPTER FIVE: COST

Station 6: Commitments and Next Steps

How we'll reach our clean electricity targets

Commitments

As we work to create a new clean energy future and address the urgency of climate change, we must do so in a way that ensures all of our customers, especially those who shoulder an outsized share of the climate burden, have a voice in and benefit from the transition to clean electricity. In listening to and learning from our new Equity Advisory Group (EAG), the following guiding principles arose from these discussions. PSE will use these principles to help guide CEIP implementation and ensure accountability and equity.

Build customer awareness and understanding of clean energy

Intentionally engage vulnerable and highly impacted populations in

Create affordable and accessible programs for vulnerable and highly

Help customers gain a sense of value and ownership in the clean energy transformation.

program design

Programs that work for the most vulnerable of us will work for all of us.

impacted populations

This requires opportunities for renters, multifamily units, small businesses, and low-income households to participate.

Effectively measure program and communication reach to vulnerable and highly impacted populations

This requires tracking participation by demographics and customer benefit indicators.

Make outreach and education culturally relevant, meaningful and intentional

This requires sharing information in multiple languages, using both digital and non-digital tools, and growing partnerships with community-based organizations.

Build education and resources among partners and customers to increase equity in clean energy and benefits

We must do this to increase equity in clean energy programs and benefits.

These are preliminary principles. PSE and the EAG will continue to develop these principles for the Final CEIP and may adjust these further during implementation. PSE is also committed to an ongoing and iterative energy planning process, which includes incorporation of the results of procurement processes, tracking progress on customer benefit indicators, and learnings from initial implementation of programs.

LEARN MORE IN CHAPTER EIGHT: FUTURE WORK AND PSE COMMITMENTS

Next steps for the CEIP process and implementation

Dec. 17, 2021

PSE will finalize the CEIP and file it with the Utilities and Transportation Commission (UTC).

2022

UTC will approve, deny or modify our CEIP.

PSE will begin implementing the CEIP, using customer benefit indicators to inform our program and investment decisions. We will continue to engage with customers and our advisory groups on CEIP implementation and progress updates.

2023

PSE will report our progress toward our targets and customer benefit indicators.

PSE will begin deploying new clean electricity programs.

Planning the clean electricity future is an ongoing process with implementation, annual reporting and plan updates. This CEIP is the first of many. We will continue to engage with our customers and stakeholders at each step of the way on our path to 100% clean electricity.

Station 7: Submit questions or comments

Thank you for your interest in Puget Sound Energy's Clean Energy Implementation Plan (CEIP)! The comments we received by Nov. 12 will be processed and addressed in the final CEIP, expected Dec. 17, 2021.

We will continue to accept and review comments on the draft CEIP, but our ability to include your feedback in the final CEIP becomes less likely as we move into December and approach the Dec. 17 filing date.

SUBMIT QUESTIONS OR COMMENTS

Learn more

Definitions and frequently asked questions

Evento de puertas abiertas en línea

Plan de Implementación de Energía Limpia (CEIP) preliminar

Estación 1: Bienvenida

Súmese a nuestro camino hacia energía 100 % limpia

Este Plan de Implementación de Energía Limpia (CEIP) es un mapa de cuatro años para cumplir los siguientes objetivos:

- Avanzar a PSE hacia casi un 60 % de energía limpia para finales de 2025 y estar así muy bien encaminados para cumplir nuestros objetivos de energía limpia para 2030 y 2045.
- Eliminar el carbón como fuente de electricidad de nuestra red para finales de 2025.
- Acelerar nuestras fuentes de energía limpia como energía eólica a larga escala y paneles solares para techos, así como proyectos de energía solar en tierra en asociación con hogares y empresas.
- Ofrecerles a los clientes más oportunidades de ahorrar energía y reducir sus costos mediante una mejora de la eficiencia energética.
- Establecer un rumbo nuevo para los programas locales de energía solar en tierra y techos y de almacenamiento de baterías, así como incentivar la reducción de energía durante períodos pico.
- Garantizar que los beneficios de la transición de energía limpia estén distribuidos equitativamente y ponernos en el camino correcto para construir un futuro más inclusivo y sin carbono.

Queremos escuchar sus comentarios

Este evento de puertas abiertas en línea resume partes importantes del CEIP preliminar. Para solicitar los materiales en cualquier otro formato o idioma, envíe un mensaje a ceip@pse.com.

Desplácese por las estaciones

Desplácese por las estaciones para conocer cómo desarrollamos el CEIP preliminar y qué implica para usted.

Envío de comentarios

Envíe sus comentarios de preguntas utilizando nuestro formulario de comentarios o envíe un correo electrónico a ceip@pse.com

Continuaremos aceptando y revisando los comentarios sobre el borrador del CEIP, pero nuestra capacidad para incluir sus comentarios en el CEIP final se vuelve menos probable a medida que nos acercamos a la fecha de presentación del 17 de diciembre.

Lea el Plan de Implementación de Energía Limpia preliminar

PSE se compromete a trabajar para combatir el cambio climático y aspira a convertirse en una empresa Beyond Net Zero (más allá de cero carbono) para el 2045. El CEIP es una pieza clave de nuestra estrategia para alcanzar este objetivo global.

Station 2: # Antecedentes

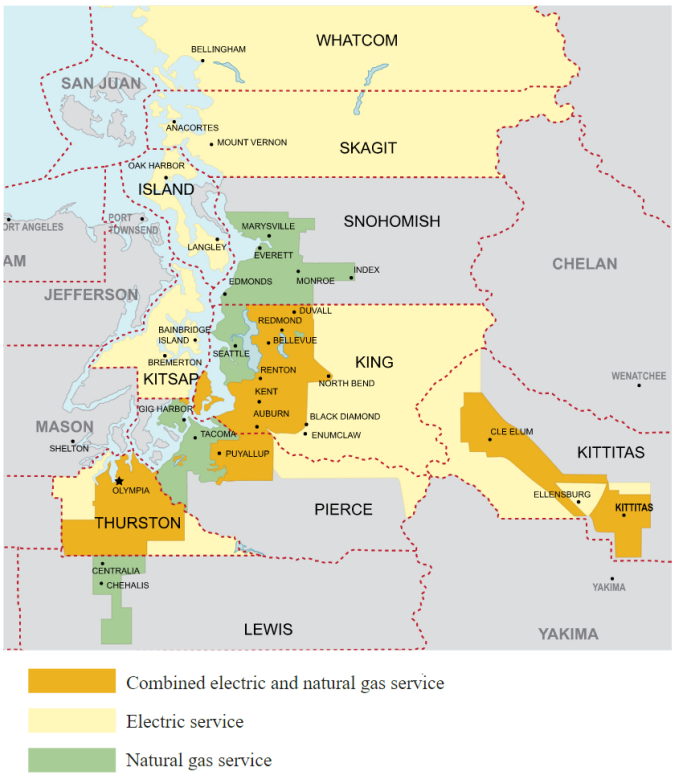
El Plan de Implementación de Energía Limpia (CEIP) es un mapa de pasos para cuatro años que guiará las inversiones de energía limpia de PSE durante los años 2022-2025. Es el primero de muchos planes que nos ayudarán a alcanzar nuestro objetivo de energía 100 % limpia para 2045 y a garantizar que todos los clientes se beneficien de la transición hacia la energía limpia.

Acerca de Puget Sound Energy (PSE)

PSE es la empresa de servicios públicos más grande del estado de Washington y brinda electricidad a más de 1,1 millones de clientes en ocho condados de la región de Puget Sound. Ofrecemos electricidad segura, confiable y asequible para nuestros clientes y ayudamos a que las comunidades sean un mejor lugar para vivir y trabajar.

PSE se compromete a trabajar con sus clientes para actuar sobre el cambio climático y tiene el objetivo de convertirse en una empresa Beyond Net Zero (más allá de cero carbono) para 2045.

Conozca cómo llega a su casa la electricidad



Combined electric and natural gas service
Electric service
Natural gas service

Transición hacia la energía limpia

La Ley de Transformación de Energía Limpia (CETA) pone a Washington en un camino hacia la energía limpia, les requiere a las empresas de servicios que ofrezcan electricidad sin uso de carbón para finales de 2025, electricidad carbono neutral para 2030 y energía 100 % limpia para 2045.

Hitos de energía limpia

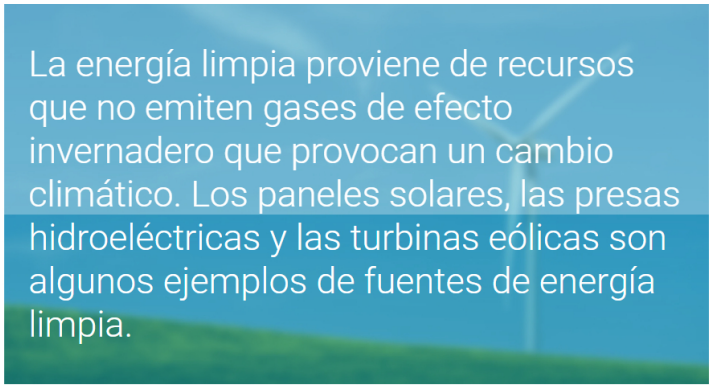
2025
Electricidad sin carbón

2030
Sistema eléctrico neutro en carbono

2045
Electricidad 100% limpia

Electricidad hoy

La energía que PSE suministra se genera a partir de una combinación de recursos. Hoy en día, más del 30% del suministro de energía eléctrica de PSE proviene de fuentes limpias como instalaciones hidroeléctricas y eólicas que no emiten gases de efecto invernadero.



Publicado por el Departamento de Comercio de Washington, octubre de 2020, con datos reportados por PSE en agosto de 2020.

PSE ha liderado los esfuerzos para enfrentar el cambio climático desde un principio y ha invertido muchísimo en recursos renovables y eficiencia energética para hogares y empresas. Ahora, nos encontramos en un camino que busca cumplir con las necesidades actuales y futuras de nuestros clientes y cumplir con los hitos ambiciosos de transformación de energía limpia de Washington.

El plan CEIP de cuatro años de PSE traza una aceleración en las estrategias de energía limpia en el portfolio de PSE, así como un avance hacia los hitos basado en los aportes de la comunidad y las necesidades y estrategias identificadas en otros documentos de planificación a largo plazo.

Equidad en electricidad limpia

A medida que trabajamos para crear un futuro de energía limpia y abordamos el cambio climático, debemos hacerlo de una manera que garantice que todos nuestros clientes, especialmente las comunidades vulnerables y con mucho impacto que llevan una participación descomunal de la carga climática, tengan voz en la transición a la energía limpia y se beneficien de ella.

En esta labor, abarcamos los principios de la equidad energética abordando la accesibilidad, asequibilidad y la rendición de cuentas.

En 2021, PSE convocó al primer Grupo Asesor de Equidad (EAG) para ampliar la comunicación con las comunidades a las cuales brindamos servicios mediante la representación de las perspectivas de comunidades de bajos ingresos y de personas de raza negra, indígenas y morenas.

✔ Ley de Transformación de Energía Limpia (CETA)

En el 2019, el gobernador Inslee promulgó la Ley de Transformación de Energía Limpia (CETA) (Clean Energy Transformation Act (CETA)), comprometiendo a Washington a suministrar electricidad libre de emisiones de gases de efecto invernadero para el 2045. CETA incluye tres hitos importantes:

- Eliminar el carbón como fuente de electricidad para finales de 2025
- Brindarles a nuestros clientes energía carbono neutral para finales de 2030 con al menos un 80 % de energía limpia y hasta un 20 % de energía no limpia con acciones de cumplimiento alternativas
- Ofrecerles a nuestros clientes energía 100 % limpia para 2045

La CETA incluye normativas para mantener la energía asequible y confiable, y garantizar que todos los clientes se beneficien de la transformación de la energía limpia.

✔ Comisión de Servicios Públicos y Transporte (UTC)

✔ Planificación de energía a largo plazo

Estación 3: Motivar a los clientes

Mejorar las comunidades mientras luchamos contra el cambio climático

La transición hacia la energía limpia crea oportunidades para mejorar nuestras comunidades mediante beneficios como aire más limpio, mejor salud pública, trabajos nuevos o diferentes métodos para que los clientes obtengan electricidad.

Mientras PSE piensa en la energía limpia, debemos acelerar la equidad en la transición. Una parte de dicha aceleración es identificar comunidades o clientes específicos que compartan de forma desproporcionada una carga más importante.

Estamos diseñando nuestro CEIP para abordar los desafíos que enfrentan las comunidades vulnerables y altamente afectadas, que son las que tienen más riesgos de sufrir los efectos del cambio climático. Conocer las ubicaciones geográficas y los factores que transforman a esas comunidades nos ayudará a identificar brechas en los servicios provistos, diseñar programas que cubran las necesidades de dichas comunidades y distribuir los beneficios de forma más equitativa.

PSE se compromete a garantizar un proceso de participación pública que fortalezca nuestros lazos comunitarios y cree soluciones que reflejen dichos valores.

A quiénes queremos involucrar

✔ Poblaciones vulnerables

Personas que tengan un mayor riesgo de experimentar el impacto ambiental debido a condiciones sociales y económicas, o de otro tipo. El Grupo Asesor de Equidad (EAG) nos ha aconsejado que esta definición incluya de forma específica factores como estrés económico, costos de vivienda, razas/etnias, comunidades históricamente excluidas, discapacidad, mayores adultos, idiomas, salud mental y atención domiciliaria.

✔ Comunidades altamente afectadas

✔ Cliente residencial

✔ Clientes comerciales

✔ Grupo Asesor de Equidad

✔ Otros grupos asesores de PSE

✔ Organizaciones comunitarias (CBO)

Cómo los clientes y las partes interesadas quieren beneficiarse de la energía limpia

En la primavera de 2021, PSE recabó aportes de clientes y partes interesadas acerca de sus valores de energía limpia y de los beneficios que quieren ver en la transformación hacia la energía limpia. PSE obtuvo aportes mediante encuestas a los clientes, reuniones grupales y reuniones de acercamiento con las organizaciones comunitarias.

921	194	8	9	13
Encuestas generales de clientes recibidas	Encuestas de empresas clientes recibidas	Reuniones con organizaciones comunitarias	Reuniones del Grupo Asesor de Equidad (EAG)	Reuniones con otros grupos asesores de PSE

A continuación, resumimos los comentarios en diferentes temas. Haga clic en un comentario para ver más detalles.

- ✔ Medio ambiente: Reducir las emisiones de gases de efecto invernadero y la extracción de combustible fósil.

  Las partes interesadas pidieron beneficios que den como resultado una reducción en la emisión de gases de efecto invernadero y en la extracción de combustible fósil. Además de reducir los impactos del cambio climático, las partes interesadas querían ver acciones que produzcan beneficios en otras categorías, como creación de puestos de trabajo, aire más limpio, mejora en la salud pública, independencia energética y ahorros en costos a largo plazo.

- ✔ Salud pública: Aumentar la calidad del aire y mejorar el bienestar de la comunidad.
- ✔ Asequibilidad: Reducir el monto gastado en electricidad y empoderar a las poblaciones de bajos ingresos para participar en programas de energía limpia.
- ✔ Economía: Aumentar la cantidad de trabajos locales en energía limpia y hacerlos accesibles a poblaciones vulnerables.
- ✔ Accesibilidad: Empoderar a los clientes para que participen en todos los programas de energía limpia, sin importar cuál sea su nivel de ingresos.
- ✔ Participación en la energía limpia: Lograr que los beneficios de la energía solar estén disponibles para las poblaciones vulnerables y altamente afectadas. Encontrar oportunidades para reducir los costos a los clientes mediante la energía solar.
- ✔ Resiliencia: Garantizar un sistema de energía limpia resiliente.
- ✔ Comodidad y satisfacción: Crear un sistema de energía limpia en que los clientes puedan depender y refleje su gestión medioambiental.

Conozca más en el Capítulo 6: Participación pública

Estación 4: Beneficios para clientes

Uso de los beneficios para los clientes para darle forma a nuestro plan

Para garantizar que nuestras acciones de energía limpia crean los beneficios que los clientes quieren ver, usamos los aportes comunitarios para desarrollar indicadores de beneficios para los clientes (CBI). Los CBI son calidades o resultados que los clientes quieren ver de nuestras acciones de energía limpia.

Cómo utilizamos los indicadores de beneficios para clientes:

- Para guiar nuestra elección de acciones e inversiones para alcanzar nuestros objetivos de electricidad limpia
- Para medir nuestro progreso hacia los beneficios que nuestros clientes quieren ver

Participación mejorada de poblaciones vulnerables y altamente afectadas

Cómo mediremos el avance: Con una medición de la participación de los clientes de PSE dentro de poblaciones vulnerables y altamente afectadas

Aumento de trabajos de energía limpia

Cómo mediremos el avance: Mediante un rastreo de la cantidad de trabajos creados por los programas de PSE con la inclusión de poblaciones vulnerables y altamente afectadas

Aumento de la comodidad en el hogar y de la calidad del aire interior para poblaciones vulnerables y altamente afectadas

Cómo mediremos el avance: Con un cálculo de los beneficios económicos de la temperatura del aire, la calidad del aire interior y la calidad de la iluminación

Impactos de costos reducidos para poblaciones vulnerables y muy afectadas

Cómo mediremos el progreso: Calcular el porcentaje de ingresos gastados en facturas de electricidad para clientes de PSE en poblaciones vulnerables y muy afectadas

Calidad del aire exterior mejorada

Cómo mediremos el avance: Con una medición de las emisiones de los contaminantes regulados y una reducción de la contaminación de los recursos de PSE

Salud comunitaria mejorada

Cómo mediremos el avance: Mediante el cálculo de factores de salud, como mortalidad, internaciones, pérdidas de días laborales

Reducción de emisiones de gases de efecto invernadero

Cómo mediremos el avance: Con el cálculo de las emisiones de dióxido de carbono (CO_2) por parte de recursos de PSE

Reducción del impacto del cambio climático

Cómo mediremos el avance: Reducción de la demanda de electricidad en pico

Asequibilidad en energía limpia

Cómo mediremos el avance: Con el cálculo de porcentaje de ingresos gastados en electricidad por parte de los clientes de PSE

Reducción en la frecuencia y duración de los cortes

Cómo mediremos el avance: Medición de la cantidad de cortes, horas totales de cortes y electricidad de respaldo total suministrada durante los cortes

Aumento en la resiliencia

Cómo mediremos el avance: Mediante el cálculo de la cantidad de clientes que tienen acceso a electricidad de emergencia en casa o en los centros comunitarios

Conozca más en el Capítulo 3: Indicaciones de beneficios para los clientes, comunidades altamente afectadas y poblaciones vulnerables

Estación 5: Objetivos y acciones

Estamos trabajando para llegar más lejos y más rápido con la transición hacia la energía limpia. El objetivo de PSE es brindar energía sin carbono para finales de 2025, energía carbono neutral para 2030 y energía 100 % limpia para 2045. Estos objetivos requieren de un enfoque incremental para garantizar que también continuemos ofreciéndoles a los clientes electricidad segura, confiable y asequible.

Durante los próximos cuatro años, PSE aumentará su mezcla de energía limpia de

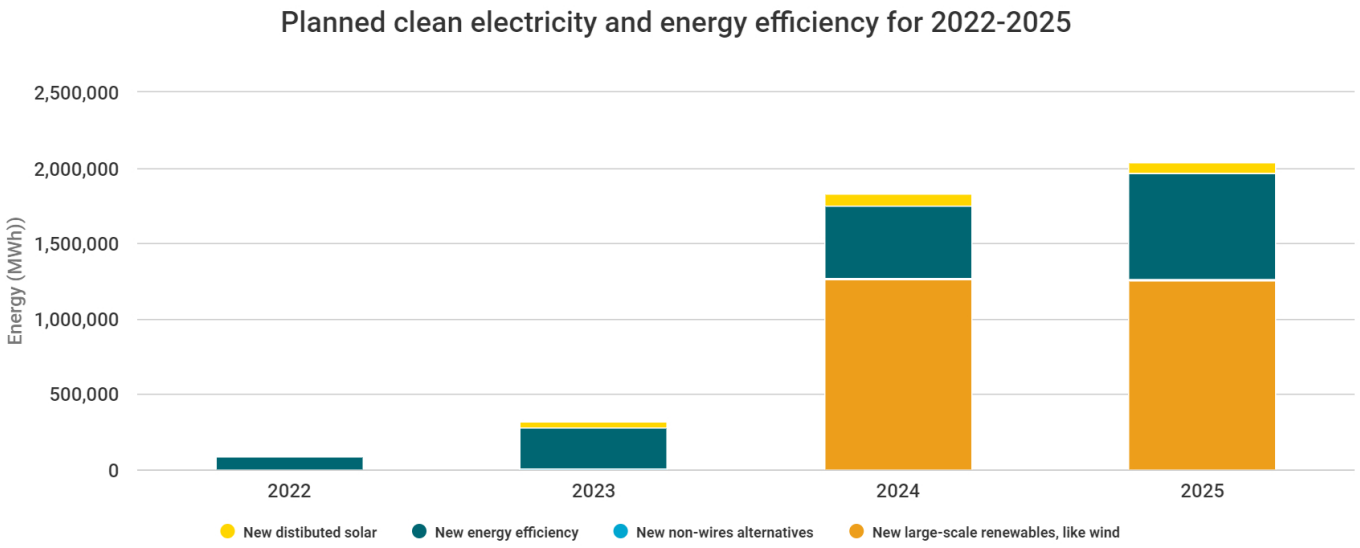
35% a 59%

Para alcanzar este objetivo, buscaremos acciones específicas mediante programas e inversiones en las siguientes áreas:

- ✔ Programas de eficiencia energética que reduzcan la cantidad de energía que usamos

  Programas como descuentos para compra de electrodomésticos con eficiencia energética, subsidios para modificaciones y actualizaciones en edificios de alto consumo de energía, y climatización basada en ingresos

- ✔ Respuesta a la demanda que reduzca la demanda de energía durante los períodos pico
- ✔ Energía renovable
- ✔ Almacenamiento de baterías



Conozca más en el Capítulo 4: Acciones específicas

Uso de los beneficios para los clientes para tomar decisiones

Uso de los beneficios para los clientes para tomar decisiones

Uno de los componentes nuevos de nuestra planificación de recursos energéticos es el uso de los beneficios para los clientes para orientarnos en las decisiones relacionadas con el programa y las inversiones. PSE usará los beneficios para los clientes a fin de evaluar los tipos de inversiones en electricidad que llevaremos a cabo en los próximos cuatro años.

Como parte del proceso de desarrollo del CEIP, PSE utilizó los beneficios para los clientes con el fin de identificar conceptos del programa potenciales para recursos energéticos distribuidos (programas locales de paneles solares para techo y tierra, para hogares y empresas). Debajo se muestran los programas locales de paneles solares y almacenamiento de baterías que identificamos inicialmente como oportunidad para beneficiar a los diferentes tipos de clientes. Se pondrán a disposición programas adicionales para eficiencia energética y respuesta a la demanda.

Todos los conceptos de recursos energéticos distribuidos buscarán oportunidades inclusivas para poblaciones vulnerables y comunidades muy afectadas.

Poblaciones vulnerables y muy afectadas

Almacenamiento de la batería

- Alquiler (para poblaciones de bajos ingresos) de baterías de PSE residenciales: PSE alquila espacios en propiedades privadas para la instalación de una batería, y las personas que viven en dicha propiedad pueden usar la batería en casos de cortes de suministro eléctrico

Paneles solares para techos y tierra

- Alquiler (para poblaciones de bajos ingresos) de paneles solares para techos residenciales: PSE alquila espacios privados en techos u otras áreas para instalar paneles solares que generan electricidad para la red eléctrica
- Paneles solares comunitarios para viviendas multifamiliares: Los clientes de electricidad de PSE que alquilan se suscriben a suministro de energía solar generada localmente
- Paneles solares comunitarios para familias de bajos ingresos (programa ya existente): Los clientes de electricidad de PSE elegibles según sus ingresos se suscriben a suministro de energía solar generada localmente
- Programa de asociación para paneles solares para viviendas multifamiliares: Los socios de PSE con propiedades multifamiliares como departamentos instalarán paneles solares para producir electricidad para las personas que viven en la propiedad
- Incentivo de paneles solares para techos en unidades de vivienda multifamiliar: PSE incentiva a los clientes a instalar paneles solares

Clientes residenciales

Almacenamiento de la batería

- Alquiler de baterías de PSE residenciales: PSE alquila espacios en propiedades privadas para la instalación de una batería, y las personas que viven en dicha propiedad pueden usar la batería en casos de cortes de suministro eléctrico

Paneles solares para techos y tierra

- Alquiler de paneles solares para techos residenciales: PSE alquila espacios privados en techos u otras áreas para instalar paneles solares que generan electricidad para la red eléctrica
- Energía solar conectada para clientes (programa ya existente): PSE descuenta de la factura de electricidad cuando instalan sus propios paneles solares y producen energía para devolver a la red (medición neta).

Sistema híbrido

- Paneles solares de clientes de PSE + oferta de almacenamiento: PSE incentiva a los clientes a instalar paneles solares y espacio de almacenamiento de baterías y les paga por utilizarlos

Clientes comerciales e industriales

Almacenamiento de la batería

- Alquiler de espacio comercial e industrial para baterías: PSE alquila espacios en propiedades privadas para la instalación de una batería, y las personas que viven en dicha propiedad pueden usar la batería en casos de cortes de suministro eléctrico

Paneles solares para techos y tierra

- Incentivo sobre paneles solares para techos comerciales e industriales: PSE incentiva a los clientes a instalar paneles solares
- Contratos de compra de energía solar distribuida (PPA): Un tercero construye y gestiona paneles solares, y PSE les compra energía para su sistema

Mantenimiento de la asequibilidad en la transición

Sabemos que los clientes quieren avanzar más y más rápido a un futuro con energía limpia. La transición hacia la energía limpia y la continuación de la proporción de energía segura, confiable y eficiente son prioridades para PSE. Expandir nuestro portfolio de recursos limpios muy rápido provocará un aumento en las facturas de los clientes.

Estamos trabajando para equilibrar la transición a la energía limpia a la vez que mantenemos la asequibilidad para los clientes y evitamos sobrecargar de manera injusta a las poblaciones vulnerables. Estimamos que los precios aumentarán, en promedio, un 2 % por año (es decir, $6/mes para 2025 para clientes residenciales y $37/mes para 2025 para empresas).

Aunque este camino dinámico hacia la energía limpia aumentará las facturas de los clientes promedio con el tiempo, el CEIP incluye oportunidades para que los clientes reduzcan sus facturas de electricidad mediante la eficiencia energética, una respuesta a la demanda nueva y un programa de recursos de energía distribuidos.

Conozca más en el Capítulo 5: Costo

Station 6: Compromisos y próximos pasos

Cómo cumpliremos nuestros objetivos de energía limpia

Compromisos

A medida que trabajamos para crear un futuro de energía limpia y en la necesidad urgente de abordar el cambio climático, debemos hacerlo de una manera que garantice que todos nuestros clientes, especialmente aquellos que llevan una participación descomunal de la carga climática, tengan una voz en la transición a la energía limpia y se beneficien de esta transición. Luego de escuchar a nuestro Grupo Asesor de Equidad (EAG) y aprender de este, surgieron los siguientes principios guía de todos los debates. PSE usará estos principios para ayudar a guiar la implementación del CEIP y garantizar la equidad y la rendición de cuentas.

Generar conciencia y entendimiento de la energía limpia en los clientes

Ayudar a los clientes a obtener un sentido de valor y propiedad en la transformación de energía limpia.

Involucrar de forma deliberada a las poblaciones vulnerables y altamente afectadas en los debates del diseño del programa

Los programas que operen a favor de los más vulnerables lo harán también a nuestro favor.

Crear programas asequibles y accesibles para poblaciones vulnerables y altamente afectadas

Esto requiere de oportunidades de participación para quienes alquilan, para las viviendas multifamiliares, para las pequeñas empresas y para las viviendas de bajos ingresos.

Medición efectiva del alcance del programa y de la comunicación para poblaciones vulnerables y altamente afectadas

Esto requiere el seguimiento de la participación por estadísticas demográficas e indicadores de beneficios para clientes.

Lograr que la participación y la educación sean culturalmente relevantes, pertinentes y deliberadas.

Para esto, se requiere compartir información en muchos idiomas, con herramientas digitales y analógicas, y expandir las sociedades con organizaciones comunitarias.

Ofrecer capacitaciones y recursos para socios y clientes, para aumentar la equidad en programas y beneficios de energía limpia

Debemos hacer esto para aumentar la equidad en los programas y beneficios de energía limpia.

Estos son principios preliminares. PSE y el EAG continuarán desarrollando estos principios para el plan CEIP final y pueden ajustarlos todavía más durante la implementación. PSE también se compromete a un proceso de planificación energética constante y repetitivo que incluya la incorporación de los resultados de los procesos de adquisición, rastreo de los avances en los indicadores de beneficios para los clientes y aprendizajes a partir de la implementación inicial de los programas.

Conozca más en el Capítulo Ocho: Trabajo Futuro y Compromisos de PSE

Próximos pasos para el proceso e implementación del CEIP

17 de diciembre de 2021

2022

UTC aprobará, rechazará o modificará el CEIP

2023

2021

PSE completará el plan CEIP y lo enviará en la Comisión de Servicios Públicos y Transporte (UTC) de Washington

UTC aprobará, rechazará o modificará el CEIP.

PSE comenzará la implementación del CEIP con indicadores de beneficios para los clientes para orientarnos en la decisiones relacionadas con el programa y las inversiones. Continuaremos involucrándonos con los clientes y los grupos asesores en las actualizaciones de implementación y avance del CEIP.

Informaremos nuestro avance hacia los objetivos e indicadores de beneficios al cliente.

PSE comenzará a implementar nuevos programas de electricidad limpia.

La planificación del futuro de la electricidad limpia es un proceso continuo con implementación, informes anuales y actualizaciones del plan. Este CEIP es el primero de muchos. Continuaremos interactuando con nuestros clientes y partes interesadas en cada paso del camino en nuestro camino hacia una electricidad 100% limpia.

Station 7: Envío de comentarios

¡Gracias por su interés en el Plan de implementación de energía limpia (CEIP) de Puget Sound Energy! Los comentarios que recibimos antes del 12 de noviembre se procesarán y abordarán en el CEIP final, previsto para el 17 de diciembre de 2021.

Continuaremos aceptando y revisando los comentarios sobre el borrador del CEIP, pero nuestra capacidad de incluir sus comentarios en el CEIP final se vuelve menos probable a medida que avanzamos en diciembre y nos acercamos a la fecha de presentación del 17 de diciembre.

enviar comentarios

Aprende más

Definiciones y preguntas frecuentes

Онлайн-день открытых дверей

Проект Плана внедрения чистой энергии

Пункт 1: Добро пожаловать

Присоединяйтесь к нам на пути к 100% чистой электроэнергии

Этот План внедрения чистой энергии (CEIP) представляет собой четырехлетний перспективный план, который:

- Продвигает PSE вперед к почти 60% чистой электроэнергии к концу 2025 года, что является значительным шагом на пути к достижению наших целей в области чистой энергии на 2030 и 2045 годы.
- Исключает уголь как источник электроэнергии из нашей сети к концу 2025 года.
- Увеличивает объем наших экологически чистых источников электроэнергии, таких как крупномасштабные проекты в области ветроэнергетики и местные проекты по установке солнечных панелей на крышах и на земле, которые реализуются в партнерстве с частными домами и предприятиями.
- Предоставляет клиентам больше возможностей для экономии энергии и снижения затрат за счет повышения энергоэффективности.
- Задает новое направление для местных программ по установке солнечных панелей на крышах и на земле и по использованию аккумуляторов для солнечных батарей, а также стимулирует сокращение энергопотребления в периоды пиковой нагрузки.
- Обеспечивает справедливое распределение преимуществ от перехода на чистую энергию и направляет нас на путь создания более инклюзивного безуглеродного будущего.

Мы хотим узнать Ваши мнения

На этом открытом онлайн-форуме кратко излагаются важные части проекта CEIP. Чтобы запросить материалы в другой форме или на другом языке, отправьте электронное сообщение по адресу ceip@pse.com.

Прокрутите станции

Просмотрите все пункты, чтобы узнать, как мы разработали проект CEIP, и что это значит для Вас

Отправить комментарии

Отправляйте свои вопросы, комментарии, используя нашу форму обратной связи, или отправьте электронное письмо по адресу ceip@pse.com

Мы продолжим принимать и рассматривать комментарии к проекту программы CEIP, но наша возможность включить ваши отзывы в окончательную версию программы CEIP станет менее вероятной

по мере приближения даты подачи заявки 17 декабря.

Прочитать проект Плана внедрения чистой энергии

PSE стремится бороться с климатическими изменениями и к 2045 году стать энергетической компанией с нулевыми выбросами углерода. CEIP является ключевым элементом нашей стратегии, направленной на достижение этой цели.

Пункт 2: Справочная информация

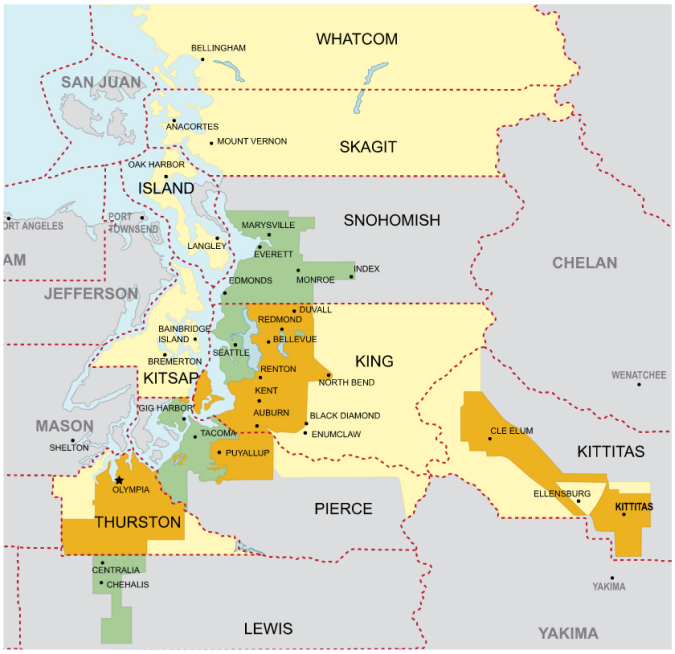
План внедрения чистой энергии (CEIP) – это четырехлетний перспективный план, который будет определять инвестиции PSE в чистую электроэнергию на 2022-2025 годы. Это первый из многих планов, которые приведут нас к достижению нашей цели по обеспечению 100% чистой электроэнергии к 2045 году и помогут обеспечить преимущества от перехода на чистую электроэнергию для всех клиентов.

О компании Puget Sound Energy

PSE является крупнейшим коммунальным предприятием штата Вашингтон и обслуживает электроэнергией 1,1 миллиона потребителей в восьми округах региона Пьюджет-Саунд. Мы обеспечиваем наших клиентов безопасной, надежной и доступной по цене энергией и помогаем делать наши сообщества лучшими местами для жизни и работы.

PSE стремится работать совместно с потребителями в борьбе с климатическими изменениями и ставит перед собой амбициозную цель – к 2045 году стать энергетической компанией с нулевыми выбросами углерода.

Узнайте, как электричество доходит до Вас



Combined electric and natural gas service

Electric service

Natural gas service

Переход на чистую электроэнергию

Закон о преобразовании за счет чистой энергии направляет штат Вашингтон на пути к обеспечению чистой электроэнергии, требуя от коммунальных предприятий предоставлять безугольную электроэнергию к концу 2025 года, углеродно-нейтральную электроэнергию к 2030 году и 100% чистую электроэнергию к 2045 году.

Основные этапы развития чистой энергии

2025 г.

Безугольное электричество

2030 г.

Углеродно-нейтральная электрическая система

2045 г.

100% чистое электричество

Электричество сегодня

Электроэнергия, поставляемая PSE, производится на основе различных источников. Сегодня более 30% электроэнергии PSE поступает из чистых источников, таких как ветряные электростанции и гидроэлектростанции, которые не выбрасывают парниковые газы.

Чистая электроэнергия поступает из ресурсов, которые не выделяют парниковые газы, вызывающие климатические изменения. Солнечные панели, плотины гидроэлектростанций и ветряные турбины являются примерами чистых источников электроэнергии.

Опубликовано Министерством торговли Вашингтона, октябрь 2020 г., данные предоставлены PSE в августе 2020 г.

PSE является одним из первых лидеров в решении проблемы климатических изменений, вложив значительные инвестиции в возобновляемые ресурсы и энергоэффективность для частных домов и предприятий. Сейчас мы находимся на пути удовлетворения текущих и будущих потребностей наших клиентов и достижения амбициозных поступательных целей штата Вашингтон по преобразованию за счет чистой энергии.

Четырехлетний план CEIP PSE отражает ускорение реализации стратегий чистой электроэнергии в рамках портфеля PSE, прогресс в достижении этих поступательных целей на основе вклада сообщества, а также потребности и стратегии, определенные в других документах долгосрочного планирования.

Равенство и справедливость в области чистой электроэнергии

По мере того, как мы работаем над созданием нового будущего чистой энергии и с учетом неотложной необходимости решения проблемы климатических изменений, мы должны делать это таким образом, чтобы все наши клиенты, особенно уязвимые и значительно пострадавшие сообщества, на которые ложится чрезмерная часть климатического бремени, имели право голоса и получали выгоду от перехода на чистую энергию.

В этой работе мы придерживаемся принципов энергетической справедливости, рассматривая факторы доступности, ценовой приемлемости и подотчетности.

В 2021 году PSE учредила нашу первую Консультативную группу по вопросам равенства и справедливости (EAG), чтобы расширить взаимодействие с сообществами, которые мы обслуживаем, представляя точки зрения сообществ с низкими доходами, а также чернокожих, коренных и цветных людей.

✔ Закон о преобразовании за счет чистой энергии (CETA)

В 2019 году губернатор Инсли подписал Закон о преобразовании за счет чистой энергии (CETA), обязывающий штат Вашингтон обеспечить электричество без выбросов парниковых газов к 2045 году. CETA включает три ключевых этапа:

- Исключить уголь как источник электроэнергии к концу 2025 года

- Обеспечить всех наших клиентов углеродно-нейтральной электроэнергией к 2030 году, состоящей как минимум на 80% из чистой электроэнергии и до 20% из не чистой электроэнергии с альтернативными мерами по соблюдению нормативных требований
- Обеспечить всех наших клиентов 100% чистой электроэнергией к 2045 году

CETA включает правила, позволяющие сделать электроэнергию доступной, надежной и обеспечить все преимущества для клиентов от преобразования за счет чистой электроэнергии.

✔ Комиссия по коммунальным предприятиям и транспорту (UTC)

✔ Долгосрочное энергетическое планирование

Пункт 3: Вовлечение клиентов

Улучшение наших сообществ в рамках борьбы с климатическими изменениями

Переход на чистую электроэнергию создает возможности для улучшения жизни наших сообществ за счет таких преимуществ, как более чистый воздух, улучшение здоровья населения, новые рабочие места или различные способы получения электроэнергии потребителями.

В рамках работы PSE по обеспечению чистой энергии мы должны обеспечивать равенство и справедливость при переходе на чистую энергию. Частью обеспечения равенства и справедливости является выявление конкретных сообществ или клиентов, несоразмерно несущих более значительное бремя.

Мы разрабатываем наш CEIP для решения проблем, с которыми сталкиваются уязвимые и значительно пострадавшие сообщества, которые наиболее подвержены риску климатических изменений. Знание географического местоположения и факторов, формирующих эти сообщества, поможет нам выявить пробелы в предоставляемых услугах, разработать программы, отвечающие потребностям этих сообществ, и помочь нам распределять преимущества более справедливо.

PSE стремится обеспечивать процесс с участием общественности, который укрепляет связи с сообществами и создает решения, отражающие эти ценности.

Кого мы стремимся вовлекать

✔ Уязвимые группы населения

Люди, которые подвергаются повышенному риску воздействия на окружающую среду в связи с социальными, экономическими и другими условиями. Консультативная группа по вопросам равенства и справедливости рекомендовала, чтобы это определение конкретно включало экономические трудности, стоимость жилья, расу/этническую принадлежность, исторически испытывавшие ограничения сообщества, инвалидность, пожилых людей, язык, психическое здоровье и уход на дому.

✔ Значительно пострадавшие сообщества

✔ Клиенты в жилых домах

✔ Бизнес-клиенты

- Консультативная группа по вопросам равенства и справедливости
- Другие консультативные группы PSE
- Местные общественные организации (CBO)

Как клиенты и заинтересованные стороны хотят получить выгоду от чистой электроэнергии

Весной 2021 года компания PSE собрала отзывы клиентов и заинтересованных сторон об их ценностях в отношении чистой электроэнергии и преимуществах, которые они хотят получать от преобразования за счет чистой электроэнергии. PSE собрала информацию посредством опросов клиентов, заседаний консультативных групп и встреч с представителями местных общественных организаций.

921

Отправлен 921 общий опрос клиентов

194

Отправлено 194 опроса бизнес-клиентов

8

8 встреч с местными общественными организациями

9

9 заседаний Консультативной группы по вопросам равенства и справедливости

13

13 встреч с другими консультативными группами PSE

Ниже мы кратко изложили комментарии по нескольким темам. Нажмите на комментарий, чтобы прочитать подробную информацию.

- Окружающая среда: Сокращение выбросов парниковых газов и добычи ископаемого топлива.

Заинтересованные стороны призвали к обеспечению преимуществ, которые приведут к снижению выбросов парниковых газов и сокращению добычи ископаемого топлива. Помимо уменьшения воздействия климатических изменений, заинтересованные стороны выразили желание, чтобы действия также обеспечивали преимущества и в других категориях, таких как создание рабочих мест, более чистый воздух, улучшение здоровья населения, энергетическая независимость и долгосрочное сокращение затрат.

- Общественное здоровье: Улучшение качества воздуха и улучшение здоровья и благополучия сообщества.
- Доступность: сокращение доходов, расходуемых на электроэнергию, и расширение возможностей населения с низкими доходами участвовать в программах экологически чистой электроэнергии.
- Экономический фактор: Увеличение количества рабочих мест в сфере чистой энергии и обеспечение их доступности для уязвимых групп населения.

- Доступность: Предоставление клиентам возможности участвовать во всех программах чистой электроэнергии независимо от уровня дохода.
- Участие в чистой электроэнергии: Обеспечение доступа к преимуществам солнечной энергии для уязвимых и значительно пострадавших слоев населения. Найти возможности снизить затраты клиентов за счет солнечной энергии.
- Устойчивость: Обеспечение отказоустойчивой системы чистого электроснабжения.
- Комфорт и удовлетворение: Создание системы чистого электроснабжения, на которую клиенты могут рассчитывать и которая отражает их заботу об окружающей среде.

Узнайте больше в Разделе Шесть: Участие общественности

Пункт 4: Преимущества для клиентов

Использование преимуществ для клиентов при формировании нашего плана

Чтобы наши действия в области чистой электроэнергии обеспечивали преимущества, которые хотят видеть наши клиенты, мы использовали вклад сообщества для разработки показателей преимуществ для потребителей (CBI). CBI – это качества или результаты, которые клиенты хотят получить в результате наших действий в области чистой электроэнергии.

Как мы используем индикаторы выгоды для клиентов:

- Чтобы направлять наш выбор действий и инвестиций для достижения наших целей в области чистой электроэнергии
- Для измерения нашего прогресса в достижении преимуществ, которые хотят видеть наши клиенты

Более активное участие уязвимых и значительно пострадавших групп населения

Как мы будем измерять прогресс: Оценка участия клиентов PSE в уязвимых и значительно пострадавших группах населения

Увеличение числа рабочих мест в сфере чистой энергии

Как мы будем измерять прогресс: Отслеживание количества рабочих мест, созданных программами PSE, в том числе для уязвимых и значительно пострадавших групп населения

Повышение комфорта в доме и улучшение качества воздуха в помещениях для уязвимых и значительно пострадавших групп населения

Как мы будем измерять прогресс: Расчет экономических преимуществ от температуры воздуха, качества воздуха в помещении и качества освещения

Снижение затрат на уязвимые и сильно пострадавшие группы населения

Как мы будем измерять прогресс: Расчет процента дохода, потраченного на счета за электроэнергию для клиентов PSE из уязвимых и сильно пострадавших групп населения

Улучшение качества наружного воздуха

Как мы будем измерять прогресс: Измерение регулируемых выбросов загрязняющих веществ и

Улучшение здоровья сообщества

Как мы будем измерять прогресс: Расчет таких факторов здоровья, как смертность, госпитализация,

Снижение выбросов парниковых газов

Как мы будем измерять прогресс: Расчет выбросов углекислого газа (CO_2) от ресурсов PSE

Снижение воздействия климатических изменений

Как мы будем измерять прогресс: Снижение пикового спроса на

сокращение загрязнения от ресурсов PSE.

количество дней потери работы

электроэнергию

Доступность чистой энергии

Как мы будем измерять прогресс: Расчет процента дохода, потраченного на счета за электроэнергию, для клиентов PSE

Снижение частоты и продолжительности отключений

Как мы будем измерять прогресс: Измерение количества отключений, общего количества часов отключений и общего количества резервной электроэнергии, подаваемой во время отключений

Повышенная отказоустойчивость

Как мы будем измерять прогресс: Расчет количества клиентов, у которых есть доступ к аварийному электроснабжению дома или в общественных центрах

Узнайте больше в Разделе Три: Показатели преимуществ для клиентов, значительно пострадавшие сообщества и уязвимые группы населения

Пункт 5: Цели и действия

Мы работаем над тем, чтобы продвигаться дальше и быстрее к цели перехода на чистую электроэнергию. Цель PSE – обеспечить безугольную электроэнергию к концу 2025 года, углеродно-нейтральную электроэнергию к 2030 году и 100-процентную чистую электроэнергию к 2045 году. Эти цели требуют поэтапного подхода, чтобы мы также могли продолжать предоставлять безопасную, надежную и доступную электроэнергию нашим клиентам.

В течение следующих четырех лет PSE увеличит объемы нашей чистой электроэнергии с 35% до 59%.

Для достижения этой цели мы будем предпринимать конкретные действия в рамках программ и инвестиций в следующих областях.

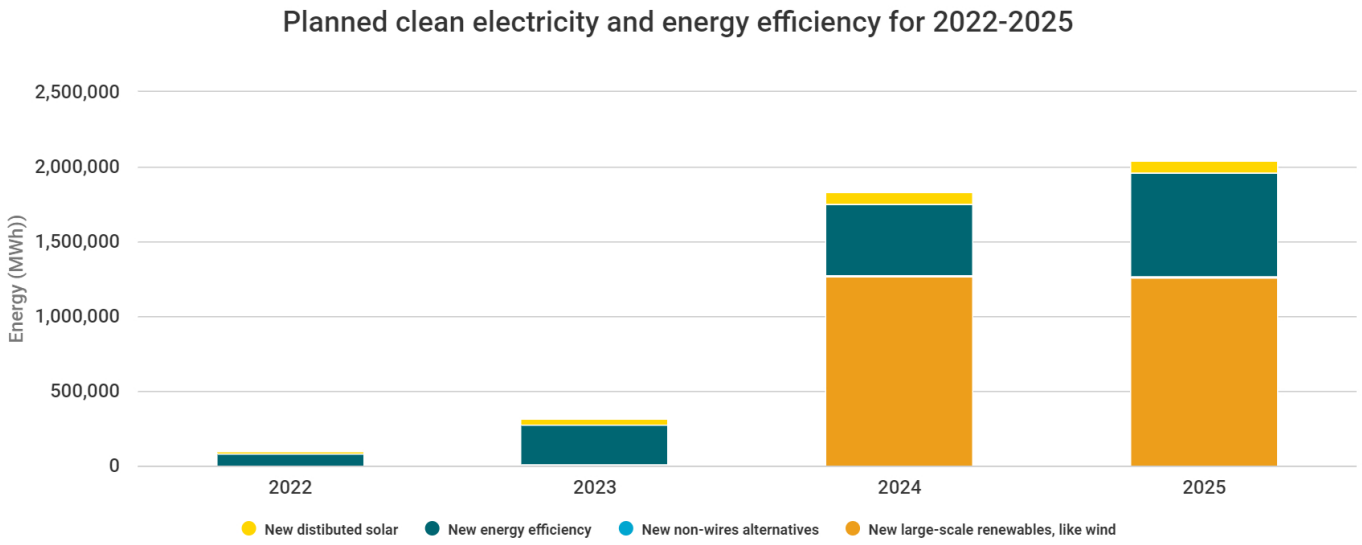
- ✔ Программы энергоэффективности, снижающие количество потребляемой нами энергии

  Такие программы, как скидки на энергоэффективные приборы, гранты на переоборудование и модернизацию энергоемких зданий, утепление на основе доходов

- ✔ Реагирование на спрос, снижающее потребность в энергии в периоды пиковой нагрузки

- ✔ Возобновляемая энергия

✔ Аккумуляторные батареи



Узнайте больше в Разделе Четыре: Конкретные действия

Использование преимуществ для клиентов при формировании наших решений

Новым компонентом нашего планирования энергоресурсов является использование преимуществ для клиентов для формирования наших программных и инвестиционных решений. PSE будет использовать преимущества для клиентов для оценки типов инвестиций в электроэнергию, которые мы планируем в течение следующих четырех лет.

В рамках процесса разработки CEIP компания PSE использовала преимущества для клиентов, чтобы определить потенциальные программные концепции для распределенных энергоресурсов – это местные программы по установке солнечных панелей на крышах и на земле и по использованию аккумуляторов для солнечных батарей для частных домов и предприятий. Ниже показаны местные программы по установке солнечных панелей и использованию аккумуляторов для солнечных батарей, которые, как мы изначально определили, могут обеспечить преимущества для различных типов клиентов. Дополнительные программы будут доступны для повышения энергоэффективности и реагирования на спрос.

Все концепции распределенных энергоресурсов будут искать инклюзивные возможности для уязвимых групп населения и сильно пострадавших сообществ.

Уязвимые и значительно пострадавшие группы населения

Аккумуляторы для солнечных батарей

- Аренда аккумуляторов для солнечных батарей PSE в жилых помещениях (для лиц с низким доходом): PSE арендует место на частной территории для установки батареи, и люди, проживающие на этой территории, могут использовать батарею во время некоторых случаев отключения электроэнергии

Клиенты в жилых домах

Аккумуляторы для солнечных батарей

- Аренда аккумуляторов для солнечных батарей PSE в жилых помещениях: PSE арендует место на частной территории для установки батареи, и люди, проживающие на этой территории, могут использовать батарею во время некоторых случаев отключения электроэнергии

Солнечные панели на крышах и на земле

- Аренда солнечных панелей для жилых помещений: PSE арендует частное

Коммерческие и промышленные клиенты

Аккумуляторы для солнечных батарей

- Аренда коммерческих и промышленных помещений для аккумуляторных батарей: PSE арендует место на частной территории для установки батареи, и люди, проживающие на этой территории, могут использовать батарею во время некоторых случаев отключения электроэнергии

Солнечные панели на крышах и на земле

- Аренда солнечных панелей для жилых помещений (для лиц с низким доходом): PSE арендует частное пространство на крыше или другой территории для установки солнечных панелей, которые вырабатывают электричество для энергосистемы
- Солнечная энергия для многогосемейных сообществ: Потребители электроэнергии PSE, являющиеся арендаторами, подписываются на солнечную энергию, вырабатываемую на местном уровне
- Программа в области солнечной энергии для сообществ с низким доходом (существующая программа): Потребители электроэнергии PSE, соответствующие требованиям на основе уровня дохода, подписываются на солнечную энергию, вырабатываемую на местном уровне
- Программа многосемейного партнерства в области солнечной энергии: PSE сотрудничает с домами, где проживают многочисленные семьи, например, многоквартирные дома, для установки солнечных панелей для производства электроэнергии для людей, которые живут в этих домах
- Поощрение установки солнечных панелей на крышах многоквартирных домов: PSE поощряет клиентов устанавливать солнечные панели

пространство на крыше или другой территории для установки солнечных панелей, которые вырабатывают электричество для энергосистемы

- Customer Connected Solar (существующая программа): PSE снижает счета за электроэнергию для клиентов, когда они устанавливают свои собственные солнечные панели и производят энергию для отправки обратно в сеть (чистые измерения).

Гибридный вариант

- PSE Солнечные панели + оборудование для накопления электроэнергии для клиентов: PSE поощряет клиентов устанавливать солнечные панели и аккумуляторы для солнечных батарей, и PSE платит за их использование

Солнечные панели на крышах и на земле

- Поощрение коммерческих и промышленных клиентов для установки солнечных панелей на крыше: PSE поощряет клиентов устанавливать солнечные панели
- Соглашение о распределенной закупке солнечной энергии (PPA): Третья сторона производит солнечные панели и управляет ими, и PSE покупает электроэнергию от системы

Обеспечение ценовой доступности в течение переходного периода

Мы знаем, что клиенты хотят продвигаться дальше и быстрее на пути к чистому электричеству. Переход на чистую электроэнергию и продолжение предоставления безопасной, надежной и эффективной энергии являются приоритетами для PSE. Столь быстрый рост нашего портфеля чистых ресурсов приведет к увеличению счетов клиентов.

Мы работаем над тем, чтобы сбалансировать переход на чистую электроэнергию, обеспечивая при этом доступность для потребителей и не возлагая несправедливое бремя на уязвимые группы населения. По нашим оценкам, тарифы будут повышаться в среднем на два процента в год (например, примерно на 6 долларов в месяц к 2025 году для жилых домов и на 37 долларов в месяц к 2025 году для предприятий).

Хотя этот агрессивный путь к экологически чистому электричеству со временем увеличит средний счет потребителя, CEIP включает в себя возможности для потребителей снизить свои счета за электроэнергию за счет повышения энергоэффективности, нового реагирования на спрос и программ распределенных энергоресурсов.

Узнать Больше в Главе Пять: Стоимость

Пункт 6: Обязательства и следующие шаги

Как мы будем достигать наших целей в области чистой электроэнергии

Обязательства

По мере того, как мы работаем над созданием нового будущего чистой энергии и с учетом неотложной необходимости решения проблемы климатических изменений, мы должны делать это таким образом, чтобы все наши клиенты, особенно те, на которых ложится чрезмерная часть климатического бремени, имели право голоса и получали выгоду от перехода на чистую энергию. Мы прислушивались и извлекали уроки из мнений членов нашей новой Консультативной группы по вопросам равенства и справедливости (EAG), и в результате этих обсуждений были сформулированы следующие руководящие принципы. PSE будет использовать эти принципы для руководства реализацией CEIP и обеспечения подотчетности, равенства и справедливости.

Повышать осведомленность клиентов и понимание экологически чистой энергии.

Помогать клиентам ощутить ценность и ответственность за преобразование за счет чистой энергии.

Намеренно вовлекать уязвимые и значительно пострадавшие группы населения в обсуждение проекта программы.

Программы, которые работают для наиболее уязвимых из нас, будут эффективно работать для всех нас.

Создавать приемлемые по цене и доступные программы для уязвимых и значительно пострадавших групп населения.

Для этого нужны возможности для участия арендаторов, многоквартирных домов, малого бизнеса и домохозяйств с низкими доходами.

Эффективно измерять охват программ и связей с уязвимыми и значительно пострадавшими группами населения.

Это требует отслеживания участия по демографическим характеристикам и показателям преимуществ для клиентов.

Сделать информационно-просветительскую работу и образование культурно актуальными, значимыми и целенаправленными.

Для этого требуется обмен информацией на нескольких языках с использованием как цифровых, так и нецифровых инструментов, а также растущее партнерство с местными общественными организациями.

Обеспечивать образование и ресурсы среди партнеров и клиентов для расширения равенства и справедливости в программах и преимуществ чистой энергии.

Мы должны сделать это для увеличения справедливости в программах и льготах в области чистой энергии.

Это предварительные принципы. PSE и EAG продолжат разработку этих принципов для окончательной версии CEIP и могут вносить в них дальнейшие изменения в ходе внедрения плана. PSE также стремится к непрерывному и циклическому процессу энергетического планирования, который включает в себя учет результатов процессов закупок, отслеживание прогресса по показателям преимуществ для клиентов и извлеченные из первоначального внедрения программ уроки и знания.

Узнать Больше в Главе Восемь: Будущая Работа И Обязательства По PSE

Следующие шаги в рамках процесса и внедрения CEIP

17 декабря 2021 г.

PSE завершит разработку CEIP и отправит его в Комиссию по коммунальным предприятиям и транспорту штата Вашингтон.

2022 г.

UTC одобрит, отклонит или изменит наш CEIP.

PSE начнет реализацию CEIP, используя показатели преимуществ для клиентов для определения наших программных и инвестиционных решений. Мы продолжим взаимодействовать с клиентами и нашими консультативными группами по вопросам внедрения CEIP и обновлений о ходе работы.

2023 г.

Мы будем сообщать о нашем прогрессе в достижении наших целей и показателей преимуществ для клиентов.

PSE начнет внедрение новых программ чистой электроэнергии.

Планирование будущего чистой электроэнергии - это непрерывный процесс, включающий внедрение, ежегодную отчетность и обновления планов. Этот CEIP - первый из многих. Мы продолжим взаимодействовать с нашими клиентами и заинтересованными сторонами на каждом этапе нашего пути к 100% чистой электроэнергии.

Пункт 7: Отправить комментарии

Благодарим вас за интерес к Плану внедрения чистой энергии (CEIP) Puget Sound Energy! Комментарии, полученные нами до 12 ноября, будут обработаны и учтены в окончательной версии CEIP, которая ожидается 17 декабря 2021 года.

Мы продолжим принимать и рассматривать комментарии к проекту программы CEIP, но наша возможность включить ваши отзывы в окончательную версию программы CEIP станет менее вероятной по мере того, как мы приближаемся к декабрю и приближаемся к дате подачи заявки 17 декабря.

Оставлять комментарии

Учить больше

Определения и часто задаваемые вопросы

Buổi ra mắt trực tuyến

Kế Hoạch Dự thảo Triển Khai Năng Lượng Sạch

Trạm 1: Chào mừng

Hãy đồng hành cùng chúng tôi trên con đường tiến tới điện sạch 100%

Kế hoạch Triển khai Năng lượng Sạch (CEIP) là một lộ trình kéo dài bốn năm:

- Đưa PSE tiến tới mục tiêu 60% điện sạch vào cuối năm 2025 – trên con đường đạt đến các mục tiêu về năng lượng sạch của chúng tôi cho năm 2030 và 2045.
- Ngừng sử dụng nguồn điện từ than đá cho lưới điện của chúng ta vào cuối năm 2025.
- Tăng cường các nguồn điện sạch - như năng lượng gió quy mô lớn và các dự án năng lượng mặt trời trên mái nhà và mặt đất tại địa phương hợp tác với các hộ gia đình và doanh nghiệp.
- Mang đến cho khách hàng thêm nhiều cơ hội để tiết kiệm năng lượng và giảm chi phí thông qua việc nâng cao hiệu quả sử dụng năng lượng.
- Đặt ra hướng đi mới cho các chương trình lưu trữ pin và năng lượng mặt trời trên mái nhà và mặt đất tại địa phương, cũng như các biện pháp khuyến khích giảm thiểu sử dụng năng lượng trong các khoảng thời gian cao điểm.
- Đảm bảo các lợi ích của quá trình chuyển đổi năng lượng sạch được phân bổ bình đẳng và đưa chúng ta đến với con đường xây dựng một tương lai không có carbon, toàn diện hơn.

Chúng tôi muốn nghe từ quý vị!

Buổi ra mắt trực tuyến này tóm tắt các thông tin quan trọng của dự thảo CEIP. Để yêu cầu tài liệu bằng định dạng hoặc ngôn ngữ khác, hãy gửi email tới ceip@pse.com.

Hãy đi thăm các trạm

Hãy đi thăm các trạm để tìm hiểu cách chúng tôi phát triển bản thảo CEIP và ý nghĩa nội dung bản thảo

Gửi ý kiến

Gửi nhận xét câu hỏi của ban bằng cách sử dụng phản hồi của chúng tôi từ hoặc gửi email đến ceip@pse.com

Chúng tôi sẽ tiếp tục chấp nhận và xem xét các nhận xét về dự thảo CEIP, nhưng khả năng chúng tôi đưa phản hồi của bạn vào CEIP cuối cùng sẽ trở nên ít khả năng hơn khi chúng tôi đến gần ngày nộp đơn 17 tháng 12.

Xem Kế Hoạch Dự thảo Triển Khai Năng Lượng Sạch

PSE cam kết hành động chống lại biến đổi khí hậu và mong muốn trở thành một công ty năng lượng hoàn toàn không phát thải khí nhà kính vào năm 2045. CEIP là một phần quan trọng trong chiến lược của chúng tôi để thực

hiện mục tiêu này.

Trạm 2: Khái quát

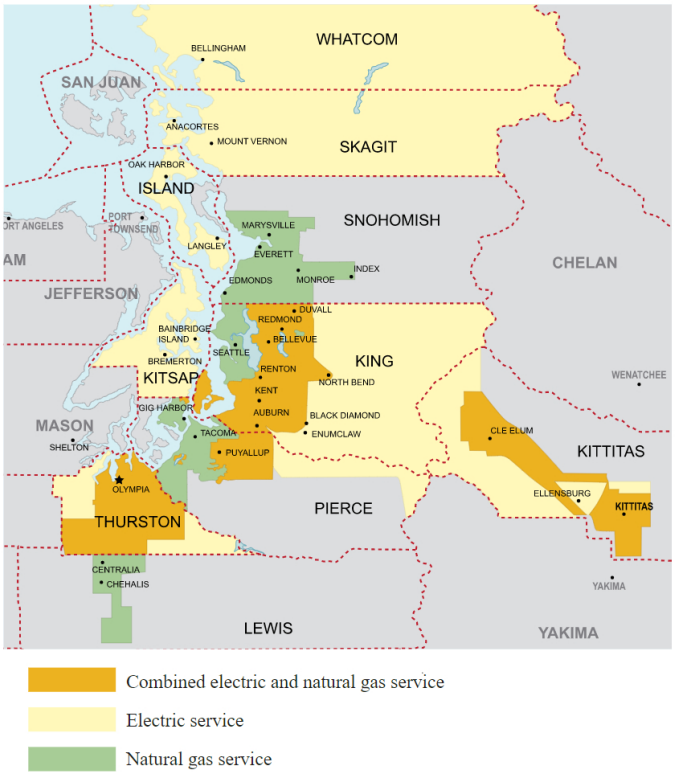
Kế Hoạch Triển Khai Năng Lượng Sạch (Clean Energy Implementation Plan, CEIP) là lộ trình bốn năm định hướng các khoản đầu tư vào điện sạch của PSE trong những năm 2022-2025. Đây là kế hoạch đầu tiên trong nhiều kế hoạch đưa chúng tôi đến với mục tiêu 100% điện sạch vào năm 2045 và giúp đảm bảo tất cả khách hàng đều được hưởng lợi từ việc chuyển đổi sang sử dụng nguồn điện sạch.

Giới thiệu về Puget Sound Energy

PSE là công ty năng lượng lớn nhất Tiểu bang Washington và cung cấp điện cho 1,1 triệu khách hàng tại tám hạt của vùng Puget Sound. Chúng tôi cung cấp năng lượng an toàn, đáng tin cậy, giá cả phải chăng cho khách hàng và giúp cho cộng đồng của chúng tôi trở thành một nơi tốt đẹp hơn để sống và làm việc.

PSE cam kết làm việc với khách hàng để hành động chống lại biến đổi khí hậu và có mục tiêu đầy tham vọng là trở thành một công ty năng lượng hoàn toàn không phát thải khí nhà kính vào năm 2045.

Tìm hiểu cách điện đến với quý vị



Chuyển đổi sang điện sạch

Đạo luật Chuyển đổi Năng lượng Sạch đặt Washington trên con đường phát triển điện sạch, yêu cầu các cơ sở cung cấp điện cho tới cuối năm 2025 sẽ ngừng sử dụng than đá, đạt mục tiêu điện trung hòa cacbon vào năm 2030 và 100% điện sạch vào năm 2045.

Các mốc năng lượng sạch

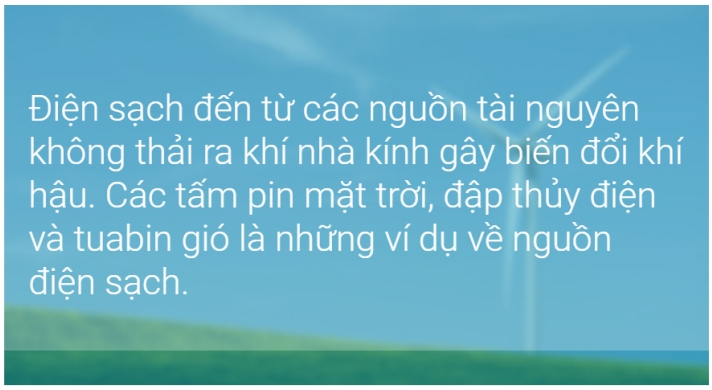
Năm 2025
Điện không than

Năm 2030
Hệ thống điện trung tính carbon

2045
100% điện sạch

Điện ngày nay

Nguồn điện mà PSE cung cấp được tạo ra từ sự kết hợp nhiều tài nguyên. Ngày nay, hơn 30% nguồn cung cấp năng lượng điện của PSE đến từ các nguồn sạch như gió và các cơ sở thủy điện không phát thải khí nhà kính.



Được xuất bản bởi Bộ Thương mại Washington, tháng 10 năm 2020, với dữ liệu được PSE báo cáo vào tháng 8 năm 2020.

PSE đã sớm đi đầu trong việc giải quyết vấn đề biến đổi khí hậu, đầu tư đáng kể vào các nguồn tài nguyên tái tạo và sử dụng năng lượng hiệu quả cho các hộ gia đình và doanh nghiệp. Giờ đây, chúng tôi đang trên con đường đáp ứng nhu cầu hiện tại và tương lai của khách hàng và đạt được các cột mốc chuyển đổi năng lượng sạch đầy tham vọng của Washington.

Lộ trình CEIP bốn năm của PSE vạch ra kế hoạch tăng tốc của các chiến lược điện sạch trong danh mục đầu tư của PSE, cũng như tiến tới các mốc quan trọng này dựa trên ý kiến đóng góp của cộng đồng cũng như các nhu cầu và chiến lược được xác định trong các tài liệu kế hoạch dài hạn khác.

Bình đẳng về điện sạch

Song song với nỗ lực tạo dựng một tương lai điện sạch mới và giải quyết vấn đề biến đổi khí hậu, chúng tôi phải đồng thời đảm bảo tất cả các khách hàng của chúng tôi, đặc biệt là các cộng đồng dễ bị tổn thương và chịu nhiều tác động, những người gánh vác phần lớn gánh nặng khí hậu, có tiếng nói và được hưởng lợi từ việc chuyển đổi sang điện sạch.

Trong công việc này, chúng tôi áp dụng các nguyên tắc về bình đẳng năng lượng bằng cách giải quyết các vấn đề về khả năng tiếp cận, khả năng chi trả và trách nhiệm giải trình.

Năm 2021, PSE đã triệu tập Nhóm Tư vấn Bình đẳng (EAG) đầu tiên để mở rộng sự gắn kết với các cộng đồng mà chúng tôi phục vụ, thể hiện quan điểm từ các cộng đồng thu nhập thấp và Người da đen, Người bản địa và Người da màu.

✔ Đạo luật Chuyển đổi Năng lượng Sạch (CETA)

Năm 2019, Thống đốc Inslee đã ký và thông qua Đạo luật Chuyển đổi Năng lượng Sạch (CETA), trong đó cam kết cho tới năm 2045, Washington sẽ cung cấp điện không phát thải khí nhà kính. CETA bao gồm ba cột mốc chính:

- Ngừng sử dụng nguồn điện từ than đá vào cuối năm 2025
- Phục vụ điện trung tính carbon vào năm 2030 cho toàn bộ khách hàng, bao gồm ít nhất 80% điện sạch và tối đa 20% điện không sạch với các hành động tuân thủ thay thế
- Phục vụ 100% điện sạch vào năm 2045 cho toàn bộ khách hàng

CETA có các quy tắc để giữ cho điện có mức giá phải chăng, đáng tin cậy và đảm bảo mọi khách hàng đều được hưởng lợi từ việc chuyển đổi sang sử dụng điện sạch.

✔ Ủy ban Tiện ích và Vận tải (Utilities and Transportation Commission, UTC)

✔ Quy hoạch năng lượng tầm xa

Trạm 3: Gắn kết khách hàng

Cải thiện cộng đồng của chúng ta song song với mục tiêu chống lại biến đổi khí hậu

Quá trình chuyển đổi sang nguồn điện sạch sẽ mang lại nhiều lợi ích hỗ trợ cải thiện cộng đồng của chúng ta như giúp không khí trong lành, nâng cao chất lượng y tế công cộng, tạo việc làm mới hoặc có thêm nhiều phương án để đáp ứng nhu cầu điện của khách hàng.

Nhắc tới năng lượng sạch, PSE đồng thời phải đẩy mạnh tính bình đẳng trong quá trình chuyển đổi. Một trong những việc cần làm để đẩy mạnh tính bình đẳng là xác định các cộng đồng hoặc khách hàng cụ thể, những người chịu nhiều gánh nặng hơn một cách không cân xứng.

Chúng tôi đang xây dựng CEIP nhằm giải quyết những thách thức mà các cộng đồng dễ bị tổn thương và chịu nhiều tác động phải đối mặt, những người có nguy cơ gặp rủi ro cao nhất trước tác động của biến đổi khí hậu. Biết được vị trí địa lý và các yếu tố hình thành các cộng đồng này sẽ giúp chúng tôi xác định các khoảng trống trong các dịch vụ được cung cấp, xây dựng các chương trình đáp ứng nhu cầu của các cộng đồng này và giúp chúng tôi phân phối lợi ích một cách công bằng hơn.

PSE cam kết thực hiện một quá trình tham gia cộng đồng giúp tăng cường mối quan hệ cộng đồng và tạo ra các giải pháp phản ánh những giá trị đó.

Những đối tượng mà chúng tôi hướng đến

- ✔ Nhóm dân cư dễ bị tổn thương

  Những người có nguy cơ cao hơn trong việc trải qua các tác động môi trường do các điều kiện xã hội, kinh tế và các điều kiện khác. Nhóm Tư vấn Bình đẳng đã đưa ra lời khuyên cụ thể về định nghĩa này bao gồm tình trạng căng thẳng kinh tế, chi phí nhà ở, chủng tộc/dân tộc, các cộng đồng có lịch sử thiếu thốn dịch vụ (redlined), khuyết tật, người cao tuổi, ngôn ngữ, sức khỏe tâm thần và chăm sóc tại nhà.

- ✔ Các cộng đồng chịu nhiều tác động
- ✔ Khách hàng dân dụng
- ✔ Khách hàng doanh nghiệp
- ✔ Nhóm Tư vấn Bình đẳng
- ✔ Các nhóm tư vấn khác cho PSE
- ✔ Các tổ chức cộng đồng (CBOs)

Cách khách hàng và các bên liên quan muốn hưởng lợi từ nguồn điện sạch

Vào mùa xuân năm 2021, PSE đã thu thập ý kiến đóng góp từ khách hàng và các bên liên quan về giá trị nguồn điện sạch đối với họ và những lợi ích mà họ muốn có được từ việc chuyển đổi sang nguồn điện sạch. PSE đã thu thập thông tin đầu vào thông qua các cuộc khảo sát khách hàng, các cuộc họp nhóm tư vấn và các cuộc họp “thảo luận” với các tổ chức cộng đồng.

921

Thu thập được tổng cộng 921 bản khảo sát từ khách hàng nói chung

194

194 bản khảo sát từ khách hàng doanh nghiệp

8

8 cuộc họp với các tổ chức cộng đồng

9

9 cuộc họp của Nhóm Tư vấn Bình đẳng

13

13 cuộc họp với các nhóm cố vấn khác của PSE

Chúng tôi tóm tắt các ý kiến thành một số chủ đề dưới đây. Bấm vào bình luận để xem thêm.

- ✔ • Môi trường: Giảm phát thải khí nhà kính và khai thác nhiên liệu hóa thạch.

Các bên liên quan mong muốn các lợi ích dẫn đến giảm phát thải khí nhà kính và giảm khai thác nhiên liệu hóa thạch. Ngoài việc giảm thiểu tác động của biến đổi khí hậu, các bên liên quan mong muốn các hành động được thực hiện cũng tạo ra lợi ích trong các lĩnh vực khác, chẳng hạn như tạo việc làm, giúp không khí trong lành hơn, cải thiện y tế công cộng, độc lập năng lượng và tiết kiệm chi phí dài hạn.

- ✔ Y tế công cộng: Tăng chất lượng không khí và cải thiện sức khỏe cộng đồng.
- ✔ Giá cả hợp lý: Giảm mức thu nhập chi tiêu cho điện và khuyến khích những người có thu nhập thấp tham gia vào các chương trình điện sạch.
- ✔ Nền kinh tế: Tăng số lượng việc làm trong lĩnh vực năng lượng sạch tại địa phương và giúp các nhóm dân cư dễ bị tổn thương có thể tiếp cận các công việc này.
- ✔ Khả năng tiếp cận: Khuyến khích khách hàng tham gia tất cả các chương trình điện sạch không phân biệt mức thu nhập.
- ✔ Tham gia sử dụng nguồn điện sạch: Đưa lợi ích của việc sử dụng năng lượng mặt trời đến gần hơn với bộ phận người dân yếu thế và có nguy cơ bị ảnh hưởng cao. Giúp giảm thiểu chi phí của khách hàng thông qua việc sử dụng năng lượng mặt trời.
- ✔ Khả năng chống chịu: Đảm bảo hệ thống điện sạch và chống chịu tốt.
- ✔ Sự thoải mái và hài lòng: Xây dựng hệ thống điện sạch khiến khách hàng tin tưởng đồng thời thể hiện được trách nhiệm của họ đối với môi trường.

Tìm hiểu thêm trong Chương Sáu: Sự tham gia của cộng đồng

Trạm 4: Lợi ích của khách hàng

Chúng tôi đặt lợi ích của khách hàng là ưu tiên hàng đầu khi xây dựng kế hoạch của mình

Để đảm bảo các hoạt động liên quan đến điện sạch của chúng tôi mang đến lợi ích mà khách hàng mong muốn, chúng tôi đã sử dụng ý kiến đóng góp từ cộng đồng để phát triển các chỉ số lợi ích của khách hàng (CBI). CBI là đặc điểm về chất lượng hoặc kết quả mà khách hàng mong muốn có được từ các hoạt động liên quan đến điện sạch của chúng tôi.

Cách chúng tôi sử dụng các chỉ số lợi ích của khách hàng:

- Hướng dẫn lựa chọn hành động và đầu tư của chúng tôi để đạt được mục tiêu điện sạch
- Để đo lường sự tiến bộ của chúng tôi đối với những lợi ích mà khách hàng của chúng tôi muốn thấy

Cải thiện sự tham gia của các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Cách chúng tôi đo lường tiến độ: Xác định số lượng khách hàng của PSE trong nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Tăng số lượng việc làm liên quan đến năng lượng sạch

Cách chúng tôi đo lường tiến độ: Theo dõi số lượng việc làm do các chương trình của PSE tạo ra, trong đó bao gồm cả các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Đem đến sự thoải mái hơn khi ở nhà và cả thiện chất lượng không khí trong nhà cho các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Cách chúng tôi đo lường tiến độ: Tính toán lợi ích về mặt kinh tế của các yếu tố nhiệt độ không khí, chất lượng không khí và chất lượng chiếu sáng trong nhà

Giảm tác động chi phí đối với các nhóm dân cư dễ bị tổn thương và bị tác động mạnh

Cách chúng tôi sẽ đo lường tiến trình: Tính toán phần trăm thu nhập chi cho hóa đơn tiền điện cho các khách hàng PSE ở các nhóm dân cư dễ bị tổn thương và chịu tác động lớn

Cải thiện chất lượng không khí ngoài trời

Cách chúng tôi đo lường tiến độ: Xác định lượng phát thải chất ô nhiễm được quy định và giảm mức độ ô nhiễm do các nguồn tài nguyên của PSE gây ra.

Cải thiện sức khỏe cộng đồng

Cách chúng tôi đo lường tiến độ: Tính toán các yếu tố liên quan đến sức khỏe như số lượng người tử vong, nhập viện, số ngày mất việc

Giảm phát thải khí nhà kính

Cách chúng tôi đo lường tiến độ: Tính toán lượng khí thải cacbon điôxít (CO_2) tạo ra từ các nguồn tài nguyên của PSE

Giảm tác động của biến đổi khí hậu

Cách chúng tôi đo lường tiến độ: Giảm nhu cầu điện cao điểm

Khả năng tiếp cận năng lượng sạch

Cách chúng tôi đo lường tiến độ: Tính toán tỷ lệ phần trăm thu nhập mà khách hàng của PSE dùng để chi trả hóa đơn tiền điện

Giảm tần suất và thời gian mất điện

Cách chúng tôi đo lường tiến độ: Xác định số lần mất điện, tổng số giờ mất điện và tổng số điện dự phòng sử dụng trong thời gian mất điện

Tăng khả năng phục hồi

Cách chúng tôi đo lường tiến độ: Tính toán số lượng khách hàng sử dụng nguồn điện khẩn cấp tại nhà hoặc tại các trung tâm cộng đồng

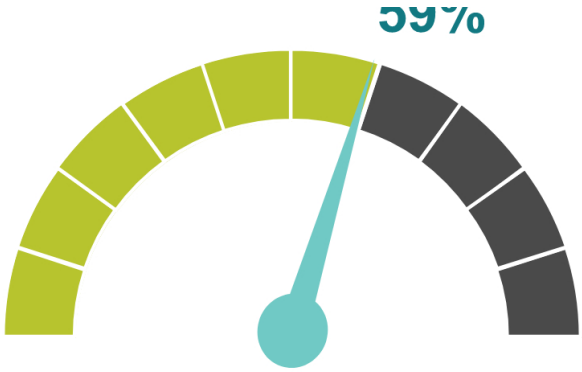
Tìm hiểu thêm trong Chương Ba: Chỉ số lợi ích khách hàng, cộng đồng bị tác động mạnh và nhóm dân cư dễ bị tổn thương

Trạm 5: Mục tiêu và hành động

Chúng tôi đang nỗ lực để tiến xa hơn và nhanh hơn để chuyển đổi sang điện sạch. Mục tiêu của PSE là cung cấp nguồn điện không dùng than vào cuối năm 2025, điện trung hòa carbon vào năm 2030 và 100% điện sạch vào năm 2045. Những mục tiêu này đòi hỏi một cách tiếp cận ở mức độ cao hơn để đảm bảo chúng tôi có thể tiếp tục phục vụ khách hàng nguồn điện an toàn, đáng tin cậy và giá cả phải chăng.

Trong bốn năm tới, PSE sẽ tăng tỷ lệ điện sạch từ 35% lên 59%.

59%

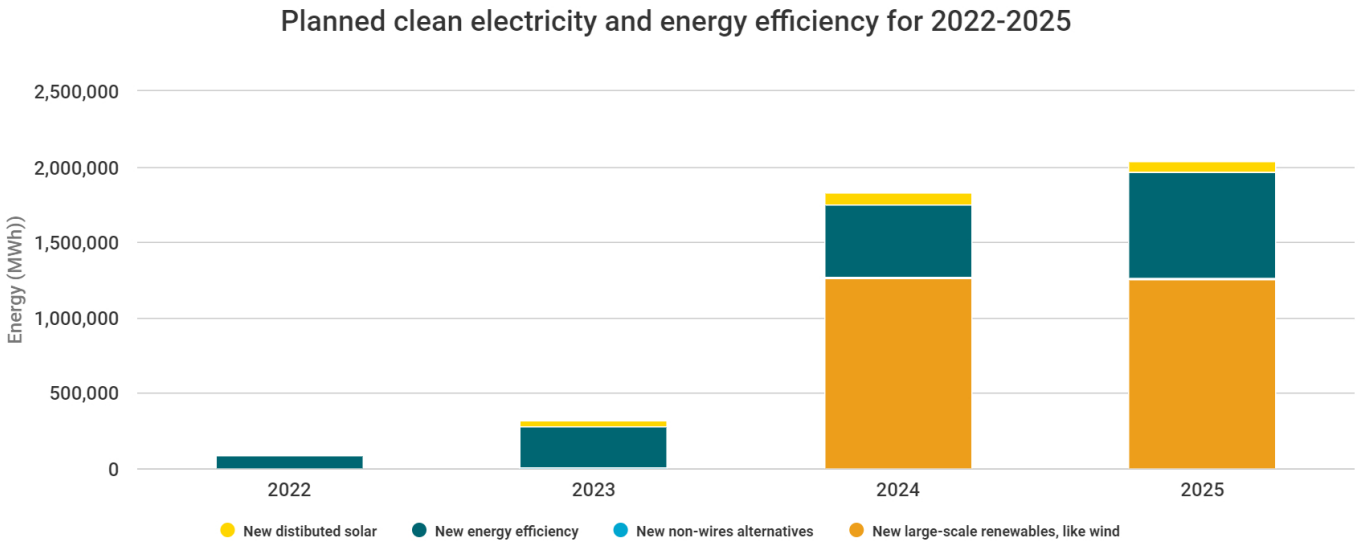


Để đạt được mục tiêu này, chúng tôi sẽ nỗ lực thực hiện một số hành động cụ thể thông qua các chương trình và các mục đầu tư vào các lĩnh vực sau:

- ✔ Các chương trình tiết kiệm năng lượng có thể giảm lượng năng lượng chúng ta sử dụng

  Các chương trình này bao gồm giảm giá các thiết bị tiết kiệm điện năng, tài trợ cho việc trang bị thêm và nâng cấp các tòa nhà sử dụng nhiều năng lượng, cải tạo nhà để chống chọi với thời tiết dựa trên thu nhập

- ✔ Động thái đáp ứng nhu cầu giúp giảm nhu cầu năng lượng trong thời gian cao điểm
- ✔ Năng lượng tái tạo
- ✔ Thiết bị dự trữ pin



Tìm hiểu thêm trong Chương Bốn: Các hành động cụ thể

Chúng tôi đặt lợi ích của khách hàng là ưu tiên hàng đầu khi đưa ra các quyết định

Một phần mới trong kế hoạch tài nguyên năng lượng của chúng tôi là chú trọng đến lợi ích khách hàng để đưa ra các quyết định đầu tư và thực hiện chương trình của

mình. PSE sẽ sử dụng lợi ích khách hàng để đánh giá các hình thức đầu tư điện thực hiện trong bốn năm tới.

Trong quá trình phát triển CEIP, PSE sử dụng lợi ích khách hàng để xác định các chương trình tiềm năng cho các nguồn năng lượng được phân bổ - bao gồm chương trình pin và năng lượng mặt trời trên mái nhà và mặt đất cho gia đình và doanh nghiệp. Dưới đây là các chương trình dự trữ pin và năng lượng mặt trời tại địa phương mà chúng tôi xác định ban đầu là có khả năng mang lại lợi ích cho nhiều khách hàng khác nhau của chúng tôi. Sẽ có các chương trình bổ sung để sử dụng năng lượng hiệu quả và đáp ứng nhu cầu về điện.

Tất cả các khái niệm tài nguyên năng lượng được phân phối sẽ tìm kiếm cơ hội toàn diện cho các nhóm dân cư dễ bị tổn thương và các cộng đồng bị tác động mạnh.

Các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Dự trữ pin

- Thuê pin PSE dân dụng (Người thu nhập thấp): PSE thuê mặ bằng lắp pin ở các khu vực tư nhân và những người sống ở đó có thể sử dụng pin trong trường hợp bị mất điện

Năng lượng mặt trời trên mái nhà và mặt đất

- Thuê năng lượng mặt trời trên mái nhà ở khu dân cư (Người thu nhập thấp): PSE thuê không gian trên mái nhà hoặc khu vực khác của người dân để lắp đặt các tấm pin mặt trời tạo ra điện năng cho lưới điện
- Năng lượng mặt trời cộng đồng đa gia đình: Khách hàng sử dụng điện của PSE là người thuê nhà đăng ký sử dụng năng lượng mặt trời sản xuất tại địa phương
- Năng lượng mặt trời cho cộng đồng người thu nhập thấp (chương trình hiện có): Khách hàng sử dụng điện của PSE có đủ điều kiện về thu nhập đăng ký sử dụng năng lượng mặt trời sản xuất tại địa phương
- Chương trình hợp tác năng lượng mặt trời cho khu nhà có nhiều hộ gia đình: PSE hợp tác với các khu nhà có nhiều hộ gia đình sinh sống như căn hộ chung cư để lắp đặt các tấm pin mặt trời dùng để sản xuất điện cho người dân sống trong khu nhà đó
- • Hình thức khuyến khích sử dụng năng lượng mặt trời trên mái nhà cho khu nhà có nhiều hộ gia đình sinh sống: PSE khuyến khích khách hàng lắp đặt các tấm pin năng lượng mặt trời

Khách hàng dân dụng

Dự trữ pin

- Thuê pin PSE dân dụng: PSE thuê mặ bằng lắp pin ở các khu vực tư nhân và những người sống ở đó có thể sử dụng pin trong trường hợp bị mất điện

Năng lượng mặt trời trên mái nhà và mặt đất

- Thuê năng lượng mặt trời dân dụng trên mái nhà: PSE thuê không gian trên mái nhà hoặc khu vực khác của người dân để lắp đặt các tấm pin mặt trời tạo ra điện năng cho lưới điện
- Khách hàng kết nối năng lượng mặt trời (chương trình hiện có): PSE sẽ giảm hóa đơn tiền điện của khách hàng khi họ tự lắp đặt các tấm pin năng lượng mặt trời và sản xuất năng lượng cho lưới điện (bù trừ điện năng).

Kết hợp

- Năng lượng mặt trời so khách hàng của PSE cung cấp + thiết bị dự trữ: PSE khuyến khích khách hàng lắp đặt các tấm pin năng lượng mặt trời và thiết bị dự trữ và PSE sẽ trả tiền để sử dụng các tấm pin đó

Khách hàng thương mại và công nghiệp

Dự trữ pin

- Thuê mặt bằng khu thương mại và công nghiệp để lắp đặt pin: PSE thuê mặ bằng lắp pin ở các khu vực tư nhân và những người sống ở đó có thể sử dụng pin trong trường hợp bị mất điện

Năng lượng mặt trời trên mái nhà và mặt đất

- Khuyến khích sử dụng năng lượng mặt trời trên mái nhà ở khu thương mại và công nghiệp: PSE khuyến khích khách hàng lắp đặt các tấm pin năng lượng mặt trời
- Hợp đồng mua bán điện mặt trời phân bổ (PPA): Bên thứ ba xây dựng và quản lý các tấm pin năng lượng mặt trời và PSE sẽ mua điện từ hệ thống đó

Đảm bảo khả năng chi trả trong quá trình chuyển đổi

Chúng tôi biết rằng khách hàng mong muốn có thể tiến xa và nhanh hơn tới tương lai sử dụng điện năng sạch. Chuyển đổi sang điện năng sạch và tiếp tục cung cấp năng lượng an toàn, đáng tin cậy và hiệu quả là những ưu tiên của PSE. Việc phát triển danh mục tài nguyên sạch quá nhanh chóng sẽ làm tăng hóa đơn của khách hàng.

Chúng tôi đang cố gắng nỗ lực để thực hiện việc chuyển đổi sang điện năng sạch và vẫn đảm bảo khả năng chi trả của khách hàng đồng thời tránh đặt gánh nặng lên các nhóm dân cư dễ bị tổn thương. Chúng tôi ước tính tỷ giá sẽ tăng trung bình hai phần trăm mỗi năm (ví dụ: khoảng 6 đô la/tháng vào năm 2025 đối với dân cư và 37 đô la/tháng vào năm 2025 đối với doanh nghiệp).

Mặc dù mục tiêu hướng tới sử dụng điện năng sạch sẽ dần làm tăng hóa đơn trung bình của khách hàng, nhưng CEIP cũng có nhiều chương trình để khách hàng giảm hóa đơn tiền điện chẳng hạn như sử dụng năng lượng một cách hiệu quả, có biện pháp đáp ứng nhu cầu mới và có chương trình tài nguyên năng lượng phân bổ.

Tìm Hiểu Thêm trong Chương Năm: Chi Phí

Trạm 6: Cam kết và các bước tiếp theo

Cách chúng tôi thực hiện để đạt được các mục tiêu về điện năng sạch

Cam kết

Khi nỗ lực tạo ra một tương lai năng lượng sạch mới và đáp ứng nhu cầu cấp thiết trong việc giải quyết vấn đề biến đổi khí hậu, chúng tôi phải đảm bảo rằng tất cả khách hàng, đặc biệt là những người gánh vác một phần lớn gánh nặng của biến đổi khí hậu, đều có tiếng nói và được hưởng lợi từ việc chuyển đổi sang năng lượng sạch. Sau khi thảo luận với Nhóm Tư vấn Bình đẳng (EAG) mới, chúng tôi đã đưa ra các nguyên tắc hướng dẫn sau đây. PSE sẽ sử dụng các nguyên tắc này để hướng dẫn việc thực hiện CEIP đồng thời đảm bảo trách nhiệm và công bằng.

Nâng cao nhận thức và hiểu biết của khách hàng về năng lượng sạch

Giúp khách hàng cảm nhận giá trị và quyền sở hữu trong việc chuyển đổi năng lượng sạch.

Vận động các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động tham gia các cuộc thảo luận về thiết kế chương trình

Các chương trình phù hợp với nhóm người dễ bị tổn thương nhất đảm bảo sẽ phù hợp với tất cả chúng ta.

Xây dựng các chương trình có phí hợp lý và dễ tiếp cận đối với các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Điều này đòi hỏi phải tạo ra cơ hội để người cho thuê nhà, dân cư sinh sống tại các khu nhà ở đa gia đình, các doanh nghiệp nhỏ và các hộ gia đình có thu nhập thấp tham gia.

Đo lường hiệu quả khả năng tiếp cận của chương trình và truyền thông đối với các nhóm dân cư dễ bị tổn thương và các cộng đồng chịu nhiều tác động

Điều này yêu cầu theo dõi sự tham gia theo nhân khẩu học và các chỉ số lợi ích của khách hàng.

Tiếp cận và giáo dục phù hợp về mặt văn hóa, có ý nghĩa và có chủ đích

Điều này yêu cầu thông tin phải được chia sẻ bằng nhiều ngôn ngữ, sử dụng cả công cụ kỹ thuật số và phi kỹ thuật số, đồng thời hợp tác với các tổ chức cộng đồng.

Tiến hành giáo dục và xây dựng nguồn lực giữa các đối tác và khách hàng để tăng tính công bằng của các chương trình và lợi ích năng lượng sạch

Chúng ta phải làm điều này để tăng công bằng trong các chương trình và lợi ích năng lượng sạch.

Đây là những nguyên tắc cơ bản. PSE và EAG sẽ tiếp tục phát triển các nguyên tắc này trong bản CEIP cuối cùng và có thể điều chỉnh thêm các nguyên tắc này trong quá trình thực hiện. PSE cũng cam kết tiếp tục tham gia quá trình hoạch định kế hoạch năng lượng, bao gồm kết hợp các kết quả của quá trình mua sắm, theo dõi tiến độ của các chỉ số lợi ích khách hàng và học hỏi từ việc thực hiện ban đầu các chương trình.

Tìm Hiểu Thêm trong Chương Tám: Công Việc Trong Tương Lai Và Các Cam Kết

Các bước tiếp theo trong quá trình thực hiện CEIP

Ngày 17 tháng 12 năm 2021

PSE sẽ hoàn thiện CEIP và nộp lên Ủy ban Tiện ích và Vận tải Washington

2022

UTC sẽ phê duyệt, từ chối hoặc sửa đổi CEIP.

PSE sẽ bắt đầu triển khai CEIP, sử dụng các chỉ số lợi ích khách hàng để đưa ra các quyết định đầu tư và thực hiện chương trình của mình. Chúng tôi sẽ tiếp

2023

Chúng tôi sẽ báo cáo tiến độ thực hiện các mục tiêu và chỉ số lợi ích khách hàng.

PSE sẽ bắt đầu triển khai các chương trình điện sạch mới.

tục trao đổi với khách hàng và các nhóm tư vấn về việc triển khai CEIP và cập nhật tiến độ.

Lập kế hoạch cho tương lai điện sạch là một quá trình liên tục với việc thực hiện, báo cáo hàng năm và cập nhật kế hoạch. CEIP này là CEIP đầu tiên trong số rất nhiều. Chúng tôi sẽ tiếp tục tương tác với khách hàng và các bên liên quan ở từng bước trên con đường đạt đến 100% điện sạch.

Trạm 7: Gửi ý kiến

Cảm ơn bạn đã quan tâm đến Kế hoạch triển khai năng lượng sạch của Puget Sound Energy (CEIP)! Các nhận xét mà chúng tôi nhận được trước ngày 12 tháng 11 sẽ được xử lý và giải quyết trong CEIP cuối cùng, dự kiến vào ngày 17 tháng 12 năm 2021.

Chúng tôi sẽ tiếp tục chấp nhận và xem xét các nhận xét về dự thảo CEIP, nhưng khả năng chúng tôi đưa phản hồi của bạn vào CEIP cuối cùng sẽ trở nên ít khả năng hơn khi chúng tôi chuyển sang tháng 12 và gần đến ngày nộp đơn vào ngày 17 tháng 12.

gửi bình luận

Tìm hiểu thêm

Định nghĩa và câu hỏi thường gặp

線上公衆意見收集
清潔能源實施計畫草案

站點 1: 歡迎

同我們一起踏上 100% 清潔電力之路

清潔能源實施計畫 **(CEIP)** 是項為期四年的發展藍圖：

推動 PSE 在 2025 年底前實現供應近 60% 的清潔電力，同時邁向實現 2030 年和 2045 年清潔能源目標之旅。

2025 年底前，我們的電網將不再使用煤炭作爲電力來源。

增加我們的清潔電力能源，比如與家庭和企業合作的大規模風能發電項目以及當地屋頂和地面太陽能發電項目。

透過提升客戶的能源效率，使客戶更有機會節約能源、降低成本。

爲當地屋頂和地面太陽能和蓄電池專案設定新目標，並提供激勵措施，以減少高峯期的能源消耗。

確保公平分配清潔能源轉型的利益，引領我們走上建設更具包容性、無碳未來的道路。

我們希望傾聽您的意見

本次線上公衆意見收集總結了 CEIP 草案的重要內容。 若需索取其他形式或語言版本的資料，請傳送訊息至 ceip@pse.com。

瀏覽這些站點

瀏覽這些站點，瞭解我們制定 CEIP 草案的過程以及它對您的意義

提交意見

使用我們的反饋表提交您的問題評論

或發送電子郵件至 ceip@pse.com

我們將繼續接受和審查對 CEIP 草案的評論，但隨著我們接近 12 月 17 日的申請日期，我們將您的反饋包含在最終 CEIP 中的可能性越來越小。

閱讀清潔能源實施計劃草案

PSE 致力於因應氣候變遷，並立志在 2045 年之前成爲一家超越純零碳耗能的公司。CEIP 是我們實現這一目標戰略的關鍵計劃。

站點 2:

背景

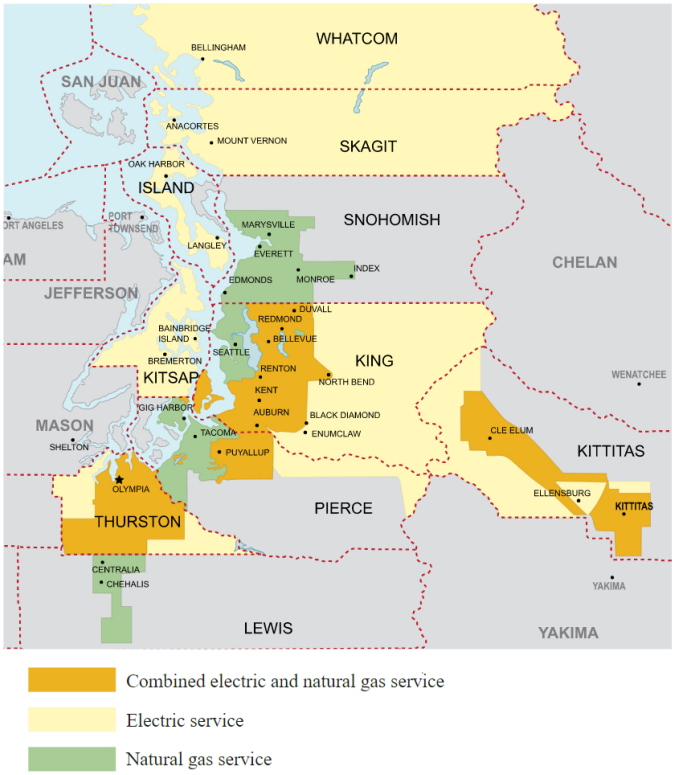
清潔能源實施計畫 (CEIP) 是為期四年的發展藍圖，成為引領 PSE 於 2022-2025 年進行清潔電力投資的準繩。這是多項計劃中的首項計劃，這項計劃將使我們在 2045 年之前實現 100% 清潔電力的目標並有助於確保所有客戶從清潔電力轉型中受益。

關於 Puget Sound Energy

PSE 是華盛頓州最大的公用事業，爲普吉特海灣地區八縣 110 萬客戶供電。我們爲客戶提供安全、可靠、經濟實惠的能源，協助將社區打造成爲更好的生活和工作場所。

PSE 致力於與客戶合作因應氣候變遷，並設立宏大目標，即在 2045 年之前成爲一家超越純零碳耗能的公司。

瞭解如何獲取電力



向清潔電力轉型

《清潔能源轉型法》使華盛頓州走上了清潔電力的道路，要求共用事業在 2025 年之前提供無燃煤電力，2030 年之前實現電力碳中和並在 2045 年之前提供 100% 清潔電力

清潔能源里程碑

2025
無煤電

2030年
碳中和電力系統

2045
100%清潔電力

今天的電力

PSE 供應的電力是由多種資源所產生。現如今，PSE 超過 30% 的供電電能來自於清潔能源，比如不排放溫室氣體的風能和水力發電設施。

清潔電力的資源來源不會排放導致氣候變

華盛頓商務部於 2020 年 10 月發布，PSE 於 2020 年 8 月報告了數據。

PSE 是因應氣候變遷的早期領導廠商，在家用與商用再生資源和能源效率方面投入了大量資金。現在，我們正朝着滿足客戶當前和未來需要及實現華盛頓州宏大的清潔能源轉型里程碑目標邁進。

PSE 的 4 年期 CEIP 制定了 PSE 系列產品清潔電力加速戰略，並根據社區的建言與需求以及長期規劃文件所述的策略，針對這些里程碑目標訂定了進度。

清潔電力衡平

我們為了創造嶄新清潔電力的未來和因應氣候變化而努力，在此同時務求讓所有客戶都能對轉型至清潔電力表達意見，並且同受裨益，尤其是氣候負擔比例過重的易受氣候影響和深受氣候影響的社區。

在此項工作中，我們藉由顧及取用便利、負擔能力和責任承擔，奉行能源衡平的原則。

2021 年，爲擴大我們所服務社區的參與度，PSE 召集成立了首個衡平諮詢團體 (EAG)，代表低收入社區和黑人、原住民及有色人種社區的觀點。

✔ 清潔能源轉型法 (CETA)

2019 年，華盛頓州長 Inslee 頒佈清潔能源轉型法 (CETA)，要求該州於 2045 年之前供應無排放溫室氣體的電力。CETA 包含三大里程碑：

- 2025 年底前，將不再使用煤炭作爲電力來源
- 在 2030 年前，透過替代合規行動爲我們的所有客戶供應炭中和電力，包括至少 80% 清潔電力以及最多 20% 非清潔電力
- 在 2045 年前，爲我們的所有客戶供應 100% 清潔電力

CETA 包含維持電力經濟實惠、可靠且確保所有客戶從清潔電力轉型中受益的規定。

✔ 公用事業和運輸委員會（Utilities and Transportation Commission，UTC）

✔ 長遠能源規劃

站點 3: 讓客戶參與其中

因應氣候變遷的同時改善我們的社群

透過更清新的空氣、更好的公衆衛生、新工作或改變客戶獲得電力的方式等利益，清潔電力轉型創造了改善社區的機會。

隨着 PSE 對清潔能源的思考，我們必須促進轉型中的平等性。促進平等性的部分措施是確定負擔比例過重的特殊社區或客戶。

易受影響和深受影響的社區受氣候變遷影響的風險最大，我們正在設計 CEIP，以因應這些社區所面臨的挑戰。瞭解這些社區的地理位置和形成因素將有助於我們確定所提供服務的差距，設計滿足這些社區需求的專案，且有助我們更加公平地分配利益。

PSE 決心開展公衆參與流程，加強社區聯繫，創造反映這些價值觀的解決方案。

我們所渴望的參與人群

- ✔ 弱勢族群

因社會、經濟或其他條件而更易遭受環境影響的人群。衡平諮詢團體建議此定義具體包含經濟壓力、住房成本、種族/族裔、過去被歧視的社區、殘障、年長、語言、心理健康和家庭保健。

- ✔ 大幅受影響的社區
- ✔ 住宅客戶
- ✔ 商業客戶
- ✔ 衡平諮詢團體
- ✔ 其他 PSE 諮詢團體
- ✔ 社區型組織 (CBO)

客戶和利害關係者希望如何從清潔電力中受惠

2021 年春季，PSE 收集了客戶和利害關係者關的意見，瞭解了他們對清潔電力價值的看法以及希望從清潔電力轉型中獲得何種益處。PSE 還透過客戶調查問卷、咨詢團體會議、以及拜訪社群型組織召開的會議收集了意見。

921

提交了 921 份普通客戶調查問卷

194

提交了 194 份商業客戶調查問卷

8

與社區型組織召開了 8 次會議

9

9 次衡平諮詢團體會議

13

與 PSE 其他諮詢團體召開了 13 次會議

我們將意見總結爲以下几項主題。點擊意見，閱讀更多細節。

- ✔ 環境：減少溫室氣體排放和化石燃料開採。

利害關係者要求可降低溫室氣體排放量和減少化石燃料開採的益處。除了減少氣候變化的影響，利益關係者希望採取在其他領域創益的舉措，比如創造就業崗位、

空氣更清潔、改善公共衛生、能源自給以及節約長期成本。

- ✔ 公共衛生：提升空氣品質，改善社區健康。
- ✔ 可負擔性：減少購電支出，使低收入人群能夠參與清潔電力專案。
- ✔ 經濟方面：增加當地清潔能源工作崗位數量，讓弱勢族群能夠就業。
- ✔ 可及性：無論收入水平如何，使客戶有能力參與所有清潔電力專案。
- ✔ 清潔電力參與：讓弱勢群體和深受影響的群體享受太陽能的益處。 尋求機會，利用太陽能降低客戶成本。
- ✔ 彈性：確保富有彈性的清潔電力系統。
- ✔ 舒適度和滿意度：建立一個客戶可信賴和反映客戶環保意識的清潔電力系統。

在第六章中瞭解更多詳情：公衆參與

站點 4: 客戶利益

利用客戶效益制定我們的計劃

爲確保清潔電力舉措創造出客戶想要看到的利益，我們採納社群意見，制定客戶效益指標 (CBI)。CBI 是客戶想要從我們的清潔電力舉措中獲得的品質或結果。

我們如何使用客戶利益指標：

- 指導我們選擇行動和投資以實現我們的清潔電力目標衡量我們在實現客戶希望看到的利益方面取得的進展
- 衡量我们在实现客户希望看到的利益方面取得的进展

提高弱勢人群和深受影響人群的參與度

我們將如何衡量進展：弱勢人群和深受影響人群中的 PSE 客戶衡量參與度

增加清潔能源就業崗位

我們將如何衡量進展：追蹤 PSE 專案所創造的就業崗位數量，包括爲弱勢人群和深受影響人群創造的就業崗位數量

提升弱勢人群和深受影響人群的居家舒適度並改善空氣品質

我們將如何衡量進展：計算氣溫、室內空氣品質和照明品質的經濟效益

降低對脆弱和受影響人群的成本影響

我們將如何衡量進展：
計算弱勢和高影響人群中 PSE 客戶的電費收入百分比

改善室外空氣品質

改善社區衛生

減少溫室氣體排放

減少氣候變化的影響

我們將如何衡量進展：衡量受規管污染物排放量，減少 PSE 資源導致的污染。

我們將如何衡量進展：計算死亡率、住院率、工作損失天數等健康因素

我們將如何衡量進展：計算 PSE 資源導致的二氧化碳 (CO2) 排放量

我們將如何衡量進展：減少高峰用電需求

清潔能源的可負擔性

我們將如何衡量進展：計算 PSE 客戶的電費支出佔收入的比重

減少停電頻率和持續時間

我們將如何衡量進展：衡量停電次數、停電總時長以及停電期間所供應的備電總量

增加彈性

我們將如何衡量進展：計算在家中或在社區中心使用應急電源的客戶數量

在第三章中瞭解更多詳情：客戶效益指標、深受影響的社區和弱勢人群

站點 5: 目標和行動

我們爭取推動清潔電力轉型發展得更遠、更快。PSE 的目標是在 2025 年之前提供無燃煤電力，在 2030 年之前提供碳中和電力，並在 2045 年之前提供 100% 清潔電力。這些目標有賴於循序漸進的策略，確保我們仍可持續爲客戶供應安全、可靠和經濟實惠的電力。

在未來四年，PSE 會將綜合清潔電力由 35% 提高至 59%。

爲實現這一目標，我們將透過以下領域的專案和投資執行專項行動

能源效率專案，降低我們所消耗的能源量

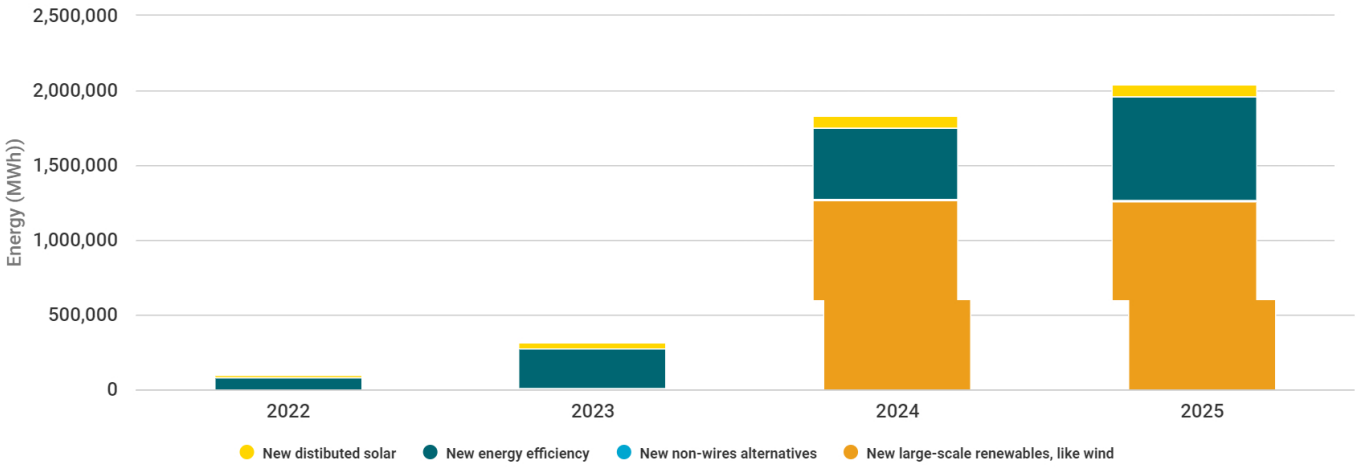
譬如對節能設備予以退稅，資助能源密集型建築的改造升級、根據收入進行房屋節能改造等專案

需求回應，減少高峰期的能源需求

可再生資源

蓄電池

Planned clean electricity and energy efficiency for 2022-2025



在第四章中瞭解更多詳情：專項行動

利用客戶效益確定我們的決策

能源計劃的一項新組成部分是利用客戶效益來指導我們的專案和投資決策。PSE 將利用客戶效益來評估我們在未來四年內投資的電力類型。

作爲 CEIP 制定流程的一部分，PSE 利用客戶效益確定分佈式能源的潛在專案概念。分佈式能源即那些針對家庭和企業的當地屋頂和地面太陽能和電池專案。以下所示即我們初步確定的當地太陽能和蓄電池儲能專案，有機會惠及不同類型的客戶。針對能源效率和需求響應，還提供了其他專案。

所有分佈式能源概念都將為弱勢群體和受到嚴重影響的社區尋求包容性機會。

弱勢人群和深受影響人群

蓄電池儲能

- PSE 住宅電池（低收入）租賃：PSE 租賃私人房地產空間安裝電池，而其中的居民可在停電時使用電池

屋頂和地面太陽能

- 住宅屋頂式太陽能（低收入）租賃：PSE 租賃屋頂或其他區域的私人空間，安裝爲電網供應電力的太陽能電池板
- 多戶型社區太陽能：PSE 電力客戶爲租用者，認購當地產生的太陽能
- 低收入社區太陽能（現有專案）：收入符合資格的 PSE 電力客戶認購當地產生的太陽能
- 多戶型太陽能合作專案：PSE 與公寓等多戶型房產合作，安裝太陽能電池板，爲居住其中的居民發電
- 多戶單元屋頂式太陽能激勵措施：PSE 激勵客戶安裝太陽能電池板

住宅客戶

蓄電池儲能

- PSE 住宅電池租賃：PSE 租賃私人房地產空間安裝電池，而其中的居民可在停電時使用電池

屋頂和地面太陽能

- 屋頂式住宅太陽能租賃：PSE 租賃屋頂或其他區域的私人空間，安裝爲電網供應電力的太陽能電池板
- 客戶連通式太陽能（現有專案）：客戶安裝自己的太陽能電池板並將產生的能量發送回電網時，PSE 降低客戶的電費（淨電量計量）。

混合型

- PSE 客戶端太陽能 + 儲能產品：PSE 激勵客戶安裝太陽能電池板和蓄電池，PSE 支付使用費

商業客戶和工業客戶

蓄電池儲能

- 工商業空間電池租賃：PSE 租賃私人房地產空間安裝電池，而其中的居民可在停電時使用電池

屋頂和地面太陽能

- 工商業屋頂式太陽能激勵措施：PSE 激勵客戶安裝太陽能電池板
- 分佈式太陽能購買協議 (PPA)：第三方安裝和管理太陽能電池板，PSE 從系統中購買電力

轉型期間維持可負擔性

我們明白，客戶希望清潔電力的未來發展得更遠、更快。向清潔電力轉型並持續提供安全、可靠的高效能源是 PSE 的重中之重。如此快速地增加清潔資源系列產品將會導致客戶電費增長。

在向清潔電力轉型的同時，我們竭力維護客戶的負擔能力，避免給弱勢族群帶來不公平的負擔。我們預計電價將以每年百分之二的平均速度增長（例如，到 2025 年民用

電價約 6 美元/月，商業電價約 37 美元/月）。

久而久之，通往清潔電力的進取之路會增加客戶的平均電費。儘管如此，CEIP 利用能源效率、新需求響應和分佈式能源專案爲客戶提供了減低能耗賬單的機會。

在第 五 章中了解更多信息：成本

站點 6: 承諾和後續步驟

我們如何實現清潔電力目標

承諾

我們為了創造嶄新清潔能源的未來，因應氣候變遷的緊迫性而努力，在此同時務求讓所有客戶都能對轉型至清潔能源表達意見，並且同受裨益，尤其是氣候負擔的比例過重者。傾聽和借鑑了新衡平諮詢團體 (EAG) 的意見後，我們從討論意見中得出以下指導原則。PSE 將採用這些原則協助指導實施 CEIP 並確保責任性和平等性。

樹立客戶對清潔電力的認知和理解

幫助客戶在清潔電力轉型中獲得價值感和主人翁意識。

有意讓弱勢人群和深受影響人群參與專案設計討論

爲最弱勢人群服務的專案也會爲我們所有人效力。

爲弱勢人群和深受影響人群創造實惠可用的專案

這需要爲租用者、多戶單元、小型企業和低收入家庭提供參與機會。

有效衡量專案和溝通是否普及到弱勢人群和深受影響人群

這需要利用人口統計資料和客戶效益指標追蹤參與情況。

開展具有文化特性、有意義、有目的的外展服務和教育

這需要利用數位工具和非數位工具以多種語言分享資訊，並發展與社區型組織的合作關係。

爲提升清潔能源專案和效益的公平性，在合作夥伴和客戶之間開展教育並構建資源。

我們必須這樣做以增加清潔能源計劃和福利的公平性。

這些是基本原則。PSE 和 EAG 將繼續爲定案 CEIP 制定原則，且有可能在實施時對這些原則做出進一步調整。PSE 還承諾不斷發展和迭代能源計劃流程，流程包括納入採購流程結果、追蹤客戶效益指標的進度以及從初步實施專案中借鑑經驗。

在第 八 章中了解更多信息：未來的工作和 PSE 承諾

CEIP 流程和實施的後續步驟

2021 年 12 月 17 日

PSE 將定案 CEIP 並向公用事業和運輸委員會提交

2022

UTC 將核准、駁回或修改我們的 CEIP。

PSE 將開始實施 CEIP，利用客戶效益指標報告我們的專案和投資決策。我們將繼續與客戶和我們的諮詢團體溝通 CEIP 實施和進展的最新情況

2023

我們將對實現目標和客戶效益指標的進展進行匯報。

PSE 將開始部署新的清潔電力計劃。

規劃清潔電力的未來是一個持續的過程，包括實施、年度報告和計劃更新。此 CEIP 是眾多 CEIP 中的第一個。我們將在通往 100% 清潔電力的道路上的每一步繼續與我們的客戶和利益相關者接觸。

站點 7: 提交意見

感謝您對普吉特海灣能源的清潔能源實施計劃 (CEIP) 的關注！我們在 11 月 12 日之前收到的意見將在最終的 CEIP 中得到處理和解決，預計將於 2021 年 12 月 17 日發

布。

我們將繼續接受和審查對 CEIP 草案的評論，但隨著我們進入 12 月並接近 12 月 17 日的申請日期，我們將您的反饋包含在最終 CEIP 中的可能性越來越小。

提交評論

了解更多

定義和常見問題

ऑनलाइन ओपन हाउस | 18 अक्टूबर-12 नवंबर, 2021

ड्राफ्ट स्वच्छ ऊर्जा कार्यान्वयन योजना

स्टेशन 1: आपका स्वागत है

100% स्वच्छ बिजली के मार्ग पर हमारे साथ जुड़ें

यह स्वच्छ ऊर्जा कार्यान्वयन योजना (CEIP) चार वर्षों की लक्ष्यगत योजना है जो:

- 2030 और 2045 के लिए हमारे स्वच्छ ऊर्जा के लक्ष्यों को पूरा करने के मार्ग पर होते हुए 2025 के अंत तक PSE को लगभग 60 प्रतिशत स्वच्छ बिजली की तरफ ले जाता है।
- 2025 के अंत तक हमारे ग्रिड से बिजली के स्रोत के रूप में कोयले को हटा देता है।
- हमारे स्वच्छ बिजली के संसाधनों को बढ़ावा देता है - जैसे बड़े पैमाने की पवन ऊर्जा और स्थानीय रूफटॉप और जमीनी सौर ऊर्जा परियोजनाएं जो घरों और व्यवसायों के साथ साझेदारी करती हैं।
- ग्राहकों की ऊर्जा दक्षता में सुधार के जरिए ऊर्जा बचाने और उनकी लागतों को कम करने के उन्हें अधिक अवसर देता है।
- स्थानीय रूफटॉप और जमीनी सोलर और बैटरी स्टोरेज कार्यक्रमों के लिए एक नई दिशा निर्धारित करता है, साथ ही पीक अवधियों के दौरान ऊर्जा के उपयोग को कम करने के लिए प्रोत्साहन देता है।
- सुनिश्चित करें कि स्वच्छ ऊर्जा परिवर्तन के लाभ समान रूप से वितरित किए जाते हैं और हमें अधिक समावेशी, कार्बन-मुक्त भविष्य के निर्माण की राह पर ले जाते हैं।

हम आपसे सुनना चाहते हैं

यह ऑनलाइन ओपन हाउस CEIP के मसौदे के महत्वपूर्ण हिस्सों का सारांश प्रस्तुत करता है। किसी अन्य रूप या भाषा में सामग्री के अनुरोध हेतु, ceip@pse.com पर संदेश भेजें।

स्टेशनों के माध्यम से स्क्रॉल करें

• हमने CEIP के मसौदे को कैसे तैयार किया और आपके लिए इसका क्या अर्थ है, यह जानने के लिए स्टेशनों पर स्क्रॉल करें

टिप्पणियाँ दर्ज करें

हमारे फीडबैक फॉर्म का उपयोग करके अपने प्रश्न टिप्पणी सबमिट करें या ceip@pse.com पर एक ईमेल भेजें

हम सीईआईपी के मसौदे पर टिप्पणियों को स्वीकार करना और उनकी समीक्षा करना जारी रखेंगे, लेकिन अंतिम सीईआईपी में आपकी प्रतिक्रिया को शामिल करने की हमारी क्षमता कम हो जाती है क्योंकि हम 17 दिसंबर को दाखिल करने की तारीख के करीब आते हैं।

स्वच्छ ऊर्जा कार्यान्वयन योजन के मसौदे को पढ़ें

PSE जलवायु परिवर्तन पर कार्य करने के लिए वचनबद्ध है और 2045 तक शुद्ध शून्य कार्बन ऊर्जा कंपनी बनने की इच्छा रखती है। CEIP इस लक्ष्य को हासिल करने के लिए हमारी रणनीति का एक महत्वपूर्ण हिस्सा है।

स्टेशन 2: पृष्ठभूमि

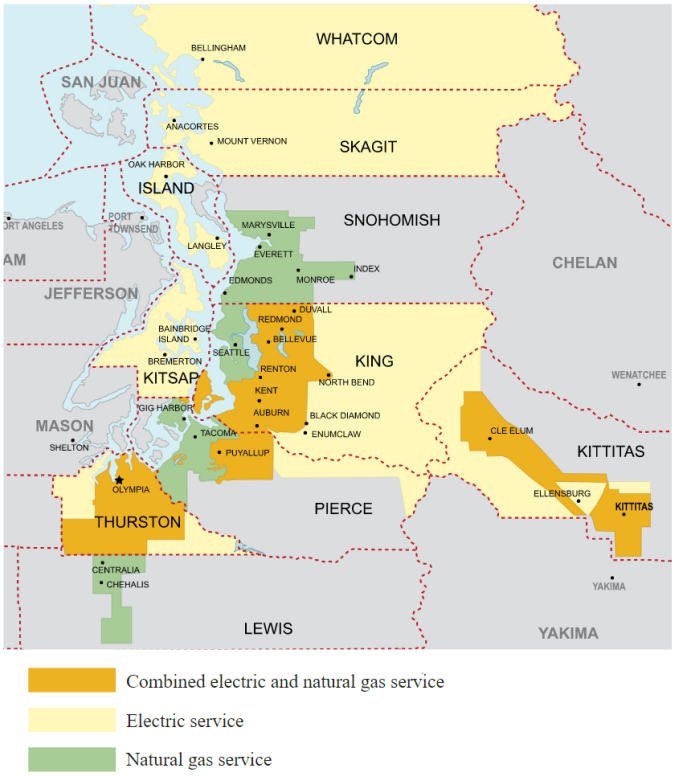
स्वच्छ ऊर्जा कार्यान्वयन योजना (CEIP) चार वर्षों की लक्ष्यगत योजना है जो वर्ष 2022-2025 के लिए PSE के स्वच्छ बिजली निवेशों का मार्गदर्शन करेगी। यह कई योजनाओं में से पहली है जो हमें 2045 तक 100% स्वच्छ बिजली के हमारे लक्ष्य तक पहुंचाएगी और सभी ग्राहकों को स्वच्छ बिजली परिवर्तन का लाभ प्राप्त करने में मदद करेगी।

पगेट साउंड एनर्जी (PSE) के बारे में

PSE वाशिंगटन राज्य की सबसे बड़ी उपयोगिता है और पगेट साउंड क्षेत्र की आठ काउंटियों में 1.1 मिलियन ग्राहकों को बिजली प्रदान करती है। हम अपने ग्राहकों को सुरक्षित, विश्वसनीय, सस्ती ऊर्जा प्रदान करते हैं और रहने और काम करने के लिए अपने समुदायों को बेहतर स्थान बनाने में मदद करते हैं।

PSE जलवायु परिवर्तन पर काम करने के लिए ग्राहकों के साथ काम करने के लिए वचनबद्ध है और 2045 तक शुद्ध शून्य कार्बन ऊर्जा कंपनी बनने का एक आकांक्षात्मक लक्ष्य रखती है।

जानें कि आपको बिजली कैसे मिलती है



स्वच्छ बिजली की ओर बदलाव लाना

स्वच्छ ऊर्जा परिवर्तन अधिनियम वाशिंगटन को स्वच्छ बिजली के मार्ग पर ले जाता है, जिसके लिए उपयोगिताओं को 2025 के अंत तक कोयला-मुक्त बिजली, 2030 तक कार्बन-न्यूट्रल बिजली, और 2045 तक 100% स्वच्छ बिजली प्रदान करने की आवश्यकता होती है।

स्वच्छ ऊर्जा मील के पत्थर

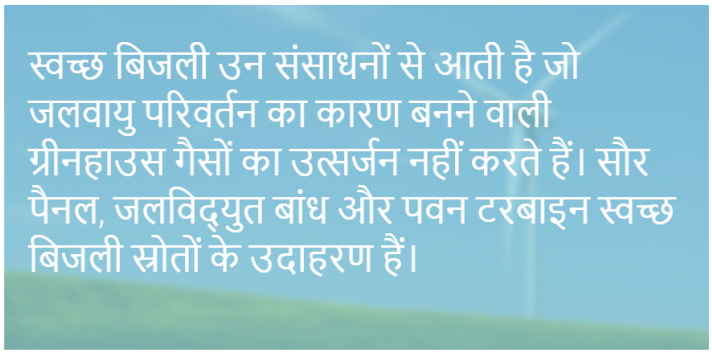
2025
कोयले से मुक्त बिजली

2030
कार्बन-तटस्थ विद्युत प्रणाली

2045
100% स्वच्छ बिजली

बिजली आज

बिजली पीएसई आपूर्ति संसाधनों के मिश्रण से उत्पन्न होती है। आज, PSE की 30% से अधिक विद्युत ऊर्जा आपूर्ति पवन और जलविद्युत सुविधाओं जैसे स्वच्छ स्रोतों से आती है जो ग्रीनहाउस गैसों का उत्सर्जन नहीं करते हैं।



वाशिंगटन वाणिज्य विभाग, अक्टूबर 2020 द्वारा प्रकाशित, अगस्त 2020 में पीएसई द्वारा रिपोर्ट किए गए आंकड़ों के साथ।

PSE जलवायु परिवर्तन को संबोधित करने, नवीकरणीय संसाधनों में महत्वपूर्ण निवेश करने और घरों और व्यवसायों के लिए ऊर्जा दक्षता में एक शुरू से ही अग्रणी रही है। अब, हम अपने ग्राहकों की वर्तमान और भविष्य की जरूरतों को पूरा करने और वाशिंगटन के महत्वाकांक्षी स्वच्छ ऊर्जा परिवर्तन के लक्ष्य को प्राप्त करने के मार्ग पर हैं।

यह 4-वर्षीय CEIP सामुदायिक इनपुट और दीर्घकालिक योजना दस्तावेजों में खोजी गई जरूरतों और रणनीतियों के आधार पर इन चरणबद्ध लक्ष्यों की दिशा में समय पर और न्यायसंगत प्रगति की रूपरेखा तैयार करेगी।

स्वच्छ बिजली में समानता

क्योंकि हम एक नई स्वच्छ बिजली का भविष्य बनाने और जलवायु परिवर्तन से निपटने पर काम कर रहे हैं, तो हमें यह इस तरह से करना चाहिए कि हमारे सभी ग्राहक, विशेष रूप से वे जो कमज़ोर हैं और उच्च प्रभावित समुदाय जो जलवायु के बोझ का एक बड़ा हिस्सा हैं, सुनिश्चित हों कि उनकी आवाज़ सुनी जाए और स्वच्छ बिजली के परिवर्तन से उन्हें लाभ मिले।

इस काम में, हम सुलभता, सामर्थ्य और जवाबदेही तय करते हुए ऊर्जा समता के सिद्धांत अपनाते हैं।

2021 में, PSE ने कम आय वाले समुदायों और काले, स्वदेशी, और रंग के लोगों के दृष्टिकोणों का प्रतिनिधित्व करते हुए, हमारे द्वारा सेवा किए जाने वाले समुदायों के साथ जुड़ाव को व्यापक बनाने के लिए हमारे पहले समानता सलाहकार समूह (EAG) को संचालित किया।

✔ **स्वच्छ ऊर्जा परिवर्तन अधिनियम** (CETA)

2019 में, गवर्नर इंसली ने स्वच्छ ऊर्जा परिवर्तन अधिनियम (CETA) कानून पर हस्ताक्षर किए, जिससे वाशिंगटन को 2045 तक ग्रीनहाउस गैस उत्सर्जन से मुक्त बिजली प्रदान करने के लिए प्रतिबद्ध किया गया। CETA में तीन प्रमुख चरणबद्ध लक्ष्य शामिल हैं:

- 2025 के अंत तक बिजली के स्रोत के रूप में कोयले को हटाना
- हमारे सभी ग्राहकों को 2030 तक कार्बन-न्यूट्रल बिजली प्रदान करना, जिसमें वैकल्पिक अनुपालन क्रियाओं के साथ कम से कम 80% स्वच्छ बिजली और 20% तक गैर-स्वच्छ बिजली शामिल है।
- 2045 तक हमारे सभी ग्राहकों को 100% स्वच्छ बिजली प्रदान करना

CETA में बिजली को किफ़ायती, विश्वसनीय रखने और स्वच्छ बिजली परिवर्तन से सभी ग्राहकों को लाभ सुनिश्चित करने के नियम शामिल हैं।

✔ **उपयोगिताएं और परिवहन आयोग** (UTC)

✔ **लंबी सीमा की ऊर्जा योजना**

स्टेशन 3:

ग्राहकों को शामिल करना

जलवायु परिवर्तन से लड़ते हुए हमारे समुदायों में सुधार करना

जलवायु परिवर्तन से निपटने हुए हमारे समुदायों में सुधार करना

स्वच्छ बिजली के लिए परिवर्तन स्वच्छ हवा, बेहतर सार्वजनिक स्वास्थ्य, नई नौकरियों, या ग्राहकों को उनकी बिजली प्राप्त करने के विभिन्न तरीकों जैसे लाभों के जरिए हमारे समुदायों को बेहतर बनाने के अवसर पैदा करता है।

जैसा कि PSE स्वच्छ ऊर्जा के बारे में सोचती है, हमें परिवर्तन में समानता में तेजी लानी चाहिए। समानता में तेजी लाने का एक हिस्सा उन विशिष्ट समुदायों या ग्राहकों की पहचान करना है जो अधिक महत्वपूर्ण बोझ को अनुपातहीन रूप से साझा करते हैं।

हम कमजोर और अत्यधिक प्रभावित समुदायों के सामने आने वाली चुनौतियों का समाधान करने के लिए अपने CEIP को तैयार कर रहे हैं, जो जलवायु परिवर्तन के प्रभावों के लिए सबसे अधिक जोखिम में हैं। इन समुदायों को आकार देने वाले भौगोलिक स्थानों और कारकों को जानना प्रदान की जाने वाली सेवाओं में कमियों की पहचान करने में, ऐसे कार्यक्रमों को तैयार करने में हमें मदद करेगा जो इन समुदायों की जरूरतों को पूरा करते हैं, और हमें अधिक समान रूप से लाभों को वितरित करने में मदद करते हैं।

PSE सार्वजनिक भागीदारी प्रक्रिया के लिए प्रतिबद्ध है जो सामुदायिक संबंधों को मजबूत बनाती है और ऐसे समाधान देती है जो उन मूल्यों को प्रतिबिंबित करते हैं।

हम किन लोगों को शामिल करना चाहते हैं

✔ कमजोर आबादी

जो लोग सामाजिक, आर्थिक और अन्य स्थितियों के कारण पर्यावरणीय प्रभावों का अनुभव करने के उच्च जोखिम में हैं। इक्विटी सलाहकार समूह ने सलाह दी है कि इस परिभाषा में विशेष रूप से आर्थिक तनाव, आवास लागतें, नस्ल/जातीयता, ऐतिहासिक रूप से पुनर्निर्धारित समुदाय, विकलांगता, वरिष्ठ, भाषा, मानसिक स्वास्थ्य और घरेलू देखभाल शामिल हैं।

✔ अत्यधिक प्रभावित समुदाय

✔ आवासीय ग्राहक

✔ व्यावसायिक ग्राहक

✔ इक्विटी सलाहकार समूह

✔ अन्य PSE सलाहकार समूह

✔ समुदाय आधारित संगठन (CBOs)

ग्राहक और हितधारक स्वच्छ बिजली से कैसे लाभ उठाना चाहते हैं

वसंत 2021 में, PSE ने ग्राहकों और हितधारकों से उनके स्वच्छ बिजली के मूल्यों और स्वच्छ बिजली परिवर्तन से वे जो लाभ देखना चाहते हैं, उस पर इनपुट एकत्र किया। PSE ने ग्राहक सर्वेक्षणों, सलाहकार समूह की बैठकों और समुदाय-आधारित संगठनों के साथ "आपके पास जाना" बैठकों के जरिए इनपुट एकत्र किया।

921

दर्ज किए गए 921 सामान्य ग्राहक सर्वेक्षण

194

दर्ज किए गए 194 व्यवसाय ग्राहक सर्वेक्षण

8

समुदाय-आधारित संगठनों के साथ 8 बैठकेंसमुदाय आधारित संगठनों के साथ बैठक

9

9 इक्विटी सलाहकार समूह बैठकें

13

PSE के अन्य सलाहकार समूहों के साथ 13 बैठकें

हमने नीचे दिए गए कई विषयों में टिप्पणियों को सारांशित किया है। अधिक विवरण पढ़ने के लिए टिप्पणी पर क्लिक करें।

✔ पर्यावरण: ग्रीनहाउस गैस उत्सर्जन और जीवाश्म ईंधन निष्कर्षण को कम करें।

हितधारकों ने उन लाभों का आह्वान किया जिनके परिणामस्वरूप ग्रीनहाउस गैस उत्सर्जन कम होता है और जीवाश्म ईंधन निष्कर्षण कम होता है। जलवायु परिवर्तन के प्रभावों को कम करने के अलावा, हितधारक अन्य श्रेणियों में भी लाभ ने के लिए काम करना चाहते थे, जैसे कि रोजगार पैदा करना, स्वच्छ हवा, बेहतर सार्वजनिक स्वास्थ्य, ऊर्जा स्वतंत्रता, और दीर्घकालिक लागत बचतें।

✔ सार्वजनिक स्वास्थ्य: वायु गुणवत्ता में वृद्धि और सामुदायिक कल्याण में सुधार।

✔ सामर्थ्य: बिजली पर खर्च की गई आय की मात्रा में कमी और स्वच्छ बिजली कार्यक्रमों में भाग लेने के लिए कम आय वाली आबादी को सशक्त बनाना।

✔ आर्थिक: स्थानीय स्वच्छ ऊर्जा नौकरियों की संख्या में वृद्धि और कमजोर आबादी के लिए उन्हें सुलभ बनाना।

✔ सुलभता: ग्राहकों को आय स्तर पर ध्यान दिए बिना सभी स्वच्छ बिजली कार्यक्रमों में भाग लेने के लिए सशक्त बनाना।

✔ स्वच्छ बिजली भागीदारी: कमजोर और अत्यधिक प्रभावित लोगों के लिए सौर ऊर्जा का लाभ उपलब्ध कराएं। सौर के माध्यम से ग्राहक लागत कम करने के अवसर खोजें।

✔ लचीलापन: एक लचीली स्वच्छ बिजली प्रणाली सुनिश्चित करें।

✔ आराम और संतुष्टि: स्वच्छ बिजली प्रणाली का निर्माण करें जिसकी ग्राहकों को समझ हो कि वे उस पर निर्भर हो सकते हैं और अपने पर्यावरण प्रबंधन को प्रतिबिंबित कर सकते हैं।

अध्याय छह में और जानें: जनतक भागीदारी

स्टेशन 4: ग्राहक लाभ

हमारी योजना को आकार देने के लिए ग्राहक लाभों का उपयोग करना

यह सुनिश्चित करने के लिए कि हमारे स्वच्छ बिजली कार्य वो लाभ पैदा करते हैं जो हमारे ग्राहक देखना चाहते हैं, हमने ग्राहक लाभ संकेतकों (CBIs) को विकसित करने के लिए सामुदायिक इनपुट का उपयोग किया है। CBIs ऐसे गुण या परिणाम हैं जो ग्राहक हमारे स्वच्छ बिजली कार्यों से पाना चाहते हैं।

हम ग्राहक लाभ संकेतकों का उपयोग कैसे करते हैं:

- हमारे स्वच्छ बिजली लक्ष्यों तक पहुंचने के लिए हमारे कार्यों और निवेशों की पसंद का मार्गदर्शन करने
- के लिए हमारे ग्राहकों को मिलने वाले लाभों की दिशा में हमारी प्रगति को मापने के लिए

कमजोर और अत्यधिक प्रभावित आबादी से बेहतर भागीदारी

हम प्रगति को कैसे मापेंगे: कमजोर और अत्यधिक प्रभावित आबादी के अंदर PSE ग्राहकों द्वारा भागीदारी का मापन

स्वच्छ ऊर्जा नौकरियों में वृद्धि

हम प्रगति को कैसे मापेंगे: कमजोर और अत्यधिक प्रभावित आबादियों सहित PSE कार्यक्रमों द्वारा पैदा की गई नौकरियों की संख्या पर नज़र रखना

कमजोर और अत्यधिक प्रभावित आबादियों के लिए बेहतर घरेलू आराम और इनडोर वायु गुणवत्ता

हम प्रगति को कैसे मापेंगे: हवा के तापमान, अंदर की वायु की गुणवत्ता और प्रकाश की गुणवत्ता के आर्थिक लाभों की गणना करना

कमजोर और अत्यधिक प्रभावित आबादी के लिए कम लागत प्रभाव

हम प्रगति को कैसे मापेंगे: कमजोर और अत्यधिक प्रभावित आबादी में पीएसई ग्राहकों के लिए बिजली बिलों पर खर्च की गई आय के प्रतिशत की गणना

बाहरी वायु की गुणवत्ता में सुधार

हम प्रगति को कैसे मापेंगे: विनियमित प्रदूषक उत्सर्जनों का मापन और PSE संसाधनों से प्रदूषण में कमी।

बेहतर सामुदायिक स्वास्थ्य

हम प्रगति को कैसे मापेंगे: मृत्यु दर, अस्पताल में दाखिल, काम के नुकसान के दिनों जैसे स्वास्थ्य कारकों की गणना करना

ग्रीनहाउस गैस के उत्सर्जन में कमी

हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

जलवायु परिवर्तन के प्रभावों में कमी

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

स्वच्छ ऊर्जा की वहनीयता

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

आवृत्ति और आउटेजेज़ की अवधि में कमी

हम प्रगति को कैसे मापेंगे: आउटेज की संख्या, आउटेज के कुल घंटे और आउटेज के दौरान दी गई कुल बैकअप बिजली को मापना

बढ़ा हुआ लचीलापन

हम प्रगति को कैसे मापेंगे: ऐसे ग्राहकों की संख्या की गणना करना जिनके पास घर या सामुदायिक केंद्रों पर आपातकालीन बिजली की पहुंच है

हम प्रगति को कैसे मापेंगे: विनियमित प्रदूषक उत्सर्जनों का मापन और PSE संसाधनों से प्रदूषण में कमी।

हम प्रगति को कैसे मापेंगे: मृत्यु दर, अस्पताल में दाखिल, काम के नुकसान के दिनों जैसे स्वास्थ्य कारकों की गणना करना

हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

हम प्रगति को कैसे मापेंगे: आउटेज की संख्या, आउटेज के कुल घंटे और आउटेज के दौरान दी गई कुल बैकअप बिजली को मापना

हम प्रगति को कैसे मापेंगे: ऐसे ग्राहकों की संख्या की गणना करना जिनके पास घर या सामुदायिक केंद्रों पर आपातकालीन बिजली की पहुंच है

हम प्रगति को कैसे मापेंगे: विनियमित प्रदूषक उत्सर्जनों का मापन और PSE संसाधनों से प्रदूषण में कमी।

हम प्रगति को कैसे मापेंगे: मृत्यु दर, अस्पताल में दाखिल, काम के नुकसान के दिनों जैसे स्वास्थ्य कारकों की गणना करना

हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

हम प्रगति को कैसे मापेंगे: आउटेज की संख्या, आउटेज के कुल घंटे और आउटेज के दौरान दी गई कुल बैकअप बिजली को मापना

हम प्रगति को कैसे मापेंगे: ऐसे ग्राहकों की संख्या की गणना करना जिनके पास घर या सामुदायिक केंद्रों पर आपातकालीन बिजली की पहुंच है

हम प्रगति को कैसे मापेंगे: विनियमित प्रदूषक उत्सर्जनों का मापन और PSE संसाधनों से प्रदूषण में कमी।

हम प्रगति को कैसे मापेंगे: मृत्यु दर, अस्पताल में दाखिल, काम के नुकसान के दिनों जैसे स्वास्थ्य कारकों की गणना करना

हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

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बढ़ा हुआ लचीलापन

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हम प्रगति को कैसे मापेंगे: विनियमित प्रदूषक उत्सर्जनों का मापन और PSE संसाधनों से प्रदूषण में कमी।

हम प्रगति को कैसे मापेंगे: मृत्यु दर, अस्पताल में दाखिल, काम के नुकसान के दिनों जैसे स्वास्थ्य कारकों की गणना करना

हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

स्वच्छ ऊर्जा की वहनीयता

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

आवृत्ति और आउटेजेज़ की अवधि में कमी

हम प्रगति को कैसे मापेंगे: आउटेज की संख्या, आउटेज के कुल घंटे और आउटेज के दौरान दी गई कुल बैकअप बिजली को मापना

बढ़ा हुआ लचीलापन

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स्वच्छ ऊर्जा की वहनीयता

हम प्रगति को कैसे मापेंगे: PSE ग्राहकों के लिए बिजली के बिलों पर खर्च की गई आय के प्रतिशत की गणना करना

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हम प्रगति को कैसे मापेंगे: आउटेज की संख्या, आउटेज के कुल घंटे और आउटेज के दौरान दी गई कुल बैकअप बिजली को मापना

बढ़ा हुआ लचीलापन

हम प्रगति को कैसे मापेंगे: ऐसे ग्राहकों की संख्या की गणना करना जिनके पास घर या सामुदायिक केंद्रों पर आपातकालीन बिजली की पहुंच है

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हम प्रगति को कैसे मापेंगे: हम प्रगति को कैसे मापेंगे: PSE संसाधनों से कार्बन डाइऑक्साइड (CO2) उत्सर्जन की गणना करना

हम प्रगति को कैसे मापेंगे: बिजली की चरम मांग को कम करना

Online Open House analytics

October 18 – November 14, 2021

Metric	Quantity
Unique Pageviews	6,757
Overall Pageviews	7,939
Overall Average Time on Site	0:03:06
Spanish Visits	1,628
Vietnamese Visits	572
Traditional Chinese Visits	480
Russian Visits	519
Hindi Visits	464

PSE's Draft Clean Energy Implementation Plan

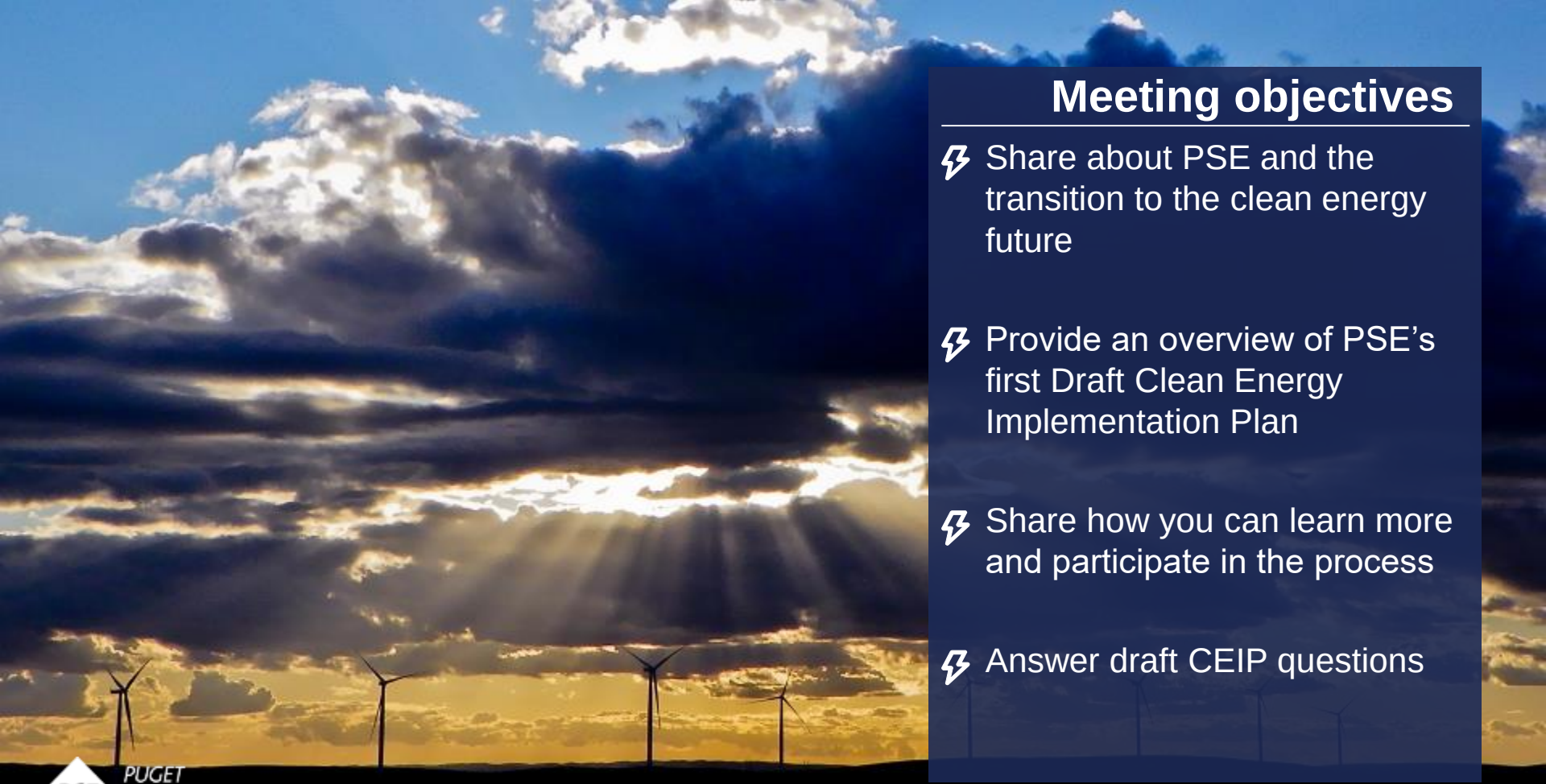
Our four-year road map for transitioning to clean electricity

October 18, 2021

Safety moment:

The Great Washington Shakeout
October 21, 2021
10:21 am
www.shakeout.org/washington

PUGET SOUND ENERGY



Meeting objectives

- Share about PSE and the transition to the clean energy future
- Provide an overview of PSE's first Draft Clean Energy Implementation Plan
- Share how you can learn more and participate in the process
- Answer draft CEIP questions

PSE PUGET SOUND ENERGY

Today's Speakers

Karen Brubeck
Senior Community Engagement Representative, PSE

Ben Farrow
Director, Clean Energy Strategy, PSE

Brian Tyson
Manager, Clean Energy Planning and Implementation, PSE

Diann Strom
Stakeholder Engagement Lead, Clean Energy Strategy, PSE

PUGET SOUND ENERGY

About PSE

PUGET SOUND ENERGY

Local energy provider for nearly 150 years.

- Washington's largest and oldest utility, **serving 1.5 million customers** in 10 counties.
- Our **3,100+ employees** live and work in the communities we serve.
- We share our customers' **concern for the environment**, balanced with their expectations for uncompromised **reliability, affordability and safety.**

PSE PUGET SOUND ENERGY

By 2045, we aspire to be a Beyond Net Zero Carbon energy company.

- Target: **Reduce our own carbon emissions to net zero** and go beyond by **helping other sectors** enable carbon reduction across Washington.
- Holistic approach encompasses our **entire energy supply**—both electric and natural gas—our operations, and the positive impact that we can have on other industries and sectors.

PSE PUGET SOUND ENERGY

Clean electricity is a key pathway to a Beyond Net Zero future.

We will achieve the following:

- Net zero carbon emissions for all PSE operations and electric supply by 2030
- 100% carbon free electric supply by 2045

- PSE has reached a milestone for clean electricity with the filing of its first-ever draft Clean Energy Implementation Plan (CEIP).

- **We want your input on the draft CEIP.**

PSE PUGET SOUND ENERGY

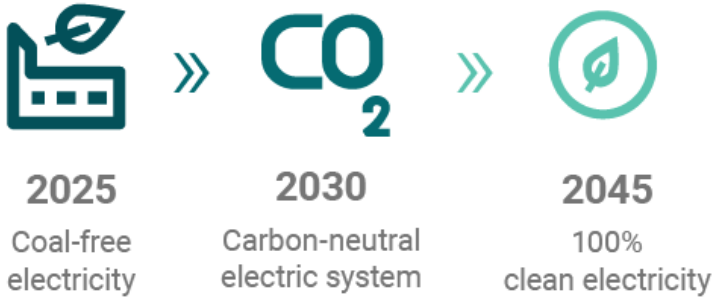
About clean electricity

PSE PUGET SOUND ENERGY

Clean Energy Transformation Act (CETA)

Washington's Clean Energy Transformation Act (CETA) goals:

Achieve clean energy milestones



Ensure all customers benefit

Through:

- Equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities
- Public health and environmental benefits and reduction of costs and risk
- Energy security and resiliency

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What's considered a clean energy resource?

- For CETA, utilities are focused on electric resources
- Clean electricity resources could include:
  - Renewable energy – like hydropower, wind, solar, geothermal, etc
  - Energy efficiency programs
  - Demand response programs
  - Distributed energy resources, like roof-top solar, batteries
  - Non-emitting resources, like nuclear or other new technologies that don't cause greenhouse gas emissions

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PSE's diversified electric supply

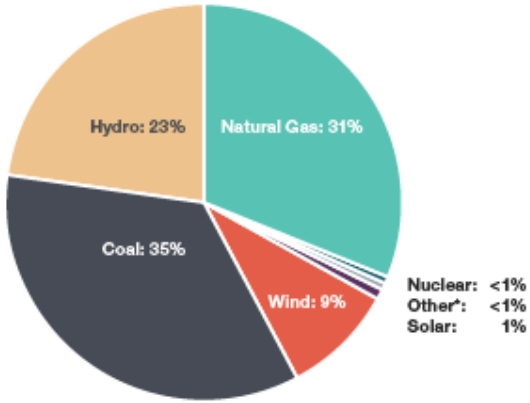
In 2019, PSE's electric supply was:

- 33% clean – hydro, wind and solar
- 35% coal
- 31% natural gas
- ~1% other

PSE is on it's way to carbon-free electricity

- Coal free by end of 2025
- Carbon neutral by 2030
- 100% clean electricity by 2045

Fuel	Percentage
Coal	35%
Hydroelectric	23%
Natural Gas	31%
Nuclear	<1%
Other*	<1%
Wind	9%
Total	100%



** Biomass, non-biogenic and petroleum.*

Source: Published by the Washington Department of Commerce, October 2020, with data reported by PSE in August 2020.

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PSE's draft Clean Energy Implementation Plan

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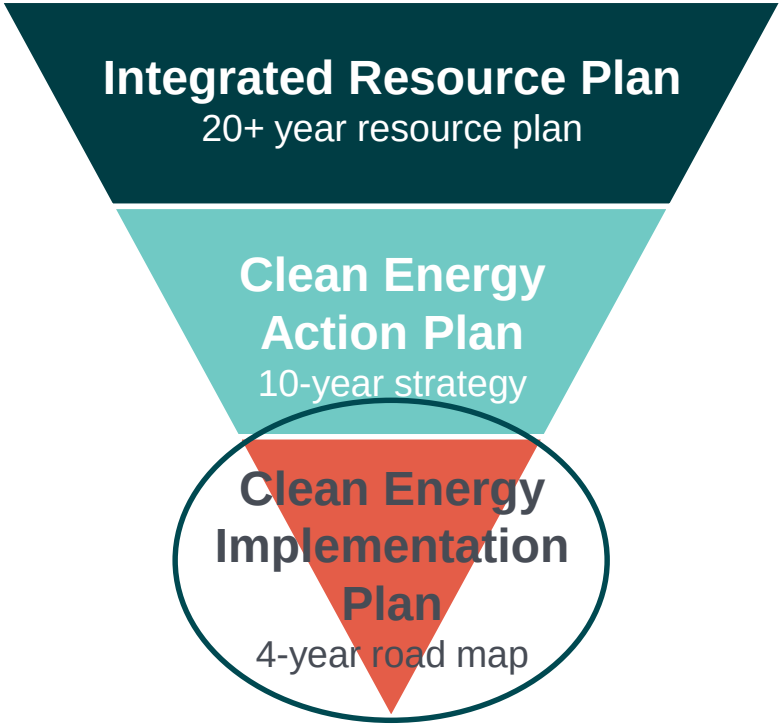
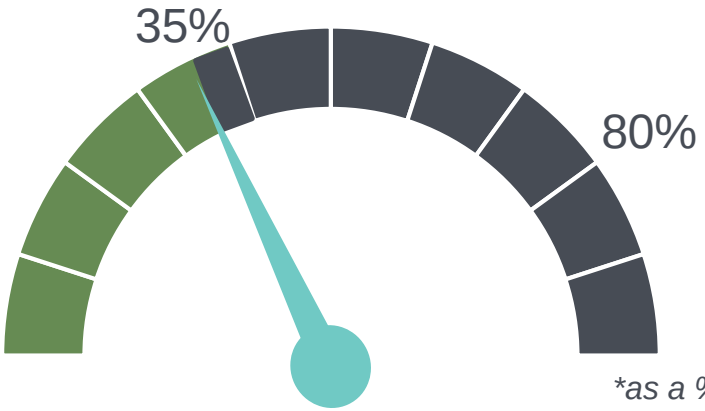
PSE electric resource planning process



- CEIP is a **new plan** required by CETA
- Four-year plan that **guides PSE's clean energy programs, actions and investments for 2022-2025**
- This is the first of many plans, as the energy resource planning **process is a continuous, iterative cycle**

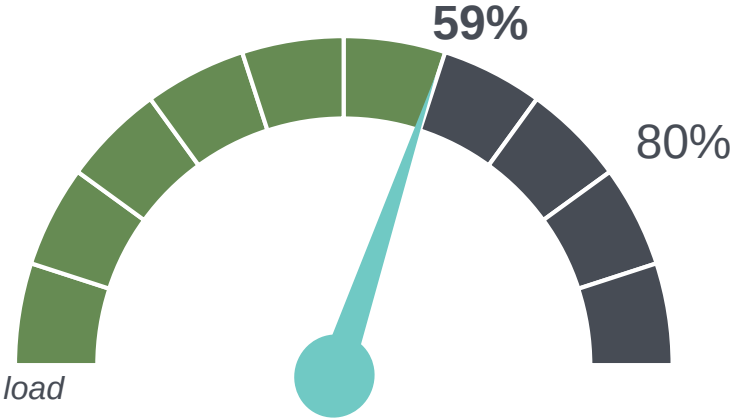
PUGET SOUND ENERGY

Transition to clean electricity: 2022-2025



PSE clean electricity portfolio in **2020**

**as a % of net retail load*



PSE clean electricity portfolio forecast by **end of 2025** via the CEIP

- ✓ Coal free
- ✓ More renewable energy
- ✓ More energy efficiency
- ✓ New local solar and battery storage programs

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Components of the Clean Energy Implementation Plan (CEIP)

- Interim targets (% clean electricity)
- Specific targets for:
  - Energy efficiency
  - Demand response
  - Renewable energy
- Customer benefit data:
  - Highly impacted communities & vulnerable populations
  - Customer benefit indicators
- Specific actions utility will take over implementation period
- Projected incremental cost
- Public participation

4-year plan; first plan covers calendar years 2022-2025

PUGET SOUND ENERGY

Targets to achieve our clean energy goals in 2025

Interim target

Electric supply from renewable or non-emitting resources in 2025

Specific targets

Energy Efficiency: 1,010,896 MWh for 2022-2025
Equivalent to electricity used by more than 130,000 homes in one year

Demand response: 23.7 MW
New programs incentivizing shifting energy use during peak periods

Renewable Energy: 59% of retail sales in 2025
- *Large-scale generation, like wind*
- *>2x as much local solar and battery programs than today*

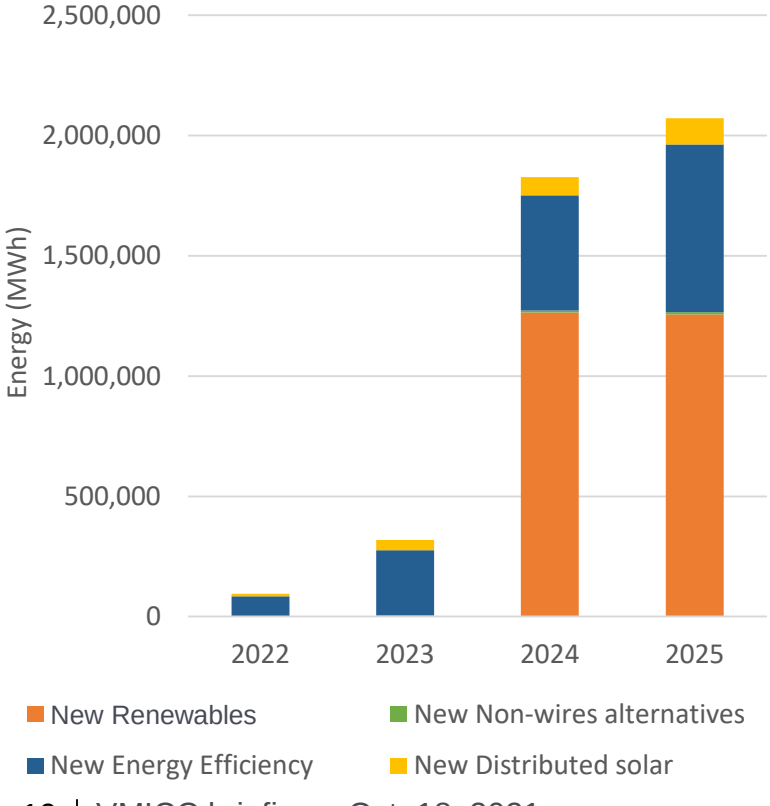
PUGET SOUND ENERGY

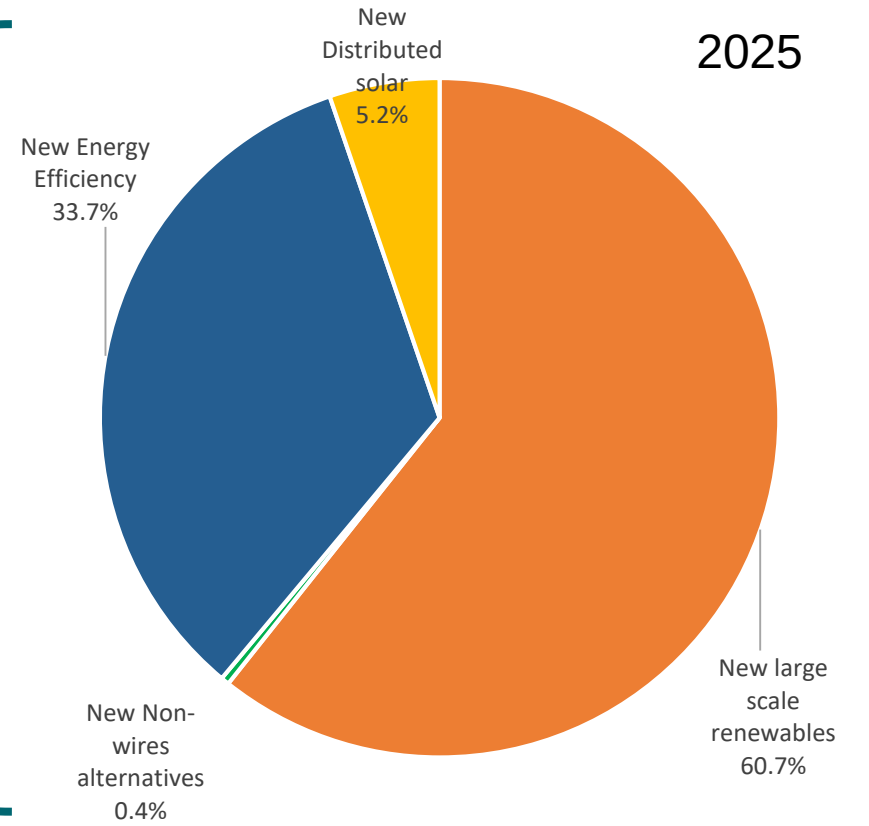
Embedding equity in our plan: listening to and learning from our new Equity Advisory Group

Shaped the draft CEIP to:

- Expand **vulnerability factors**
- **Balance affordability, accessibility, and benefits**
- Ensure the CEIP includes **measurements for accountability**
- Emphasize **inclusive community engagement and education** to accelerate accessibility
- **Design programs** to be accessible, affordable, accountable to **accelerate benefits to highly-impacted communities and vulnerable populations**

Draft CEIP: New clean electricity mix for 2022-2025 (estimated)





Note: MWh are estimated. Distributed solar percentage doesn't include "Customer Connected Solar" (aka net metering)

PSE recommendation: DER program concept mix

Highly impacted communities and vulnerable populations

Battery storage
- Residential PSE battery (Low-income) leasing

Rooftop and ground solar (distributed)
- Residential roof-top solar (Low-income) leasing
  Multifamily Community Solar
- Low-income Community Solar (existing program)
  Multifamily solar partnership program
- Multifamily unit rooftop solar incentive

Commercial & industrial (C&I)

Battery storage
- C&I space for batteries – leasing

Rooftop and ground solar (distributed)
- C&I roof-top solar incentive
- Distributed solar power purchase agreement

Residential programs

Battery storage
- Residential PSE battery leasing

Rooftop and ground solar (distributed)
- Residential roof-top solar leasing
- Customer Connected Solar (existing program)
- Community Solar (existing program)

Hybrid
- PSE Customer-sited solar + storage offering

- All DER concepts will seek inclusive opportunities for Named Communities
- Additional hybrid programs may be available as result of RFP, including targeting Named Communities

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Customer benefits shape our plans

Highly impacted communities and vulnerable populations (Named communities)

Energy benefits
- Improved participation from named communities

Burden reduction
- Improved participation from named communities
- Reduced cost impacts

Non-energy benefits
- Improved participation from named communities
- Increase in clean energy jobs
- Improved home comfort (includes indoor air quality)

All PSE customers (including highly impacted communities and vulnerable populations)

Public health
- Improved outdoor air quality (includes pollution)
- Improved community health

Risk reduction
- Reduction of climate change impacts
- Decrease in frequency & duration of outages Increased resiliency

Environment
- Reduce GHG emissions
- Reduction of climate change impacts

Energy security
- Decrease in frequency & duration of outages
- Increased resiliency

Cost reduction
- Affordability of clean energy

Resiliency
- Decrease in frequency & duration of outages
- Increased resiliency

- Customer benefit indicators are outcomes that improve our customers lives
- Customer benefit indicators:
  - Shape program, actions and investment decisions
  - Help ensure all customers benefit from the clean energy transition

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Engaging customers on clean energy values and benefits

Who did we engage?

- PSE general customers and community members
- PSE business customers

- Community based organizations (7)

- PSE advisory groups (4)

How did we engage?

- Project website
- Targeted emails
- Newspaper advertising
- Online surveys
- Go-to-you meetings
- Advisory group meetings
- PSE bill insert (The Voice)
- Social media
- Partner tool kit

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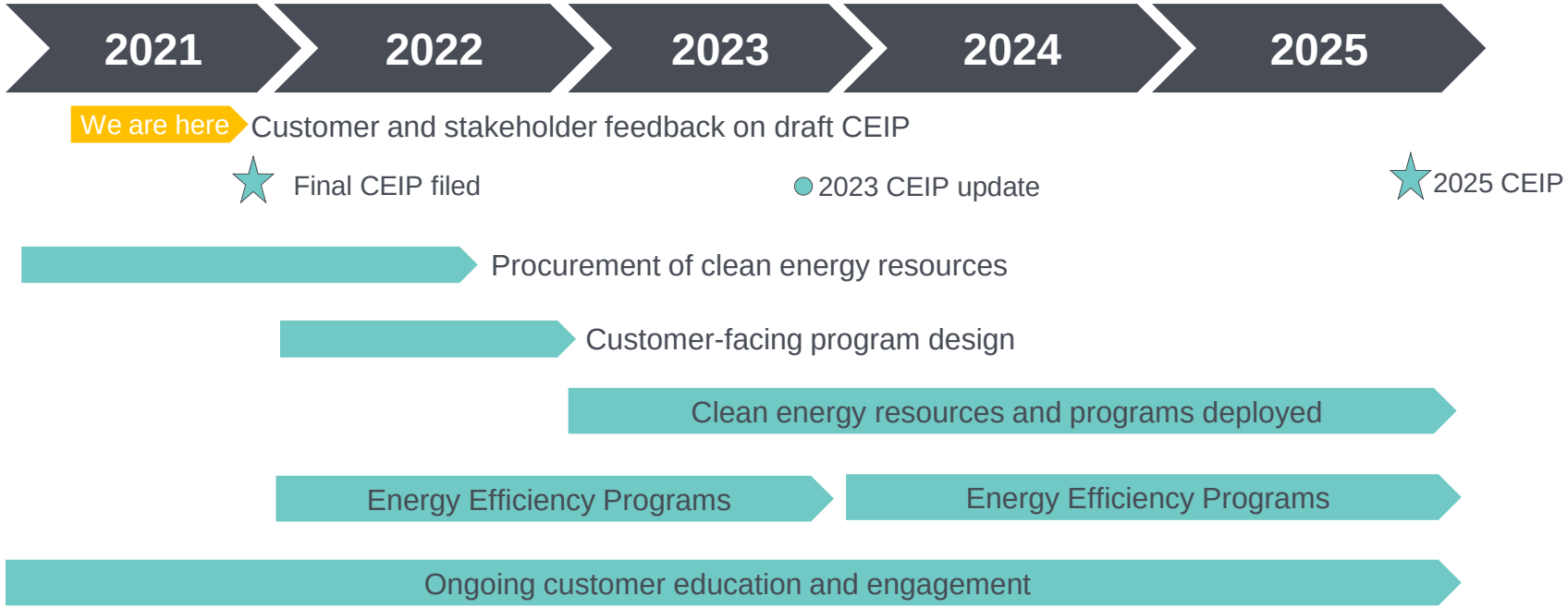
Next steps to delivering clean electricity



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How you can help

Oct. 18-Nov. 12: We want to hear from you!

- Visit our online open house to learn more about the draft CEIP and provide feedback at **pse.com/plan**

Participate in our programs

- Vashon-Maury Island today:
  - 350 net metered solar customers
  - 13.5% of customers participate in Green Power and Solar Choice programs
- Learn more about energy efficiency and renewable options we offer now at pse.com
- Stay tuned for more on new programs!

PUGET SOUND ENERGY

Working together for a clean energy future

Stay informed and involved:

Get the latest news and subscribe for email updates:
cleanenergyplan.pse.com

Email us at **ceip@pse.com**

Leave a message at **(425) 818-2051**

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Appendix

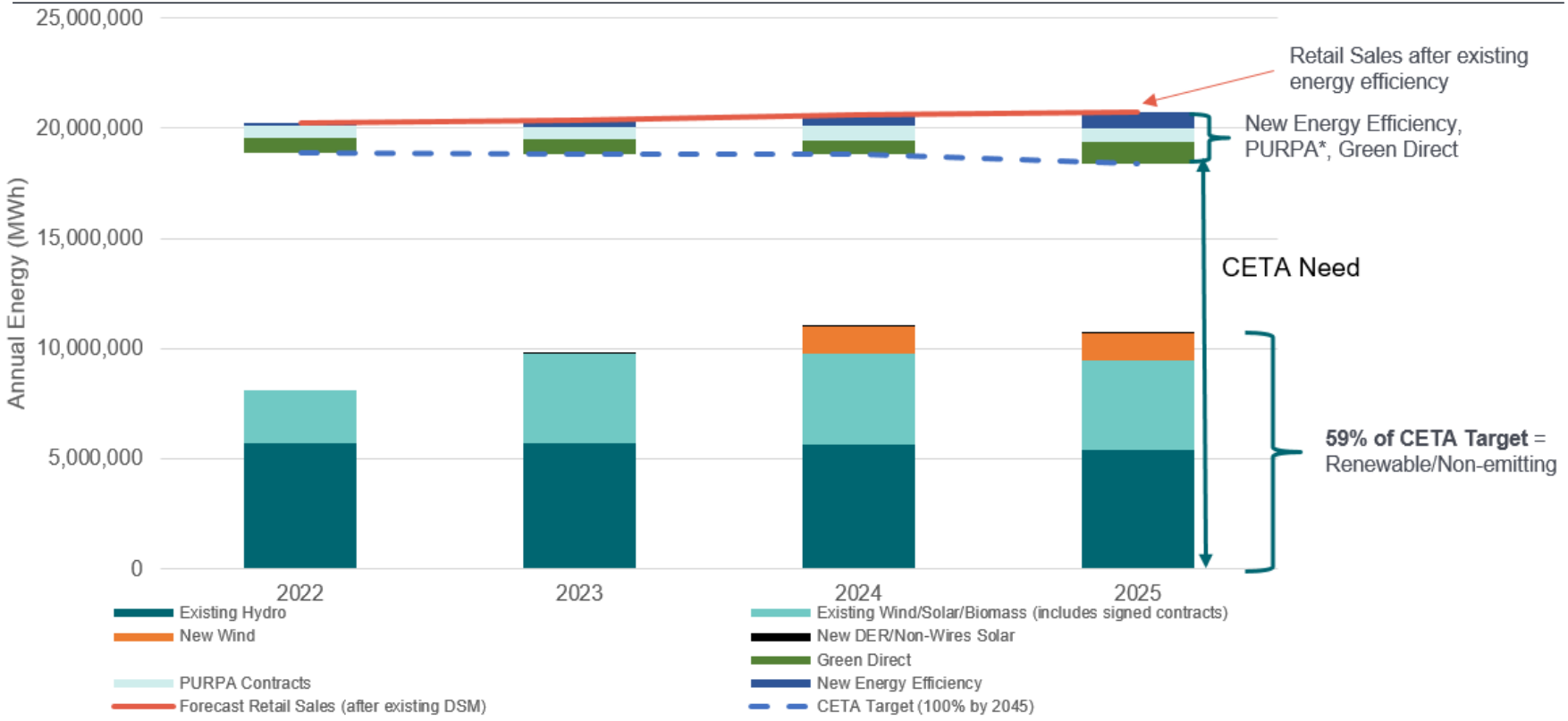
Common acronyms

Acronym	Meaning
BCP	Biennial Conservation Plan
CBI	Customer benefit indicator
CEAP	Clean Energy Action Plan – 10-year strategy
CEIP	Clean Energy Implementation Plan – 4-year roadmap
CETA	Clean Energy Transformation Act, which set clean electricity standards for Washington
C&I	Commercial and industrial
DER	Distributed energy resource, e.g., rooftop solar & small-scale battery storage
DR	Demand response, e.g., incentive programs for customers to reduce their energy use at peak periods
EAG	Equity Advisory Group
HIC	Highly Impacted Communities
IRP	Integrated Resource Plan – 20+ year resource plan
Named Communities	Refers to “Highly Impacted Community” and “Vulnerable Populations” (defined by CETA)
PPA	Power purchase agreement
PURPA	Public Utility Regulatory Policies Act Qualifying Facility
RFP	Request for proposal
UTC	Washington Utilities and Transportation Commission, which regulates PSE
VP	Vulnerable Populations

UTC requirements and Draft CEIP content

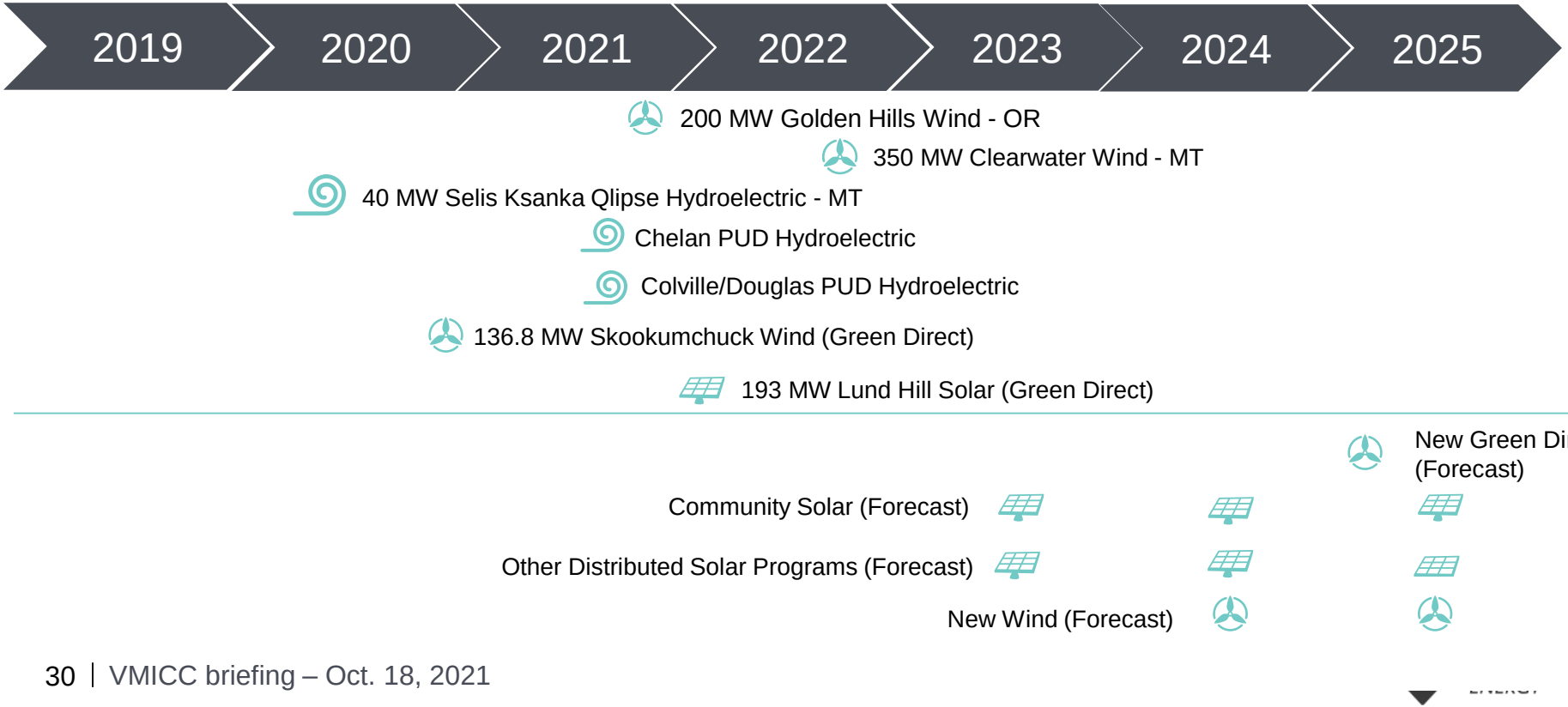
WAC 480-100-640	Draft CEIP content for 2022-2025
(1) Filing requirements	• Per UTC Order 01, draft CEIP filed on Oct. 15 and final CEIP to be filed by Dec. 17, 2021
(2) Interim targets	• Interim target of 59% clean electricity by 2025 • Details in Chapter 2
(3) Specific targets	• Energy Efficiency: 1,010,896 MWh total for 2022-2025 (based on draft 2022-2023 BCP) • Demand Response: 23.7 MW • Renewable Energy: 59% of retail sales in 2025 • Details in Chapter 2 and Appendices A, D, E, F and H
(4) Customer benefit data	• Highly Impacted Communities identified • Vulnerable Populations (VP) identified, with new factors based on EAG input • Customer Benefit Indicators (CBI) identified using customer, advisory group and stakeholder input. Based on mixed feedback from advisory groups, PSE equally weighted the CBI • Described in Chapters 3 and 6, plus Appendix D
(5) Specific actions	• Specific actions described in detail in Chapter 4 and Appendix L, as well as Chapter 3
(6) Narrative description of specific actions	• Specific actions narrative in in Chapter 4, as well as Chapter 2 and 3 and all appendices except I
(7) Projected incremental cost	• Slightly exceeding an estimated 2% annual rate increase from directly attributable activities • Details in Chapter 5 and Appendix E, as well as Chapter 2
(8) Public participation	• Described in Chapter 6. Appendix C includes draft Public Participation Plan for 2022-mid-2023
(9) Alternative compliance	• PSE is not going to use alternative compliance during this period
(10) Early action coal credit	• PSE is not proposing to take early action compliance credit
(11) Biennial CEIP update	• Not applicable for this draft CEIP, as biennial CEIP update is due in 2023

2022-2025: CETA clean electricity mix



* *Public Utility Regulatory Policies Act Qualifying Facility*

PSE has made significant progress in renewable energy over the past several years and will continue to make significant progress in renewable energy under the CEIP



2022-2025: Moving further, faster to a clean energy future

	2022	2023	2024	2025
Resource specific (projected)	• Energy Efficiency Programs	• Energy Efficiency Programs	• Energy Efficiency Programs	• Energy Efficiency Programs
	• Complete targeted DER/DR RFP	• Start Demand Response Programs	• Expand Demand Response programs	• Expand Demand Response programs
	• Complete targeted DER/DR RFP • 7 MW of DER solar in service	• 23 MW of DER solar in service • 5 MW of storage in service	• 400 MW of wind in service • 25 MW of DER solar in service • 7 MW of storage in service	• 100 MW of wind in service • 24 MW of DER solar in service • 14 MW of storage in service
Other investments	• Begin tariffs filing DER programs • Customer-centered program design • Baseline data collection for CBIs • Enabling technologies planning	• Tariff filing DER programs • Build and deploy new DER and DR programs • Initial customer programs and education launch • Begin installing enabling technologies • Progress reporting and CEIP Update	• Utility-scale renewables and DERs in service • Progress reporting • Ongoing programs and education • Ongoing installation of enabling technologies	• Utility-scale renewables and DERs in service • Ongoing programs and education • Ongoing installation of enabling technologies • File 2026-2029 CEIP

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2021 CEIP: Draft costs (estimated)*

The current forecast of costs to pursue this cleaner portfolio** would:

- Increase the average **residentia**l customer's bill by **~$6/month in 2025**
- Increase average **commercial** customer's bill by **~$37/month in 2025**

Cost does not include impact of:

- *Low-income rates for qualifying customers and seniors, which was designed in consultation with the EAG.*
- *Participation in energy efficiency, demand response, low-income community solar, or other programs, which could decrease a customer's bill.*
- *Participation in bill assistance programs.*
- *Non-CEIP related costs.*

***Targets, actions, and costs are subject to change based on feedback from stakeholders and further development*
***as compared to a portfolio that does not meet CETA clean electricity requirements*

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PUGET SOUND ENERGY

Summary of Vashon-Maury Island Community Council Presentation

Nov. 2021

Puget Sound Energy's Clean Energy Strategy Team was invited to present to the Vashon-Maury Island Community Council (VMICC) on the draft Clean Energy Implementation Plan (CEIP). The team participated in the VMICC's online meeting on Oct. 18 from 7-8:35 p.m., which had about 30 attendees.

Kevin Jones, VMICC member, introduced the CEIP topic, and Diane Emerson, VMICC member, introduced PSE's speakers – Karen Brubeck, Ben Farrow, Brian Tyson and Diann Strom. The PSE team presented key highlights from the draft CEIP, encouraged attendees to visit the online open house website to learn more and provide feedback, and answered questions from attendees.

PSE answered questions from VMICC members, many of which were on residential natural gas service, which is outside the scope of the CEIP. The questions and comment themes are listed below

- Support for moving off of coal as a big step to reaching clean energy goals
- Interest in percentage of net metering solar and battery storage in PSE's service area today
- Question on supporting renters in clean energy transition
- Interest in incentives to move customers from gas to electric appliances
- Question on potential peaking plant needed by 2026 based on the 2021 Integrated Resource Plan
- Questions and comments on residential natural gas:
    - PSE's efforts to reduce climate change while encouraging residential rebates
    - How PSE is protecting groundwater related to acquisition of natural gas
    - Confusion on why the CEIP doesn't discuss natural gas
    - PSE's participation in the American Gas Association and opposition to fossil fuel bans

In addition, Karen Brubeck, followed up on some non-CEIP related questions via email.

PSE's Draft Clean Energy Implementation Plan – CBO Lunch and Learn

Our four-year road map for transitioning to clean electricity

October 27, 2021

Safety moment: How long does Halloween candy last?

- Halloween candy does have a shelf life, but it's probably longer than you think.
- The type of candy and how you store it can affect how long it will last.
- Keeping your sweets in cool and dry places is the most efficient way to store it.
- Plain chocolate typically lasts the longest.

PUGET SOUND ENERGY

Meeting objectives

- Share about PSE and the transition to the clean energy future
- Share how your feedback was incorporated into the draft CEIP
- Provide an overview of PSE's first Draft Clean Energy Implementation Plan
- Share how you and your community can learn more and participate in the process
- Answer draft CEIP questions

PSE PUGET SOUND ENERGY

Today's Speakers

Ben Farrow
Director, Clean Energy Strategy, PSE

Brian Tyson
Manager, Clean Energy Planning and Implementation, PSE

Diann Strom
Stakeholder Engagement Lead, Clean Energy Strategy, PSE

Lucila Gambino & Claire Wendle
Facilitators, Triangle Associates

PUGET SOUND ENERGY

Introductions

Please share your:

- Name and organization
- If you could be a renewable energy (wind, solar, hydro, etc.), what would you be and why? OR
- What role do you see your organization/community playing in the transition to clean electricity?

PUGET SOUND ENERGY

About PSE

PSE PUGET SOUND ENERGY

Local energy provider for nearly 150 years.

- Washington's largest and oldest utility, **serving 1.5 million customers** in 10 counties.
- Our **3,100+ employees** live and work in the communities we serve.
- We share our customers' **concern for the environment**, balanced with their expectations for uncompromised **reliability, affordability and safety.**

By 2045, we aspire to be a Beyond Net Zero Carbon energy company.

- Target: **Reduce our own carbon emissions to net zero** and go beyond by **helping other sectors** enable carbon reduction across Washington.
- Holistic approach encompasses our **entire energy supply**—both electric and natural gas—our operations, and the positive impact that we can have on other industries and sectors.

PSE PUGET SOUND ENERGY

Clean electricity is a key pathway to a Beyond Net Zero future.

We will achieve the following:

- Net zero carbon emissions for all PSE operations and electric supply by 2030
- 100% carbon free electric supply by 2045
- PSE has reached a milestone for clean electricity with the filing of its first-ever draft Clean Energy Implementation Plan (CEIP).
- **We want your input on the draft CEIP.**

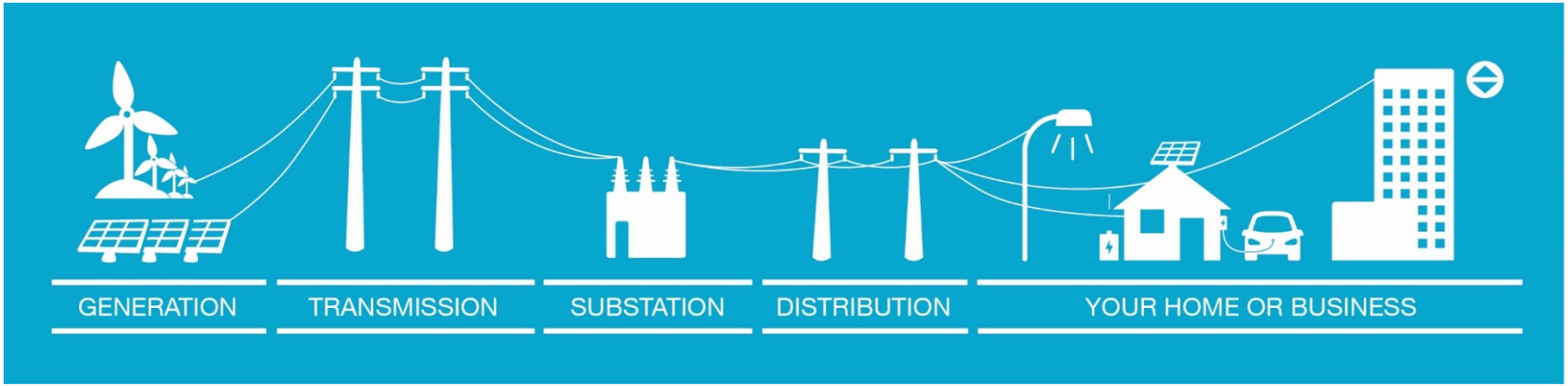
PSE PUGET SOUND ENERGY

About clean electricity

PSE PUGET SOUND ENERGY

Delivering safe, dependable and affordable energy

How power gets to you



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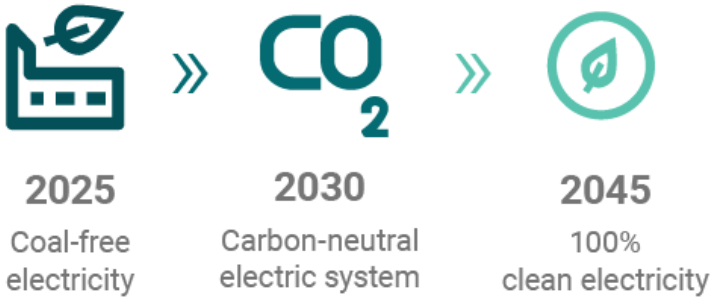
Clean Energy Transformation Act (CETA)

Washington's Clean Energy Transformation Act (CETA) goals:

Achieve clean energy milestones



Ensure all customers benefit

Through:

- Equitable distribution of energy and non-energy benefits and reduction of burdens to vulnerable populations and highly impacted communities
- Public health and environmental benefits and reduction of costs and risk
- Energy security and resiliency

PUGET SOUND ENERGY

What's considered a clean energy resource?

- For CETA, utilities are focused on electric resources
- Clean electricity resources could include:
  - Renewable energy – like hydropower, wind, solar, geothermal, etc
  - Energy efficiency programs
  - Demand response programs
  - Distributed energy resources, like roof-top solar, batteries
  - Non-emitting resources, like nuclear or other new technologies that don't cause greenhouse gas emissions

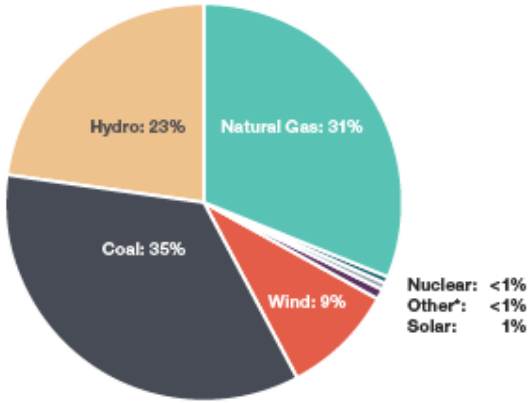
PUGET SOUND ENERGY

PSE's diversified electric supply

In 2019, PSE's electric supply was:

- 33% clean – hydro, wind and solar
- 35% coal
- 31% natural gas
- ~1% other

Fuel	Percentage
Coal	35%
Hydroelectric	23%
Natural Gas	31%
Nuclear	<1%
Other*	<1%
Wind	9%
Total	100%



** Biomass, non-biogenic and petroleum.*

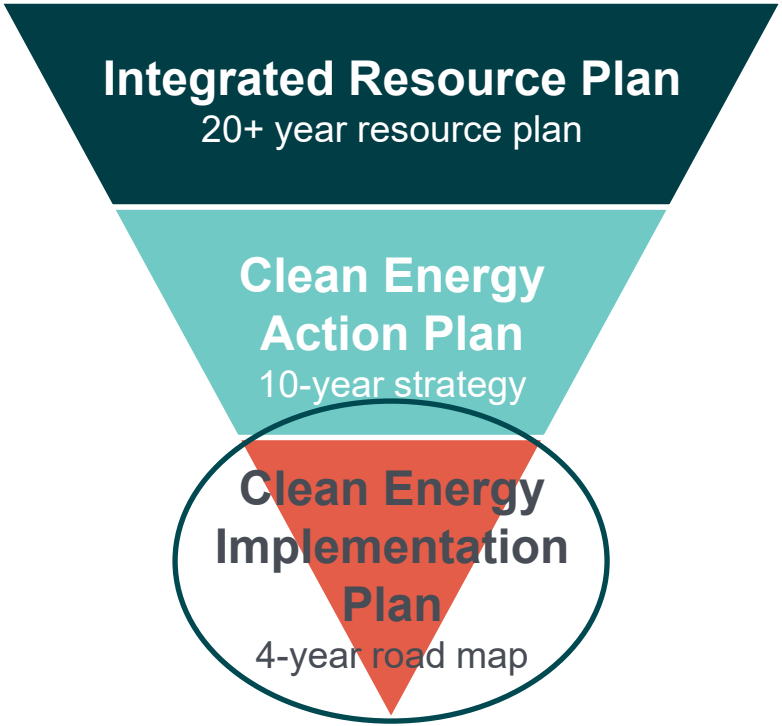
Source: Published by the Washington Department of Commerce, October 2020, with data reported by PSE in August 2020.

PUGET SOUND ENERGY

Public participation during the draft CEIP

PSE PUGET SOUND ENERGY

PSE electric resource planning process



- CEIP is a **new plan** required by CETA
- Four-year plan that **guides PSE's clean energy programs, actions and investments for 2022-2025**
- This is the first of many plans, as the energy resource planning **process is a continuous, iterative cycle**

PUGET SOUND ENERGY

Engaging customers on clean energy values and benefits

Who did we engage?

- PSE general customers and community members
- PSE business customers

- Community based organizations (8)

- PSE advisory groups (4)

How did we engage?

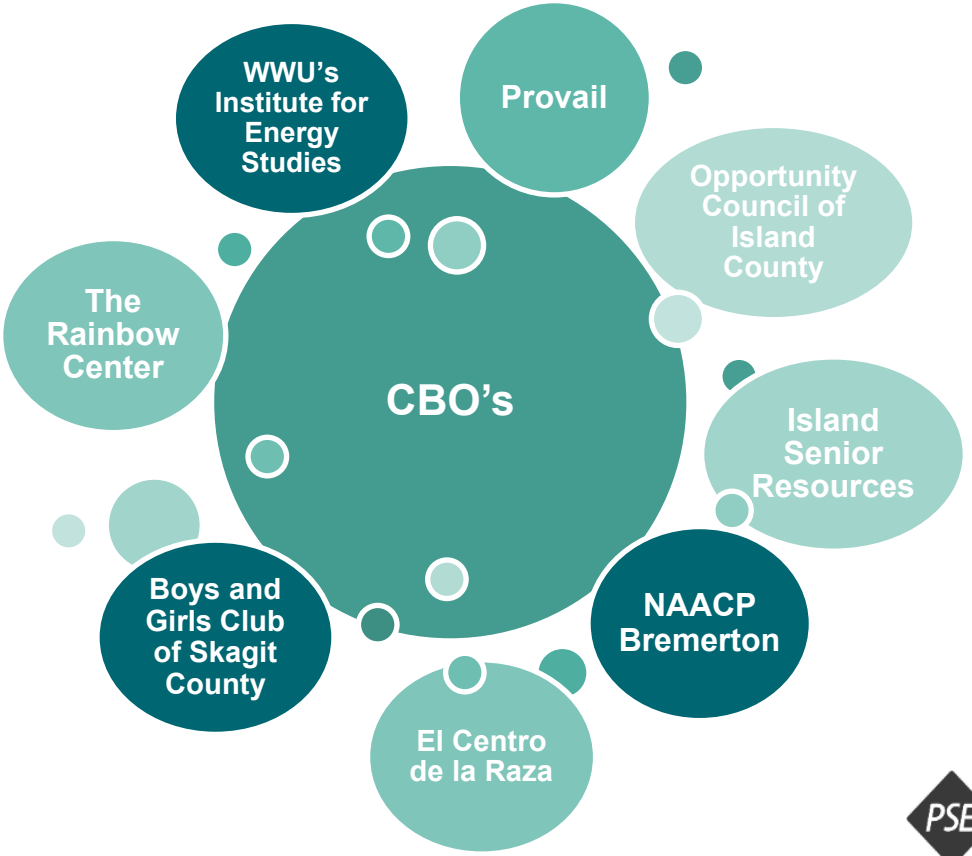
- Project website
- Targeted emails
- Newspaper advertising
- Online surveys
- Go-to-you meetings
- Advisory group meetings
- PSE bill insert (The Voice)
- Social media
- Partner tool kit

PUGET SOUND ENERGY

Community-based organization outreach

- Seven ‘go-to-you’ meetings across six counties
- One Spanish in-language session

PSE is actively conducting outreach



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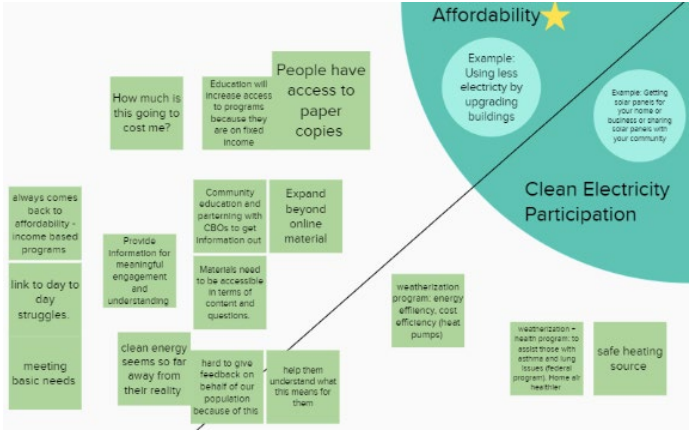
CBO feedback on values, benefits, and barriers

Which clean electricity values are most important to you?



What are some potential barriers or burdens as it relates to clean energy?

Mentimeter

Legislation to approve clean energy	Dams are fairly clean but difficult to salmon recovery. Cost of transition.	Jobs being taken from coal workers and replacing jobs for clean energy
curbing demand.	Knowledge	People's mindsets that create a focus on the trees rather than the forest. Birds, for example, rather than the devastating impact of climate change on birds.

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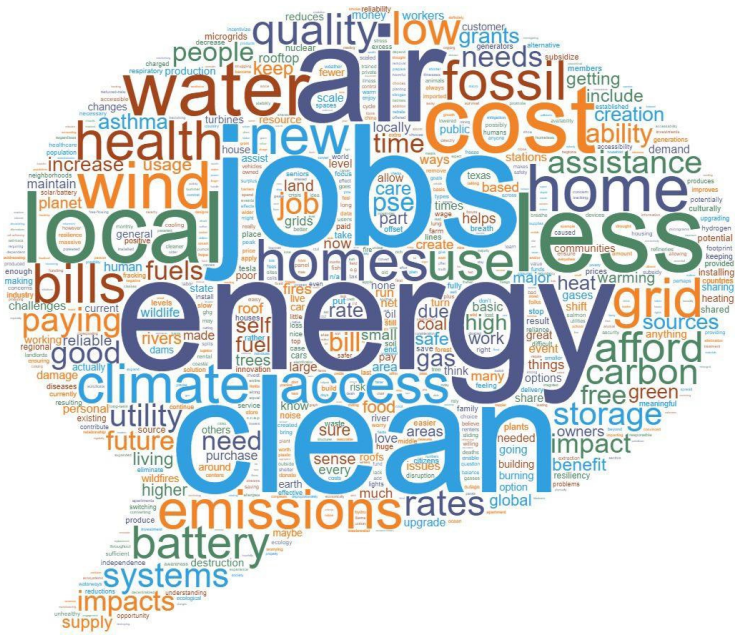
How your feedback was used

- Customer benefit indicators (CBIs)
- Public participation, including barriers to participation
    - Example: Inclusive, culturally-relevant, and multilingual education
- Implementation
    - Example: Access to clean energy jobs

PUGET SOUND ENERGY

What we heard from all customers

Priority	Category
Higher	• Environment • Public health • Affordability
	• Economic • Accessibility
Lower	• Clean energy participation • Energy resiliency • Comfort and satisfaction



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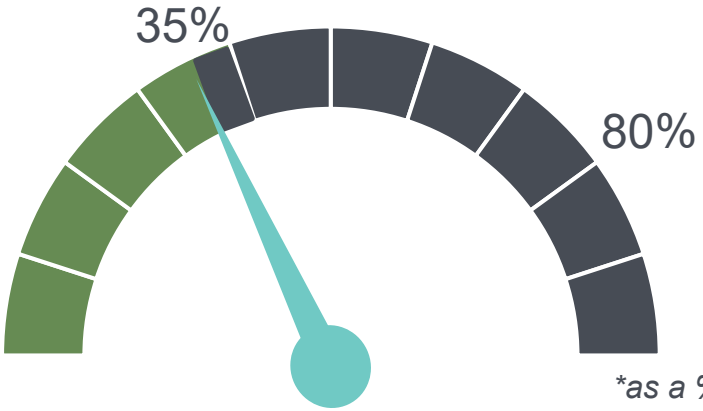
PSE's draft Clean Energy Implementation Plan

PUGET SOUND ENERGY

Transition to clean electricity: 2022-2025



PSE clean electricity portfolio in **2020**

**as a % of net retail load*

PSE clean electricity portfolio forecast by **end of 2025** via the CEIP

- ✓ Coal free
- ✓ More renewable energy
- ✓ More energy efficiency
- ✓ New local solar and battery storage programs

PUGET SOUND ENERGY

Components of the Clean Energy Implementation Plan (CEIP)

- Interim targets (% clean electricity)
- Specific targets for:
  - Energy efficiency
  - Demand response
  - Renewable energy
- **Customer benefit data:**
  - Highly impacted communities & vulnerable populations
  - Customer benefit indicators
- Specific actions utility will take over implementation period
- Projected incremental cost
- Public participation

4-year plan; first plan covers calendar years 2022-2025

PUGET SOUND ENERGY

Targets to achieve our clean energy goals in 2025

Interim target

Electric supply from renewable or non-emitting resources in 2025

Specific targets

Energy Efficiency: 1,010,896 MWh for 2022-2025
Equivalent to electricity used by more than 130,000 homes in one year

Demand response: 23.7 MW
New programs incentivizing shifting energy use during peak periods

Renewable Energy: 59% of retail sales in 2025
- *Large-scale generation, like wind*
- *>2x as much local solar and battery programs than today*

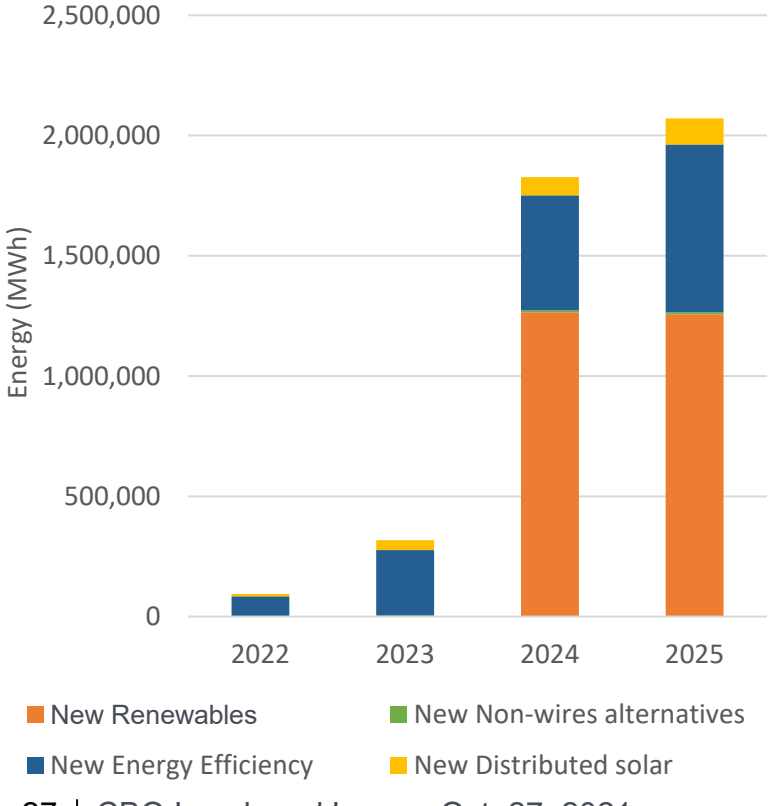
PUGET SOUND ENERGY

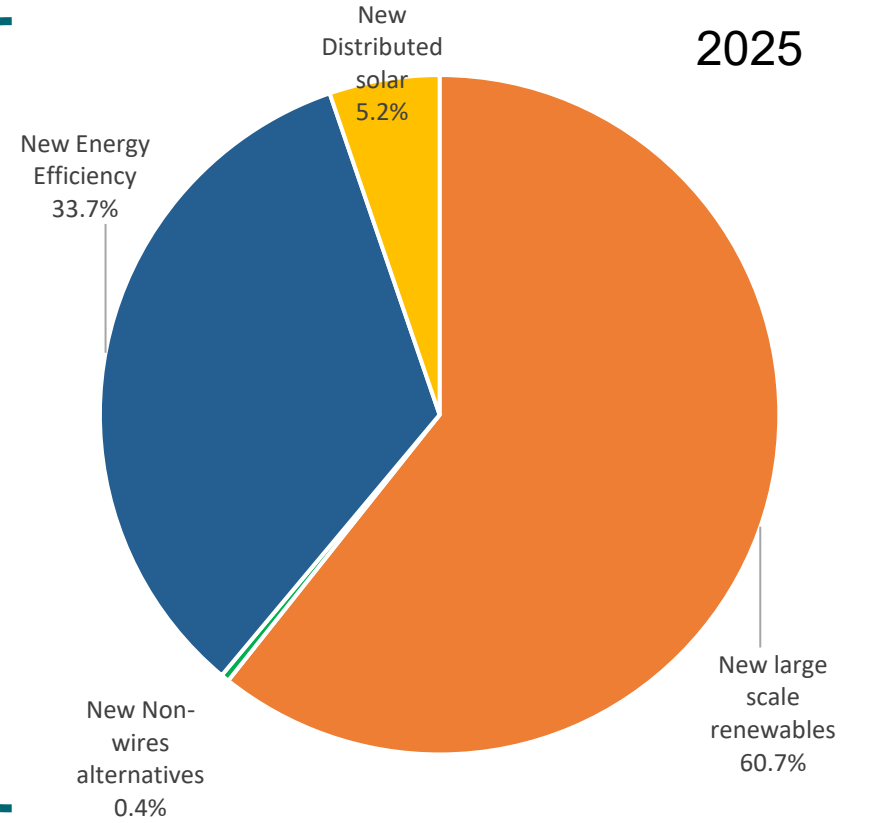
Embedding equity in our plan: listening to and learning from our new Equity Advisory Group

Shaped the draft CEIP to:

- Expand **vulnerability factors**
- **Balance affordability, accessibility, and benefits**
- Ensure the CEIP includes **measurements for accountability**
- Emphasize **inclusive community engagement and education** to accelerate accessibility
- **Design programs** to be accessible, affordable, accountable to **accelerate benefits to highly-impacted communities and vulnerable populations**

Draft CEIP: New clean electricity mix for 2022-2025 (estimated)





Note: MWh are estimated. Distributed solar percentage doesn't include "Customer Connected Solar" (aka net metering)

Customer benefits shape our plans

Highly impacted communities and vulnerable populations
(Named communities)

Energy benefits
- Improved participation from named communities

Burden reduction
- Improved participation from named communities
- Reduced cost impacts

Non-energy benefits
- Improved participation from named communities
- Increase in clean energy jobs
- Improved home comfort (includes indoor air quality)

All PSE customers (including highly impacted communities and vulnerable populations)

Public health
- Improved outdoor air quality (includes pollution)
- Improved community health

Risk reduction
- Reduction of climate change impacts
- Decrease in frequency & duration of outages Increased resiliency

Environment
- Reduce GHG emissions
- Reduction of climate change impacts

Energy security
- Decrease in frequency & duration of outages
- Increased resiliency

Cost reduction
- Affordability of clean energy

Resiliency
- Decrease in frequency & duration of outages
- Increased resiliency

- Customer benefit indicators are outcomes that improve our customers lives
- Customer benefit indicators:
  - Shape program, actions and investment decisions
  - Help ensure all customers benefit from the clean energy transition

PUGET SOUND ENERGY

PSE recommendation: DER program concept mix

Highly impacted communities and vulnerable populations

Battery storage
- Residential PSE battery (Low-income) leasing

Rooftop and ground solar (distributed)
- Residential roof-top solar (Low-income) leasing
  Multifamily Community Solar
- Low-income Community Solar (existing program)
  Multifamily solar partnership program
- Multifamily unit rooftop solar incentive

Commercial & industrial (C&I)

Battery storage
- C&I space for batteries – leasing

Rooftop and ground solar (distributed)
- C&I roof-top solar incentive
- Distributed solar power purchase agreement

Residential programs

Battery storage
- Residential PSE battery leasing

Rooftop and ground solar (distributed)
- Residential roof-top solar leasing
- Customer Connected Solar (existing program)
- Community Solar (existing program)

Hybrid
- PSE Customer-sited solar + storage offering

- All DER concepts will seek inclusive opportunities for Named Communities
- Additional hybrid programs may be available as result of RFP, including targeting Named Communities

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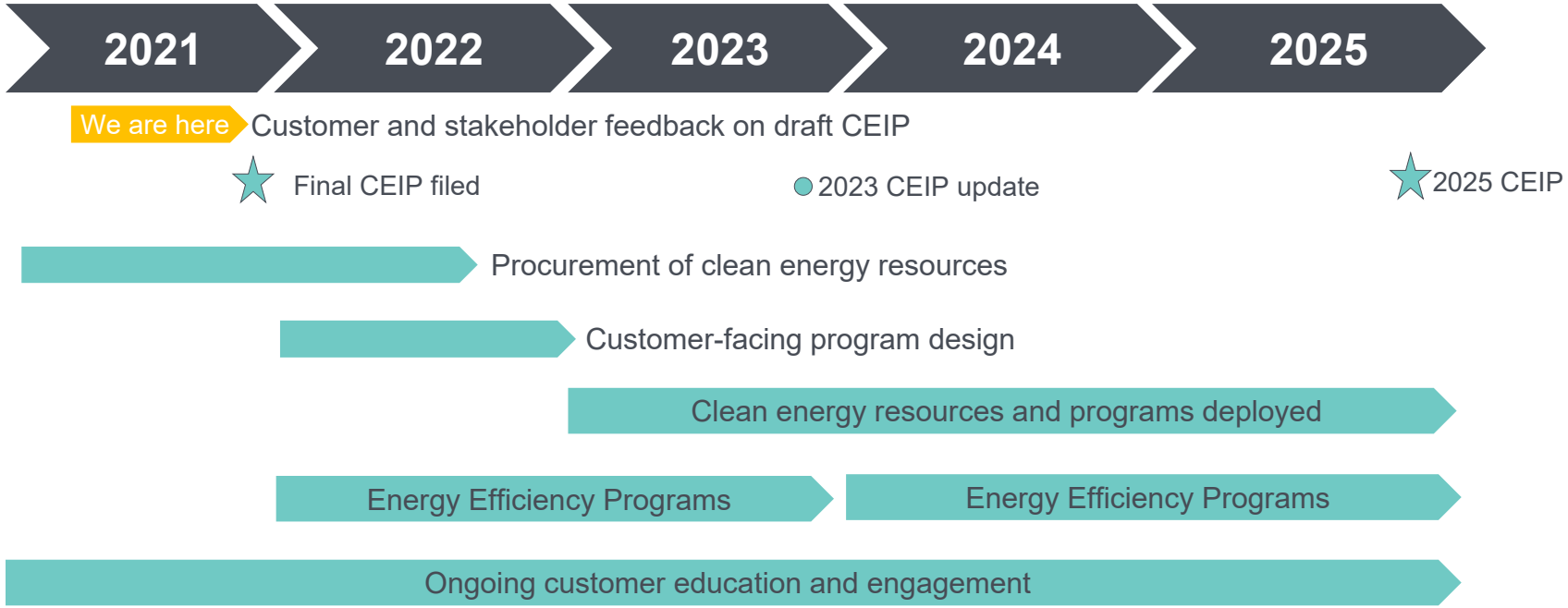
Next steps to delivering clean electricity



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How you can be involved

Oct. 18-Nov. 12: We want to hear from you!

- Visit our online open house to learn more about the draft CEIP and provide feedback at **pse.com/plan**

Participate in our programs

- Learn more about energy efficiency and renewable options we offer now at **pse.com**

How you can help!

- Share with your networks:
  - Online open house
  - Partner toolkit
  - Nov 8 CBO information session
- Look for CEIP opportunities and updates in 2022

PUGET SOUND ENERGY

Working together for a clean energy future

Stay informed and involved:

Get the latest news and subscribe for email updates:
cleanenergyplan.pse.com

Email us at **ceip@pse.com**

Leave a message at **(425) 818-2051**

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Appendix

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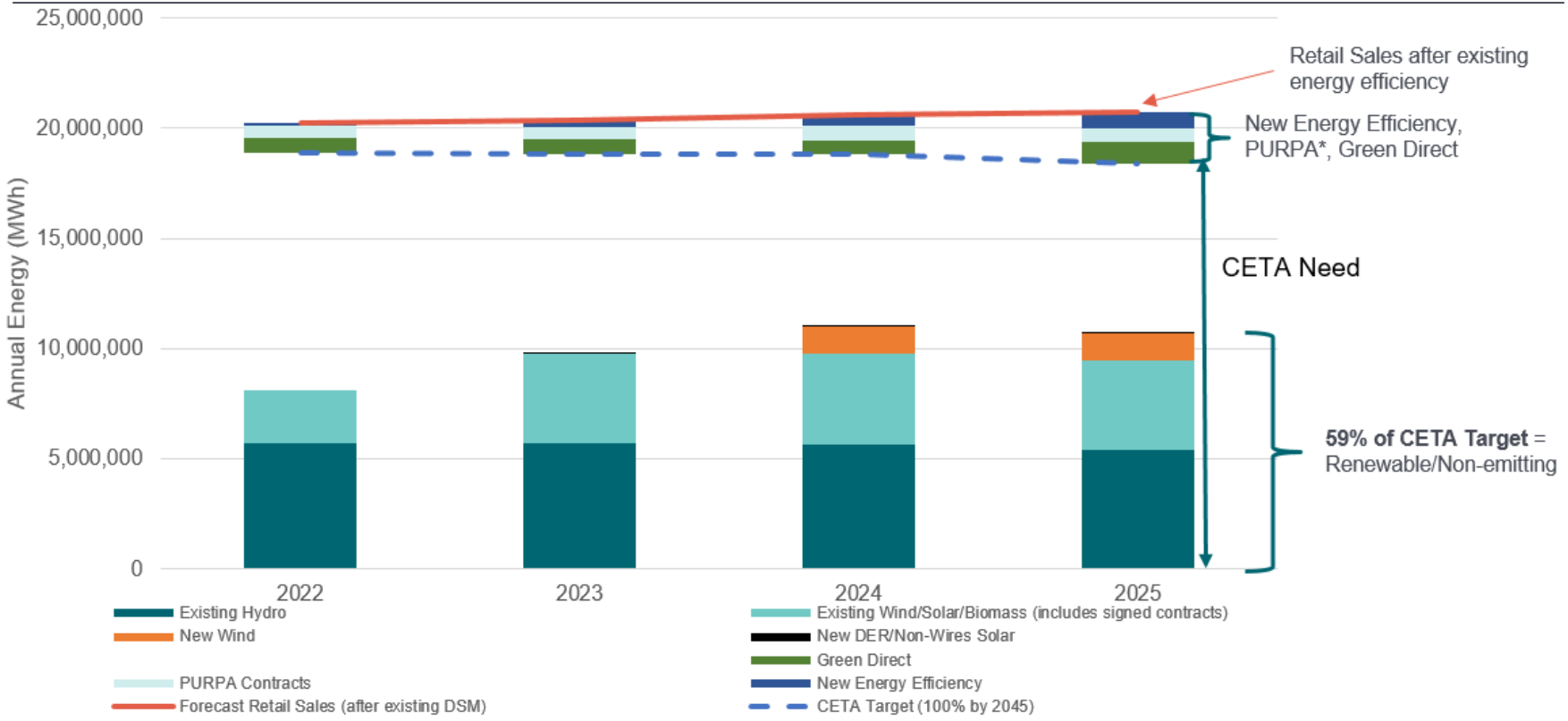
Common acronyms

Acronym	Meaning
BCP	Biennial Conservation Plan
CBI	Customer benefit indicator
CEAP	Clean Energy Action Plan – 10-year strategy
CEIP	Clean Energy Implementation Plan – 4-year roadmap
CETA	Clean Energy Transformation Act, which set clean electricity standards for Washington
C&I	Commercial and industrial
DER	Distributed energy resource, e.g., rooftop solar & small-scale battery storage
DR	Demand response, e.g., incentive programs for customers to reduce their energy use at peak periods
EAG	Equity Advisory Group
HIC	Highly Impacted Communities
IRP	Integrated Resource Plan – 20+ year resource plan
Named Communities	Refers to “Highly Impacted Community” and “Vulnerable Populations” (defined by CETA)
PPA	Power purchase agreement
PURPA	Public Utility Regulatory Policies Act Qualifying Facility
RFP	Request for proposal
UTC	Washington Utilities and Transportation Commission, which regulates PSE
VP	Vulnerable Populations

UTC requirements and Draft CEIP content

WAC 480-100-640	Draft CEIP content for 2022-2025
(1) Filing requirements	• Per UTC Order 01, draft CEIP filed on Oct. 15 and final CEIP to be filed by Dec. 17, 2021
(2) Interim targets	• Interim target of 59% clean electricity by 2025 • Details in Chapter 2
(3) Specific targets	• Energy Efficiency: 1,010,896 MWh total for 2022-2025 (based on draft 2022-2023 BCP) • Demand Response: 23.7 MW • Renewable Energy: 59% of retail sales in 2025 • Details in Chapter 2 and Appendices A, D, E, F and H
(4) Customer benefit data	• Highly Impacted Communities identified • Vulnerable Populations (VP) identified, with new factors based on EAG input • Customer Benefit Indicators (CBI) identified using customer, advisory group and stakeholder input. Based on mixed feedback from advisory groups, PSE equally weighted the CBI • Described in Chapters 3 and 6, plus Appendix D
(5) Specific actions	• Specific actions described in detail in Chapter 4 and Appendix L, as well as Chapter 3
(6) Narrative description of specific actions	• Specific actions narrative in in Chapter 4, as well as Chapter 2 and 3 and all appendices except I
(7) Projected incremental cost	• Slightly exceeding an estimated 2% annual rate increase from directly attributable activities • Details in Chapter 5 and Appendix E, as well as Chapter 2
(8) Public participation	• Described in Chapter 6. Appendix C includes draft Public Participation Plan for 2022-mid-2023
(9) Alternative compliance	• PSE is not going to use alternative compliance during this period
(10) Early action coal credit	• PSE is not proposing to take early action compliance credit
(11) Biennial CEIP update	• Not applicable for this draft CEIP, as biennial CEIP update is due in 2023

2022-2025: CETA clean electricity mix



** Public Utility Regulatory Policies Act Qualifying Facility*

PSE SOUND ENERGY

PSE has made significant progress in renewable energy over the past several years and will continue to make significant progress in renewable energy under the CEIP

2022-2025: Moving further, faster to a clean energy future

	2022	2023	2024	2025
Resource specific (projected)	• Energy Efficiency Programs	• Energy Efficiency Programs	• Energy Efficiency Programs	• Energy Efficiency Programs
	• Complete targeted DER/DR RFP	• Start Demand Response Programs	• Expand Demand Response programs	• Expand Demand Response programs
	• Complete targeted DER/DR RFP • 7 MW of DER solar in service	• 23 MW of DER solar in service • 5 MW of storage in service	• 400 MW of wind in service • 25 MW of DER solar in service • 7 MW of storage in service	• 100 MW of wind in service • 24 MW of DER solar in service • 14 MW of storage in service
Other investments	• Begin tariffs filing DER programs • Customer-centered program design • Baseline data collection for CBIs • Enabling technologies planning	• Tariff filing DER programs • Build and deploy new DER and DR programs • Initial customer programs and education launch • Begin installing enabling technologies • Progress reporting and CEIP Update	• Utility-scale renewables and DERs in service • Progress reporting • Ongoing programs and education • Ongoing installation of enabling technologies	• Utility-scale renewables and DERs in service • Ongoing programs and education • Ongoing installation of enabling technologies • File 2026-2029 CEIP

PUGET SOUND ENERGY

2021 CEIP: Draft costs (estimated)*

The current forecast of costs to pursue this cleaner portfolio** would:

- Increase the average **residentia**l customer's bill by **~$6/month in 2025**
- Increase average **commercial** customer's bill by **~$37/month in 2025**

Cost does not include impact of:

- *Low-income rates for qualifying customers and seniors, which was designed in consultation with the EAG.*
- *Participation in energy efficiency, demand response, low-income community solar, or other programs, which could decrease a customer's bill.*
- *Participation in bill assistance programs.*
- *Non-CEIP related costs.*

***Targets, actions, and costs are subject to change based on feedback from stakeholders and further development*
***as compared to a portfolio that does not meet CETA clean electricity requirements*

PUGET SOUND ENERGY

Dialogue: Transition to Clean Energy

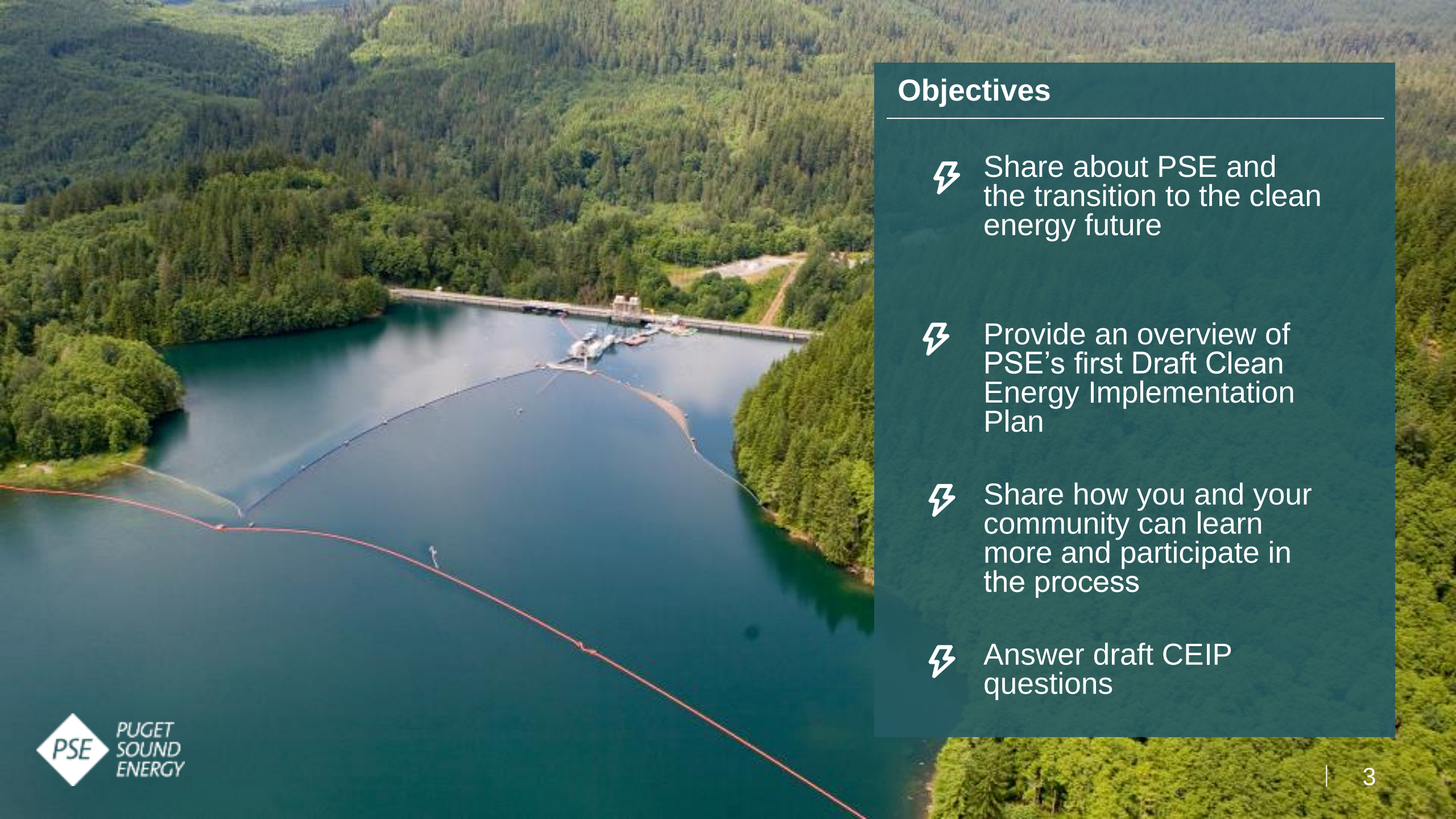
Nov. 8, 2021

PSE PUGET SOUND ENERGY

Safety moment: How long does Halloween candy last?

- Halloween candy does have a shelf life, but it's probably longer than you think.
- The type of candy and how you store it can affect how long it will last.
- Keeping your sweets in cool and dry places is the most efficient way to store it.
- Plain chocolate typically lasts the longest.

PUGET SOUND ENERGY



Objectives

- Share about PSE and the transition to the clean energy future
- Provide an overview of PSE's first Draft Clean Energy Implementation Plan
- Share how you and your community can learn more and participate in the process
- Answer draft CEIP questions

PSE PUGET SOUND ENERGY

Introductions and Icebreaker

Please share your:

- Name
- What comes to mind when you think of clean electricity?

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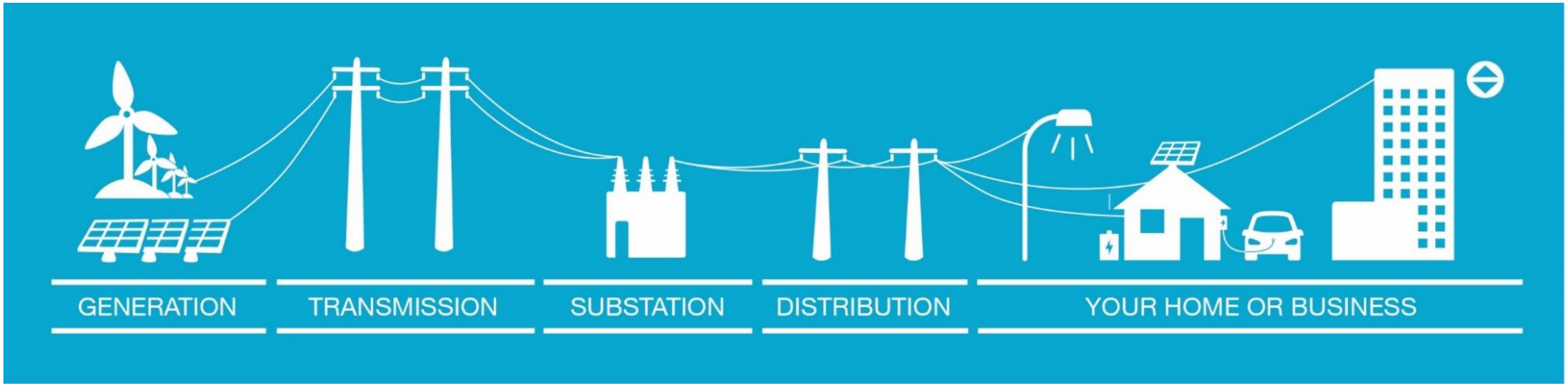

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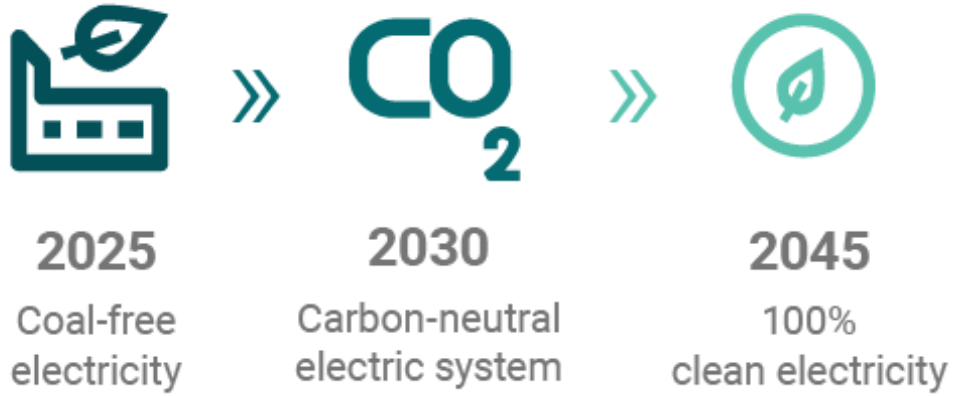

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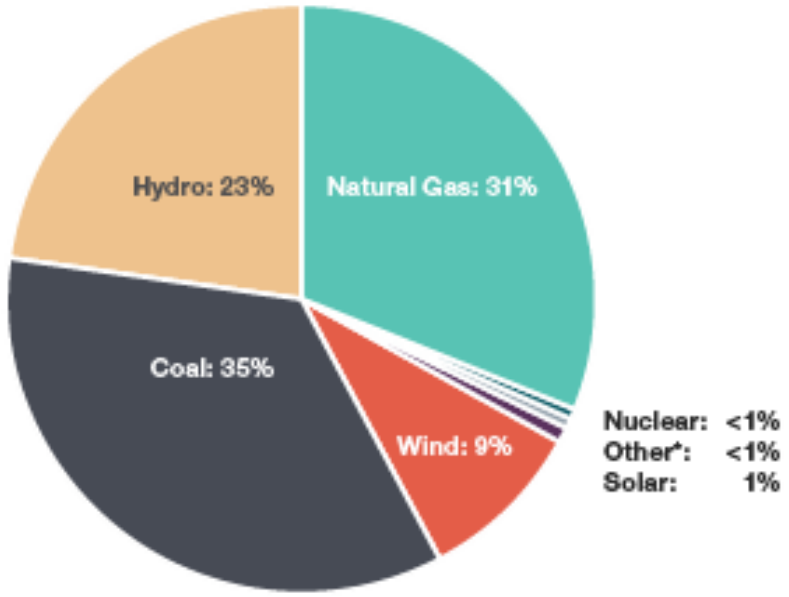

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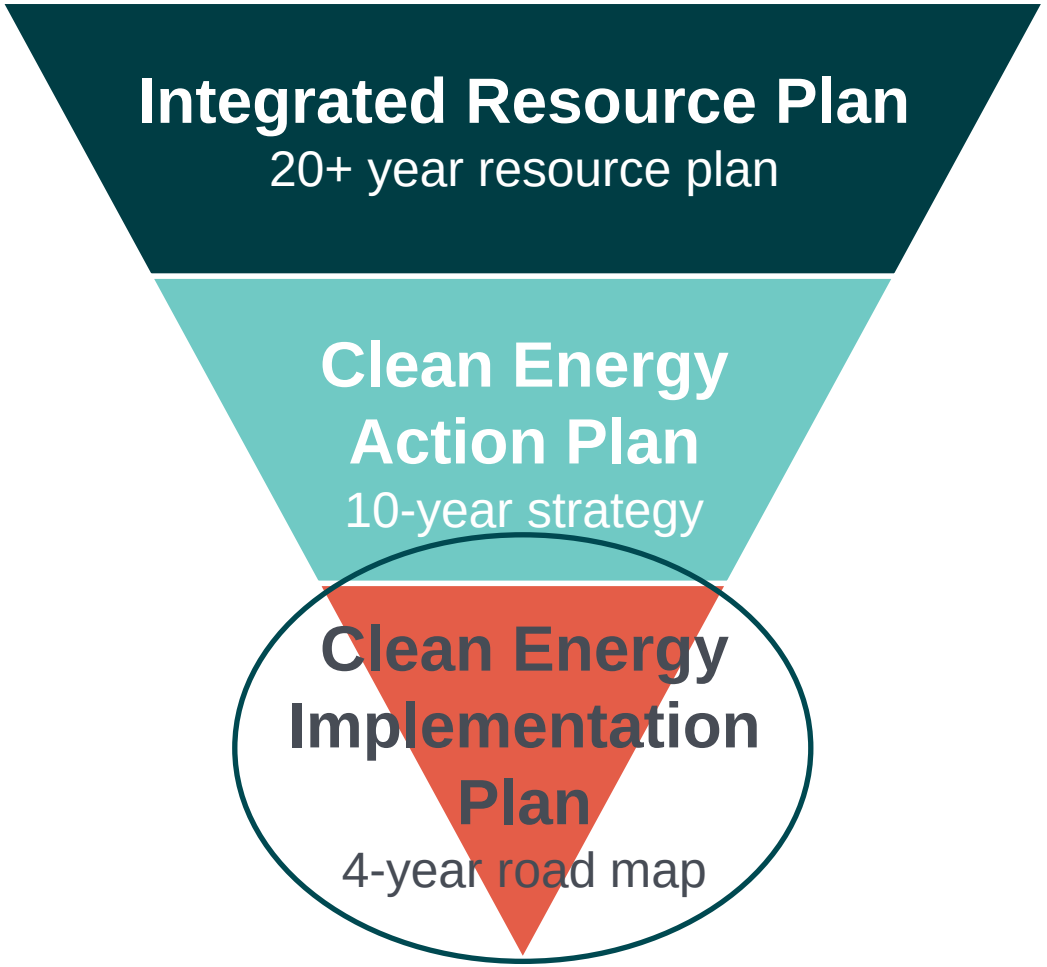

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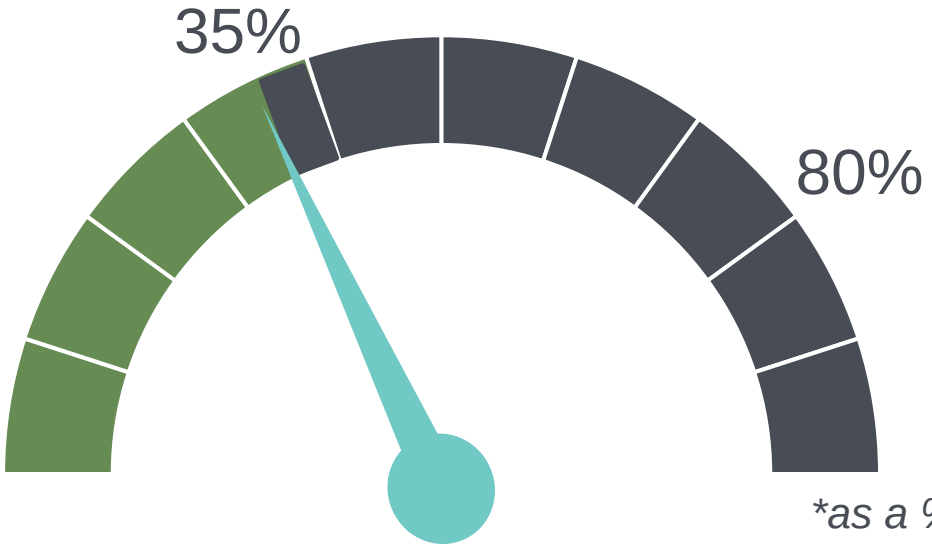
PUGET SOUND ENERGY

PSE's draft Clean Energy Implementation Plan

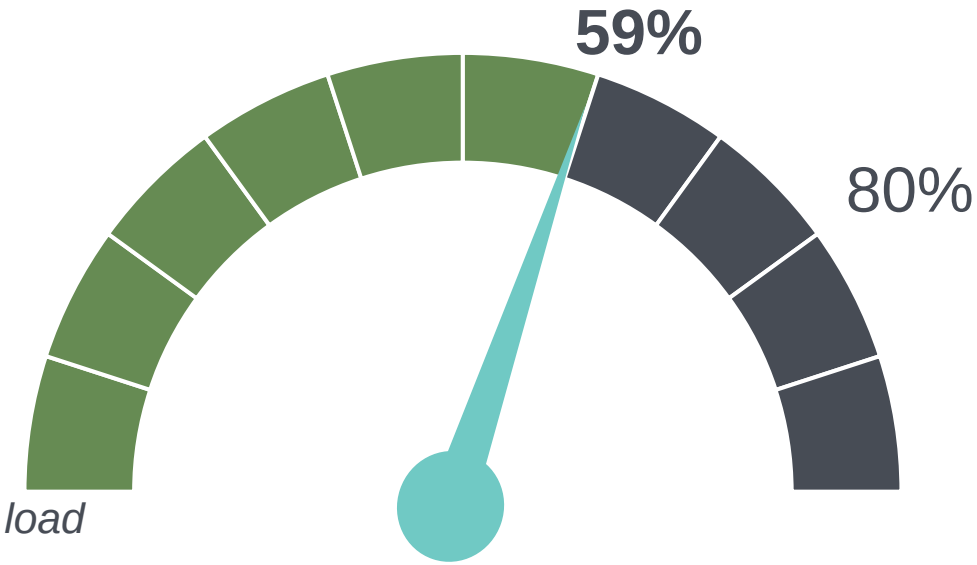
PUGET SOUND ENERGY

Transition to clean electricity: 2022-2025



PSE clean electricity portfolio in **2020**

*as a % of net retail load



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PUGET SOUND ENERGY

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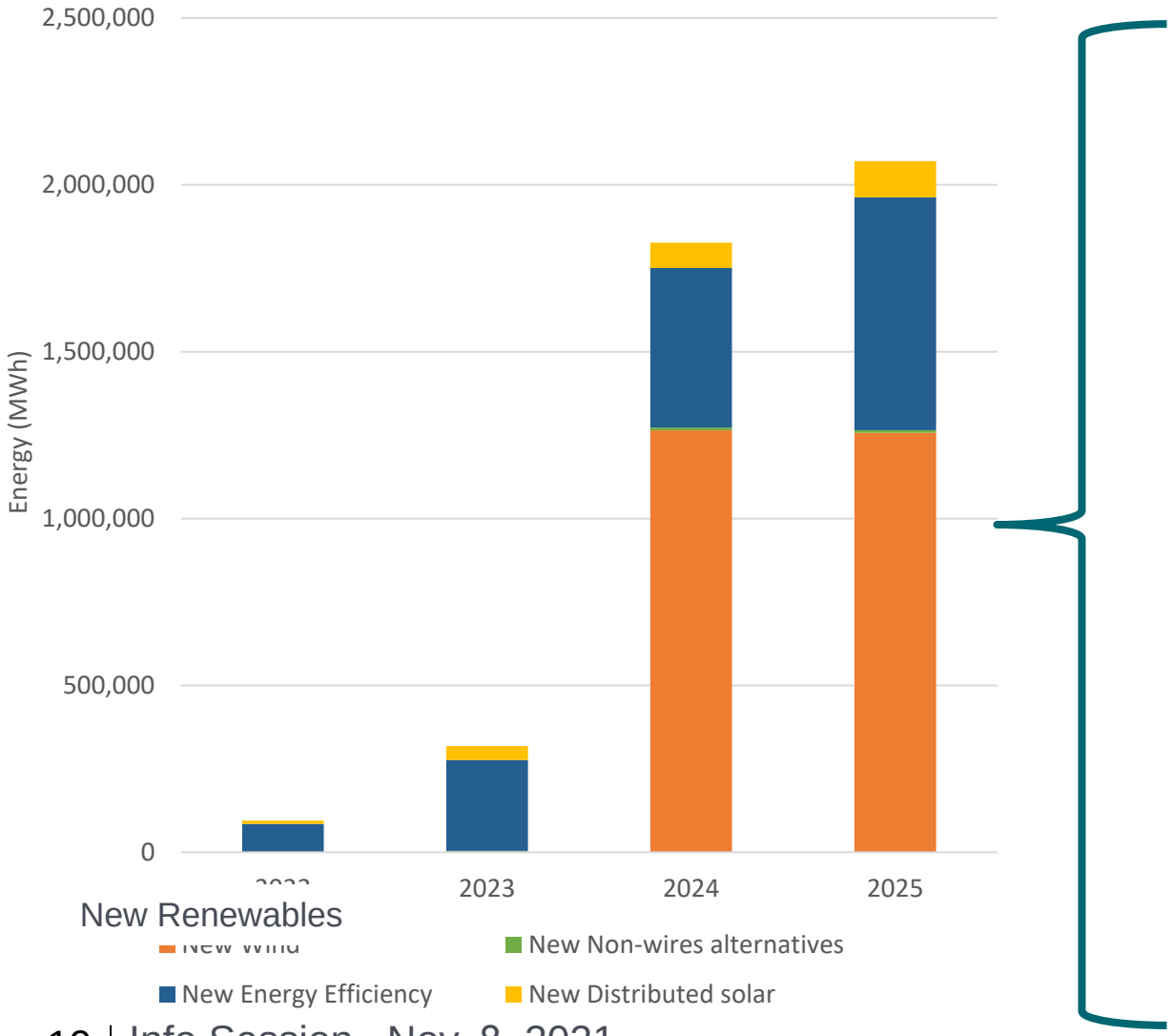
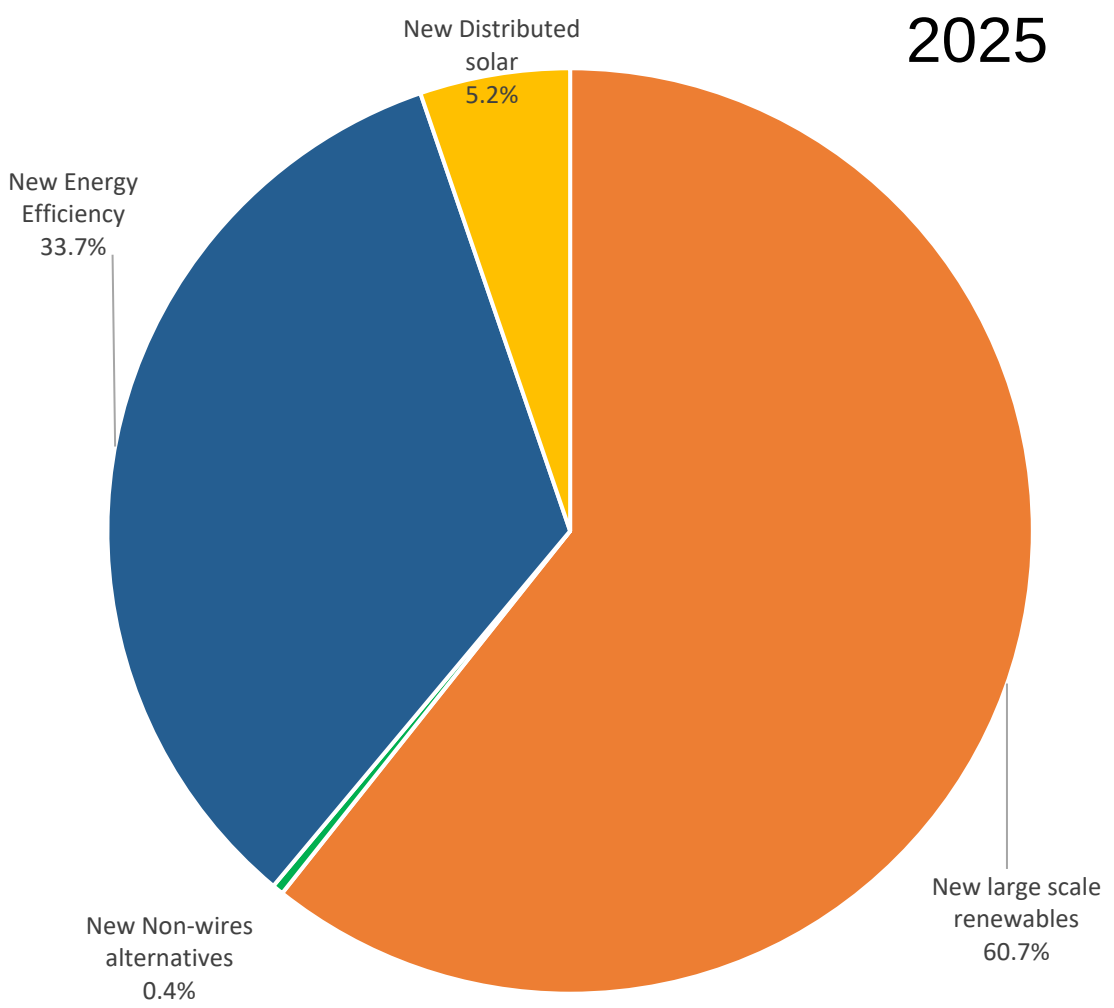
PUGET SOUND ENERGY

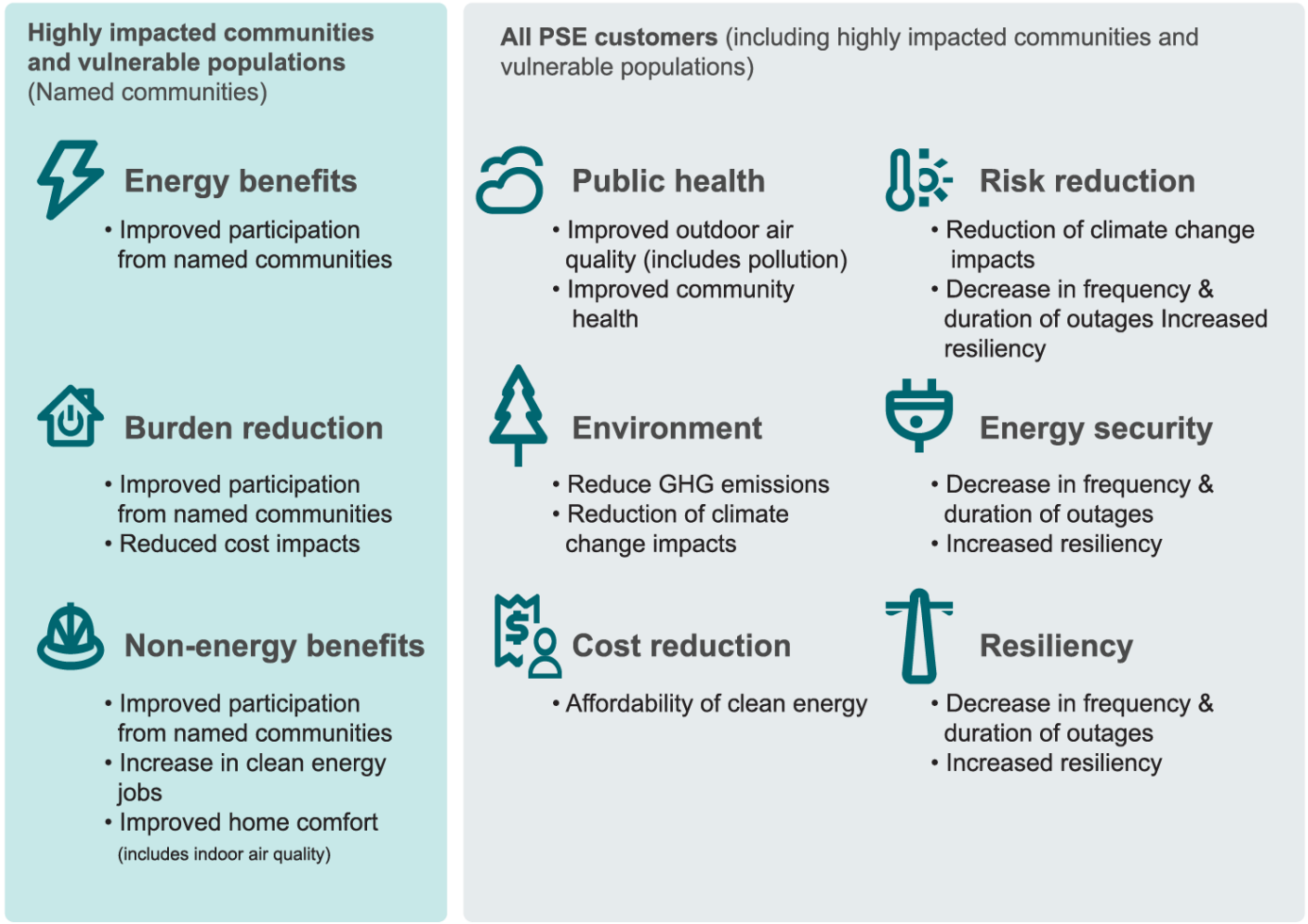
Draft CEIP: New clean electricity mix for 2022-2025 (estimated)





Note: MWh are estimated. Distributed solar percentage doesn't include "Customer Connected Solar" (aka net metering)

Customer benefits shape our plans



- Customer benefit indicators are outcomes that improve our customers lives
- Customer benefit indicators:
  - Shape program, actions and investment decisions
  - Help ensure all customers benefit from the clean energy transition

PUGET SOUND ENERGY

PSE recommendation: DER program concept mix

Highly impacted communities and vulnerable populations

Battery storage
- Residential PSE battery (Low-income) leasing

Rooftop and ground solar (distributed)
- Residential roof-top solar (Low-income) leasing
  Multifamily Community Solar
- Low-income Community Solar (existing program)
  Multifamily solar partnership program
- Multifamily unit rooftop solar incentive

Commercial & industrial (C&I)

Battery storage
- C&I space for batteries – leasing

Rooftop and ground solar (distributed)
- C&I roof-top solar incentive
- Distributed solar power purchase agreement

Residential programs

Battery storage
- Residential PSE battery leasing

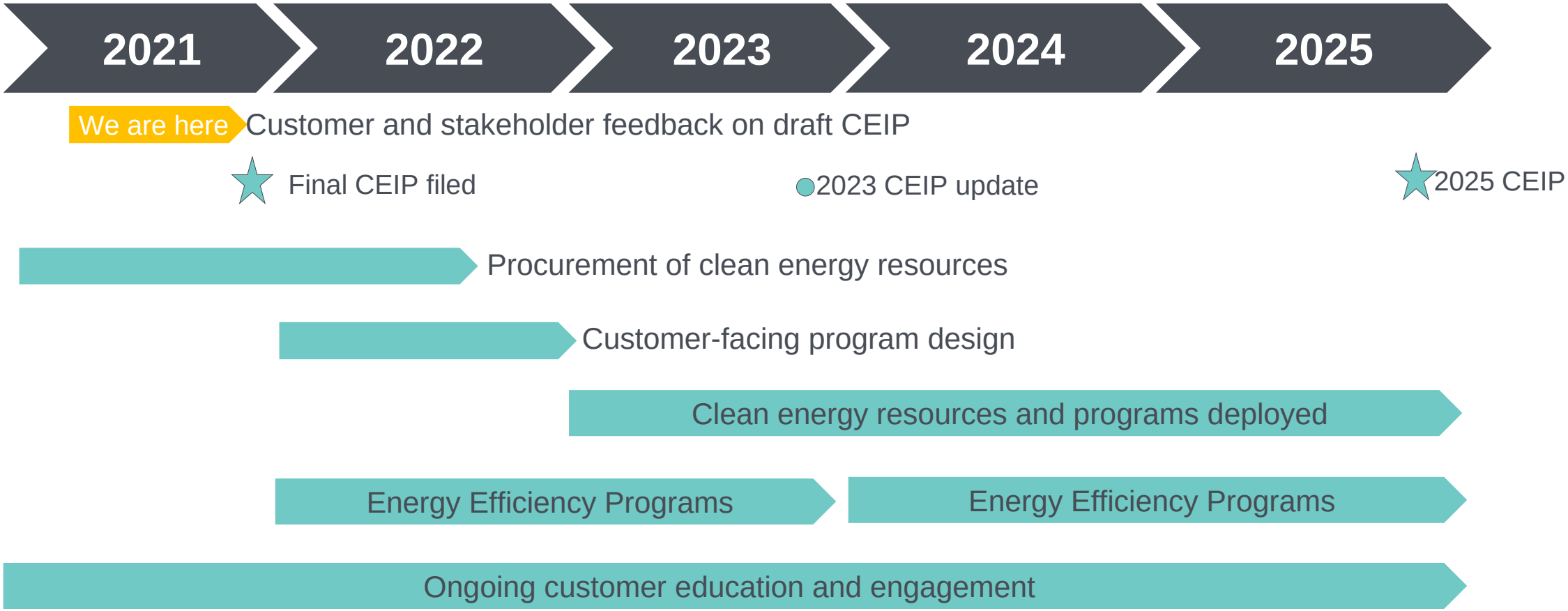
Rooftop and ground solar (distributed)
- Residential roof-top solar leasing
- Customer Connected Solar (existing program)
- Community Solar (existing program)

Hybrid
- PSE Customer-sited solar + storage offering

- All DER concepts will seek inclusive opportunities for Named Communities
- Additional hybrid programs may be available as result of RFP, including targeting Named Communities

PUGET SOUND ENERGY

Next steps to delivering clean electricity



PUGET SOUND ENERGY

Public participation during the draft CEIP

Engaging customers on clean energy values and benefits

Who did we engage?

- PSE general customers and community members
- PSE business customers

- Community based organizations (8)

- PSE advisory groups (4)

How did we engage?

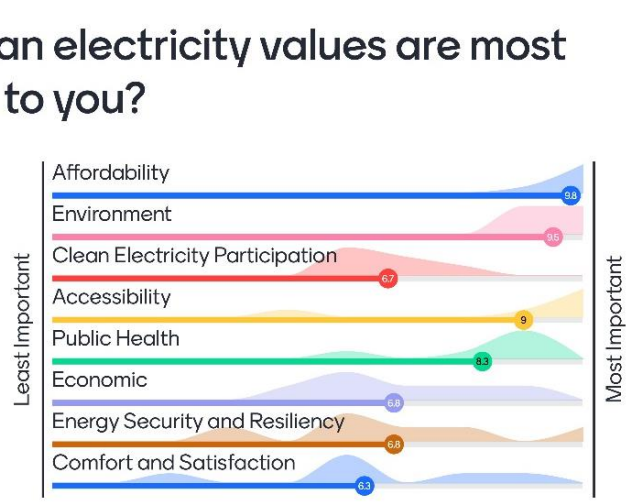
- Project website
- Targeted emails
- Newspaper advertising
- Online surveys
- Go-to-you meetings
- Advisory group meetings
- PSE bill insert (The Voice)
- Social media
- Partner tool kit

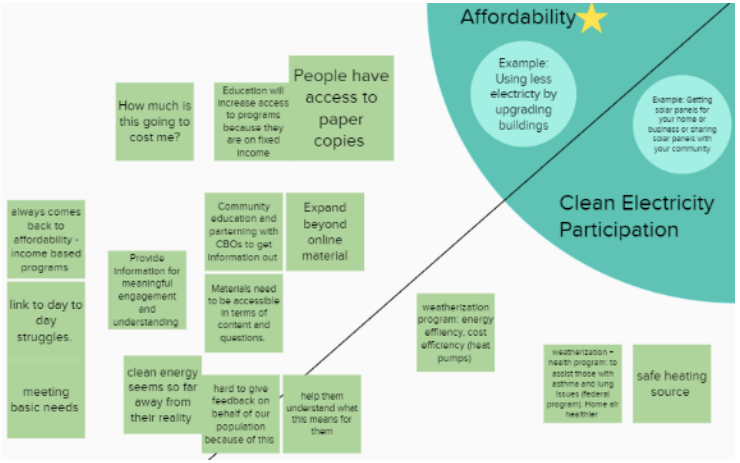
PUGET SOUND ENERGY

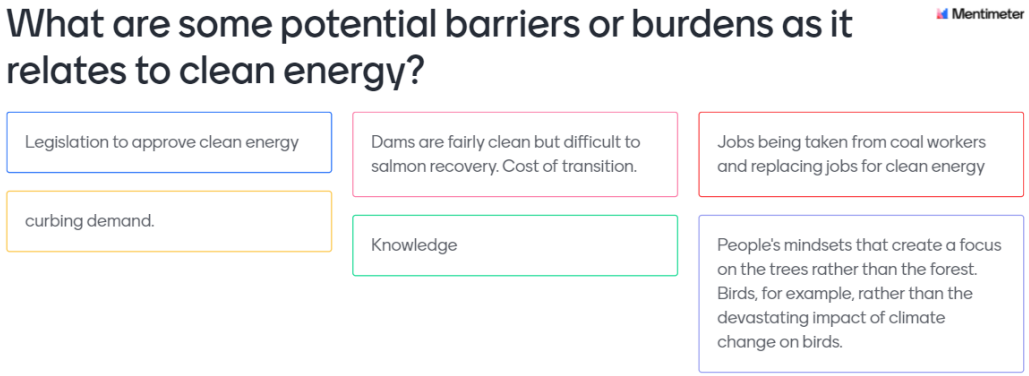
Community-based organization outreach on values, benefits, and barriers

- Seven ‘go-to-you’ meetings across six counties
- One Spanish in-language session

PSE is actively conducting outreach







PUGET SOUND ENERGY

How you can be involved

Oct. 18-Nov. 12: We want to hear from you!

- Visit our online open house to learn more about the draft CEIP and provide feedback at **pse.com/plan**

Participate in our programs

- Learn more about energy efficiency and renewable options we offer now at **pse.com**

How you can help!

- Share with your networks:
  - Online open house
  - Partner toolkit
- Look for CEIP opportunities and updates in 2022

PUGET SOUND ENERGY

Contact

- Contact Lucila Gambino at: lgambino@triangleassociates.com
- PSE CEIP website: https://cleanenergyplan.pse.com
- Email PSE at: ceip@pse.com

PSE Clean Energy Implementation Plan CBO Meetings

PSE CEIP October 27 CBO Lunch and Learn

Goals and organization roles

Leading the way for seniors and persons with disabilities in the implementation process and providing access to usable information

Using knowledge of the CEIP and the Spanish population to make communication culturally and linguistically relevant

Bring aspect of aging population living on a limited income.

Making CEIP information applicable to sneiors and navigating the appropriate language to make them feel they have a role and it's beneficial

Reflections

Thankful that PSE is including equity and considering cost reduction alongside the delivery of benefits and energy.

The DER program mix conforms to what we talk about

Hope that pilot programs will get fleshed out during this phase and PSE tries things out in partnership with communities

Partner toolkit is useful resource to share with communities

PSE CEIP November 8 CBO Info Session

Questions and Comments

Will PSE be investing in additional solar and wind power as opposed to buying it in the market?

So PSE isn't planning to build it's own generating resources?

Could PSE's investments be new or existing power? If it's existing power, will we be taking it from somewhere else?

Will PSE invest in renewable energy directly and not through asking their customers to pay extra for this energy through their bills?

Green Power Energy Agreement has been the way that PSE recorded their investment in green energy so people could choose to pay that directly. Will that scenario change as part of PSE's plan?

Can you elaborate on some of the energy efficiency resources being considered?

What are non-wires alternatives?

Is PSE going to fund more community solar?

We requested a PSE rep come and talk to the 34th Dem. LD about PSE energy policies, and it took months. It didn't feel like they were interested in our thoughts and only shared a slide deck.

Is PSE coordinating with Seattle City Light?

Is PSE calculating the GHG emissions for each of its current or proposed sources?

It's part of the large discussion of where our carbon emissions come from to know how we can reduce them and it's important to have full and complete accounting. How will PSE document that in the CEIP?

Looking forward to hearing options for low-income neighborhoods

Feeling excited, sense of urgency

Felt heard

PSE Clean Energy Implementation Plan Partner Content Toolkit (English)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for English-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	Comment on Puget Sound Energy's first Clean Energy Implementation Plan! PSE has developed a roadmap for the next 4 years to accelerate equity and increase the clean electricity they serve from 35% to nearly 60%. The plan includes: • Removing coal as a source of electricity from PSE's grid by the end of 2025 • Using community input to develop benefits for vulnerable populations, highly impacted communities, and all customers • Develop programs that address customer benefits and meet clean electricity targets • Building equity into PSE's electricity planning process Now through November 12, visit PSE's online open house and provide comments on the draft plan: https://cleanenergyopenhouse.pse.com/
Twitter	Comment on PSE's first Clean Energy Implementation Plan! Now through November 12, visit PSE's online open house to learn about this four-year plan that will start our journey to 100% clean electricity by 2045. Visit pse.com/plan
Instagram	Comment on Puget Sound Energy's first Clean Energy Implementation Plan! PSE has developed a four-year roadmap to accelerate equity and increase the amount of clean electricity they serve from 35% to nearly 60%. The plan includes: • Removing coal as a source of electricity from PSE's grid by the end of 2025 • Using community input to develop benefits for vulnerable populations, highly impacted communities, and all customers • Develop programs that address customer benefits and meet clean electricity targets • Building equity into PSE's electricity planning process Now through November 12, visit PSE's online open house and provide comments on the draft plan: https://cleanenergyopenhouse.pse.com/
LinkedIn	Comment on Puget Sound Energy's first Clean Energy Implementation Plan! PSE has developed a four-year roadmap to accelerate equity and increase the amount of clean electricity they serve from 35% to nearly 60%.

	The plan includes: • Removing coal as a source of electricity from PSE's grid by the end of 2025 • Using community input to develop benefits for vulnerable populations, highly impacted communities, and all customers • Develop programs that address customer benefits and meet clean electricity targets • Building equity into PSE's electricity planning process Now through November 12, visit PSE's online open house and provide comments on the draft plan: https://cleanenergyopenhouse.pse.com/

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

Help Puget Sound Energy build a more equitable clean electricity plan to address climate change and benefit our community. PSE is seeking feedback on their first clean electricity plan in October and November so they can incorporate community comments in the final plan by Dec. 17, 2021. As part of PSE's first Equity Advisory Group, [organization] is helping lead conversations with PSE around equity in our region's transition to 100 percent clean electricity.

PSE has set a bold direction to achieve carbon neutrality from its electric supply portfolio by 2030, and becoming a beyond net zero carbon company by 2045.

To meet this goal, PSE has developed its first Clean Energy Implementation Plan (CEIP), a four-year roadmap of investments and programs that includes more clean electricity sources such as large-scale wind energy and local rooftop and ground solar energy projects that partner with homes and businesses.

Between 2022 and 2025, PSE expects to increase the amount of clean electricity they serve from 35% to 59% and this plan describes how they will do it.

Tell PSE what you think! Now through Nov. 12, visit https://cleanenergyopenhouse.pse.com/ to provide feedback on the draft plan and help shape the clean electricity future.

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

PSE Clean Energy Implementation Plan Partner Content Toolkit (Spanish)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for English-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	¡Comente sobre el primer Plan de Implementación de Energía Limpia (CEIP) de Puget Sound Energy (PSE)! PSE desarrolló un mapa para los próximos 4 años para acelerar la equidad y aumentar la energía limpia que ofrece del 35 % a casi el 60 %. Detalles del plan: • Eliminación del carbón como fuente de electricidad de PSE para 2025 • Uso de los aportes de la comunidad para desarrollar beneficios para poblaciones vulnerables, comunidades gravemente afectadas y todos los clientes • Desarrollo de programas que aborden los beneficios para los clientes y cumplan los objetivos de energía limpia • Incorporación de equidad en el proceso de planificación de energía de PSE Desde ahora y hasta el 12 de noviembre, puede visitar el evento de puertas abiertas en línea de PSE y comentar sobre el plan preliminar: https://cleanenergyopenhouse.pse.com/es
Twitter	¡Comente sobre el primer Plan de Implementación de Energía Limpia (CEIP) de PSE! Desde ahora y hasta el 12 de noviembre, puede visitar el evento de puertas abiertas en línea de PSE para conocer más acerca del plan de cuatro años que dará inicio a nuestro hacia energía 100 % limpia para 2045. Visite pse.com/planesp
Instagram	¡Comente sobre el primer Plan de Implementación de Energía Limpia (CEIP) de Puget Sound Energy (PSE)! PSE desarrolló un mapa para los próximos 4 años para acelerar la equidad y aumentar la energía limpia que ofrece del 35 % a casi el 60 %. Detalles del plan: • Eliminación del carbón como fuente de electricidad de PSE para 2025 • Uso de los aportes de la comunidad para desarrollar beneficios para poblaciones vulnerables, comunidades gravemente afectadas y todos los clientes • Desarrollo de programas que aborden los beneficios para los clientes y cumplan los objetivos de energía limpia • Incorporación de equidad en el proceso de planificación de energía de PSE Desde ahora y hasta el 12 de noviembre, puede visitar el evento de puertas abiertas en línea de PSE y comentar sobre el plan preliminar: https://cleanenergyopenhouse.pse.com/es

LinkedIn	¡Comente sobre el primer Plan de Implementación de Energía Limpia (CEIP) de Puget Sound Energy (PSE)! PSE desarrolló un mapa para los próximos 4 años para acelerar la equidad y aumentar la energía limpia que ofrece del 35 % a casi el 60 %. Detalles del plan: • Eliminación del carbón como fuente de electricidad de PSE para 2025 • Uso de los aportes de la comunidad para desarrollar beneficios para poblaciones vulnerables, comunidades gravemente afectadas y todos los clientes • Desarrollo de programas que aborden los beneficios para los clientes y cumplan los objetivos de energía limpia • Incorporación de equidad en el proceso de planificación de energía de PSE Desde ahora y hasta el 12 de noviembre, puede visitar el evento de puertas abiertas en línea de PSE y comentar sobre el plan preliminar: https://cleanenergyopenhouse.pse.com/es

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

Ayude a Puget Sound Energy (PSE) a crear un plan de energía limpia más equitativa que aborde el cambio climático y beneficie a nuestra comunidad. PSE quiere recibir comentarios sobre su primer plan de energía limpia durante el mes de octubre y noviembre para incorporar los aportes de la comunidad al plan final del 17 de diciembre de 2021. Como parte del primer Grupo Asesor de Equidad (EAG) de PSE, [organization] ayudará a liderar conversaciones con PSE en lo concerniente a la equidad en la transición a la energía 100 % limpia en nuestra región.

PSE está en un camino audaz para alcanzar la neutralidad en carbono en su portfolio de suministro eléctrico para 2030 y para convertirse en una empresa Beyond Net Zero [más allá de cero carbono] para 2045.

Para alcanzar este objetivo, PSE desarrolló su primer Plan de Implementación de Energía Limpia (CEIP), que es un mapa de cuatro años de inversiones y programas que incluye más fuentes de energía limpia como energía eólica a larga escala y paneles solares para techos, así como proyectos de energía solar en tierra en asociación con hogares y empresas.

Entre 2022 y 2025, PSE espera aumentar la cantidad de energía limpia que ofrece del 35 % al 59 %, y este plan describe cómo planea hacerlo.

¡Cuéntele a PSE qué opina! Desde ahora y hasta el 12 de noviembre, visite https://cleanenergyopenhouse.pse.com/es para comentar sobre el plan preliminar y ayudarnos a crear un futuro con energía limpia.

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

PSE Clean Energy Implementation Plan Partner Content Toolkit (Russian)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for Russian-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	Поделитесь комментариями о первом Плане внедрения чистой энергии Puget Sound Energy! Компания PSE разработала перспективный план на следующие 4 года, чтобы обеспечить равенство и справедливость и увеличить объем чистой энергии, предоставляемой компанией, от 35% до почти 60%. План включает следующее: • Исключение угля как источника энергии из энергосистемы PSE к концу 2025 года • Использование вклада сообщества для разработки преимуществ для уязвимых групп населения, значительно пострадавших сообществ и всех клиентов • Разработка программ, направленных на обеспечение преимуществ для клиентов и достижение целей в области чистой электроэнергии • Обеспечение равенства и справедливости в процессе планирования электроснабжения PSE Сейчас и до 12 ноября посетите онлайн-день открытых дверей PSE и поделитесь Вашими комментариями о проекте плана: https://cleanenergyopenhouse.pse.com/ru
Twitter	Поделитесь комментариями о первом Плане внедрения чистой энергии Puget Sound Energy! Сейчас и до 12 ноября посетите онлайн-день открытых дверей PSE, чтобы узнать об этом четырехлетнем плане, который положит начало нашему пути к 100% чистой электроэнергии к 2045 году. Посетите сайт pse.com/planru
Instagram	Поделитесь комментариями о первом Плане внедрения чистой энергии Puget Sound Energy! Компания PSE разработала перспективный план на следующие 4 года, чтобы обеспечить равенство и справедливость и увеличить объем чистой энергии, предоставляемой компанией, от 35% до почти 60%. План включает следующее: • Исключение угля как источника энергии из энергосистемы PSE к концу 2025 года • Использование вклада сообщества для разработки преимуществ для уязвимых групп населения, значительно пострадавших сообществ и всех клиентов • Разработка программ, направленных на обеспечение преимуществ для клиентов и достижение целей в области чистой электроэнергии

	• Обеспечение равенства и справедливости в процессе планирования электроснабжения PSE Сейчас и до 12 ноября посетите онлайн-день открытых дверей PSE и поделитесь Вашими комментариями о проекте плана: https://cleanenergyopenhouse.pse.com/ru
LinkedIn	Поделитесь комментариями о первом Плане внедрения чистой энергии Puget Sound Energy! Компания PSE разработала перспективный план на следующие 4 года, чтобы обеспечить равенство и справедливость и увеличить объем чистой энергии, предоставляемой компанией, от 35% до почти 60%. План включает следующее: • Исключение угля как источника энергии из энергосистемы PSE к концу 2025 года • Использование вклада сообщества для разработки преимуществ для уязвимых групп населения, значительно пострадавших сообществ и всех клиентов • Разработка программ, направленных на обеспечение преимуществ для клиентов и достижение целей в области чистой электроэнергии • Обеспечение равенства и справедливости в процессе планирования электроснабжения PSE Сейчас и до 12 ноября посетите онлайн-день открытых дверей PSE и поделитесь Вашими комментариями о проекте плана: https://cleanenergyopenhouse.pse.com/ru

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

чистой электроэнергии в октябре и ноябре, чтобы включить комментарии сообщества в окончательный план к 17 декабря 2021 года. В рамках первой Консультативной группы PSE по вопросам равенства и справедливости [organization] помогает проводить обсуждения с PSE по вопросам равенства и справедливости при переходе нашего региона на 100% чистую электроэнергию.

PSE задала смелое направление для достижения углеродной нейтральности в своем портфеле поставок электроэнергии к 2030 году и статуса компании с нулевыми выбросами углерода к 2045 году.

Для достижения этой цели PSE разработала свой первый План внедрения чистой энергии (CEIP), четырехлетний перспективный план инвестиций и программ, который включает больше источников чистой электроэнергии, таких как крупномасштабные ветроэнергетические проекты и местные проекты по установке солнечных панелей на крышах и на земле, которые реализуются в партнерстве с частными домами и предприятиями.

В период с 2022 по 2025 год PSE планирует увеличить объемы чистой электроэнергии, поставляемой компанией, с 35% до 59%, и в этом плане описывается, как эта цель будет достигнута.

Поделитесь с PSE Вашими мнениями! Сейчас и до 12 ноября посетите сайт https://cleanenergyopenhouse.pse.com/ru, чтобы предоставить отзывы о проекте плана и помочь сформировать будущее чистой электроэнергии.

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

PSE Clean Energy Implementation Plan Partner Content Toolkit (Vietnamese)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for Vietnamese-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	Hãy cho ý kiến về Kế hoạch Triển khai Năng lượng Sạch đầu tiên của Puget Sound Energy! PSE đã xây dựng lộ trình để tăng tốc vốn chủ sở hữu và tăng sản lượng điện sạch từ 35% lên gần 60% trong vòng 4 năm tới. Kế hoạch bao gồm: • Ngừng sử dụng nguồn điện từ than đá cho lưới điện của PSE vào cuối năm 2025 • Tiếp thu ý kiến đóng góp của cộng đồng để phát triển lợi ích cho các nhóm dân số dễ bị tổn thương, các cộng đồng chịu nhiều ảnh hưởng và tất cả các khách hàng nói chung • Xây dựng các chương trình chú trọng đến lợi ích của khách hàng và đáp ứng các mục tiêu về điện sạch • Đảm bảo tính bình đẳng trong quy trình quy hoạch điện của PSE Từ nay đến hết ngày 12 tháng 11, hãy truy cập buổi ra mắt trực tuyến của PSE và đưa ra ý kiến về kế hoạch dự thảo: https://cleanenergyopenhouse.pse.com/vi
Twitter	Hãy cho ý kiến về Kế hoạch Triển khai Năng lượng Sạch đầu tiên của PSE! Từ nay đến hết ngày 12 tháng 11, hãy truy cập buổi ra mắt trực tuyến của PSE để tìm hiểu về kế hoạch kéo dài bốn năm giúp bắt đầu hành trình đạt tới 100% điện sạch vào năm 2045 của chúng tôi. Truy cập pse.com/planvi
Instagram	Hãy cho ý kiến về Kế hoạch Triển khai Năng lượng Sạch đầu tiên của Puget Sound Energy! PSE đã xây dựng lộ trình để tăng tốc vốn chủ sở hữu và tăng sản lượng điện sạch từ 35% lên gần 60% trong vòng 4 năm tới. Kế hoạch bao gồm: • Ngừng sử dụng nguồn điện từ than đá cho lưới điện của PSE vào cuối năm 2025 • Tiếp thu ý kiến đóng góp của cộng đồng để phát triển lợi ích cho các nhóm dân số dễ bị tổn thương, các cộng đồng chịu nhiều ảnh hưởng và tất cả các khách hàng nói chung • Xây dựng các chương trình chú trọng đến lợi ích của khách hàng và đáp ứng các mục tiêu về điện sạch • Đảm bảo tính bình đẳng trong quy trình quy hoạch điện của PSE Từ nay đến hết ngày 12 tháng 11, hãy truy cập buổi ra mắt trực tuyến của PSE và đưa ra ý kiến về kế hoạch dự thảo: https://cleanenergyopenhouse.pse.com/vi

LinkedIn	Hãy cho ý kiến về Kế hoạch Triển khai Năng lượng Sạch đầu tiên của Puget Sound Energy! PSE đã xây dựng lộ trình để tăng tốc vốn chủ sở hữu và tăng sản lượng điện sạch từ 35% lên gần 60% trong vòng 4 năm tới. Kế hoạch bao gồm: • Ngừng sử dụng nguồn điện từ than đá cho lưới điện của PSE vào cuối năm 2025 • Tiếp thu ý kiến đóng góp của cộng đồng để phát triển lợi ích cho các nhóm dân số dễ bị tổn thương, các cộng đồng chịu nhiều ảnh hưởng và tất cả các khách hàng nói chung • Xây dựng các chương trình chú trọng đến lợi ích của khách hàng và đáp ứng các mục tiêu về điện sạch • Đảm bảo tính bình đẳng trong quy trình quy hoạch điện của PSE Từ nay đến hết ngày 12 tháng 11, hãy truy cập buổi ra mắt trực tuyến của PSE và đưa ra ý kiến về kế hoạch dự thảo: https://cleanenergyopenhouse.pse.com/vi

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

Giúp Puget Sound Energy xây dựng một kế hoạch điện sạch bình đẳng hơn để giải quyết vấn đề biến đổi khí hậu và mang lại lợi ích cho cộng đồng của chúng ta. PSE mong muốn tiếp nhận phản hồi về kế hoạch điện sạch đầu tiên của mình vào tháng 10 và tháng 11 để công ty có thể đưa các ý kiến của cộng đồng vào kế hoạch cuối cùng trước ngày 17 tháng 12 năm 2021. Là một phần của Nhóm Tư vấn Bình đẳng đầu tiên của PSE, [organization] đang giúp dẫn dắt các cuộc trò chuyện với PSE về tính bình đẳng trong quá trình chuyển đổi của khu vực chúng ta sang sử dụng nguồn điện sạch 100%.

PSE đã đặt ra một hướng đi táo bạo để đạt được mức trung hòa carbon từ danh mục cung cấp điện của mình vào năm 2030, và trở thành công ty hoàn toàn không phát thải khí nhà kính vào năm 2045.

Để đạt được mục tiêu này, PSE đã phát triển Kế hoạch Triển khai Năng lượng Sạch (CEIP) đầu tiên của mình, với các chương trình và một lộ trình đầu tư kéo dài 4 năm bao gồm nhiều nguồn điện sạch hơn như năng lượng gió quy mô lớn và các dự án năng lượng mặt trời lắp đặt trên mái nhà và dưới mặt đất của địa phương hợp tác với các hộ gia đình và doanh nghiệp.

Từ năm 2022 đến năm 2025, PSE dự kiến sẽ tăng sản lượng điện sạch từ 35% lên 59% và kế hoạch này mô tả cách công ty sẽ thực hiện điều này.

Hãy cho PSE biết ý kiến của quý vị! Từ nay đến hết ngày 12 tháng 11, hãy truy cập https://cleanenergyopenhouse.pse.com/vi để góp ý cho kế hoạch dự thảo và giúp xác định tương lai cho ngành điện sạch.

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

PSE Clean Energy Implementation Plan Partner Content Toolkit (Traditional Chinese)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for Traditional Chinese-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	關於普吉特海灣能源公司 (Puget Sound Energy, PSE) 首個清潔能源實施計劃的意見！ 爲促進平等性並將其供應的清潔電力由 35% 提高至近 60%，PSE 已制定了未來 4 年的藍圖。 本計劃包括： • 2025 年底前，PSE 電網將不再使用煤炭作爲電力來源 • 利用社群意見爲弱勢族群、大幅受影響的社區以及所有客戶謀求利益 • 制定滿足客戶利益並實現清潔電力目標的專案 • 在 PSE 電力規劃流程中構建公平性 自現在起至 11 月 12 日，造訪 PSE 的線上公衆意見收集並對計劃草案提出意見: https://cleanenergyopenhouse.pse.com/zh-tw
Twitter	關於普吉特海灣能源公司 (Puget Sound Energy, PSE) 首個清潔能源實施計劃的意見！ 自現在起至 11 月 12 日，造訪 PSE 的線上公衆意見收集，瞭解此四年計劃，開啓 2045 年實現 100% 清潔電力的旅程。造訪 pse.com/planchi
Instagram	關於普吉特海灣能源公司 (Puget Sound Energy, PSE) 首個清潔能源實施計劃的意見！ 爲促進平等性並將其供應的清潔電力由 35% 提高至近 60%，PSE 已制定了未來 4 年的藍圖。 本計劃包括： • 2025 年底前，PSE 電網將不再使用煤炭作爲電力來源 • 利用社群意見爲弱勢族群、大幅受影響的社區以及所有客戶謀求利益 • 制定滿足客戶利益並實現清潔電力目標的專案 • 在 PSE 電力規劃流程中構建公平性 自現在起至 11 月 12 日，造訪 PSE 的線上公衆意見收集並對計劃草案提出意見: https://cleanenergyopenhouse.pse.com/zh-tw
LinkedIn	關於普吉特海灣能源公司 (Puget Sound Energy, PSE) 首個清潔能源實施計劃的意見！ 爲促進平等性並將其供應的清潔電力由 35% 提高至近 60%，PSE 已制定了未來 4 年的藍圖。

	本計劃包括： • 2025 年底前，PSE 電網將不再使用煤炭作爲電力來源 • 利用社群意見爲弱勢族群、大幅受影響的社區以及所有客戶謀求利益 • 制定滿足客戶利益並實現清潔電力目標的專案 • 在 PSE 電力規劃流程中構建公平性 自現在起至 11 月 12 日，造訪 PSE 的線上公衆意見收集並對計劃草案提出意見: https://cleanenergyopenhouse.pse.com/zh-tw

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

協助普吉特海灣能源公司制定一項更加公正的清潔電力計劃，以應對氣候變化和造福於我們的社區。在 10 月和 11 月，PSE 正在收集關於首個清潔電力計劃的回饋意見，以便在 2021 年 12 月 17 日前將社區意見納入到最終計劃中。作為 PSE 首個衡平諮詢團體的一部分，[organization] 將會在我們的區域轉型為 100% 清潔電力的過程中，協助引導與 PSE 進行關於平等性的討論。

PSE 已設定大膽的目標，於 2030 年以前在供電組合中達到碳中和並
於 2045 年以前成爲超越純零碳耗能的公司。

爲實現這一目標，PSE 制定了首個清潔能源實施計劃 (CEIP)。這是一項爲期四年的投資藍圖和專案，涉及更多清潔電力能源，比如與家庭和企業合作的大規模風能發電項目以及當地屋頂和地面太陽能發電項目。

2022 年至 2025 年期間，PSE 預計將清潔電力的供應量由 **35%** 提高至 **59%** ，而本計劃闡述了如何實現這一目標。
告訴 PSE 您的意見！自現在起至 11 月 12 日，請造訪 https://cleanenergyopenhouse.pse.com/zh-tw 並針對計劃草案提供回饋意見，幫助塑造清潔電力的未來。

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

PSE Clean Energy Implementation Plan Partner Content Toolkit (Hindi)

Dear valued partner,

We're excited and grateful for you to share information with your communities about participation in the draft Clean Energy Implementation Plan comment period.

In this content toolkit, you'll find content for Hindi-speaking community members including:

- Social media content for you to post
- Newsletter information
- Imagery

You're welcome to rephrase the content as needed to make this news more relevant to the interests of your communities.

Thank you for your partnership and support.

If you have questions about this content toolkit, please contact:

Diann Strom
Puget Sound Energy
425-462-3593
cleanenergyplan.pse.com

Social

The following posts are optional ways to share with your communities how they can comment on the draft Clean Energy Implementation Plan.

Channel	***Copy***
Facebook	Puget Sound Energy की प्रथम स्वच्छ ऊर्जा कार्यान्वयन योजना पर टिप्पणी करें! PSE ने इक्विटी में तेजी लाने और उनके द्वारा दी जाने वाली स्वच्छ बिजली को 35% से बढ़ाकर लगभग 60% करने के लिए अगले 4 वर्षों के लिए एक रोडमैप विकसित किया है। योजना में यह शामिल है: • 2025 के अंत तक PSE के ग्रिड से बिजली के स्रोत के रूप में कोयले को हटाना • कमजोर आबादी, अत्यधिक प्रभावित समुदायों और सभी ग्राहकों के लिए लाभ विकसित करने के लिए सामुदायिक राय का उपयोग करना • ऐसे कार्यक्रम विकसित करना जो ग्राहकों के लाभों को हल करें और स्वच्छ बिजली लक्ष्यों को पूरा करें • PSE की बिजली योजना प्रक्रिया में इक्विटी का निर्माण करना अब 12 नवंबर तक, PSE के ऑनलाइन ओपन हाउस पर जाएं और मसौदा योजना पर टिप्पणी दें: cleanenergyopenhouse.pse.com/hi
Twitter	PSE की प्रथम स्वच्छ ऊर्जा कार्यान्वयन योजना पर टिप्पणी करें! अब 12 नवंबर तक, इस चार वर्षीय योजना के बारे में जानने के लिए PSE के ऑनलाइन ओपन हाउस पर जाएं, जो 2045 तक 100% स्वच्छ बिजली की हमारी यात्रा शुरू करेगी। पर जाएँ: pse.com/planhin
Instagram	Puget Sound Energy की प्रथम स्वच्छ ऊर्जा कार्यान्वयन योजना पर टिप्पणी करें! PSE ने इक्विटी में तेजी लाने और उनके द्वारा दी जाने वाली स्वच्छ बिजली को 35% से बढ़ाकर लगभग 60% करने के लिए अगले 4 वर्षों के लिए एक रोडमैप विकसित किया है। योजना में यह शामिल है: • 2025 के अंत तक PSE के ग्रिड से बिजली के स्रोत के रूप में कोयले को हटाना • कमजोर आबादी, अत्यधिक प्रभावित समुदायों और सभी ग्राहकों के लिए लाभ विकसित करने के लिए सामुदायिक राय का उपयोग करना • ऐसे कार्यक्रम विकसित करना जो ग्राहकों के लाभों को हल करें और स्वच्छ बिजली लक्ष्यों को पूरा करें

	• PSE की बिजली योजना प्रक्रिया में इक्विटी का निर्माण करना अब 12 नवंबर तक, PSE के ऑनलाइन ओपन हाउस पर जाएं और मसौदा योजना पर टिप्पणी दें: cleanenergyopenhouse.pse.com/hi
LinkedIn	Puget Sound Energy की प्रथम स्वच्छ ऊर्जा कार्यान्वयन योजना पर टिप्पणी करें! PSE ने इक्विटी में तेजी लाने और उनके द्वारा दी जाने वाली स्वच्छ बिजली को 35% से बढ़ाकर लगभग 60% करने के लिए अगले 4 वर्षों के लिए एक रोडमैप विकसित किया है। योजना में यह शामिल है: • 2025 के अंत तक PSE के ग्रिड से बिजली के स्रोत के रूप में कोयले को हटाना • कमजोर आबादी, अत्यधिक प्रभावित समुदायों और सभी ग्राहकों के लिए लाभ विकसित करने के लिए सामुदायिक राय का उपयोग करना • ऐसे कार्यक्रम विकसित करना जो ग्राहकों के लाभों को हल करें और स्वच्छ बिजली लक्ष्यों को पूरा करें • PSE की बिजली योजना प्रक्रिया में इक्विटी का निर्माण करना अब 12 नवंबर तक, PSE के ऑनलाइन ओपन हाउस पर जाएं और मसौदा योजना पर टिप्पणी दें: cleanenergyopenhouse.pse.com/hi

Newsletter Information

The following information is optional to share with your communities about how they can get involved with the Clean Energy Implementation Plan.

Puget Sound Energy को जलवायु परिवर्तन से निपटने और हमारे समुदाय को लाभ पहुंचाने के लिए एक अधिक न्यायसंगत स्वच्छ बिजली योजना का निर्माण करने में मदद करें। PSE अक्टूबर और नवंबर में अपनी पहली स्वच्छ बिजली योजना पर फीडबैक प्रदान करने के लिए कह रहा है ताकि वे 17 दिसंबर, 2021 तक अंतिम योजना में सामुदायिक टिप्पणियों को शामिल कर सकें। PSE के प्रथम इक्विटी सलाहकार समूह के भाग के रूप में, [organization] हमारे क्षेत्र के 100 प्रतिशत स्वच्छ बिजली के बदलाव में इक्विटी पर बातचीत का नेतृत्व करने में मदद कर रहा है।

PSE ने 2030 तक अपने विद्युत आपूर्ति पोर्टफोलियो से कार्बन तटस्थता प्राप्त करने के लिए एक साहसिक दिशा निर्धारित की है, और यह 2045 तक शुद्ध शून्य कार्बन ऊर्जा कंपनी बनने जा रही है।

इस लक्ष्य को पूरा करने के लिए, PSE ने अपनी प्रथम स्वच्छ ऊर्जा कार्यान्वयन योजना (CEIP) विकसित की है, जिसमें निवेश और कार्यक्रमों का चार साल का रोडमैप दिया गया है जिसमें बड़े पैमाने पर पवन ऊर्जा और स्थानीय रूफटॉप जैसे अधिक स्वच्छ बिजली स्रोत और जमीनी सौर ऊर्जा परियोजनाएं शामिल हैं जिनकी घरों और व्यवसायों के साथ साझेदारी है।

2022 और 2025 के बीच, PSE को उनके द्वारा दी जाने वाली स्वच्छ बिजली की मात्रा 35% से बढ़ाकर 59% होने की उम्मीद है और यह योजना बताती है कि वे इसे कैसे करेंगे।

PSE को बताएं कि आप क्या सोचते हैं! अब 12 नवंबर तक, cleanenergyopenhouse.pse.com/hi पर जाएं और मसौदा योजना पर प्रतिक्रिया दें और स्वच्छ बिजली के भविष्य को आकार देने में मदद करें।

Imagery

The following imagery is optional to share with any of the other assets above and high resolution downloads can be found here.

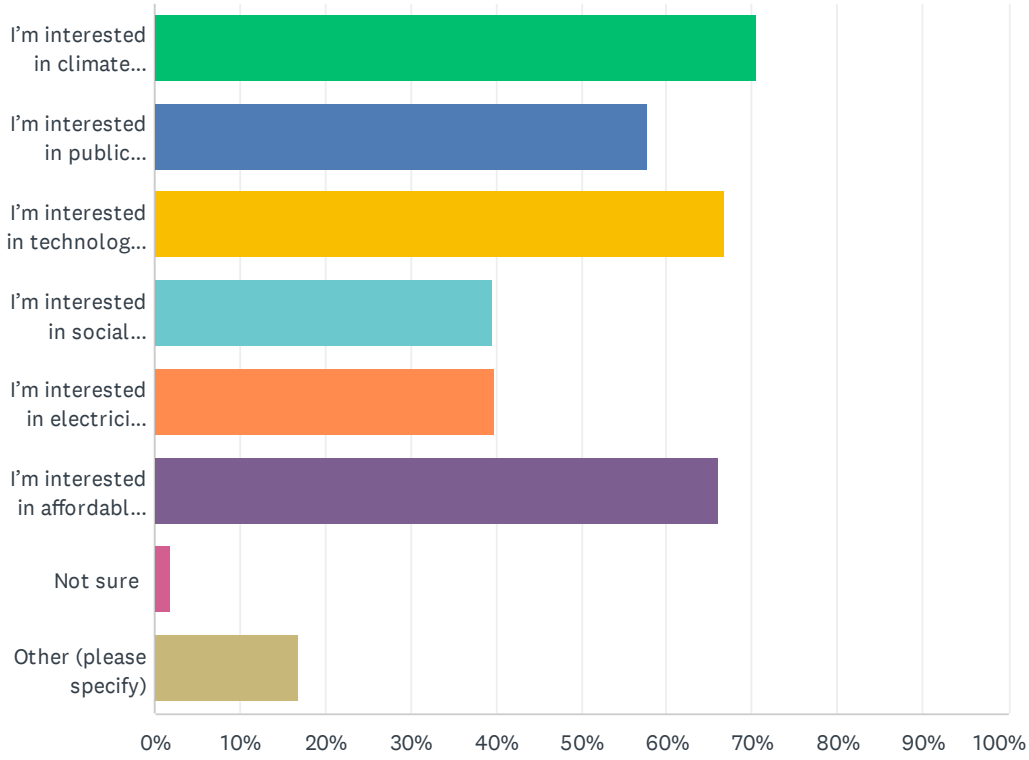
- Wind Turbines

- Solar Panels

- Hydroelectric Facilities

Q1 Why did you visit this online open house? Select all that apply.

Answered: 298 Skipped: 3



ANSWER CHOICES	RESPONSES	
I'm interested in climate change and the environment	70.47%	210
I'm interested in public health and clean air	57.72%	172
I'm interested in technology like solar panels and batteries	66.78%	199
I'm interested in social equity	39.60%	118
I'm interested in electricity planning	39.93%	119
I'm interested in affordable electricity	66.11%	197
Not sure	2.01%	6
Other (please specify)	16.78%	50
Total Respondents: 298		

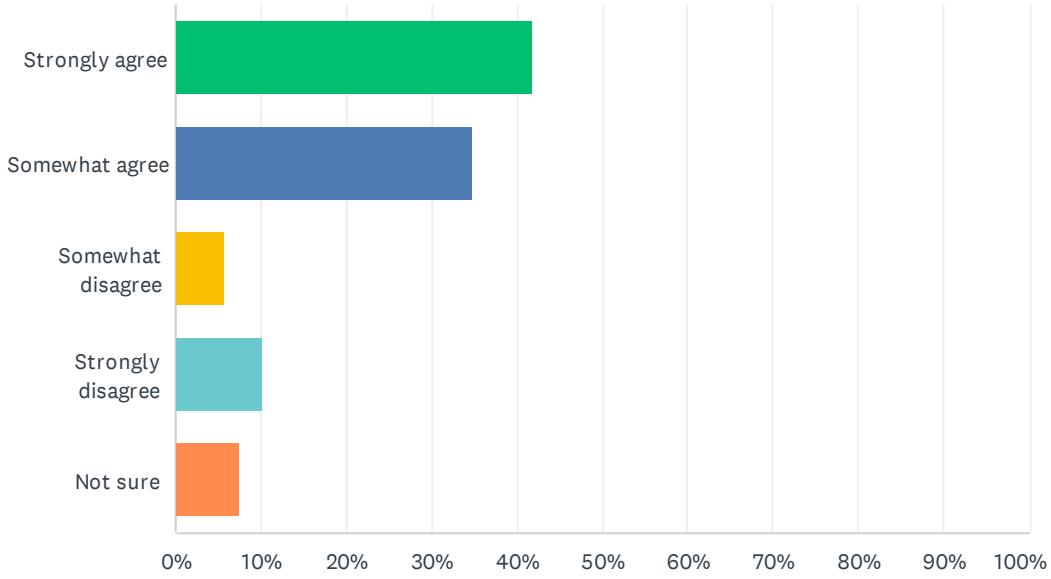
#	OTHER (PLEASE SPECIFY)	DATE
1	Did not visit online open house	11/30/2021 4:50 PM
2	I am interested in emergency power supply	11/12/2021 10:10 PM
3	$100 gift card!	11/12/2021 7:20 PM
4	I'm interested in biomass, nuclear, removing dams, and essential protection of salmon and	11/12/2021 6:57 PM

	other endangered and important members of the biosphere.	
5	I am interested in PSE concentrating on what should be your only goal...providing gas and electric services. Not being social justice advocates	11/12/2021 5:36 PM
6	I'm interested in how PSE clean energy electricity planning will affect my family and my community.	11/12/2021 12:36 PM
7	I'm interested in the environment, affordable and reliable energy.	11/12/2021 11:31 AM
8	My local housing authority wont authorize weatherization audits, nor are most units weatherized. Can a "workshop" be considered?	11/12/2021 8:05 AM
9	Practical engineered systems to 'provide' reliable e-power, and 'usage' of.	11/12/2021 7:43 AM
10	I oppose PSE trying to change the climate. I live here because of the current climate.	11/11/2021 9:43 PM
11	I am very concerned about climate changes. Twenty years is too long to wait for 100% fossil fuel free electricity.	11/11/2021 9:05 PM
12	I would like my own windmill	11/11/2021 4:37 PM
13	I am interested healthy and safe new generation	11/11/2021 4:13 PM
14	I'm interested in why your actions don't follow your words, aka greenwashing	11/11/2021 12:26 PM
15	Have been transitioning to cleaner energy with new windows (rebate info sent to PSE) and installation of a new propane stove . Very interested in solar.	11/11/2021 10:29 AM
16	I want to know what PSE is up to and how much it will cost me.	11/11/2021 12:27 AM
17	How to save money at home and help our country/world	11/10/2021 11:18 PM
18	I received "Help us shape the clean electricity future" email from PSE	11/10/2021 10:23 PM
19	Too many families request help and cannot pay their bill.	11/10/2021 9:23 PM
20	Concerned about what PSE is doing.	11/10/2021 7:42 PM
21	To provide my comments to the CEIP	11/10/2021 6:14 PM
22	What's the effect on the environment, job displacement, etc.	11/10/2021 2:24 PM
23	I want solar cells and on site battery system for my house	11/10/2021 12:05 PM
24	Concern that "clean energy" scam will increase energy coast and make power delivery less reliable.	11/10/2021 11:16 AM
25	Owner of multifamily, commercial and residential real estate	11/10/2021 10:52 AM
26	A reliable power supply.	11/10/2021 10:50 AM
27	Interested in solar leasing program.	11/10/2021 10:39 AM
28	I'm interested in using fields I own and graze sheep in to house solar panals	11/10/2021 10:23 AM
29	As a representative of a non-profit community organization what opportunities are available to us to replace a 90 year old oil furnace?	11/10/2021 10:20 AM
30	curiosity about green washing	11/10/2021 10:17 AM
31	I have solar panels. Can I get more at an affordable price?	11/10/2021 10:11 AM
32	Gain understanding of the mix of clean energy production	11/9/2021 6:01 AM
33	interested in providing green energy with minimal enviro impacts	11/5/2021 2:46 PM
34	I want a reliable, consistent supply of Energy	11/5/2021 1:03 PM
35	Residential solar/battery lease, subsidies	11/4/2021 8:09 AM
36	Curious	10/31/2021 2:49 PM
37	I'm interested in how much you'll raise rates because of wokeism	10/31/2021 10:44 AM

38	Para mí TODOS LOS DIAS SON DIA DE LA TIERRA. Mi Familia y yo Reciclamos, Reducimos y Reutilizamos: SIEMPRE.	10/29/2021 2:28 PM
39	I appreciate PSE's focus on customers and wanted to participate.	10/27/2021 1:51 PM
40	I just bought a heat pump to replace using so many space heaters and I am looking to see if there is a rebate.	10/26/2021 4:58 PM
41	porque me interesa el medio ambiente y el costo de la electricidad y sus derivados	10/26/2021 1:21 AM
42	I'm interested in stopping PSE from destroying the planet and the human race.	10/25/2021 8:37 PM
43	Tenemos un planeta y una casa q es de todos	10/25/2021 2:43 PM
44	I want to install my solar panels on my property in accordance with PSE Clean Energy Transformation Act	10/25/2021 12:18 PM
45	For the truth of 'green' energy. Wind turbines last only 10-15 years. Wind energy isn't really 'green'.	10/24/2021 2:06 PM
46	clean energy jobs	10/24/2021 2:01 PM
47	I'm interested in knowing how you plan to implement backup storage for solar and wind.	10/22/2021 1:08 PM
48	i'm concerned that we keep our heads in the sand about global warming. There has always been global warming and global cooling. If not for global warming i'd be living at the foot of the Continental ice sheet right now and Skagit County would be very different. Man didn't cause it and man can't stop it	10/19/2021 1:47 PM
49	我關注地球氣候轉變	10/19/2021 12:31 PM
50	I'm interested in stopping my Electricity provider from becoming a social program & wasting resources trying to attain an unattainable goal that will do no good.	10/19/2021 9:28 AM

Q2 Does the information you've read about the draft CEIP address the benefits you want to see from the clean electricity future and balance acting on climate change with maintaining affordability?

Answered: 296 Skipped: 5



ANSWER CHOICES	RESPONSES	
Strongly agree	41.89%	124
Somewhat agree	34.80%	103
Somewhat disagree	5.74%	17
Strongly disagree	10.14%	30
Not sure	7.43%	22
TOTAL		296

Q3 Please explain your answer.

Answered: 215 Skipped: 86

#	RESPONSES	DATE
1	Self-explanatory	12/1/2021 10:26 AM
2	I don't know if the solutions solve problems or just shift them from one pollution method (fossil fuels) to another (battery production and disposal)	12/1/2021 10:18 AM
3	Need more information	12/1/2021 10:08 AM
4	Did not visit online site	11/30/2021 4:50 PM
5	Public incentives	11/12/2021 10:10 PM
6	The timeline and environmental goals seem to be set by the governor, not PSE, but there does seem to be efforts around other social responsibility areas that go above and beyond.	11/12/2021 7:20 PM
7	It seemed written to avoid specifics, exhaust with excessive verbiage, and obscure what should be specific a eadily	11/12/2021 6:57 PM
8	maintaining affordability is far from what you are prioritizing	11/12/2021 5:36 PM
9	I believe the forecasted costs of this transition are unrealistically low, and the benefits overstated.	11/12/2021 4:46 PM
10	A lot of information to peal through and needing a higher education to understand a lot of it. I get what you are saying and trying to do, though your general populace will have a difficult time deciphering the information.	11/12/2021 4:20 PM
11	We are putting at risk the reliability of the electrical generation system with more expensive and unreliable systems that will cause environmental harm where the raw materials are mined.	11/12/2021 1:42 PM
12	Since this is a preliminary draft document, it’s short on details for areas about which I have questions, concerns regarding changing the public mindset about electricity, a given commodity. I’m also concerned that there is so much reliance on solar energy, which I know from personal experience is not abundant in western Washington winters.	11/12/2021 12:36 PM
13	Not balanced with all the costs. Supposedly green energy solar panels and wind energy are not recycleable at end of life, same with batteries to store the energy for when needed. Keep improving what we have and let the best sources win out. There are fish ladders for dams, coal can be burned cleanly now so retrofit old burners and use the ash for cement and glass. Educate the public on all the costs, trade-offs, and options. Lobby the government to stop regulating solutions. We don't want to be like California and Texas early adopters with poor reliability.	11/12/2021 11:31 AM
14	I see you have multiple ways to improve the climate and keep it affordable, especially for the elderly and disabled.	11/12/2021 11:27 AM
15	Answers list in question 1.	11/12/2021 10:51 AM
16	I think there ae some great step here, but more can be done and sooner. There is an opportunity to make huge strides toward clean energy, grid resilience and supporting local communities and small businesses right now. This can be done by creating and maintaining policies that support rooftop and community solar. The first big step would be a long term commitment and guarantee to net metering, past the 4 percent threshhold required by law.	11/12/2021 9:02 AM
17	Need to be more efficient	11/12/2021 8:14 AM
18	As the solar cells of batteries & solar panels improve, I feel we can even cost vs climate issues.	11/12/2021 8:05 AM
19	I love the battery and solar applications, and the road to clean energy seems to be right on track in this plan.	11/12/2021 7:48 AM

20	PSE's goals should primarilly be to provide reliable e-power to its cutomers. Wind turbines and voltaic-solar systems DO NOT address that core objective. Both (WTs & VS) are intermitent and diluted sources of Power, NOT sources of Energy. To conflate the two (Power & Energy) is both ignorant and dangerous. A stable robust AC grid requires large-scale rotaing genenerators - neither are realized with W & S. Then- to simoultaneously encourage BEVs for general-transportation is clear naivity. Could go on here - suffice to say - I am very concerned that PSE's objectives here will place your customers at great risk. Please contact me! I am not a fool. I am a very knowledgeable e-power/energy conversion and control engineer.	11/12/2021 7:43 AM
21	more details needed	11/12/2021 7:41 AM
22	We knew about climate change and should have started this long ago.	11/12/2021 6:04 AM
23	Nuclear is an option that should be explored, as well as new energy storage technology in development	11/12/2021 5:58 AM
24	¡Too little too late	11/11/2021 9:36 PM
25	Growth in rooftop solar and batteries	11/11/2021 9:17 PM
26	Twenty years is too long to wait.	11/11/2021 9:05 PM
27	Don't see how it's going to be affordable and expect cost overruns	11/11/2021 7:17 PM
28	Wind turbines need to be recyclable. Batteries need to be earth friendly.	11/11/2021 6:52 PM
29	Includes a variety of responses, includes private homeowners as well as public facilities, has close goal dates	11/11/2021 6:41 PM
30	I'm concerned about getting to zero emissions while maintaining affordability.	11/11/2021 6:10 PM
31	Plan as set forth seems to be a great start.	11/11/2021 5:51 PM
32	Just stick to reliable energy. Avoid trendy political goals.	11/11/2021 4:44 PM
33	The plan is fine but goals are not ambitious enough to meet the moment (time line a bit slow). I would have also like to see more specific details and links to programs such as the residential roof top solar program. Plan seemed a bit vague.	11/11/2021 4:39 PM
34	I'm glad to see that PSE will increase non-fossil fuel generating sources over the next few years. I am curious, however, about hydroelectric power, and the effect it has on fish (particularly salmon) in the rivers.	11/11/2021 4:38 PM
35	very important to be carbon free ASAP	11/11/2021 4:37 PM
36	I believe in clean energy sources.	11/11/2021 4:31 PM
37	I'm still seeing a large reliance on hydro. Given the continued drought situations we have been witnessing we need to reduce our reliance on this as a major source of energy.	11/11/2021 4:31 PM
38	PSE is trying to bring the clean environment.	11/11/2021 4:13 PM
39	Deseo el cambio climático	11/11/2021 3:37 PM
40	I would like to see it happen faster.	11/11/2021 3:12 PM
41	The shift is too rapid and does not take in to account the financial impacts all around from customers to resource utilization	11/11/2021 2:28 PM
42	Energy target timeframes are too slow.	11/11/2021 2:26 PM
43	It's not fast enough and it's not true. Just one example: You're still incenting sale of gas appliances, but not electrical.	11/11/2021 12:26 PM
44	I was hoping to see more info on incentivizing customers to install solar panels.	11/11/2021 12:18 PM
45	We need to act now on clean energy	11/11/2021 12:11 PM
46	Cost benefits over 10 years, with solar panels and battery storage	11/11/2021 12:00 PM
47	I was pleasantly surprised to see the number of ways the issue is being attacked. I am impressed with the comprehensive approach.	11/11/2021 11:26 AM

48	This needs to happen faster, please	11/11/2021 10:40 AM
49	Makes sense we need to clean up our air and environment for the benefit of all .	11/11/2021 10:29 AM
50	Somethings are vague and so long range I won't be here	11/11/2021 9:21 AM
51	I love the residential solar and battery program and more investment in wind. I strongly disagree that hydro power is green. Hydro power and dams, hold up valuable sediment that is needed to wash into our oceans. It creates a warm water sink that leads to a warming climate. It is leading to the extinction is salmon runs	11/11/2021 8:48 AM
52	This is a plan that has been needed for a long time!our green house gases have increased to numbers that can longer happen or planet will be at a point of no return. Our energy sources need to reflect a less toxicity to our environment!!	11/11/2021 8:24 AM
53	There is no time to waste. Action now to protect the future.	11/11/2021 8:04 AM
54	We have to act sooner than later for future generations.	11/11/2021 12:45 AM
55	I see a lot of the catch phrases for equitability, low income, and various phrases to emphasize the poor. But see nothing that assist the middle income. All populations can fall under "vulnerable" but not all populations will receive benefits.	11/11/2021 12:27 AM
56	Balancing individual household cost and funds needed for proactive correction/changes can work.c orrective measures to insure both can make a differenceorrectionsClimate Change	11/10/2021 11:18 PM
57	"Clean electricity" is a world-wide scam.	11/10/2021 10:23 PM
58	Moving towards affordable solar	11/10/2021 9:58 PM
59	I want to see a focus on subsidized solar and back up battery systems at scale for local residences, especially in areas that experience frequent power interruptions where lines are above ground.	11/10/2021 9:35 PM
60	Yes, we need to advance to reduce cost.	11/10/2021 9:23 PM
61	Clear and measurable goals that accomplish a cleaner energy in the near future	11/10/2021 9:10 PM
62	Overall cost of electricity goes up. Is any energy stored? If not, what happens if solar and wind is not available?	11/10/2021 8:22 PM
63	I'm interested to see the progress as time goes on	11/10/2021 8:22 PM
64	I don't see specific steps about replacing coal with other forms of energy,	11/10/2021 7:53 PM
65	I got the material today (November 10th) and this closes on the 12th. You must be kidding.	11/10/2021 7:42 PM
66	I hope that it is affordable for consumers and low income population	11/10/2021 7:14 PM
67	Natural Gas is one of the cleanest energies around and you would instead manufacture batteries and solar cells that while they may burn clean you conveniently hide how much of a carbon footprint it take to manufacture them. Plus there are not reliable sources to keep us "energized" yet. You are speaking a false narrative and hiding the real costs.	11/10/2021 7:00 PM
68	It fails to consider the most "realistic" form of clean energy...Nuclear Power!	11/10/2021 6:39 PM
69	The Plan is pie-in-the-sky, unrealistic, and deceptive.	11/10/2021 6:14 PM
70	As a Renter I’m not sure what benefits other than price reduction would actually help me	11/10/2021 5:46 PM
71	PSE has clear goals and a plan for measured outcomes.	11/10/2021 5:42 PM
72	I don't think that even the best efforts will have complete success.	11/10/2021 5:14 PM
73	Would like to see a bigger financial commitment to assist residential customers who install solar ststems	11/10/2021 4:51 PM
74	Doing the right thing is more important to us than affordability	11/10/2021 4:40 PM
75	The data does not support it.	11/10/2021 4:02 PM
76	Will we have enough powe at an affordable rate	11/10/2021 4:01 PM

77	seems adequate, too much to read in detail	11/10/2021 3:56 PM
78	We know that any successful program takes a good plan to start with.	11/10/2021 3:41 PM
79	There was enough info that I could understand the future plans	11/10/2021 3:36 PM
80	It is a bit of a wish list, but even a portion of which would be beneficial	11/10/2021 3:02 PM
81	Therms “equitable” are seemingly used to infer that the cost not paid by some is transferred over to those who can.	11/10/2021 2:47 PM
82	It sounds like a well thought out plan	11/10/2021 2:32 PM
83	Climate change is going to happen - we can't stop it. The changes you propose must require 'Made in the USA' or it will not be affordable.	11/10/2021 2:24 PM
84	It seems thorough and mindful of all the elements at play.	11/10/2021 1:57 PM
85	Will wait see	11/10/2021 1:57 PM
86	I think it's beyond time that energy providers get on board with the reality of climate change and do all within their power to help reduce the effects. This CEIP is a good first step.	11/10/2021 1:33 PM
87	Moving toward clean energy is an absolute must and I appreciate the clarity with which the information was shared.	11/10/2021 1:23 PM
88	I believe we have the technology to address the problem and this plan seems like a great appplication	11/10/2021 1:16 PM
89	Por el cambio climático me preocupa	11/10/2021 1:07 PM
90	After reading the goals and how to accomplish them makes sense. I’m impressed by the fact that our local utility is committed to a sustainable energy future.	11/10/2021 1:03 PM
91	It is imperative that a multipronged approach be implemented that will not only reach the clean energy goals, but surpass them, improving air quality, delaying the effects of global warming, and stabilizing the cost of energy for all.	11/10/2021 1:01 PM
92	I believe most current 'clean energy options are inefficient, too expensive, unsustainable, anf sacrifice well paying jobs in a climate where energyand taxes are already much too high. I also believe in the ideal of freedom and personal choice, which is often eliminated by green initiatives.	11/10/2021 1:00 PM
93	I already have solar panels and I am worried about climate change	11/10/2021 12:22 PM
94	If you can offer a plan , that I can afford, where I can get soloar cells and a battery system that keeps me up (at least partially) during an outage, I like it	11/10/2021 12:05 PM
95	The United States is not the major polluter of the earth and we should not be responsible for fixing this on our own. Look at the major polluters like Asia and India.	11/10/2021 12:03 PM
96	I’m excited that PSE is tackling this aggressively and I can’t wait to be part of the change that will benefit all of our futures.	11/10/2021 11:41 AM
97	Both topics were called out and thoughtfully discussed.	11/10/2021 11:40 AM
98	The focus is consistent with my personal values.	11/10/2021 11:36 AM
99	Seems we have to pay more to save a little bit.	11/10/2021 11:21 AM
100	Reaching out to get public input and ideas is a great first step	11/10/2021 11:16 AM
101	"Clean energy" is BS	11/10/2021 11:16 AM
102	we should already be far past this stage.	11/10/2021 11:14 AM
103	I don't have enough knowledge on the subject to strongly agree.	11/10/2021 11:13 AM
104	like building equity into programs, am interested in solar for our multifamily cohousing project.	11/10/2021 11:10 AM
105	Distributed solar and batteries plus getting off of coal and going to renewables is a solid decision	11/10/2021 11:08 AM

106	Residential property owners investing in solar panels are not allowed to capitalize on their investment. Electricity in excess of net-zero generated by privately owned infrastructure is not compensated to the owner. Allowing compensation for privately generated electricity would encourage solar panel investment.	11/10/2021 11:07 AM
107	Im not a expert I tend to trust that companies will start telling the truth eventually and creating change so that we may all remain on this planet.	11/10/2021 11:02 AM
108	We are fortunate here in the northwest to have dams and that natural energy.	11/10/2021 11:02 AM
109	I don't agree with phasing out natural gas. It has much benefits especially in emergencies.	11/10/2021 10:57 AM
110	Best bang for your buck	11/10/2021 10:54 AM
111	I like the plan, it seems reasonable and effective.	11/10/2021 10:52 AM
112	Need more business model incentives	11/10/2021 10:52 AM
113	No comments about cost measures. All I see is I get to pay a lot more for electricity.	11/10/2021 10:52 AM
114	Income dependency on most of the programs is great, but to reduce energy consumption in general, the benefits to all residents/businesses needs to be addtessed. Otherwise, energy use will continue to increase.	11/10/2021 10:50 AM
115	not sure how to balance future with climate change in the time available	11/10/2021 10:45 AM
116	Anything that can help with making power bills lower yet keeping clean air is great in my book	11/10/2021 10:44 AM
117	the goal is established, but how to get there is not.	11/10/2021 10:43 AM
118	I've lived in WA 55 years. I've seen a lit of changes, mostly bad, as far as our climate & energy. I've wanted to have alternate energy for as long as I've know about them (Solar,wind,microhydro). Due to health & financial issues, I've never been able to achieve this.	11/10/2021 10:39 AM
119	More info than i imagined	11/10/2021 10:39 AM
120	Except for the time line - we may not have until 2045 at this point- these are changes i want to see	11/10/2021 10:38 AM
121	need to understand the financial impact and availablity of energy	11/10/2021 10:38 AM
122	I believe changes are needed and I hope there will be affordable ways for residents to participate in cleaner air.	11/10/2021 10:34 AM
123	It's informative	11/10/2021 10:32 AM
124	No cost benefit analysis.	11/10/2021 10:32 AM
125	There is a carbon neutral goal set that will benefit end users and improve efficiency which maintains affordability	11/10/2021 10:30 AM
126	We need to look at and implement more clean renewable energy sources.	11/10/2021 10:25 AM
127	reasonable time frame, balanced	11/10/2021 10:23 AM
128	too much unnecessary information	11/10/2021 10:23 AM
129	i'm interested in how we can make electricity more equitable to those who are already struggling and more alternative electricity options that are affordable.	11/10/2021 10:21 AM
130	addresses the needs of getting electricity responsibly	11/10/2021 10:13 AM
131	Weaning PSE off coal and strengthening solar and wind programs are key to addressing climate change.	11/10/2021 10:13 AM
132	I would like to see more incentives for solar power on homes.	11/10/2021 10:13 AM
133	Lower carbon footprint	11/10/2021 10:11 AM
134	Would like to know more information of solar panels on residential rooftop	11/10/2021 10:11 AM
135	Builds a better future for everyone.	11/10/2021 8:58 AM
136	There is no mention of nuclear. Nuclear power production *has* to be part of the plan; there are	11/9/2021 6:01 AM

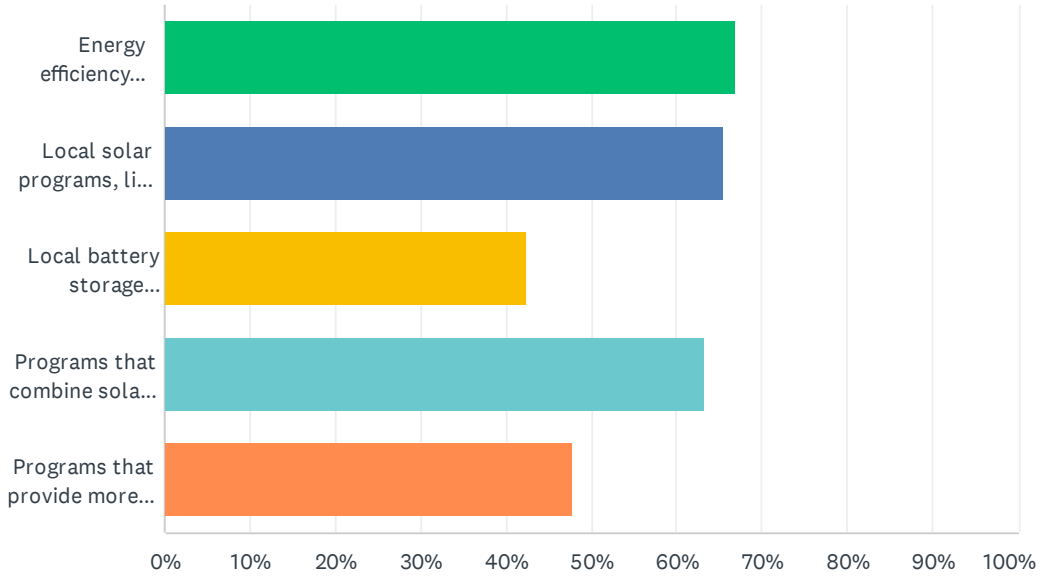
	a variety of safe and modular designs these days that can scale up or down. There are also innovative new processes and technologies that can make use of the waste afterwards. Nuclear CANNOT be ignored as a means to produce CO2e-free energy.	
137	不但节省能源,亦可使每个人活得健康快乐.	11/8/2021 1:11 PM
138	PSE needs to reach 100% clean electricity by 2035	11/7/2021 3:41 PM
139	Affordable energy is key to healthy lifestyles. This program over values ambiguous "benefits" and under values the cost impact on families and businesses.	11/7/2021 12:55 PM
140	No lo se	11/7/2021 12:27 PM
141	I'm interested in how we move off of coal and natural gas.	11/7/2021 8:31 AM
142	Looks like the plan covers just about every element required to move to a clean, renewable supply of energy.	11/6/2021 11:56 AM
143	Plan seems likely to cost more for those who can afford more (OK by me) and less for needy populations, while moving away from carbon	11/5/2021 2:46 PM
144	Your focus on carbon free energy and Equity are ridiculous! Clean coal, natural gas along with Hydro and nuclear are the only way to ensure we don't have Brown and Black outs like California and Texas. Your job is to supply me with dependable, affordable power - That's all! c	11/5/2021 1:03 PM
145	Será de gran ayuda con el cambio climático	11/5/2021 12:54 PM
146	Sounds good; will it really happen. Can it really provide enough power.	11/4/2021 3:40 PM
147	The plan defines a path for clean electricity while balancing the impact on climate change and making it affordable.	11/4/2021 3:24 PM
148	Pienso que si toda la comunidad en General cooperara para este cambio y se pusiera en accion podriamos ver un impacto en nuestro ambiente y nuestra salud.a	11/4/2021 9:21 AM
149	It's a good start but I think you could push the envelop more.	11/4/2021 9:04 AM
150	I want more solar energy, and would love to put solar panels up on my home soon to help.	11/4/2021 8:41 AM
151	Not much detail on the plans yet. Need more info on residential solar/battery programs.	11/4/2021 8:09 AM
152	Các thông tin có liên quan mật thiết và sử dụng năng lượng sạch và biến đổi khí hậu, môi trường.	11/4/2021 6:07 AM
153	Agree with all your saying	11/4/2021 2:48 AM
154	I dont feel like the explanation was very clear. I wanted to see a bigger focus on hydroelectric (a low-carbon energy source that our region has in abundance) and how it can be used for pumped storage for wind and solar. I would also have liked to see attention given to nuclear power. Solar (particularly on a consumer scale) won't provide enough output at this latitude in the winter.	11/4/2021 1:37 AM
155	我喜欢清新空气	11/3/2021 9:22 PM
156	Top priority reducing CO2 emissions.	11/3/2021 8:11 PM
157	clear, viable options	11/3/2021 8:07 PM
158	So glad to see coal phased out	11/3/2021 7:59 PM
159	When it comes to climate change, no price is too much. Actions against climate change need to be drastic, not scaled back because of the price tag.	11/3/2021 7:46 PM
160	It would be beneficial for pse to offer affordable and clear information on Installation and actual cost to install and operate said solar panels. Not have to go thru a sales company.	11/3/2021 7:18 PM
161	Por el bien de todos y así poder sobrevivir más y dejar en buenas condiciones a nuestra generación.	11/3/2021 7:17 PM
162	Need to drill down to more specifics	11/3/2021 6:38 PM
163	Proof's in the pudding	11/3/2021 6:30 PM

164	I agree with putting a solar panels on houses and apartments and I have been trying to get my mother in law to talk to somebody about about getting solar panels for her house and as she doesn't understand how she could save it could save on electricity and and potentially uh credit for the	11/3/2021 6:27 PM
165	I'm impressed by PSE's timeline and specific goals.	11/3/2021 6:12 PM
166	2045 is too far out to get to 100%	11/3/2021 12:39 PM
167	The targets seem quite low and quite a bit behind what is needed.	11/2/2021 3:22 PM
168	i appreciate recognition of the wealth gap	11/1/2021 10:13 PM
169	There is no explanation how to achieve 5x growth in renewable energy generation in 3 years	10/31/2021 10:20 PM
170	Many different scientific opinions about actual climate change	10/31/2021 9:15 AM
171	I don't see why hydropower is not listed as one of the options. It is just that Seattle uses hydropower and they sell the excess to Canada. Why can't PSE use hydropower?	10/31/2021 6:31 AM
172	The plan is much too slow. There is no concrete plan for demand response and DER optimization.	10/30/2021 10:52 PM
173	I totally agree	10/30/2021 5:50 PM
174	We must act on climate change by increasing clean energy.	10/30/2021 11:53 AM
175	I'd like to see more emphasis placed on large business energy consumers. Every Walmart etc should have solar roofs and battery requirements	10/30/2021 6:02 AM
176	This plan is aggressive and comprehensive. Good work!	10/28/2021 10:44 AM
177	Great info and specific targets on switching power sources. Would like to see more info on water/river/fish impacts of hydroelectric projects.	10/27/2021 9:56 PM
178	Todos tenemos que poner de nuestro lado y colaborar para tener una energía más limpia y asequible para todod	10/27/2021 4:25 PM
179	The CEIP seems very well-considered. I saw many references to "vulnerable and highly impacted communities." Does that term "highly impacted" include middle-income residential customers, who are being called upon to shoulder additional financial burdens due to layoffs and businesses closed since 2019?	10/27/2021 1:51 PM
180	It's good to have a long range plan but I think so many people are just trying to make it day by day we need deeper help federally.	10/26/2021 4:58 PM
181	no estoy totalmente de acuerdo porque no conosco exactamente el proceso que llevaran y si lo llevaran exitosamente hay proyectos de grandes empresas que se quedan en l camino	10/26/2021 1:21 AM
182	Va por buen camino, tal vez será difícil su implementación pero se debe empezar con algo. Tengo la confianza que si todos ponemos nuestro granito de arena se podrán lograr las metas.	10/25/2021 10:52 PM
183	The draft CEIP does not meet the plain language of CETA law which requires PSE to *not* use ANY Natural Gas generation after 2045!	10/25/2021 8:37 PM
184	Tenemos una casa y es de todos	10/25/2021 2:43 PM
185	Climate always changes, it has been changing since the time of the dinosaurs. How much of the 'climate change' is really climate control? To control air pollution-how about stopping all chemtrails from planes and bunker fuel from ships at sea? 1 ship at sea burning bunker fuel equals the emissions from over a million cars. Correct the true issues not the created issues.	10/24/2021 2:06 PM
186	Goals are laudable but lack details	10/24/2021 2:01 PM
187	PV + storage + demand response is a good start. Most investment should be in distributed generating sources not centralizes plants proverbial owned and transmitted great distance. DG is 70% more value than centralized generation. Build local for efficiency and job creation.	10/24/2021 9:30 AM
188	Wasn't fully residence/home specific	10/23/2021 2:05 PM
189	Cost increase was less than expected.	10/23/2021 10:33 AM

190	I want to remodel my house to make it more energy efficient.	10/22/2021 11:03 PM
191	I believe clean energy needs to be implemented ASAP	10/22/2021 5:12 PM
192	I know hydro power is much cheaper than wind and solar. Unless you can provide sufficient storage of wind and solar power , ted will be unreliable and people will be paying more for less.	10/22/2021 1:08 PM
193	Need to move faster	10/21/2021 8:23 PM
194	Well written and easy to read on mobile device	10/21/2021 7:22 PM
195	Do not see any good information on how senior citizens could benefit from all this BS.	10/21/2021 6:09 AM
196	I am not seeing any plan for residential wind power. Especially in Western WA, this would seem to be as consistent as solar, and could operate 24/7. Combining a solar array with the smaller wind generators now on the market could help make a bigger impact on power consumption from the grid.	10/20/2021 11:18 AM
197	I am impressed with the rapid pace of eliminating Cole as a means of generating electricity.	10/20/2021 7:56 AM
198	none	10/20/2021 7:51 AM
199	I want to know more specifically how you'll reduce heat within our homes i.e. white paint that deflects heat from our rooftops & helps reduce the need for air conditioning.	10/19/2021 9:29 PM
200	You may have to consider nuclear power.	10/19/2021 9:21 PM
201	一起保护环境	10/19/2021 8:16 PM
202	I don't think divesting from coal is good	10/19/2021 5:04 PM
203	Whether we like it or not, "NOW" is the time to start building on alternative energy to stop environmental change	10/19/2021 2:25 PM
204	Climate change is happening so we need to do more to help the earth	10/19/2021 1:49 PM
205	We should always be conscious of environment and affordibility, but this will NOT stop climate change, will probably make the impact worse by keeping scientific expertise from searching for responses when it occurs. And don't hide political agendas behind "inclusivity, or equity and fake affordability".	10/19/2021 1:47 PM
206	Do better, sooner.	10/19/2021 1:05 PM
207	Concerned with the statement that says low-income participants will be given the opportunity to benefit from reduced rates to install solar power to their homes. I believe that ALL people, regardless of income, etc., should be able to benefit from these programs.	10/19/2021 12:59 PM
208	希望透過清潔能源實施計劃能提升空氣質素,同時降低一般市民電費負擔。	10/19/2021 12:31 PM
209	I want an affordable way to contribute to a clean energy future. I'm excited about the residential rooftop and storage lease option..	10/19/2021 12:22 PM
210	Not fast enough. 2045 may be the legal requirement, but this is an existential crisis for human civilization. Start acting like it.	10/19/2021 12:01 PM
211	I didn't read the whole draft, but even thinking about these issues is encouraging.	10/19/2021 9:38 AM
212	Your definition of "Clean" is flawed, CO2 is not pollution. You need to focus on providing plentiful power at an affordable price. That means including Nat Gas and Coal should be considered.	10/19/2021 9:28 AM
213	Any proposal to eliminate fossil fuels that does not include replacing coal/oil/gas with nuclear is unrealistic.	10/19/2021 9:22 AM
214	I believe we can live with clean energy	10/19/2021 9:14 AM
215	The PLAN is better than nothing, but it is TOO SLOW! We need to stop using coal RIGHT NOW! We must spend more NOW to even hope to have a window of time to reverse our present trajectory! We are already in the HOT ZONE!	10/18/2021 5:06 PM

Q4 Which types of programs in the CEIP are you most interested in? Select all that apply.

Answered: 278 Skipped: 23



ANSWER CHOICES	RESPONSES	
Energy efficiency programs	66.91%	186
Local solar programs, like community solar, solar rooftop leasing, etc.	65.47%	182
Local battery storage programs, like leasing space for PSE batteries	42.45%	118
Programs that combine solar and storage	63.31%	176
Programs that provide more access and affordability for vulnerable populations (e.g., multifamily, income-qualified, etc.)	47.84%	133
Total Respondents: 278		

Q5 Please explain your answer.

Answered: 185 Skipped: 116

#	RESPONSES	DATE
1	We lose power a lot on our island. Solar and battery back up are practical alternatives to gas power generators.	12/1/2021 10:18 AM
2	We need to be more energy efficient	12/1/2021 10:12 AM
3	Progression	12/1/2021 10:08 AM
4	Did not visit programs	11/30/2021 4:50 PM
5	They always get the job done	11/30/2021 4:41 PM
6	Senior citizen home owner vulnerable to power outage	11/12/2021 10:10 PM
7	We are low income and new construction home owners with land. I would love to work with PSE for the best options around solar and batteries. We also have an ev which is already battery storage that could be users to sell at peak times and buy at off times if we had help to set that up. We are also interested in upgrading our ev.	11/12/2021 7:20 PM
8	It seemed written to obscure what should be easily understood, to bore readers into compliance, and to avoid specifics.	11/12/2021 6:57 PM
9	I would like to learn more about becoming part the clean energy swing and learning about it is the first step.	11/12/2021 4:20 PM
10	ANYTHING that raises the cost of electricity (a necessity of life) forces the poorest among us to make hard choices on what they can afford to buy. Pricier electricity leaves less money for food, housing and medical care.	11/12/2021 1:42 PM
11	Solar systems coupled with battery storage systems are expensive and have very specific housing needs. They can't effectively be installed in an existing home without some modifications in electricity usage i.e. weatherization, upgrading appliances, changing usage behaviors, space modification, etc. All of these issues will be more challenging and less effective in vulnerable populations, specifically fixed-income seniors who have difficulty paying winter utility bills and live in older homes.	11/12/2021 12:36 PM
12	I'm also interested in where our energy comes from and how reliable it is, and how clean and safe hydro and natural gas are. I don't think enough people know. I still see signs to remove dams, which is ludicrous. Any vibrant economy needs affordable energy to support businesses and families.	11/12/2021 11:31 AM
13	My husband is disabled and I am almost 65. I was laid off in 2020 and forced to retire early. I had to use half of retirement money to pay off mortgage. Now we live off of Social Security.	11/12/2021 11:27 AM
14	Answers list in question 1.	11/12/2021 10:51 AM
15	Re-examine schemes that stress leasing because they do not benefit end users, only the companies that own the leased systems. Consider the feedback received in this process from stakeholders and build programs in collaboration with the rooftop solar industry. Private ownership leverages private investment, tax credits, and spurs local employment in PSE's service area. "Direct pay" provisions of the federal Investment Tax Credit now before Congress will greatly increase rooftop solar+storage investments by a much bigger pool of property owners.	11/12/2021 9:02 AM
16	The most vulnerable tend to be the marginalized most. Informed advocacy and options would be helpful.	11/12/2021 8:05 AM
17	Very interested in the battery applications, and the solar.	11/12/2021 7:48 AM
18	Interested in all aspects of power and energy - provision and usage	11/12/2021 7:43 AM

19	I'm interested in electrical sustainability with solar rooftop.	11/12/2021 6:04 AM
20	More renewables!!	11/12/2021 5:58 AM
21	All possibilities must be used to the greatest extent possible.	11/11/2021 9:05 PM
22	We should cut down our electricity usage as well as creating clean energy sources.	11/11/2021 6:52 PM
23	small and large scale projects, social equity	11/11/2021 6:41 PM
24	We need PSE to be an inspiring and transformational utility, not one that drags its feet on its climate commitments, or does the minimum to meet the law e.g., CETA.	11/11/2021 6:10 PM
25	Interested in residential and business solar rooftop.	11/11/2021 5:51 PM
26	Just stick to your core business. Not a bunch of political demands.	11/11/2021 4:44 PM
27	As a homeowner, I would be most interested in the rooftop solar power program. More information would be helpful to know if I qualify and how to apply for the program. The last choice was less for my family, more of something I think would benefit the community.	11/11/2021 4:39 PM
28	As an apartment-dweller, I don't have control over adding rooftop solar panels, etc. I would like more information about what I can do to reduce fossil-fuel power sources.	11/11/2021 4:38 PM
29	all important to get to carbon 0	11/11/2021 4:37 PM
30	I believe clean energy should be available to everyone.	11/11/2021 4:31 PM
31	I am hoping to see some day a way for PSE to make use of qualifying rooftops on single family dwellilings. PSE owns the equipment but rewards the homeowner by offsetting their usage cost with generation credit.	11/11/2021 4:31 PM
32	All are the best programs.	11/11/2021 4:13 PM
33	Todos estos son muy buenos programas	11/11/2021 3:37 PM
34	N/A	11/11/2021 3:12 PM
35	We should NOT be moving away from Natural Gas so quickly and also need to be looking more toward a dependable source like nuclear.	11/11/2021 2:28 PM
36	In the PNW, not everyone has clear access to sunlight (trees), nor can they afford rooftop solar even if they do have a clear setting. There needs to be more emphasis on community solar access and affordability.	11/11/2021 2:26 PM
37	PSE cannot be trusted	11/11/2021 12:26 PM
38	If we decide to store electricity in batteries, how will PSE help us.	11/11/2021 12:18 PM
39	I have a perfect roof for solar panels and I'd like to install a mini split and hot water on demand. The rebates and financing will make it possible.	11/11/2021 12:11 PM
40	It all comes down to cost	11/11/2021 12:00 PM
41	I would love to have solar panels on my roof but can't afford the output of $$$ upfront.	11/11/2021 11:26 AM
42	Give monetary incentives to install solar/wind energy generation and battery storage for all clients	11/11/2021 10:40 AM
43	More information on solar and the costs and options lease vs purchase.	11/11/2021 10:29 AM
44	I would love to participate in a solar/battery program.	11/11/2021 8:48 AM
45	We all need help with clean power sources!!	11/11/2021 8:24 AM
46	Battery and Solar equipment becomes an eyesore and a risk for disposal and maintenance.	11/11/2021 8:22 AM
47	My husband used to work in the RND of a solar cell company and since learning from him, I have come to know the benefits of solar cells. I have always wanted one for us but I heard it is expensive and so if you have programs that make it affordable, that would be awesome!	11/11/2021 12:45 AM
48	I have always wanted to participate in solar energy programs, but do not have too little income to do so at an affordable rate. I don't really want to go into debt to put panels on my roof. I	11/11/2021 12:27 AM

	have also been told trees must be removed to place panels...aren't trees just as important as the solar panels?	
49	Our country is very able to become #1 again through working together to succeed successfully. Only Trump said , "He can do it alone!" but failed miserably..	11/10/2021 11:18 PM
50	None of the above. I do not want to participate in this scam scheme.	11/10/2021 10:23 PM
51	Interested in solar panels	11/10/2021 9:58 PM
52	I am seeking this option currently for my home.	11/10/2021 9:35 PM
53	Low income families cannot pay their electric bills.	11/10/2021 9:23 PM
54	I think they are all important. We need to deal with all these aspects	11/10/2021 9:10 PM
55	Older homes need to be made more efficient but often homeowners can't afford improvements	11/10/2021 8:22 PM
56	I don't have good solar access at my property but I do live in an outage prone area, and am interested in storage so that I can safely store energy for later or emergency use.	11/10/2021 7:53 PM
57	Interested in affordable solar energy	11/10/2021 7:14 PM
58	I looked into solar panels. they do not pay for themselves very quickly, the cheap ones are crap and do not have a long life.	11/10/2021 7:00 PM
59	Nuclear power need to be considered in the CEIP!	11/10/2021 6:39 PM
60	I am in favor of uniform rates. Quit talking about vulnerable pops.	11/10/2021 6:14 PM
61	I'm low income and section 8	11/10/2021 5:46 PM
62	I bought property recently and intend to build a home.	11/10/2021 5:42 PM
63	I favor localizing energy production and storage as much as possible.	11/10/2021 5:14 PM
64	I am interested in "what is in it for me".	11/10/2021 4:02 PM
65	I feel that solar power is the wave of the future	11/10/2021 4:01 PM
66	Want to reduce my carbon footprint so like solar energy.	11/10/2021 3:36 PM
67	I would be interested in solar if it would realistically	11/10/2021 3:02 PM
68	I especially like the solar/ solar lease incentives	11/10/2021 2:32 PM
69	I can not answer until my environment question 1 is answered.	11/10/2021 2:24 PM
70	I like the idea of solar and storage, and how they could support resilience with our increasingly erratic weather.	11/10/2021 1:57 PM
71	Great idea	11/10/2021 1:57 PM
72	I thing equity in any program is essential. The next step for me is learning more about the potential available to ME to do MY part in helping, so each of the programs listed are of interest to me.	11/10/2021 1:33 PM
73	These are all hot topics that I have great interest to me because of the equity and impact on saving our planet.	11/10/2021 1:23 PM
74	Makes an efficient use of the technology	11/10/2021 1:16 PM
75	Por las personas no pasen frío y puedan tener servicio	11/10/2021 1:07 PM
76	See response to 4.	11/10/2021 1:03 PM
77	You really cannot have one without all. Having solar collection is great, but without storage it is wasted. You cannot create a program for collection and storage without doing it for all demographics, and you cannot even begin unless you also consider efficiency.	11/10/2021 1:01 PM
78	It sounds like you can use the battery storage when power goes out which it does frequently where I live.	11/10/2021 12:22 PM
79	I would consider a neighborhood PSE battery, but I would have to gather more information on	11/10/2021 12:05 PM

	the effects of inductive current impact of a mass storage device	
80	I try to be energy efficient in my daily use of utilities.	11/10/2021 12:03 PM
81	Would love to find out more	11/10/2021 11:41 AM
82	I live in a community with vulnerable neighbors, where there are very frequent power outages	11/10/2021 11:40 AM
83	Public school bus barns provide a big opportunity to utilize public infrastructure to produce and store solar created electrical. Partner with school districts and the federal government to create a model using bus barn and school roofs to generate while converting school buses to e-vehicles	11/10/2021 11:16 AM
84	All this is scam	11/10/2021 11:16 AM
85	seriously?	11/10/2021 11:14 AM
86	multifamily cohousing looking to use solar with possible battery backup	11/10/2021 11:10 AM
87	I have a rental property and a house serviced by PSE and want solar and batteries for both.	11/10/2021 11:08 AM
88	Im an electrical contractor and this is more work and I would love to help people that couldnt afford it before. I also have an array and would love to have more panels and a battery bank for storage. Batteries will also be a great option for power outages, people wont be burning fuel during these times.	11/10/2021 11:02 AM
89	I plan on building a new custom energy efficient smart home in a year	11/10/2021 10:57 AM
90	Energy efficiency is key to saving money.	11/10/2021 10:52 AM
91	Interested in the applicability of efficiency and generation on owned real estate holdings	11/10/2021 10:52 AM
92	Curious to see how much customers get to pay for reduced availability of energy.	11/10/2021 10:52 AM
93	Most multi family housing is owned by a landlord and they would be getting the financial benefits from leasing space, not the residents.	11/10/2021 10:50 AM
94	all the programs are relevant - I have my own solar and storage	11/10/2021 10:45 AM
95	We need more programs to help those of us that can’t afford the high prices	11/10/2021 10:44 AM
96	I have solar and look for ways to add storage to my mix	11/10/2021 10:43 AM
97	Pretty much same as above. I care about the environment. I do what I can, want to do much more. Can't afford it	11/10/2021 10:39 AM
98	Fairness in programs	11/10/2021 10:39 AM
99	I am pleased to see equitable availability in the an	11/10/2021 10:38 AM
100	not sure of value	11/10/2021 10:38 AM
101	I would like to see solar rooftop become affordable. I would switch if it was!	11/10/2021 10:34 AM
102	Helpful tips	11/10/2021 10:32 AM
103	Gathering solar energy to battery makes little sense if that storage can't be accessed during a power outage. Outages frequent in my home area.	11/10/2021 10:32 AM
104	Energy efficiency is a major challenge as most neighborhoods are old and not even up to current standards, so this will need addressed so we can all experience the upgrades	11/10/2021 10:30 AM
105	We want solar and/or wind power.	11/10/2021 10:25 AM
106	vulnerable population need to have access and affordability	11/10/2021 10:23 AM
107	see above comment	11/10/2021 10:21 AM
108	decentralized power generation and storage	11/10/2021 10:17 AM
109	I think we should be doing more solar and battery storage	11/10/2021 10:13 AM
110	Anything and everything that can be done to make it easier for everyone to participate in renewable energy sources is important.	11/10/2021 10:13 AM

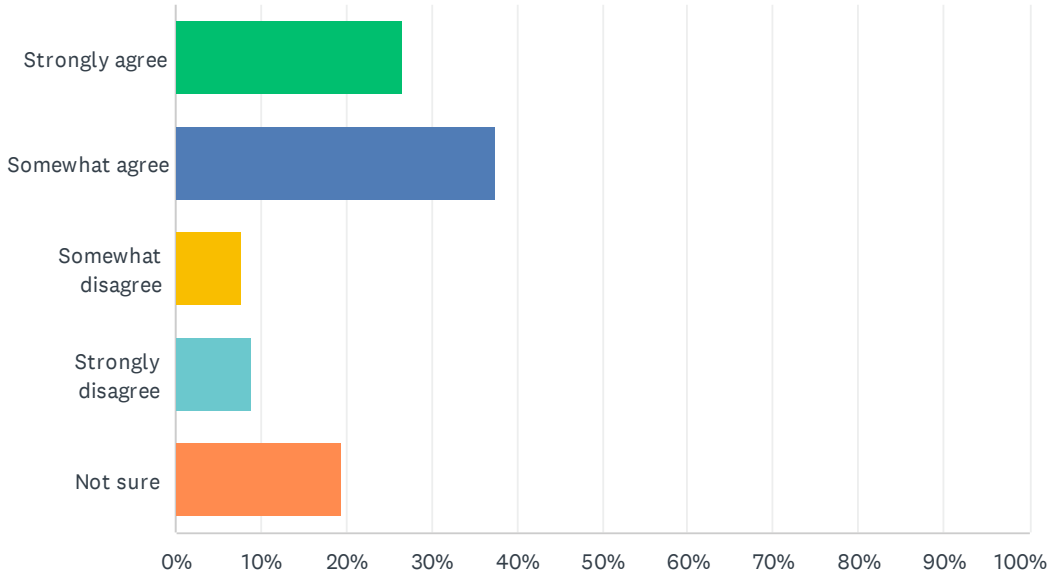
111	I'm all for solar	11/10/2021 10:11 AM
112	Would like to see solar panels not only on residential rooftop, but also on big warehouses, and see those solar panels benefiting local community not only the businesses	11/10/2021 10:11 AM
113	Anything that improves our energy use and where it comes from. However, not a fan of batteries at this time	11/10/2021 8:58 AM
114	不但节省能源,降低用量的消费,有助于弱勢族群	11/8/2021 1:11 PM
115	Want to intsall solar and battery, but the WSU budget is out of funds?	11/7/2021 3:41 PM
116	Energy efficiency lowers my cost and puts reduced demands on the energy grid as a whole.	11/6/2021 11:56 AM
117	I support community solar. I have solar panels and am interested in storage. I favor efficiency programs - fewest enviro impacts. I favor equity	11/5/2021 2:46 PM
118	Por que sería muy útil en caso de una emergencia	11/5/2021 12:54 PM
119	Those are the only two that would apply to our household.	11/4/2021 3:40 PM
120	These 5 programs address the issues that concern me.	11/4/2021 3:24 PM
121	Todos los programas serian importantes, porque està dedtinafo a diferentes g4upos sociales y factores economicos, el programa que es u til y bueno a una comunidad, para otro s4ctor se implementaria otro programa f,	11/4/2021 9:21 AM
122	Using community programs that localize services versus making a massive network that is susceptible to massive outages	11/4/2021 9:04 AM
123	All of the above sound good!	11/4/2021 8:41 AM
124	I have a lot of open space that can be utilized.	11/4/2021 8:09 AM
125	Năng lượng mặt trời trên mái nhà là khả thi nhất. Dễ triển khai. Vấn đề là kinh phí đầu tư!	11/4/2021 6:07 AM
126	Ways to bring costs down	11/4/2021 2:48 AM
127	Increases to energy efficiency will be a net benefit to the environment regardless of the power generation method. As noted earlier, solar isn't efficient in the pacific northwest.	11/4/2021 1:37 AM
128	如果有太阳能我们就会方便很多	11/3/2021 9:22 PM
129	Combine community and personal interests.	11/3/2021 8:11 PM
130	it will take many approaches	11/3/2021 8:07 PM
131	All programs that expand energy efficiency are goals for me	11/3/2021 7:59 PM
132	makes the air alot clearner, free from daisies air quality control	11/3/2021 7:49 PM
133	I may be interested in installing a system on my house	11/3/2021 7:27 PM
134	More information in a clear and understandable manner that doesn't require a large investment.	11/3/2021 7:18 PM
135	Que todos tengan posibilidades de tener un hogar digno ,económico y ahorrativo.	11/3/2021 7:17 PM
136	N/a	11/3/2021 7:01 PM
137	Going to build and want to include solar and battery	11/3/2021 6:38 PM
138	We’d love hoe solar. We drive an electric car and a hybrid.	11/3/2021 6:30 PM
139	As I am a part of the population lives in poverty in poverty I would love to see solar panels on there are panels on houses and apartments to help residents residents with the electricity bills	11/3/2021 6:27 PM
140	As a low-income residential customer, I'm interested in everything that helps manage energy bills.	11/3/2021 6:12 PM
141	Solar and storage plus other DER options (hot water tanks such as Mixergy). In general it seems designed to just hit the mandated targets but not be innovative.	11/2/2021 3:22 PM
142	i’d like to explore a solar panel for my rental property	11/1/2021 10:13 PM

143	Own an ev, plan to install solar soon, interested in wind generator too, would like storage to reduce the impact of outages.	11/1/2021 9:31 AM
144	Energy efficiency was promoted for decades, and while it helps, overall energy consumption grows and will grow, hence we need new energy sources	10/31/2021 10:20 PM
145	Need nuclear power plants, not wind turbines, solar panels	10/31/2021 9:15 AM
146	I am installing a solar + battery system and want to participate in a compensated demand response program.	10/30/2021 10:52 PM
147	I am interested in the world agenda	10/30/2021 5:50 PM
148	Do whatever is possible.	10/30/2021 11:53 AM
149	I would love to have a solar roof but it is very expensive and access is confusing	10/30/2021 6:02 AM
150	Nice to see this going all the way do to users who can then participate.	10/28/2021 10:44 AM
151	Porque la energía no es un servicio de lujo , sino que es de primera necesidad	10/27/2021 4:25 PM
152	PSE has a great reputation for customer support! I am most interested in beneficial programs being available to all communities -- not just those considered "vulnerable."	10/27/2021 1:51 PM
153	I have 2 rentals and I have put heat pumps in both to help my renters, especially the one on a fixed income.See the above answer	10/26/2021 4:58 PM
154	Las opciones que venefician a comunidades vulnerables es la que me gusto mas pues con energia limpia segun este proyecto se pagaria menos y tendrian la mejor tecnología para cuidar el medio ambiente según el programa es muy atractivo el proyecto	10/26/2021 1:21 AM
155	La energía solar es una fuente inagotable. Es una buena solución al problema energético.	10/25/2021 10:52 PM
156	I'm interested in more cost-effective ways for PSE to reduce their emissions such as EE and Wind Power. Also interested in time-of-day pricing.	10/25/2021 8:37 PM
157	Si los programas de energía limpia son aun muy caros y la población de bajos recursos aun no lo podemos pagar	10/25/2021 2:43 PM
158	I have 10 solar panels to be installed and connected thru PSE. How can I best dovetail into your Clean Energy Targets?	10/25/2021 12:18 PM
159	Wind energy also increase local temperatures and kills millions of birds across this country every year. Solar is major issues as well.	10/24/2021 2:06 PM
160	These programs address decentralization of generation and transmission for system reliability.	10/24/2021 2:01 PM
161	Don't do a lease system it's too expensive and the bank ends up owning the value not the generator. Implement free and fair market variables with incentives for system owners. That is the fastest and cheapest way forward	10/24/2021 9:30 AM
162	Would like to upgrade for efficiency but don’t have a lot of money to spare	10/23/2021 2:05 PM
163	Would like to be invoked in reductions.	10/23/2021 10:33 AM
164	I want to do everything possible to make energy use as efficient as possible.	10/22/2021 11:03 PM
165	They help achieve clean energy goals	10/22/2021 5:12 PM
166	I am ot aware of any sufficient technology to store solar and wind when they produce excess power.	10/22/2021 1:08 PM
167	I am looking at solar panels	10/21/2021 8:23 PM
168	Every avenue needs to be explored to achieve goals	10/21/2021 7:22 PM
169	Using less energy to have a comfortable home is superior to generating more. With the pop growth, we will need more energy so distributive systems in each neighborhood using solar, wind and battery storage seems like a practical solution for residential.	10/20/2021 11:18 AM
170	On our home in Bellingham Washington, we currently have 13 solar panels installed. We have been very happy with the benefits, and are looking to potentially install more solar panels on a	10/20/2021 7:56 AM

	roof. We have significant existing electrical infrastructure at our house and are interested and learning more about on-site battery storage.	
171	none	10/20/2021 7:51 AM
172	Refer to #3	10/19/2021 9:29 PM
173	Most interested in solar.	10/19/2021 9:21 PM
174	我是低收入者	10/19/2021 8:16 PM
175	Using large rooftops for solar seems wise	10/19/2021 5:04 PM
176	What we need, is cheap, alternative energies: Solar, Wind, Sea Curent, Geo Thermal to get away from coal fired electrical generation and heating	10/19/2021 2:25 PM
177	We use alot of energy being a big house hold we	10/19/2021 1:49 PM
178	Actually you donj't have the real choice up there. We always want energy efficiency, but not when options are hidden behind "stopping climate change, or the inane "carbon footprint". I'm tired of politicials acting as pimps and prostituting scientists to keep them from working on the real problem.	10/19/2021 1:47 PM
179	-	10/19/2021 1:05 PM
180	因為倚靠太陽的日子不多。	10/19/2021 12:31 PM
181	Solar on every roof!	10/19/2021 9:38 AM
182	You didn't include an option for "NONE". Your job is to provide plentiful power at an affordable price. This is the second worse state for solar after Alaska. Battery storage is dangerous, expensive and inefficient. You do not have a option for Nuclear. I'm not interested in social programs for the "vulnerable"	10/19/2021 9:28 AM
183	So far only rich people have solar panels on their roofs. And the government has paid 1/3 of the cost. This is unsustainable.	10/19/2021 9:22 AM
184	we need support	10/19/2021 9:14 AM
185	At this stage, already 20 years too late, should progress on EVERY LEVEL. Anything and everything we can possibly do should be done RIGHT NOW. This is an URGENT SITUATION! BY 2025 the entire planet's weather pattern will be irrevocably changed, the Atlantic current will have totally changed, already measurable NOW,	10/18/2021 5:06 PM

Q6 Do you think the draft programs and actions listed increase access and affordability of clean electricity, particularly for vulnerable populations?

Answered: 290 Skipped: 11



ANSWER CHOICES	RESPONSES	
Strongly agree	26.55%	77
Somewhat agree	37.59%	109
Somewhat disagree	7.59%	22
Strongly disagree	8.97%	26
Not sure	19.31%	56
TOTAL		290

Q7 Please explain your answer.

Answered: 164 Skipped: 137

#	RESPONSES	DATE
1	A product does not mean there is a trained, and sufficiently available, workforce for installation and maintenance.	12/1/2021 10:18 AM
2	I think it is a hit and miss	12/1/2021 10:12 AM
3	Planning	12/1/2021 10:08 AM
4	Did not visit programs	11/30/2021 4:50 PM
5	Very good draft for us seniors	11/30/2021 4:41 PM
6	Battery storage	11/12/2021 10:10 PM
7	That seems to be strongly the intention. I think getting target communities to know about the available resources and overcome any unseen barriers to access can be a big issue.	11/12/2021 7:20 PM
8	Again, the presentation made it difficult to acquire exactly what was planned.	11/12/2021 6:57 PM
9	The focus on vulnerable populations is virtue signaling. Focus on rational economics instead.	11/12/2021 4:46 PM
10	You are going to reach people, though will it be affordable. Probably not at first.	11/12/2021 4:20 PM
11	More expensive generating methods take money OUT of the economy, hurting more than just the poorest members. We need to grow the economy making things of value not wasting money on unreliable expensive energy production.	11/12/2021 1:42 PM
12	I did not see any specific information that would reassure me.	11/12/2021 12:36 PM
13	Sorry, it was a lot of material to cover and I did not reveiw everything. In general the green energy ideas are going to drastically increase costs.	11/12/2021 11:31 AM
14	I don't know enough about solar on a property next to DNR property with very tall trees. I need to learn more before I strongly agree.	11/12/2021 11:27 AM
15	Dependent on your engagement with communities	11/12/2021 11:19 AM
16	Answers list in question 1.	11/12/2021 10:51 AM
17	Although local public housing authority's refer subsidized tenant to energy assistance funding, they do little to support conservation or weatherization. The tenants are left to pay.	11/12/2021 8:05 AM
18	I hope so, but vulnerable populations often rent property rather than own and will be at the mercy of landlords when it comes to applications such as these. What kinds of options can you afford these people?	11/12/2021 7:48 AM
19	PSE's plans, if pursued, would be both costly and ineffective. BEvs (although smart for defined-radius transportation) will be the first area to fail. Can provide many reasons if interested. Adivise PSE not ignore inputs as this.	11/12/2021 7:43 AM
20	The future will tell.	11/12/2021 6:04 AM
21	Renewables will be cheaper in the long term	11/12/2021 5:58 AM
22	No cost estimated have been published. Why don't you start with a small pilot program somewhere else first to determine the efectiveness and costs.	11/11/2021 9:43 PM
23	I would say strongly agree except I do not feel I have enough information to do so, this is an answer best comijng from those populations, not me	11/11/2021 6:41 PM
24	Not sure vulnerable populations are aware or have access to information.	11/11/2021 5:51 PM
25	This is a non issue to me.	11/11/2021 4:44 PM

26	Again I think this is a good start but details are too vague to really say with certainty. I like the idea of community shared solar and energy efficiency programs. It depends on the level of outreach and help each family recieved. In my community there is a lot of burning being done to heat homes which impacts air quality substantially. If sufficiently implemented, these programs would be a huge help to our community.	11/11/2021 4:39 PM
27	I am not sure what the vulnerable populations need, and how they can participate in the planned programs.	11/11/2021 4:38 PM
28	Yes, I believe that the programs adequately address the needs of vulnerable populations.	11/11/2021 4:31 PM
29	It seems you covered taking care of the demographic in your plan.	11/11/2021 4:31 PM
30	Yes these problems are the best.	11/11/2021 4:13 PM
31	Son buenos si se pudieran llevar a cabo	11/11/2021 3:37 PM
32	It is stated that energy bills will increase.	11/11/2021 3:12 PM
33	Focus is too much just on "vulnerable populations" and not other customers.	11/11/2021 2:28 PM
34	Just not sure about the specifics of how the programs will be accessed, or how affordable they will be.	11/11/2021 2:26 PM
35	I need the financial help	11/11/2021 12:11 PM
36	Need more information on the system cost x	11/11/2021 12:00 PM
37	It sounds like it is starting to be worked on. As those groups and individuals are identified there can start to be cooperation and flow of dialog to pinpoint issues.	11/11/2021 11:26 AM
38	If it is affordable.	11/11/2021 10:29 AM
39	Depends on the residents too	11/11/2021 9:21 AM
40	Because everything we do as a community helps	11/11/2021 8:24 AM
41	Energy costs will rise and elderly populations are usually on fixed incomes.	11/11/2021 8:22 AM
42	If these drafts materialize, it will give the people opportunity to see and know more about clean electricity. It is always best to see it vs. reading and imagining and	11/11/2021 12:45 AM
43	Why is everything for the vulnerable population, what about the rest of us?	11/11/2021 12:27 AM
44	It has been said that it takes a village to succeed and we have thousands of villages to work together.	11/10/2021 11:18 PM
45	As every scam scheme, this one will affect "vulnerable populations" the worst.	11/10/2021 10:23 PM
46	Not sure	11/10/2021 9:58 PM
47	Leased equipment is just a way to create further dependence. This program should be subsidized and or lease to own at the bare minimum	11/10/2021 9:35 PM
48	Not certain that the costs will be lower.	11/10/2021 9:23 PM
49	It sounds good. And the data as it gets implemented will tell us more.	11/10/2021 9:10 PM
50	Increases affordability for vulnerable which means it is going to cost me more.	11/10/2021 8:22 PM
51	Lowering the consumer cost of clean energy will be vital to buy-in from vulnerable populations.	11/10/2021 8:22 PM
52	They might - don't see any commitments about affordability of clean energy for vulnerable populations.	11/10/2021 7:53 PM
53	Was not given adequate time to review.	11/10/2021 7:42 PM
54	Including low income communities (rural)	11/10/2021 7:14 PM
55	Again, nuclear power has failed to be included in the CEIP.	11/10/2021 6:39 PM
56	They pretend to, but they are unrealistic.	11/10/2021 6:14 PM
57	An increase of $6/month is a lot for some families.	11/10/2021 5:42 PM

58	I don't think that even the best efforts will have complete success.	11/10/2021 5:14 PM
59	Again, it looks like more of a social-engineering attempt than actual assistance to customers	11/10/2021 4:51 PM
60	It appears that the plan is not focused on the bigger picture, rather, on equity and vulnerable populations.	11/10/2021 4:02 PM
61	We need to chage the way we use power to help those who are vulnerable	11/10/2021 4:01 PM
62	The info was laid out in a coherent manner and showed a sufficient amount of research into what needs to be done	11/10/2021 3:36 PM
63	Reality will tell	11/10/2021 3:02 PM
64	They do if the intent is to have the rest of the population with higher usage costs to offset those that are bot.	11/10/2021 2:47 PM
65	Certain populations can make anything affordable for other populations.	11/10/2021 2:24 PM
66	It all sounds good.	11/10/2021 1:57 PM
67	It's a start	11/10/2021 1:57 PM
68	Without more details on how each of the programs will work, I cannot answer more specifically.	11/10/2021 1:33 PM
69	Easy to follow diagrams and narrative with explanation provided of all terms used.	11/10/2021 1:23 PM
70	Let’s others get involved	11/10/2021 1:16 PM
71	Pienso que si	11/10/2021 1:07 PM
72	I worry that the historical tendency of investing where there is money will mean that the largest program investments will not be made based on need, but based on revenue.	11/10/2021 1:01 PM
73	Many times, what looks good on paper turns out to benefit the entity controlling the plan far more than those who must use it.	11/10/2021 1:00 PM
74	I didn't read that section	11/10/2021 12:22 PM
75	I really do not know, short of building 100% solar/wind units for low income people, how would i know	11/10/2021 12:05 PM
76	This climate change issue has been WAY overblown by the media and the current administration.	11/10/2021 12:03 PM
77	It was clear that a lot of thought went into identifying vulnerable population and mapping where they are. The ideas listed seem worth exploring.	11/10/2021 11:40 AM
78	If these people leased battery space to you they should benefit.	11/10/2021 11:21 AM
79	They have the biggest hurdle	11/10/2021 11:16 AM
80	All this is BS that would only cause taxpayer money waste	11/10/2021 11:16 AM
81	The draft program falls short of providing equitable economic opportunity to all power generators. This will decrease the amount of private citizens willing to invest into clean energy.	11/10/2021 11:07 AM
82	I have not read the whole proposal. I would think it would be hard to include everyone, especially with this inflation we have right now.	11/10/2021 11:02 AM
83	Not enough information on actual cost and benefits to the dollar amount	11/10/2021 10:57 AM
84	vulnerable populations have less access to power changing where it comes from won't fix that.	11/10/2021 10:53 AM
85	I definitely believe that conserving and efficiency of energy saves vulnerable populations money.	11/10/2021 10:52 AM
86	Access is not tied to cost per unit energy. I understand this is the mandate you operate under but see this as just putting lipstick on the pig. End game is I get to pay more for brownouts.	11/10/2021 10:52 AM
87	See answer to # 6. Unless the leading programs directly impact the residents, there is no apparent benefit to the residents.	11/10/2021 10:50 AM

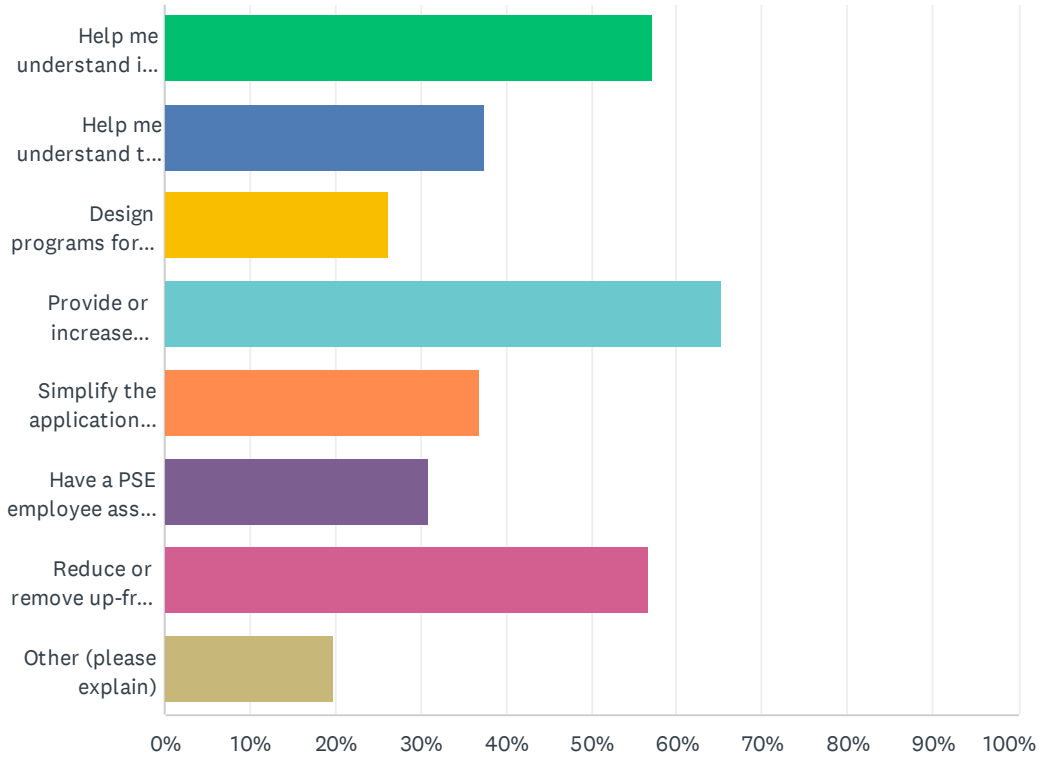
88	I’m kinda confused about this	11/10/2021 10:44 AM
89	Not sure how this fits. Nice to address but think pricing and availability needs to be fair and equitable for all.	11/10/2021 10:43 AM
90	Need more details, on paper though. I hate reading on-line. I know it's not as environmentally friendly, but I can't focus/ retain what I've read. It hurts my eyes.	11/10/2021 10:39 AM
91	You know more about it than we do!	11/10/2021 10:39 AM
92	Do not know options or how to evaluate	11/10/2021 10:38 AM
93	not sure of the afordability or reliability	11/10/2021 10:38 AM
94	To some degree	11/10/2021 10:32 AM
95	Funding not explained.	11/10/2021 10:32 AM
96	Improving the infrastructure and energy efficiency makes it possible for vulnerable populations to experience this as well	11/10/2021 10:30 AM
97	It sounds good in writing, but what would the cost be to the consumer to rent the battery?	11/10/2021 10:25 AM
98	no one is going to read the entire list	11/10/2021 10:23 AM
99	people need a clear vision & incentives.	11/10/2021 10:21 AM
100	I really don't know.	11/10/2021 10:20 AM
101	it's a step in the right direction	11/10/2021 10:13 AM
102	Not completely sure of how these populations will be convinced to be involved.	11/10/2021 10:13 AM
103	I'll wait and see	11/10/2021 10:11 AM
104	No enough detail	11/10/2021 10:11 AM
105	Reducing energy costs is biggest factor for this group.	11/10/2021 8:58 AM
106	不但节省能源,降低用量的消费,有助于弱勢族群	11/8/2021 1:11 PM
107	Not enough detail about the actual costs of these programs as of yet.	11/7/2021 8:31 AM
108	Looks like they should. Seems like access is generally pretty available . Cost likely will increase but that's inevitably going to be part of the price of cleaning-up the atmosphere. Truly vulnerable populations should be helped but how that'd be administered is a quagmire.	11/6/2021 11:56 AM
109	Proof will be in the delivery, but the plan looks good.	11/5/2021 2:46 PM
110	If you were to spend half the time and money you are on the clean energy fantasy, into clean carbon technology we would be in a better place	11/5/2021 1:03 PM
111	Muy de acuerdo	11/5/2021 12:54 PM
112	It’s good ‘talk’; I hope it comes to pass.	11/4/2021 3:40 PM
113	Specific actions in the programs address affordability and access.	11/4/2021 3:24 PM
114	Se reduciría el bioxido De carbon que tanto està afevtando a nuestro planeta u porvende nuestra salud	11/4/2021 9:21 AM
115	Vulnerable populations are focused on surviving more than thriving. You will need an excellent outreach program to make it happen.	11/4/2021 8:09 AM
116	Đảm bảo công bằng cho các đối tượng sử dụng có thu nhập thấp.	11/4/2021 6:07 AM
117	Yes they do	11/4/2021 2:48 AM
118	It isn't clear to me how these programs would help affordability.	11/4/2021 1:37 AM
119	不知道	11/3/2021 9:22 PM
120	they appear well thought out	11/3/2021 8:07 PM
121	The programs seem to be geared to all	11/3/2021 7:59 PM

122	people health is a stake. if we had icsolated purified eergywe would not worry about tixic chemicls in the air effecient.ngs would be alot better. there are alot of people and from different places, our energy shoild be clean and effercent	11/3/2021 7:49 PM
123	Es un apoyo así las familias que trabajan día a día para poder solventar sus gastos.	11/3/2021 7:17 PM
124	N/a	11/3/2021 7:01 PM
125	Pudding	11/3/2021 6:30 PM
126	There is no way to transition to cleaner energy _unless_ the cost of energy increases 3-5 times. So _increasing_ affordability looks totally unrealistic, the best outcome - is to keep it where it is for vulnerable populations...	10/31/2021 10:20 PM
127	Not sure about affordable?	10/31/2021 9:15 AM
128	I don't think the vulnerable really care about where their electricity comes from, it is more about the price and can they afford it.	10/31/2021 6:31 AM
129	The easiest way to improve access is to end utility use of fossil fuels.	10/30/2021 10:52 PM
130	Programs look well thought out.	10/30/2021 11:53 AM
131	PSE’s timeline is fast if compared with other utilities. Of course I want to know why it will take 5, 10, and 15 years to transition	10/28/2021 8:10 PM
132	While we agree on democracy and helping lower and middle classes, political terms such as equity, diversity, inclusion and sustainability (church of Globalist eugenics. Top of the “elitist privilege”) are unacceptable period!	10/28/2021 7:50 PM
133	It is important to inform all people about this program in ways they can come to understand and participate in it and see the benefits of doing so.	10/28/2021 10:44 AM
134	El recibo debería ser en función de los ingresos mensuales de la unidad familiar	10/27/2021 4:25 PM
135	The CEIP seems very thorough, with a strong balance of focus on people, technology AND education!	10/27/2021 1:51 PM
136	no soy experta en el tema pero el proyecto anuncia buenos beneficios para toda la comunidad y el medio ambiente	10/26/2021 1:21 AM
137	Es difícil cubrir a toda la población. Es como el internet. Hay lugares en los que aun no hay acceso.	10/25/2021 10:52 PM
138	I see PSE's efforts in these areas as being tiny "window dressing" efforts when the most importing thing is that PSE 100% stop using electricity from coal and natural gas.	10/25/2021 8:37 PM
139	How much hydraulic fluid (oil) is used in a wind turbine? Is this green? How are the fiberglass blades disposed of, when their lifespan is up? Clean and green energy is not clean and it is not green. The cost of a wind turbine increases 20-35% by the time it reaches the end of it's lifespan. Do the turbine blades get recycled? How many turbine fires are their/year? What type of toxins are released into the atmosphere during every turbine fire?	10/24/2021 2:06 PM
140	no details	10/24/2021 2:01 PM
141	Renters doing stay in one location long, so how can they benefit from a long term investment?	10/24/2021 9:30 AM
142	I appreciate making things affordable for the vulnerable population but those that fall in the middle have their own expenses plus pay for the vulnerable which doesn’t make us in a much better off position	10/23/2021 2:05 PM
143	Do not find myself in their shoes.	10/23/2021 10:33 AM
144	The steps you mention are a good start.	10/22/2021 11:03 PM
145	Iknow that hydro is clean, green and much cheaper than wind and solar. Why are you not increasing your hydro power resources for cheaper energy??	10/22/2021 1:08 PM
146	There should be an option for electric free, financed by extra energy collected via solar panel	10/21/2021 8:23 PM
147	Draft plans and actual execution often vary in results	10/21/2021 7:22 PM

148	I am not clear how this would work. A lot of nice words but not really clear on how those words change things.	10/20/2021 11:18 AM
149	I am sure PSE will do its very best to ensure equity for all impacted customers. I also know that policy implementation can be fraught with unintended consequences. I wish PSE every possible success in its implementation	10/20/2021 7:56 AM
150	none	10/20/2021 7:51 AM
151	There’s no discussion about cost to lower income and disadvantaged communities.	10/19/2021 9:29 PM
152	Solar is expensive compared to its efficiency.	10/19/2021 9:21 PM
153	我们一起努力	10/19/2021 8:16 PM
154	At the current rate that our atmosphere is changing, (bad storms, hotter summers, etc) we need to change now, not later	10/19/2021 2:25 PM
155	Any way we can come up saving energy is great	10/19/2021 1:49 PM
156	First, I object o those you call vulnerable. Someone over a certain age is not automatically "vulnerable". Plus I see nothing here that improves acdess or affordability. Those terms are a smoke screen for the real agenda.	10/19/2021 1:47 PM
157	Do more, sooner.	10/19/2021 1:05 PM
158	Yes, it seems that the focus is to assist more low-income individuals than other populations. These programs should be available to all populations regardless of income levels.oth	10/19/2021 12:59 PM
159	很難做到普及性,需要政府配合,協助和降低弱勢族群的負擔能力。	10/19/2021 12:31 PM
160	There needs to be a push to get solar on every roof.	10/19/2021 9:38 AM
161	Your definition of clean is wrong, CO2 is not pollution. Closing coal plants will result in less not more power that reduces "access" and affordability. To make it more affordable you need to build more production, Nuclear, clean coal, Nat Gas, Hydro.	10/19/2021 9:28 AM
162	We have ignored nuclear energy in this country. (The military has used nuclear fuel for submarines and big ships for 50 years with very few problems.	10/19/2021 9:22 AM
163	it's 100% clear	10/19/2021 9:14 AM
164	This will not affect the homeless, which is going to be a growing problem in years to come, when the people being currently evicted are living in the streets.	10/18/2021 5:06 PM

Q8 How can we help you and others participate in clean electricity programs? Select all that apply.

Answered: 287 Skipped: 14



ANSWER CHOICES	RESPONSES	
Help me understand if I qualify for programs	57.14%	164
Help me understand the benefits of participating in clean electricity programs	37.63%	108
Design programs for people who rent their homes	26.13%	75
Provide or increase financial incentives for customers to participate	65.16%	187
Simplify the application process	36.93%	106
Have a PSE employee assist customers with the application process	31.01%	89
Reduce or remove up-front costs, if applicable	56.79%	163
Other (please explain)	19.86%	57
Total Respondents: 287		

#	OTHER (PLEASE EXPLAIN)	DATE
1	Work with groups like Opportunity Council or DSHS to mainstream access to low-income families.	12/1/2021 10:18 AM
2	Do not know anything about them	11/30/2021 4:50 PM

3	Simplify and say who, what, where, when, why, and how. (And how much.)	11/12/2021 6:57 PM
4	you can not	11/12/2021 5:36 PM
5	No opinion.	11/12/2021 4:46 PM
6	Nuclear and gas are excellent clean energy sources.	11/12/2021 1:42 PM
7	Guarantee net metering long term and well past the 4% threshhold required by law. This will give encourage private investment in rooftop solar, leveraging private investments, federal tax credits and spurring local employment in PSE's territory. Private investment in solar + storage will reduce PSEs investments and stabilize the grid, benefitting PSE and your customers.	11/12/2021 9:02 AM
8	Make it appealing to HUD subsidized rentals.	11/12/2021 8:05 AM
9	Show me how moving to WTs and VS will effectively provide the future power demands - and why PSE champions BEVs for general-transportation	11/12/2021 7:43 AM
10	Our energy is "clean" enough. Don't change. Don't change. Don't change.	11/11/2021 9:43 PM
11	have a cost/benefit analysis for individual homeowners considering solar	11/11/2021 6:41 PM
12	More info on available grant funds for a non-profit	11/11/2021 5:51 PM
13	Stick to your core business.	11/11/2021 4:44 PM
14	More outreach so others know programs that are available to them.	11/11/2021 4:39 PM
15	The PSE employees are hard working for their customers.	11/11/2021 4:13 PM
16	Stop the current annual reset to zero for banked solar energy production.	11/11/2021 3:12 PM
17	Make MORE fast charging stations available along major transportation corridors. Many times I get to a spot and it is already occupied and there's only one charger. Trickle charging is not viable for people who are traveling.	11/11/2021 2:26 PM
18	I have asked PSE to send someone to estimate how we can improve our energy efficiency but never had anyone contact me.	11/11/2021 12:18 PM
19	Landlords who want to add solar panels to a renters roof could use a break. Especially in Seattle where, the Light bills are paid by the landlord. Of course Seattle doesn't get its electricity from PSE.	11/11/2021 12:27 AM
20	I myself will need assistance with financing and a plan to proceed exuberantly under your care. I am ready.	11/10/2021 11:18 PM
21	Leave me alone	11/10/2021 10:23 PM
22	Make it free.	11/10/2021 8:22 PM
23	Not interested.	11/10/2021 7:42 PM
24	improve the technology before forcing it on us.	11/10/2021 7:00 PM
25	Help me understand why nuclear power was not considered in the planning for clean energy sources!	11/10/2021 6:39 PM
26	Just get back into the business of producing and selling electricity and rejoice when you sell more, because that is your business.	11/10/2021 6:14 PM
27	See #9.	11/10/2021 2:24 PM
28	Have more options/incentives for landlords to update their properties.	11/10/2021 1:57 PM
29	Allow homeowners and renters to choose the most cost-effective options for their budgets and increase, rather than reduce options.	11/10/2021 1:00 PM
30	I would like a modular plan where I could build a small solar system with on site storage and then add to it as I had the money. Also access to affordable modern battery (Tesla) technology would be nice so I did not have to use an array of old lead car batteries	11/10/2021 12:05 PM
31	Mail flyers with the loan incentive info so people dont have to search for it	11/10/2021 11:02 AM

32	Build plants that efficiently generate power in a cost effective manner.	11/10/2021 10:52 AM
33	Already participating in 100% clean energy program for my residence, as well as participating in the big solar project in E. WA. My question: None of this is beneficial if the power goes out locally - that last mile (Sammamish) regularly loses power.	11/9/2021 6:01 AM
34	方便申請者在多方面不理解的手續	11/8/2021 1:11 PM
35	No se	11/7/2021 12:27 PM
36	Keep customers well-informed of your progress toward 100% renewable sourced electricity and natural gas.	11/6/2021 11:56 AM
37	Se reduce el costo de la enrjia	11/6/2021 7:00 AM
38	provide financial incentives to allow me to disconnect to you ill-conceived fantasy of carbon free power. Let the customers decide with their wallets and we will go to someone else if we had the choice.	11/5/2021 1:03 PM
39	Increase language access	11/4/2021 8:19 PM
40	Actively contact individual customers to discuss installing rooftop solar.	11/4/2021 3:40 PM
41	Help with permitting process and ROI projections.	11/4/2021 8:09 AM
42	How the program will work. And help others	11/4/2021 2:48 AM
43	Require the use of efficient climate control (e.g. heat pumps) and good insulation in new construction. Change the law to require HOA approval for the aforementioned items as retrofits to homes and condominiums.	11/4/2021 1:37 AM
44	,make it fun not a must	11/3/2021 7:49 PM
45	Have more programs. I see trials for time of use and EV charging TOU, POCs for others. But programs not generally available, including net metering for solar. Heck I have a juicenet EV charger but can't participate.	11/2/2021 3:22 PM
46	Just flat out hike electricity rates 5 times, for everybody - participation in all programs will skyrocket!	10/31/2021 10:20 PM
47	I'm not at all interested but you'll force it on everyone anyway	10/31/2021 10:44 AM
48	I don't think they really care.	10/31/2021 6:31 AM
49	By PSE 100% stop using electricity from Coal and Natural Gas so that we can ALL be part of clean electricity ALL the time!	10/25/2021 8:37 PM
50	Si los programas pueden ser para todos	10/25/2021 2:43 PM
51	Tell the truth and not follow the party clean and green lies.	10/24/2021 2:06 PM
52	Offer discounts to this that don’t qualify as vulnerable/low income as we are funding so many programs we can’t afford what we are paying for others to get	10/23/2021 2:05 PM
53	Explainhowwidn and solar power can actually benefit me with the present technology.	10/22/2021 1:08 PM
54	Review and include residential wind generation programs.	10/20/2021 11:18 AM
55	EVERYTHING HELPS	10/19/2021 9:29 PM
56	I question your definition of "clean electricity". If you produce this whatever it is, it should be easily avilable and not require all the barrier in your choices above.	10/19/2021 1:47 PM
57	I'm not interested in your "Clean" electricity programs. Your job isn't to reduce CO2, vital to life on Earth, but to provide plentiful cheap power no matter the source. Why is Hydro and Nuclear not included?	10/19/2021 9:28 AM

Q9 Do you have other comments about the draft CEIP you want to share?

Answered: 130 Skipped: 171

#	RESPONSES	DATE
1	No	12/1/2021 10:23 AM
2	No	11/30/2021 4:50 PM
3	no	11/30/2021 4:41 PM
4	Can a generac type generator be utilized linked to solar/wind farm in Kititas?	11/12/2021 10:10 PM
5	I would love help accessing these resources when they become available. Thank you.	11/12/2021 7:20 PM
6	I didn't have enough time to slog through it al!, as it was written in governmentese. I used to be a medical editor and it made my head hurt. Didn't find the words salmon, forest, preservation. Wonder where you're going to find solar panels, batteries, whether grid-free installations would be encouraged or made impossible. Just found this site and need more time to make useful comments. I'll bet everyone needs more time to comment.	11/12/2021 6:57 PM
7	your company leadership has drank the PC kool aid.....it is pathetic!	11/12/2021 5:36 PM
8	The CEIP draft is quite the word salad. I get it, PSE is trying to dress things up for state regulators, no matter how misguided the regulatory requirements. My prediction is the cost for this transition will be far more expensive than forecasted, and won't make one iota's different to global climate. But the people driving this will feel better, and regrettably that is valued more in today's world than a rational economic analysis. Good luck with that. As rates rise and power becomes less reliable, people will be driven by economic necessity out of the PSE service area ... and I will likely be among them.	11/12/2021 4:46 PM
9	Remember no everyone is an engineer and will likely not fully grasp all the information or concepts. Write it like you have to explain it to an individual who knows nothing about electricity.	11/12/2021 4:20 PM
10	The poor cannot afford backup generators. A dependence on unreliable solar or wind power affects the poorest the most. Drop this sham "clean" energy fiasco in the name "climate change."	11/12/2021 1:42 PM
11	Nice Job	11/12/2021 1:39 PM
12	Yes. Several years ago, I lived in a remote Olympic Peninsula home that was designed and built to be able to use a PV/battery/inverter system with generator backup to charge batteries during low solar opportunities. Reason being grid power was unavailable at the time. A great deal of thought went into building energy efficiently and sizing the system to the energy used. And the components had a finite life and required skills in maintaining them so I'm somewhat skeptical about one-size-fits-all-applications canned systems. I'm definitely supportive of the project and the need to do this, I just think it will require more time and public education that is outlined in the CEIP.	11/12/2021 12:36 PM
13	Hydroelectricity, natural gas, and even coal (can burn cleanly and use byproducts) should continue to be central to the energy supply and the energy industry should be more vocal about their value and ensure the negatives involved with solar and wind are factored when making infrastructure changes to ensure affordable, clean, and cost effectiveness are balanced.	11/12/2021 11:31 AM
14	I commend you for your plans. Keep up the good work.	11/12/2021 11:27 AM
15	We can't wait to put these steps into action. Home and building owners are eager to invest their own money in reducing the burden on the grid, and community solar will help vulnerable populations. PSE can be a leader by committing to long-term net metering and other programs that support distributed renewables, and by creating programs that support the LOCAL solar industry. And this can be done in ways that financially benefit PSE, but reducing the need/cost of building more power plants by leveraging private investments. Please don't build large	11/12/2021 9:02 AM

	solar/wind farms outside our state using large national corporations. Distributed renewables supports the communities you serve, which ultimately benefits PSE too.	
16	Good for you PSE! I personally appreciate the initiative.	11/12/2021 7:48 AM
17	Very very concerned relative PSE's advertised direction. So much to challenge. Thanks for hopefully 'listening'.	11/12/2021 7:43 AM
18	I'd like to know if there will be incentive programs for solar power available now or in the near future.	11/12/2021 6:04 AM
19	I'm in a condo, ev charging retrofit for condos and other older apartments would be great! I would have an ev right now if I had a place to charge it	11/12/2021 5:58 AM
20	Give a lot more consideration to keeping coal, natural gas, and nuclear energy. Please immediately stop all wind farms, which change the entire landscape in Washington State. Please study the possibility to generate energy from underwater tidal changes. The Puget Sound would be one of the best places to harness that potential.	11/11/2021 9:43 PM
21	Time line is grossly inadequate.	11/11/2021 9:36 PM
22	Seems like a boondoggle	11/11/2021 7:17 PM
23	I would like to see PSE do more than put a marketing spin on its requirements to meet the law i.e., CETA, rather be a leader and exceed CETA and step back from gas. Would PSE have done what is in the CETA law on its own? No. I'd like to see the CEIP plan address what PSE can and should do for the Puyallup tribe especially what commitments it will make to not building new fossil fuel infrastructure such as the LNG tank in Tacoma, or the North Seattle Lateral Upgrade, and how it is going to transition (eliminate) its residential and commercial fracked gas business. Just meeting the law and marketing that isn't sufficient, we need real leadership.	11/11/2021 6:10 PM
24	Much better understanding of programs and timelines. Thanks!	11/11/2021 5:51 PM
25	You are pandering to people that have no idea how the world really works.	11/11/2021 4:44 PM
26	I sincerely home that pse is serious about these goals and not using the moment as a pr move. We are at a critical moment that must be met with sufficient urgency. Please take it seriously.	11/11/2021 4:39 PM
27	Thank you for your efforts to make electrical power "cleaner," more readily available, and less expensive.	11/11/2021 4:38 PM
28	No	11/11/2021 4:31 PM
29	We need to do this and shorten the end goal date as progress is made and new technologies come to market.	11/11/2021 4:31 PM
30	We want a clean environment and that the electricity authorities can provide when they governments supports.	11/11/2021 4:13 PM
31	No pienso que todo los planes que tienen son favorables para la comunidad	11/11/2021 3:37 PM
32	I have rooftop solar panels and not only do I have to pay about $8/month, PSE sets the banked solar production back to zero each year. Why? I paid for the panels that produce the energy. Resetting the production credit to zero each year is stealing from me! How can you possibly justify that?	11/11/2021 3:12 PM
33	Excited to hear this is really going to finally happen😍	11/11/2021 10:29 AM
34	I thought we were based more in water power than coal. That surprised me.	11/11/2021 9:21 AM
35	I love the residential solar and battery program and more investment in wind. I strongly disagree that hydro power is green. Hydro power and dams, hold up valuable sediment that is needed to wash into our oceans. It creates a warm water sink that leads to a warming climate. It is leading to the extinction is salmon runs	11/11/2021 8:48 AM
36	Thank you, for getting this plan setup and in motion! Our futures depend on this!!!	11/11/2021 8:24 AM
37	None at this time.	11/11/2021 12:45 AM

38	What is being done to replace natural gas? When will PSE figure out that charging 15K for underground electricity is outrageous? Perhaps if PSE encouraged more underground electricity, there would be less power outages due to trees or other wind damage. Perhaps there might be less wood usage if PSE wouldn't charge so much for more dependable electricity. The CEIP is a document to make PSE look good, but not to actually help ALL customers. It emphasizes the vulnerable, makes the rest of PSE customers look like some type of rich, ugly, hoarder. PSE is not really showing a full-blown effort to change the electrical grid process, or even the Natural Gas process...it is showing a long plan of how to make itself look good in the eye of the consumer. Electricity has gone out at least 4 times in the last year, at our cabin. We were not informed that a line was down, that our meter was not working, or that the mast on our cabin had been torn down by the power line. We were sent a bill saying, our account was closed and a refund. It made no sense. Perhaps informing customers of what has happened to their electricity would be helpful? We had even called before our account was closed by PSE to find out why the bill seemed so low. We were told everything was okay. Perhaps better information to existing customers would help. In the city, we have wanted to add solar panels for years but have found them cost prohibitive. PSE only services our house for gas.	11/11/2021 12:27 AM
39	"LET PSE ENSURE YOUR FUTURE"	11/10/2021 11:18 PM
40	Great ideas and hope the development goes well and soon.	11/10/2021 9:23 PM
41	How often must renewable sources be replaced, i.e. solar panels, wind generators compared to maintaining current sources of electricity? Not interested in a clean environment if it means living like they did in the 1800's without electricity. How will the grid support all the supposed electric cars for everyone? Will there be rationed electricity?	11/10/2021 8:22 PM
42	It's aspirational and I hope that PSE will follow through.	11/10/2021 7:53 PM
43	The use of wind power is both stupid and harmful to the environment. I cringe every time I cross the Columbia River and see the wind turbines. These things are a blight on the environment and do not provide uninterruptible power. Why is there no discussion of nuclear - the only truly practical and economic non-carbon source.	11/10/2021 7:42 PM
44	As I said before you are hiding the "carbon emitting costs" of the technology and pretending you are saving a planet that has been facing climate change since the end of the ice age. And we know that if the temperatures don't fit your narrative you change the way they are recorded.	11/10/2021 7:00 PM
45	No.	11/10/2021 6:39 PM
46	Yes, I do. I will send them to ceip@pse.com.	11/10/2021 6:14 PM
47	I think we need to get started on solar power and start researching better power storage systems	11/10/2021 4:01 PM
48	An excellent start to an important program!	11/10/2021 3:41 PM
49	Well done, keep up the good work.	11/10/2021 3:36 PM
50	Share which areas of electricity production will increase when another is eliminated (e.g. when coal is discontinued what will take its place).	11/10/2021 2:47 PM
51	PSE does a good job using all the correct happy language. Now prepare an impact statement. Just be honest!	11/10/2021 2:24 PM
52	Right now it doesn't make $$ sense for me, as a landlord to install a heat pump. The cost of electricity vs natural gas and the cost of the heat pump just doesn't pencil out. That's disappointing to me. It would be great to figure out a way to offset the cost somehow, to incentivize the greener option.	11/10/2021 1:57 PM
53	Not now	11/10/2021 1:57 PM
54	It's a good first step. Don't lose momentum regardless of what the UTC decides. If they reject the plan, get back to the drawing board and come up with a plan they will endorse.	11/10/2021 1:33 PM
55	Nothing elae	11/10/2021 1:16 PM
56	No	11/10/2021 1:07 PM
57	Not at the moment, but I’m sure as the plan moves forward, I’ll have more questions. Thank	11/10/2021 1:03 PM

	you.	
58	First, thank you. We cannot reach the larger energy goals including the reduction in chemicals that promote global warming without first steps. We may be a democratic republic that focuses on capitalism, but until we see ALL of the people that use a service, we are doing them a disservice.	11/10/2021 1:01 PM
59	Throughout our history, electricity has proven to be the cleanest and most efficient energy option available, because it utilizes natural resources, such as water, to generate it. Wind and solar, while natural, have failed to generate cost-effective and safe energy because they only work under certain environmental conditions, and because the engineering of these options has not lived up to hype. In addition, solar panels and wind turbines create an environmental hazard when they wear out, since they are mostly not recyclable. Water, on the other hand, is readily available in WA state, the structures used to generate power already built and are designed for maximum power generation with minimal environmental impact. I I believe increased use of water powered electricity is the most sensible source of energy.	11/10/2021 1:00 PM
60	No	11/10/2021 12:22 PM
61	Have you ever considered creating a class for residential home owners in how to safely construct and maintain a residential solar/wind system? (The wind system I am referring to here is not the big propeller turbines, I am referring to the 5 foot high cones (goggle it).	11/10/2021 12:05 PM
62	Kudos! This was a beautiful and effective way of presenting the info. I appreciated the way this was structured and laid out. It was easy to go through at one's own pace, know where you were (halfway through? only a quarter of the way through?), and easily dive deeper for more info using the links.	11/10/2021 11:40 AM
63	Looks to me our costs will go up and yours will go down.	11/10/2021 11:21 AM
64	People who came up with this BS must be fired/voted out	11/10/2021 11:16 AM
65	I want info now on how to get a loan and set up a new roof and panels and backup batteries.	11/10/2021 11:02 AM
66	Good information that stimulates your mind to think about how important this is.	11/10/2021 10:54 AM
67	Many homes / properties could support a larger than 10k solar panel system. Why not let people have as large a system as they can support.	11/10/2021 10:53 AM
68	No other comments. I am excited to see the plan in action!! Thank you PSE for always taking care of your customers!	11/10/2021 10:52 AM
69	It sounds good, I'm especially interested in the battery programs since we already have installed solar panels	11/10/2021 10:50 AM
70	Thanks!	11/10/2021 10:39 AM
71	Unsure where hydro fits in	11/10/2021 10:38 AM
72	Why is this important. Seems there are more important issues to be solved	11/10/2021 10:38 AM
73	No	11/10/2021 10:30 AM
74	I am interested i hearing what develops.	11/10/2021 10:25 AM
75	I'm wondering what compensations I can receive if I house solar panels in the fields I use to graze my cattle and sheep	11/10/2021 10:23 AM
76	when does the discussion about burying power lines underground begin? Every gust of wind breaks a limb which falls on a wire and knocks out power for hours. this happens all year long	11/10/2021 10:23 AM
77	not really	11/10/2021 10:21 AM
78	How many problems could we solve right now if only the power lines were buried instead of being overhead where they are susceptible to wind, weather, trees, etc?	11/10/2021 10:13 AM
79	Would like to know more details about rooftop solar panel in community. Not only on residential rooftop, but also on warehouses, parking lot etc to maximize solar utilization.	11/10/2021 10:11 AM
80	Solar and wind are great, and it is a step in the right direction. Maintenance of our hydro-power system in this region are also incredibly important. Likewise, new modern nuclear systems cannot be ignored. There are safe, efficient, and modular designs available that scale up or	11/9/2021 6:01 AM

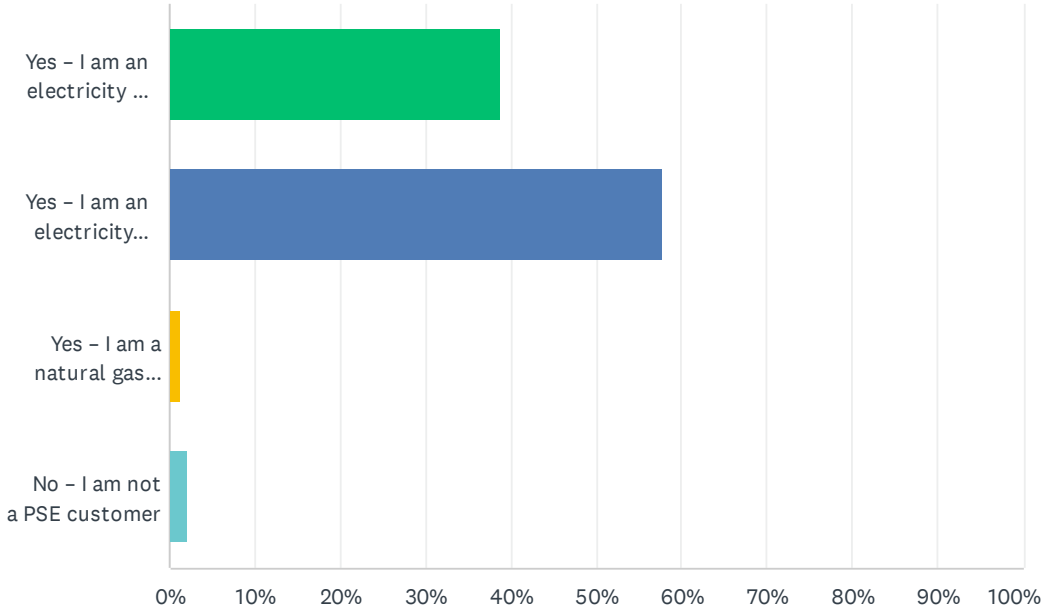
	down, as well as new processes to actually USE the waste products. Do NOT ignore nuclear as an option.	
81	沒有	11/8/2021 1:11 PM
82	No	11/7/2021 12:27 PM
83	No.	11/6/2021 11:56 AM
84	Limpieza en las líneas que no estén las remas de los árboles encima de los cables	11/6/2021 7:00 AM
85	Clean energy is a must. Appreciate what you are doing. Reminder that not all carbon-free energy is "clean." Need to be careful to minimize impacts of roads, construction, instream flows, etc.	11/5/2021 2:46 PM
86	It is sad that you will put all of your customers at risk to chase this ridiculous pipe-dream of 100% carbon-free energy. I hope I am no longer a customer of yours when the black-outs come.	11/5/2021 1:03 PM
87	Ninguno	11/5/2021 12:54 PM
88	Thank you for being proactive in addressing the issues of climate change, accessabilty and affordability.	11/4/2021 3:24 PM
89	Its a good start and I'm thrilled this is an active project.	11/4/2021 9:04 AM
90	EV's are increasing in number. Include charge point installation in your clean energy subsidy programs.	11/4/2021 8:09 AM
91	No	11/4/2021 2:48 AM
92	沒有	11/3/2021 9:22 PM
93	i would like to participate .	11/3/2021 7:49 PM
94	Non	11/3/2021 7:09 PM
95	Good program that I would like to participate in if possible	11/3/2021 6:38 PM
96	Again I am saying that not only should houses get solar panels but also Have people that can explain explain solar energy to the elderly and also and people that don't speak speak English as a first language apartment complexes so that even the people that cannot afford to honor their own home or that don't have good enough credit to get a look	11/3/2021 6:27 PM
97	I would love to see the targets accelerated and more options explored for clean energy. How about a restructure of the community solar program, it seems right now that it is just a variation of the green power program where customers pay extra to get green power. Perhaps find a way that customers can really help fund the project now but get a real benefit when it comes online. Find innovative ways to expand the DER program. I would love to have some battery to help stabilize the grid, and provide backup power, even share a generator with neighbours to recharge it in event of an outage.	11/2/2021 3:22 PM
98	I am wondering about the Negative Affects of Windmills (there are some) and if the positive outweigh the negative.	10/31/2021 2:49 PM
99	This is all ridiculous and is not about making the way you do things better. Its about money and those who control you.	10/31/2021 10:44 AM
100	A lot of energy, toxic chemicals, are used to make batteries, solar panels, composite wing turbines. Need to rethink CLEAN Nuclear Power. Save out landscapes to view, not wind turbines.	10/31/2021 9:15 AM
101	I would like to see what environmental impact is with each alternative you are showing. Like aren't the birds killed by the wind turbines, and "to produce solar-grade silicon, semi-conductor processing typically involves hazardous chemicals. Depending on the solar panel manufacturer and country of origin, these chemicals may or may not be disposed properly. Where are you obtaiining the solar panels from? And do you have a "Buy America clause" and that you are only purchasing USA-made solar panels?	10/31/2021 6:31 AM
102	The plan should be much more aggressive and move much faster to 0 carbon. Where is the discussion of two war vehicle charging and vehicle battery as DERs with compensated	10/30/2021 10:52 PM

	dispatch?	
103	No.	10/30/2021 11:53 AM
104	Thank you for making this available to the public for comment.	10/30/2021 6:02 AM
105	To comment on a CEIP that is well summarized but thereby bypasses the deeper dives and explanations is the trade off we are given if we want to maximize responses. We're smart; I hope responses don't disappoint.	10/28/2021 8:10 PM
106	All PSE customers should be proud of how PSE is taking this seriously and developing a plan wherein progress can be measured and people can participate and feel that they are a part of the solution. Eventual success will rely on everyone working together to meet these goals. The more people know what they can do to help and what the specific goals are, the better it will work. This presentation is very well put together. Thanks!	10/28/2021 10:44 AM
107	Thanks for making so much information readily available and shared while in development!	10/27/2021 9:56 PM
108	No	10/27/2021 4:25 PM
109	Re: PSE's desire to engage community-based programs, have you reached out to local faith communities or Food Banks? I suspect these are seeing many "middle-class" families, who used to be financially stable, now struggling with utilities and other living expenses. "The Silent Majority." Thanks for not neglecting them.	10/27/2021 1:51 PM
110	hacer mas publicidad e iinformar a todo el publico en general hacer que la comunidad participe dando sus puntos de vista y vicitando personalmente a comunidades que serian beneficiadasexplicando los paso a seguir y como la comunidad podria contribuir para que sea un programa exitoso	10/26/2021 1:21 AM
111	I am very disappointed that PSE continues to LIE in their draft CEIP, by, for example not providing public access to their "Temperature" hourly input data. There is NOTHING which stops PSE from releasing this data -- other than the desire to LIE to the public. Further PSE LIES when PSE makes plans to continue to use Natural Gas generation and "unspecified" power when the clear language of CETA says that PSE CANNOT use such power after 2045.	10/25/2021 8:37 PM
112	No	10/25/2021 2:43 PM
113	Comments don't really matter, since you won't be making the changes, just following the governors' signed law. This 'draft' is basically a done deal and your just going through the motions. Wind and solar aren't really clean and green and the real issues still don't get addressed.	10/24/2021 2:06 PM
114	Give power to the people to create market driven[rate of return] investments on their property. That is the fastest way to green our grid.	10/24/2021 9:30 AM
115	None	10/23/2021 2:05 PM
116	We should also do things to make hot water less costly and other ways to increase efficiency in the home (better insulation) and efficient windows.	10/22/2021 11:03 PM
117	I would be in favor of solar and wind if they could provide reliable, cheap energy with the present state of storage technology. Nothing I am aware of has explained to the public how you can achieve this.	10/22/2021 1:08 PM
118	What is the outreach for this review? We're PSE customers but I only came across this in a Facebook ad, likely because I'm in construction and generally interested in these matters	10/21/2021 7:22 PM
119	Well done!	10/20/2021 7:56 AM
120	no	10/20/2021 7:51 AM
121	Please follow through and answer questions.	10/19/2021 9:29 PM
122	I don't think you'll be able to replace coal by the deadline unless you go nuclear, and it usually takes quite a few years to bring nuclear power plants online.	10/19/2021 9:21 PM
123	没有	10/19/2021 8:16 PM
124	You're doing the "Right Thing", it's gotta be done, and like it or not, we've gotta take the bull by the horns	10/19/2021 2:25 PM

125	Climate change is the only thing both political parties get wrong. Yes there is climate change (see my remarks above) but man didn't cause it. there is such a thing as clean coal, but it isn't politically correct to even mention. Our carbon footprint isn't going to have one bit of impact on climate change. We should work on ways to use all available power sources--including petroleum and coal and nuclear---in the most efficient method possible. That is wise management and has nothing to do with the finger pointing, blame and denial of leaders about the issue that is our current situation. Unfortunately I live in a state where this is especially rampant. All that is being proposed in DC and in Olympia will make energy more costly and reduce the quality of living of all of us. And global warming will still continue.	10/19/2021 1:47 PM
126	No.	10/19/2021 1:05 PM
127	祈望有見此迫切性人士能勇往直前,為未來空氣質素努力。	10/19/2021 12:31 PM
128	Your definition of "Clean" is wrong, CO2 is not pollution. Washington is the second worse state for solar. You don't include Hydro or Nuclear for future production to replace the coal plants you are shutting off. You have no good plan to provide plentiful power and the cost will skyrocket. Including social programs from a power company is not your job -maybe assisting private charities to help those in need is fine. We need more power production to supply industry to keep it here and bring more to the state.	10/19/2021 9:28 AM
129	I want to live on clean energy as soon as possible	10/19/2021 9:14 AM
130	IT MUST MOVE FASTER! TIME TO REINVEST PROFITS INTO ACTION.	10/18/2021 5:06 PM

Q10 Are you a PSE customer?

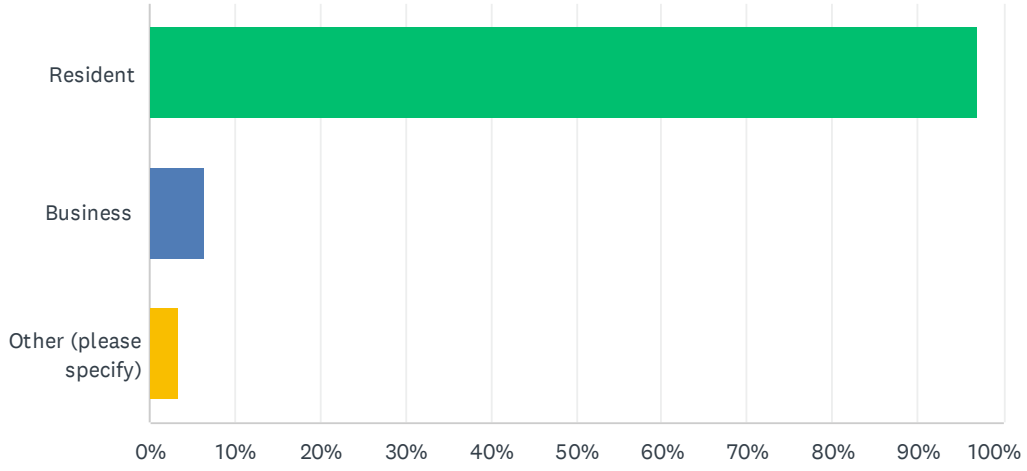
Answered: 293 Skipped: 8



ANSWER CHOICES	RESPONSES	
Yes – I am an electricity and natural gas customer	38.91%	114
Yes – I am an electricity customer only	57.68%	169
Yes – I am a natural gas customer only	1.37%	4
No – I am not a PSE customer	2.05%	6
TOTAL		293

Q11 Are you taking this survey as a resident or as a business?

Answered: 266 Skipped: 35



ANSWER CHOICES	RESPONSES	
Resident	96.99%	258
Business	6.39%	17
Other (please specify)	3.38%	9
Total Respondents: 266		

#	OTHER (PLEASE SPECIFY)	DATE
1	Disabled (violent crime), living in subsidized housing and advocating for my community and environment.	11/12/2021 8:07 AM
2	Concerned at-large individual	11/12/2021 7:49 AM
3	Resident	11/11/2021 4:17 PM
4	Have rental homes	11/11/2021 2:29 PM
5	Landlord	11/11/2021 12:31 AM
6	50 YEARS IN ONE HOUSE SERVICED BY PSE	11/10/2021 11:28 PM
7	As both a resident, and an officer of a non-profit that owns and operates a Library building in Manchester WA	11/10/2021 3:42 PM
8	both and a landlord	11/10/2021 1:59 PM
9	Y como Ciudadano consciente d que nos sumemos al cambio: Cuidemos de Nuestro Planeta.	10/29/2021 2:31 PM

Q12 What is your ZIP code?

Answered: 293 Skipped: 8

#	RESPONSES	DATE
1	98277	12/1/2021 10:26 AM
2	98277	12/1/2021 10:24 AM
3	98277	12/1/2021 10:19 AM
4	98277	12/1/2021 10:15 AM
5	98277	12/1/2021 10:13 AM
6	98277	12/1/2021 10:10 AM
7	98277	12/1/2021 10:07 AM
8	98260	12/1/2021 10:03 AM
9	98277	11/30/2021 4:52 PM
10	98277	11/30/2021 4:47 PM
11	98277	11/30/2021 4:43 PM
12	98277	11/30/2021 4:37 PM
13	98225	11/12/2021 10:11 PM
14	98253	11/12/2021 7:22 PM
15	98028	11/12/2021 7:00 PM
16	98332	11/12/2021 5:39 PM
17	98273	11/12/2021 4:47 PM
18	98237	11/12/2021 4:20 PM
19	98105	11/12/2021 3:25 PM
20	98031	11/12/2021 1:44 PM
21	98335	11/12/2021 1:39 PM
22	98366	11/12/2021 12:37 PM
23	98036	11/12/2021 11:32 AM
24	98237	11/12/2021 11:30 AM
25	98058	11/12/2021 11:22 AM
26	98055	11/12/2021 10:52 AM
27	98274	11/12/2021 9:03 AM
28	98237	11/12/2021 8:16 AM
29	98370	11/12/2021 8:07 AM
30	98276	11/12/2021 7:50 AM
31	98230	11/12/2021 7:49 AM
32	98503	11/12/2021 7:42 AM
33	98371-6629	11/12/2021 6:08 AM

34	98198	11/12/2021 5:58 AM
35	98579	11/11/2021 10:42 PM
36	98506	11/11/2021 9:45 PM
37	98226	11/11/2021 9:37 PM
38	98031	11/11/2021 9:18 PM
39	98226	11/11/2021 9:07 PM
40	98239	11/11/2021 7:18 PM
41	98237	11/11/2021 6:53 PM
42	98221-8663	11/11/2021 6:43 PM
43	98236	11/11/2021 6:10 PM
44	98597	11/11/2021 5:54 PM
45	98027	11/11/2021 4:45 PM
46	98042	11/11/2021 4:40 PM
47	98052	11/11/2021 4:40 PM
48	98236	11/11/2021 4:39 PM
49	98117 and 98940	11/11/2021 4:33 PM
50	98229	11/11/2021 4:32 PM
51	98188	11/11/2021 4:17 PM
52	98516	11/11/2021 4:03 PM
53	98148	11/11/2021 3:42 PM
54	98367	11/11/2021 3:14 PM
55	98512	11/11/2021 2:29 PM
56	98370	11/11/2021 2:27 PM
57	98516	11/11/2021 12:28 PM
58	98221	11/11/2021 12:21 PM
59	98346	11/11/2021 12:13 PM
60	98579	11/11/2021 12:02 PM
61	98257	11/11/2021 11:28 AM
62	98579	11/11/2021 10:43 AM
63	98370	11/11/2021 10:30 AM
64	98372	11/11/2021 9:22 AM
65	98391	11/11/2021 8:49 AM
66	98392	11/11/2021 8:25 AM
67	98371	11/11/2021 8:24 AM
68	98506	11/11/2021 8:05 AM
69	98221	11/11/2021 7:39 AM
70	98327	11/11/2021 7:32 AM
71	98233	11/11/2021 7:15 AM

72	98516	11/11/2021 6:55 AM
73	98392	11/11/2021 5:12 AM
74	98375	11/11/2021 12:47 AM
75	98133	11/11/2021 12:31 AM
76	98372	11/10/2021 11:28 PM
77	98034	11/10/2021 10:25 PM
78	Y	11/10/2021 9:59 PM
79	98392	11/10/2021 9:36 PM
80	98233	11/10/2021 9:24 PM
81	98501	11/10/2021 9:11 PM
82	98221	11/10/2021 8:32 PM
83	98312	11/10/2021 8:24 PM
84	98312	11/10/2021 8:22 PM
85	98110	11/10/2021 7:54 PM
86	98580	11/10/2021 7:46 PM
87	98237	11/10/2021 7:16 PM
88	98516	11/10/2021 7:01 PM
89	98516	11/10/2021 6:40 PM
90	98042	11/10/2021 6:18 PM
91	98312	11/10/2021 5:47 PM
92	98312	11/10/2021 5:43 PM
93	98597	11/10/2021 5:16 PM
94	98375	11/10/2021 5:10 PM
95	98597	11/10/2021 4:52 PM
96	98346	11/10/2021 4:42 PM
97	98338	11/10/2021 4:28 PM
98	98926	11/10/2021 4:04 PM
99	98406 and 98597	11/10/2021 4:03 PM
100	98346	11/10/2021 3:56 PM
101	98513	11/10/2021 3:56 PM
102	98221	11/10/2021 3:55 PM
103	98366	11/10/2021 3:42 PM
104	98359	11/10/2021 3:37 PM
105	98371	11/10/2021 3:17 PM
106	98370	11/10/2021 3:03 PM
107	98327	11/10/2021 2:49 PM
108	98310	11/10/2021 2:33 PM
109	98576	11/10/2021 2:30 PM

110	98260	11/10/2021 1:59 PM
111	98257	11/10/2021 1:58 PM
112	98346	11/10/2021 1:37 PM
113	98233	11/10/2021 1:34 PM
114	98392	11/10/2021 1:24 PM
115	98370	11/10/2021 1:18 PM
116	98387	11/10/2021 1:12 PM
117	98110	11/10/2021 1:05 PM
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119	98579	11/10/2021 1:02 PM
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122	98340	11/10/2021 12:24 PM
123	98392	11/10/2021 12:07 PM
124	98375	11/10/2021 12:05 PM
125	98284	11/10/2021 11:42 AM
126	98342	11/10/2021 11:41 AM
127	98516	11/10/2021 11:37 AM
128	98498	11/10/2021 11:24 AM
129	98342	11/10/2021 11:18 AM
130	98346	11/10/2021 11:17 AM
131	98342	11/10/2021 11:15 AM
132	98346	11/10/2021 11:15 AM
133	98579	11/10/2021 11:13 AM
134	98221	11/10/2021 11:12 AM
135	98310	11/10/2021 11:09 AM
136	98221	11/10/2021 11:05 AM
137	98513	11/10/2021 11:04 AM
138	98274	11/10/2021 11:03 AM
139	98346	11/10/2021 10:59 AM
140	98372	11/10/2021 10:59 AM
141	98501	11/10/2021 10:54 AM
142	98277	11/10/2021 10:53 AM
143	98516	11/10/2021 10:53 AM
144	98501	11/10/2021 10:52 AM
145	98370	11/10/2021 10:52 AM
146	98372	11/10/2021 10:46 AM
147	98439	11/10/2021 10:45 AM

148	98221	11/10/2021 10:45 AM
149	98499	11/10/2021 10:42 AM
150	98312	11/10/2021 10:40 AM
151	98513	11/10/2021 10:40 AM
152	98371	11/10/2021 10:39 AM
153	98232	11/10/2021 10:39 AM
154	98390	11/10/2021 10:37 AM
155	98373	11/10/2021 10:35 AM
156	98498	11/10/2021 10:33 AM
157	98342	11/10/2021 10:33 AM
158	98337	11/10/2021 10:31 AM
159	98506	11/10/2021 10:25 AM
160	98370	11/10/2021 10:25 AM
161	98514	11/10/2021 10:25 AM
162	98342	11/10/2021 10:24 AM
163	98338	11/10/2021 10:22 AM
164	98383	11/10/2021 10:22 AM
165	98373	11/10/2021 10:21 AM
166	00000	11/10/2021 10:18 AM
167	98092	11/10/2021 10:14 AM
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169	98221	11/10/2021 10:14 AM
170	98110	11/10/2021 10:12 AM
171	98327	11/10/2021 10:12 AM
172	98221	11/10/2021 10:11 AM
173	98580	11/10/2021 10:08 AM
174	98188	11/10/2021 9:00 AM
175	98926	11/9/2021 3:48 PM
176	98075	11/9/2021 6:02 AM
177	98370	11/7/2021 3:42 PM
178	98023	11/7/2021 12:30 PM
179	98042	11/7/2021 8:32 AM
180	98512	11/6/2021 11:57 AM
181	98103	11/5/2021 2:48 PM
182	98042	11/5/2021 1:05 PM
183	98092	11/5/2021 12:55 PM
184	98058	11/5/2021 8:28 AM
185	98002	11/5/2021 3:39 AM

186	98198	11/5/2021 12:39 AM
187	98229	11/4/2021 8:20 PM
188	98003	11/4/2021 3:54 PM
189	98327	11/4/2021 3:42 PM
190	98055-3579	11/4/2021 3:25 PM
191	98030	11/4/2021 9:24 AM
192	98032	11/4/2021 9:05 AM
193	98003	11/4/2021 8:42 AM
194	98055	11/4/2021 8:10 AM
195	98058	11/4/2021 7:09 AM
196	98030	11/4/2021 6:10 AM
197	98001	11/4/2021 2:51 AM
198	98198	11/4/2021 1:39 AM
199	98056	11/4/2021 1:34 AM
200	97216	11/3/2021 9:24 PM
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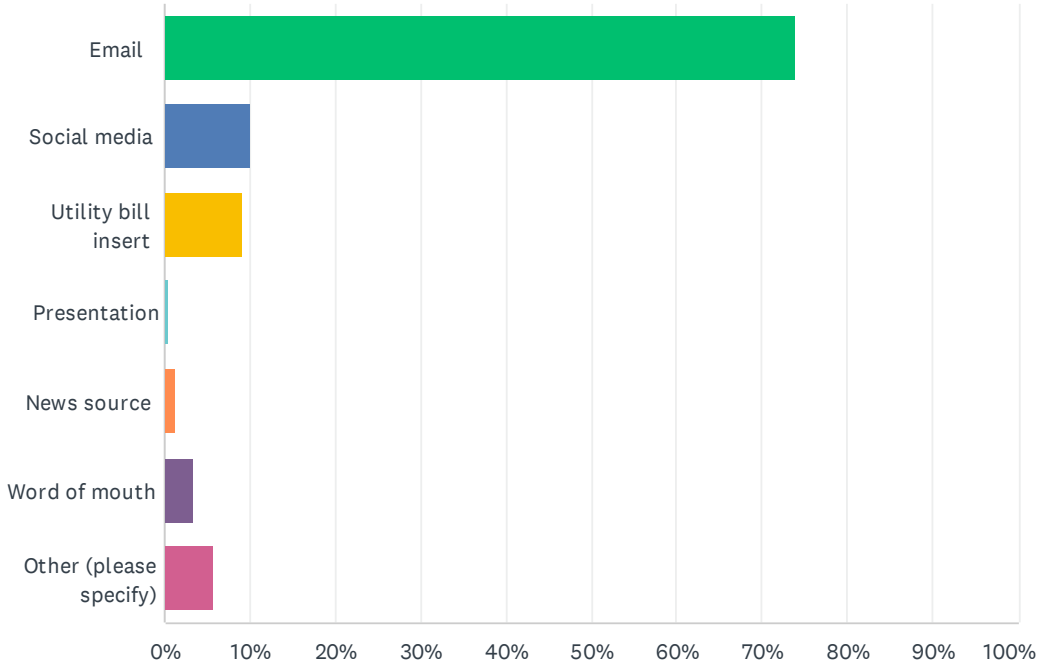
202	98327	11/3/2021 8:12 PM
203	98031	11/3/2021 8:08 PM
204	98226	11/3/2021 8:00 PM
205	98003	11/3/2021 7:50 PM
206	98226	11/3/2021 7:47 PM
207	98516-2132	11/3/2021 7:28 PM
208	98032	11/3/2021 7:20 PM
209	98059	11/3/2021 7:18 PM
210	98031	11/3/2021 7:12 PM
211	98030	11/3/2021 7:02 PM
212	98273	11/3/2021 6:41 PM
213	98310	11/3/2021 6:39 PM
214	98597	11/3/2021 6:32 PM
215	98032	11/3/2021 6:32 PM
216	98031	11/3/2021 6:29 PM
217	98188	11/3/2021 6:14 PM
218	98003	11/3/2021 6:13 PM
219	98122	11/3/2021 12:39 PM
220	98074	11/3/2021 8:18 AM
221	98055	11/2/2021 4:17 PM
222	98226	11/2/2021 3:41 PM
223	98075	11/2/2021 3:23 PM

224	98052	11/2/2021 3:02 PM
225	98225	11/1/2021 10:14 PM
226	98226	11/1/2021 12:14 PM
227	98221 and 98155	11/1/2021 9:32 AM
228	98004	10/31/2021 10:22 PM
229	98503	10/31/2021 2:51 PM
230	98338	10/31/2021 10:48 AM
231	98390	10/31/2021 9:19 AM
232	98003	10/31/2021 9:06 AM
233	98040	10/31/2021 6:32 AM
234	98033	10/30/2021 10:53 PM
235	100007	10/30/2021 5:51 PM
236	98002	10/30/2021 1:14 PM
237	98023 and 98198	10/30/2021 11:54 AM
238	98260	10/30/2021 6:03 AM
239	98003	10/29/2021 2:31 PM
240	98034	10/29/2021 2:06 PM
241	98002	10/29/2021 10:04 AM
242	98404	10/28/2021 7:54 PM
243	98022	10/28/2021 10:45 AM
244	98229	10/27/2021 9:58 PM
245	98034	10/27/2021 9:53 PM
246	98004	10/27/2021 4:25 PM
247	98042	10/27/2021 1:54 PM
248	98244	10/26/2021 4:59 PM
249	98008	10/26/2021 8:38 AM
250	98038	10/26/2021 6:41 AM
251	98056	10/26/2021 1:25 AM
252	98520	10/26/2021 12:51 AM
253	98053	10/25/2021 10:53 PM
254	98006	10/25/2021 8:38 PM
255	98115	10/25/2021 3:59 PM
256	98236	10/25/2021 12:19 PM
257	98011	10/24/2021 2:08 PM
258	98058	10/24/2021 2:02 PM
259	98502	10/24/2021 9:31 AM
260	98446	10/23/2021 2:06 PM
261	98001	10/23/2021 10:36 AM

262	98281	10/22/2021 11:04 PM
263	98034	10/22/2021 5:13 PM
264	98258	10/22/2021 1:10 PM
265	98042	10/22/2021 12:48 PM
266	78703	10/22/2021 12:42 PM
267	98028	10/21/2021 8:24 PM
268	98312	10/21/2021 7:23 PM
269	98030	10/21/2021 6:12 AM
270	98502	10/20/2021 11:20 AM
271	98225-6404	10/20/2021 7:58 AM
272	98055	10/20/2021 7:53 AM
273	98198	10/19/2021 9:31 PM
274	98030	10/19/2021 9:22 PM
275	98055	10/19/2021 8:18 PM
276	98023	10/19/2021 5:04 PM
277	98310	10/19/2021 2:26 PM
278	98031	10/19/2021 2:09 PM
279	98148	10/19/2021 1:50 PM
280	98233	10/19/2021 1:49 PM
281	97206	10/19/2021 1:23 PM
282	98055	10/19/2021 1:06 PM
283	98003	10/19/2021 1:00 PM
284	WA 98055	10/19/2021 12:33 PM
285	98023	10/19/2021 12:23 PM
286	98148	10/19/2021 12:02 PM
287	98115	10/19/2021 10:53 AM
288	98038	10/19/2021 9:39 AM
289	98226	10/19/2021 9:29 AM
290	98366 (rental)	10/19/2021 9:23 AM
291	98031	10/19/2021 9:23 AM
292	98023	10/19/2021 9:15 AM
293	98266	10/18/2021 5:07 PM

Q13 How did you learn about this survey?

Answered: 292 Skipped: 9



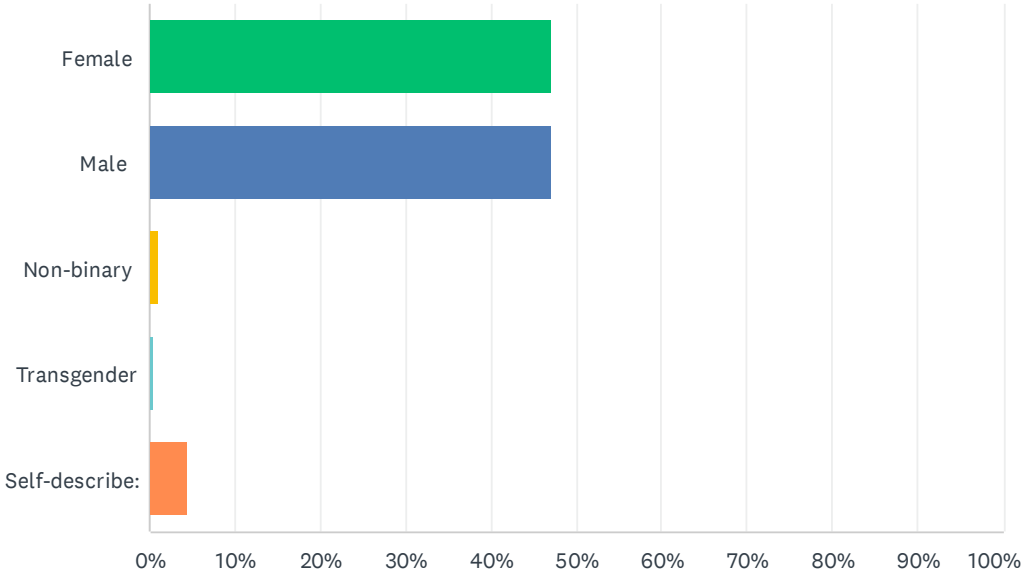
ANSWER CHOICES	RESPONSES	
Email	73.97%	216
Social media	9.93%	29
Utility bill insert	9.25%	27
Presentation	0.34%	1
News source	1.37%	4
Word of mouth	3.42%	10
Other (please specify)	5.82%	17
Total Respondents: 292		

#	OTHER (PLEASE SPECIFY)	DATE
1	Mailing	12/1/2021 10:26 AM
2	By mail	12/1/2021 10:15 AM
3	Came in mail	12/1/2021 10:13 AM
4	Opportunity council	11/30/2021 4:52 PM
5	Not sure	11/12/2021 7:00 PM
6	Basic internet research	11/11/2021 5:54 PM
7	Email from p s e	11/10/2021 12:24 PM

8	HopeSource	11/9/2021 3:48 PM
9	PSE web site	11/7/2021 3:42 PM
10	As an advertisement	11/4/2021 8:20 PM
11	stumbled on it when looking on the website for programs	11/2/2021 3:23 PM
12	website	11/1/2021 10:14 PM
13	Ran into it while looking for a heat pump rebate.	10/26/2021 4:59 PM
14	face book	10/26/2021 1:25 AM
15	Research on PSE website	10/25/2021 12:19 PM
16	PSE.com	10/23/2021 2:06 PM
17	Add in Auburn Reporter	10/23/2021 10:36 AM

Q14 What is your gender?

Answered: 285 Skipped: 16



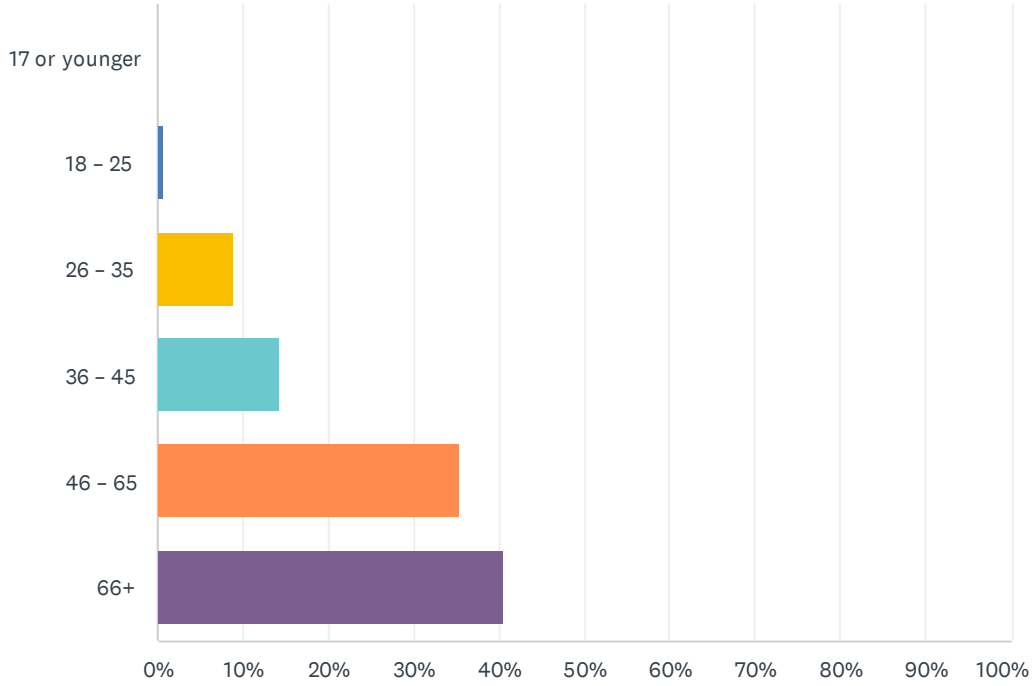
ANSWER CHOICES	RESPONSES	
Female	47.02%	134
Male	47.02%	134
Non-binary	1.05%	3
Transgender	0.35%	1
Self-describe:	4.56%	13
TOTAL		285

#	SELF-DESCRIBE:	DATE
1	Does it matter?	11/12/2021 7:00 PM
2	Male. Simply asking this question indicates YOUR bias. What difference would this make??	11/12/2021 7:49 AM
3	None of your business	11/11/2021 12:31 AM
4	N	11/10/2021 1:37 PM
5	Not pertaining to subject	11/10/2021 10:42 AM
6	NA	11/10/2021 10:18 AM
7	This shouldn't matter	11/5/2021 1:05 PM
8	Hub	11/4/2021 9:24 AM
9	Why does this matter for clean energy?	11/4/2021 8:10 AM
10	Hobbit	10/31/2021 10:22 PM
11	The fact you added all these 'genders' shows your distigusting wokeness	10/31/2021 10:48 AM

12	prefer not to answer	10/24/2021 2:08 PM
13	I am a female, determined at conception. What does this question have to do with energy efficiency or anything else! Talk about PC nonsense	10/19/2021 1:49 PM

Q15 What is your age?

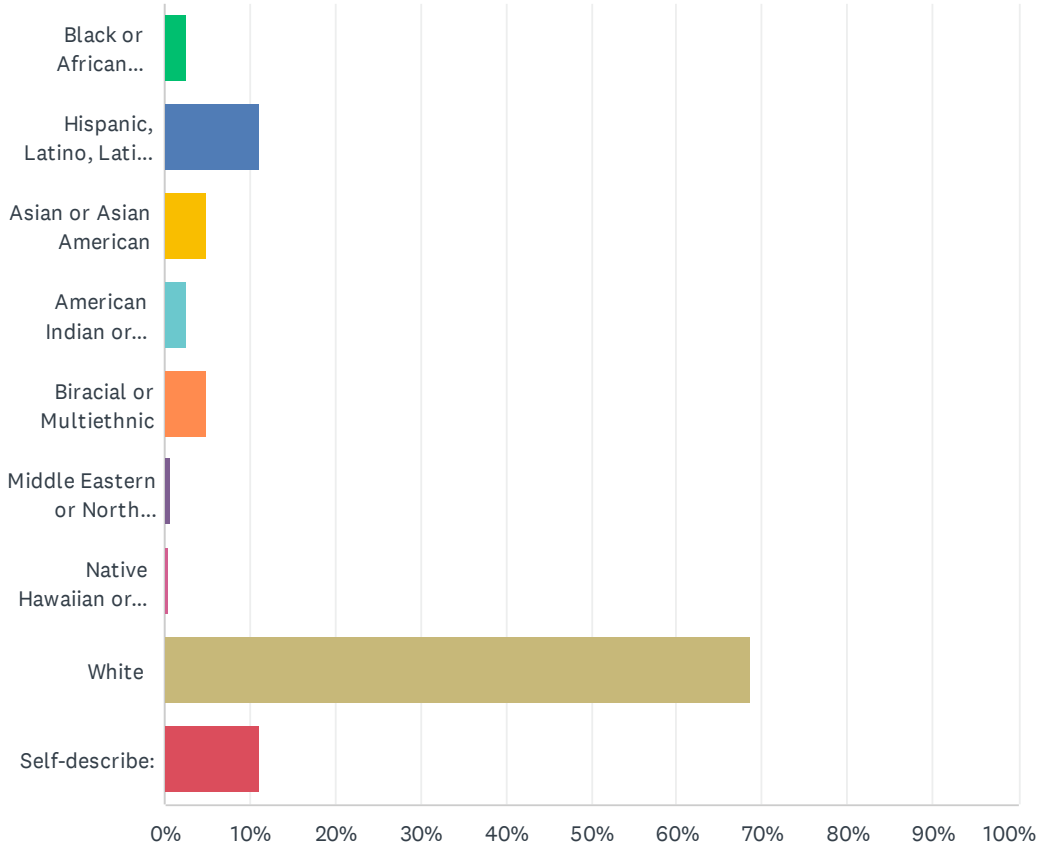
Answered: 279 Skipped: 22



ANSWER CHOICES	RESPONSES	
17 or younger	0.00%	0
18 – 25	0.72%	2
26 – 35	8.96%	25
36 – 45	14.34%	40
46 – 65	35.48%	99
66+	40.50%	113
TOTAL		279

Q16 Please indicate your race or ethnicity?

Answered: 280 Skipped: 21



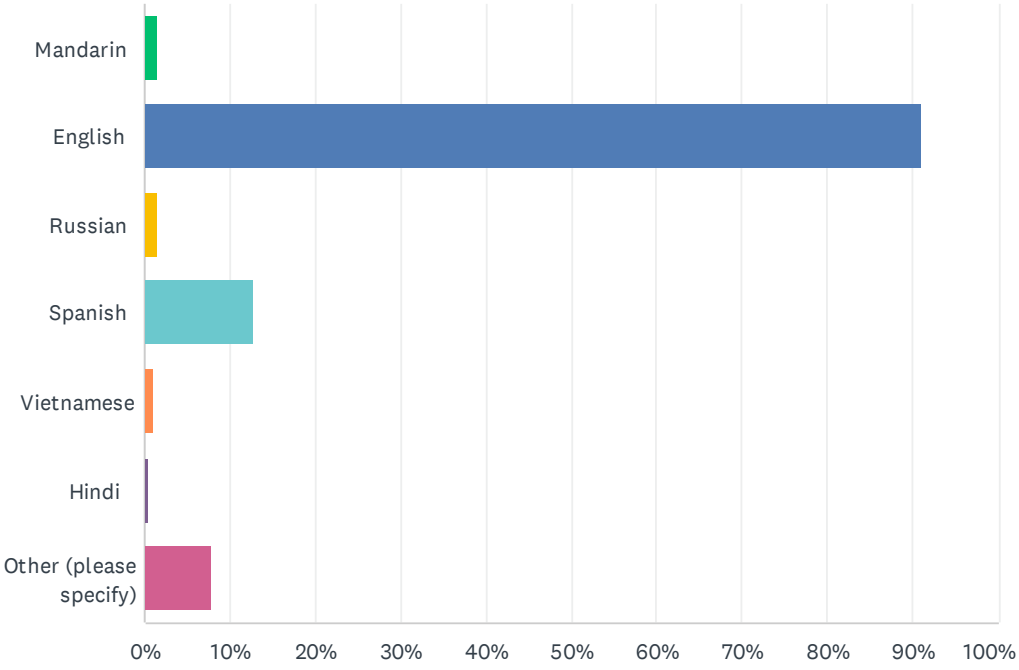
ANSWER CHOICES	RESPONSES	
Black or African American	2.50%	7
Hispanic, Latino, Latina or Latinx	11.07%	31
Asian or Asian American	5.00%	14
American Indian or Alaska Native	2.50%	7
Biracial or Multiethnic	5.00%	14
Middle Eastern or North African	0.71%	2
Native Hawaiian or other Pacific Islander	0.36%	1
White	68.57%	192
Self-describe:	11.07%	31
Total Respondents: 280		

#	SELF-DESCRIBE:	DATE
1	Human Race	11/30/2021 4:52 PM

2	Swedish and northwestern European decent	11/12/2021 7:22 PM
3	Private	11/12/2021 7:00 PM
4	American	11/12/2021 5:39 PM
5	Why should this matter?	11/12/2021 4:47 PM
6	Human	11/12/2021 1:44 PM
7	human--ethnicity is discriminatory	11/12/2021 11:30 AM
8	White. Again - per above	11/12/2021 7:49 AM
9	american	11/12/2021 7:42 AM
10	human race	11/11/2021 7:18 PM
11	not germane to this discussion.	11/11/2021 4:45 PM
12	ethnicity is irrelevant	11/11/2021 3:14 PM
13	earthling with space	11/11/2021 10:43 AM
14	Human	11/11/2021 8:24 AM
15	really fair? what does this have to do with PSE, they gonna give me a discount for being any of that?	11/11/2021 12:31 AM
16	Franco-American	11/10/2021 7:46 PM
17	Cosmopolitan	11/10/2021 2:30 PM
18	European and American Indian	11/10/2021 1:05 PM
19	White or Northern European American	11/10/2021 12:29 PM
20	Caucasian, I find "white" and "black" racially insensitive.	11/10/2021 11:13 AM
21	Not you business.	11/10/2021 10:53 AM
22	Rather not	11/10/2021 10:42 AM
23	This shouldn't matter	11/5/2021 1:05 PM
24	Why does this matter for clean energy?	11/4/2021 8:10 AM
25	Norwegian	11/3/2021 6:29 PM
26	None of your business	10/31/2021 10:48 AM
27	Why does it matter?	10/31/2021 9:19 AM
28	American. I commend PSE for their sensitivity, but in matters of public services, it makes no sense, to me, to distinguish gender or race!)	10/27/2021 1:54 PM
29	prefer not to answer	10/24/2021 2:08 PM
30	HUMAN	10/19/2021 1:49 PM
31	European	10/19/2021 9:29 AM

Q17 What language(s) do you speak at home? Select all that apply.

Answered: 280 Skipped: 21



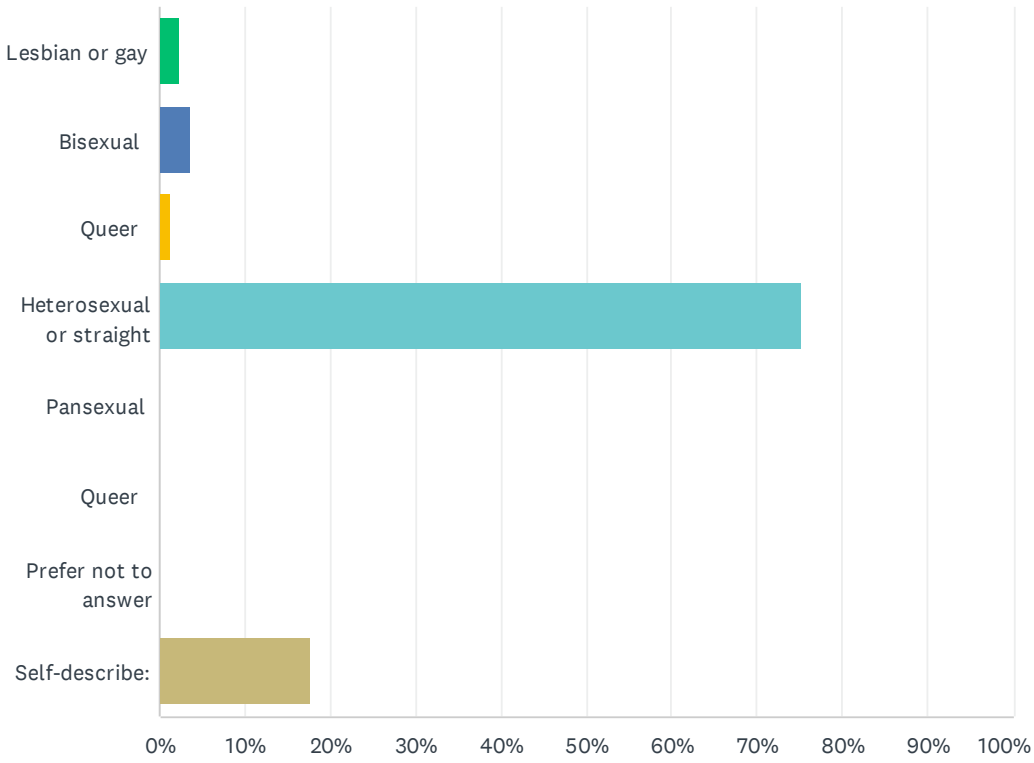
ANSWER CHOICES	RESPONSES	
Mandarin	1.43%	4
English	91.07%	255
Russian	1.43%	4
Spanish	12.86%	36
Vietnamese	1.07%	3
Hindi	0.36%	1
Other (please specify)	7.86%	22
Total Respondents: 280		

#	OTHER (PLEASE SPECIFY)	DATE
1	arabic	11/11/2021 10:42 PM
2	None of your business	11/11/2021 4:45 PM
3	japanese	11/11/2021 4:39 PM
4	Pashto	11/11/2021 4:17 PM
5	German/English	11/11/2021 10:43 AM
6	Tagalog	11/11/2021 7:32 AM
7	Filipino	11/11/2021 12:47 AM

8	whatever works at the moment	11/11/2021 12:31 AM
9	French	11/10/2021 5:43 PM
10	Hawaiian	11/10/2021 2:30 PM
11	I live in America and English is the language of our Country.	11/10/2021 12:05 PM
12	German	11/10/2021 10:14 AM
13	Chinese	11/9/2021 6:02 AM
14	This shouldn't matter	11/5/2021 1:05 PM
15	Aeabic	11/3/2021 7:12 PM
16	None of your business	10/31/2021 10:48 AM
17	Tagalog	10/28/2021 7:54 PM
18	Español	10/25/2021 3:59 PM
19	prefer not to answer	10/24/2021 2:08 PM
20	Japanese	10/23/2021 2:06 PM
21	French	10/21/2021 8:24 PM
22	廣東話	10/19/2021 12:33 PM

Q18 Do you consider yourself to be:

Answered: 250 Skipped: 51



ANSWER CHOICES	RESPONSES	
Lesbian or gay	2.40%	6
Bisexual	3.60%	9
Queer	1.20%	3
Heterosexual or straight	75.20%	188
Pansexual	0.00%	0
Queer	0.00%	0
Prefer not to answer	0.00%	0
Self-describe:	17.60%	44
TOTAL		250

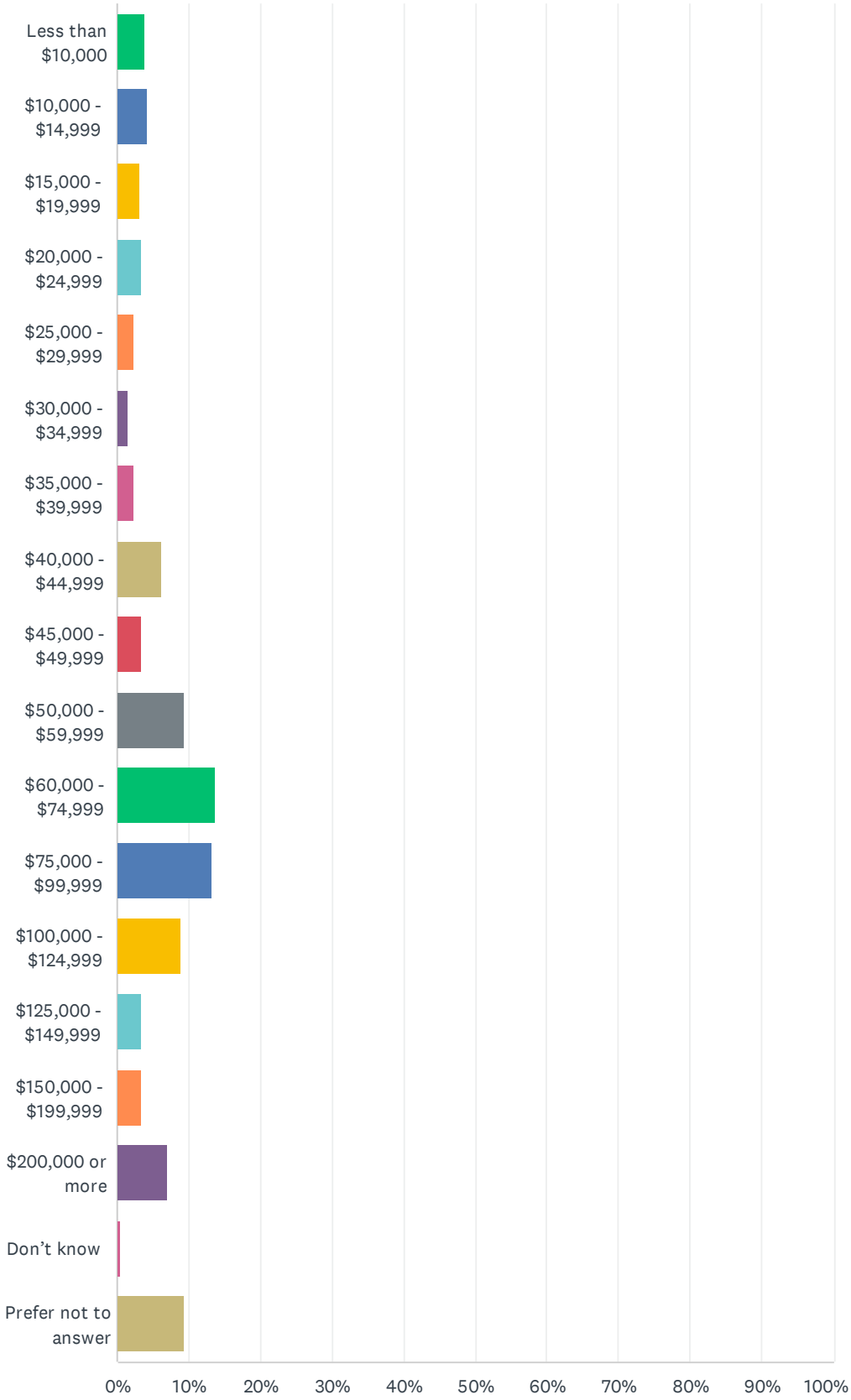
#	SELF-DESCRIBE:	DATE
1	Why should it matter?	12/1/2021 10:10 AM
2	That is my Business	11/30/2021 4:52 PM
3	Whatever. But I am a woman and have only been in romantic relationships with men, but I don't feel strongly about sexual orientation.	11/12/2021 7:22 PM

4	why does it matter	11/12/2021 5:39 PM
5	Why should this matter?	11/12/2021 4:47 PM
6	Human	11/12/2021 1:44 PM
7	why should this matter?	11/12/2021 11:30 AM
8	WOW !! 'You' do not give up, do you. Very disappointed.	11/12/2021 7:49 AM
9	none of your business	11/12/2021 7:42 AM
10	None of your business, my God, I can't believe you ask.	11/11/2021 9:45 PM
11	n/a	11/11/2021 7:18 PM
12	I consider that to be my business	11/11/2021 6:43 PM
13	None of your business. Just keep the lights on.	11/11/2021 4:45 PM
14	Straight	11/11/2021 4:17 PM
15	Irrelevant	11/11/2021 3:14 PM
16	Normal	11/11/2021 12:21 PM
17	What does this have to do with renewable energy?	11/11/2021 10:43 AM
18	Inappropriate question	11/11/2021 8:24 AM
19	Has nothing to do with PSE, none of their business	11/11/2021 12:31 AM
20	WIDOW	11/10/2021 11:28 PM
21	You must be kidding. What has this to do with electric power.	11/10/2021 7:46 PM
22	NOYB	11/10/2021 4:52 PM
23	Why would this question matter at all....	11/10/2021 4:42 PM
24	This question is absurd and have no bearing on energy issues.	11/10/2021 1:02 PM
25	This is none of your business and should not be included in a survey	11/10/2021 12:05 PM
26	Sexuality is private.	11/10/2021 11:13 AM
27	What does this question have at all to do with power consumption and energy conservation?	11/10/2021 11:04 AM
28	Seriously! Are you going to deny someone based on these	11/10/2021 10:42 AM
29	No	11/7/2021 12:30 PM
30	Seriously? This shouldn't matter	11/5/2021 1:05 PM
31	A normal person	11/4/2021 3:54 PM
32	What has this got to do with clean energy?	11/4/2021 8:10 AM
33	Totally female	11/4/2021 2:51 AM
34	None.	11/3/2021 7:12 PM
35	Female	11/3/2021 6:14 PM
36	Hobbit	10/31/2021 10:22 PM
37	Again showing your wokeness here with these sick questions	10/31/2021 10:48 AM
38	Again, Why does it matter?	10/31/2021 9:19 AM
39	Что мне выбрать???	10/30/2021 5:51 PM
40	Esta pregunta no apoya ni detiene el Cambio Climatico.	10/29/2021 2:31 PM
41	How does this apply to distribution of energy?	10/27/2021 1:54 PM

42	prefer not to answer	10/24/2021 2:08 PM
43	none of your business	10/20/2021 7:53 AM
44	I am a happy monogamous hetersexual. Please justify even asking this question.	10/19/2021 1:49 PM

Q19 Which category best describes your 2020 total household income before taxes? Please include the income of all of the people living in your home in this figure.

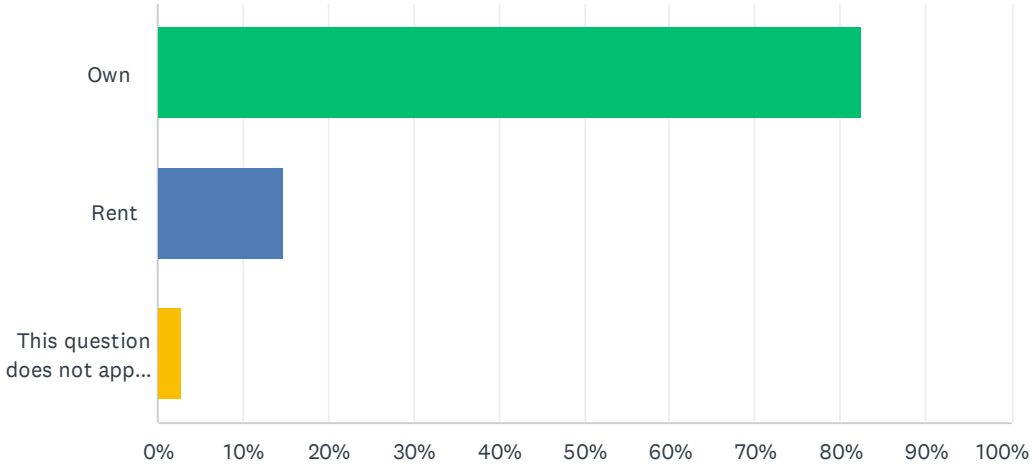
Answered: 256 Skipped: 45


Less than $10,000
$10,000 - $14,999
$15,000 - $19,999
$20,000 - $24,999
$25,000 - $29,999
$30,000 - $34,999
$35,000 - $39,999
$40,000 - $44,999
$45,000 - $49,999
$50,000 - $59,999
$60,000 - $74,999
$75,000 - $99,999
$100,000 - $124,999
$125,000 - $149,999
$150,000 - $199,999
$200,000 or more
Don’t know
Prefer not to answer
0%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

ANSWER CHOICES	RESPONSES	
Less than $10,000	3.91%	10
$10,000 - $14,999	4.30%	11
$15,000 - $19,999	3.13%	8
$20,000 - $24,999	3.52%	9
$25,000 - $29,999	2.34%	6
$30,000 - $34,999	1.56%	4
$35,000 - $39,999	2.34%	6
$40,000 - $44,999	6.25%	16
$45,000 - $49,999	3.52%	9
$50,000 - $59,999	9.38%	24
$60,000 - $74,999	13.67%	35
$75,000 - $99,999	13.28%	34
$100,000 - $124,999	8.98%	23
$125,000 - $149,999	3.52%	9
$150,000 - $199,999	3.52%	9
$200,000 or more	7.03%	18
Don’t know	0.39%	1
Prefer not to answer	9.38%	24
TOTAL		256

Q20 Do you own or rent your home/business?

Answered: 287 Skipped: 14



ANSWER CHOICES	RESPONSES	
Own	82.58%	237
Rent	14.63%	42
This question does not apply to me	2.79%	8
TOTAL		287

Draft CEIP web and email comment report

In addition to a survey, PSE collected comments on the draft CEIP via email and web comment form. The text of comments received through these sources are included in this section. Personal addresses, phone numbers and emails have been removed from the text. Any images that were submitted with comments are referenced but not included here.

PSE's responses to comments on the draft CEIP are included in Appendix C-2.

Materials in this section include the following:

- List of individual commenters
- List of organization commenters
- Email and web comments

Individuals

- James Adcock
- Martha Bishop
- Ben Blank
- Edward Bohn
- Steven Bolliger
- Ted Bookless
- Robin Briggs
- Phillip Burns
- April Chapman
- Peter Clitherow
- Michael Cox
- Ken Dickey
- Keith Dunbar
- Simon ffitch
- Ann Fletcher
- Kyle Frankiewich
- Jena Gilman
- Ram Hariharan
- Larry Hayden
- Jerry Heitzman
- Herbert Hethcote
- Colleen Hinton
- Patricia Holm
- Daveen Jones
- Kevin Jones
- Terrance Jorgensen
- Jennifer Keller
- Shana Kelly
- Joe Kieren
- Fran Korten
- Jessica Koski
- Michelle LeSourd
- Ron Lindsay
- David Mahaffy
- Don Marsh
- Jon Mathison
- Ted Matts
- Rosemary Moore
- Arvia Morris
- Larry K Nelson
- Peter Newcomb
- Anne Newcomb
- Diana Newton
- Linda Nothstein
- Linda Olchoff
- Susan Oxley
- Rob Penney
- Jim Perich-Anderson
- Annie Phillips
- Ann Posner
- Miriam Raffel-Smith
- Vincent Russo
- Jose Sahagun
- Autumn Salamack
- David Schuchardt
- Candace Smith
- Matthew Solomon
- Sulakshana
- Amy Theobald
- Tyrone Thomas
- Cecil Joe Thomlinson
- Pedro Valaverde
- Seth Vidaña
- Richard Voget
- Peter Werner
- Peter Werner
- Katherine Woolverton
- Barbara Zimmer
- Mariel Thuraisingham
- Joni Bosh
- Katie Ware
- Bill Westre

Organizations

- BlueGreen Alliance
- Front and Centered
- Northwest Energy Coalition
- Renewable Northwest
- Sierra Club
- The Energy Project
- Vashon Climate Action Group
- Washington Clean Energy Coalition
- Washington Department of Fish & Wildlife
- Washington Society of Professional Engineers
- Washington Solar Energy Industries Association
- Washington Utilities and Transportation Commission

Source: Email

Comment:

Dear Ms. Maxwell:

As a member of Sierra Club's Washington State Energy Committee and lead of the Washington Clean Energy Coalition, I participated in stakeholder meetings with Puget Sound Energy during the development of Time Varying Rate (TVR) programs that will be proposed to the Utilities and Transportation Commission as part of the company's General Rate Case early in 2022.

The concept of TVRs has been a passion of mine for at least six years, stemming partly from a debate about the need for PSE's "Energize Eastside" transmission upgrade project proposed by the company in late 2013. Organizations such as the Coalition of Eastside Neighborhoods for Sensible Energy (CENSE) have long argued that more ambitious Demand Response programs such as TVRs would delay or eliminate the need for a very expensive and damaging transmission project. PSE has always dismissed the idea, claiming that customers dislike such programs and cannot be relied upon to respond when the integrity of the Eastside grid is at stake. Successful TVR programs in other states suggest otherwise.

The Clean Energy Transformation Act has apparently compelled PSE to think differently about TVRs. In the Draft CEIP, PSE states, "This program reduces load required to meet peak capacity need and enables greater integration of renewables bringing PSE closer to 80 percent CETA compliance." We applaud PSE's change of heart, but some of the company's previous ambivalence toward TVRs is still evident.

For example, Table 4-2 includes a "50% derate for a winter-peaking system." This puzzling handicap is explained in footnote 33: "The estimated peak reduction is cut in half because PSE's system is a winter peaking system." No other detail or clarification of this consequential claim is offered.

Let's take a closer look. In the first row of Table 4-2 (shown on the next page), the third column shows an estimated 10.9% reduction for winter peaks. Why would that number be cut in half because peak demand is higher in winter than summer (the definition of a "winter peaking system")? It is hard to understand.

PSE engaged the Brattle Group, a well-respected consultant in development of TVR programs. I attended several presentations by the consultant, which were quite good. Brattle never mentioned the idea of derating peak reduction. Brattle should be asked what might justify derating both summer and winter peaks, and a thorough explanation should be provided to all stakeholders.

These programs provide a cost-effective way to manage peak demand while reducing GHG emissions and energy costs for customers. However, the current deployment schedule will not provide these benefits for many years. PSE may have incentives to slow down deployment, because a successful TVR program could delay or eliminate the need for a new peaker plant PSE wants to begin building shortly.

The Commission should seek a clear explanation for PSE's derating claims. If the claims are not reasonable, the Commission should require faster adoption of TVR programs as an effective tool to modernize our electric grid and achieve CETA targets.

Source: Email

Comment:

Dear PSE,

As a customer I feel very frustrated about my inability to use electricity without knowing much of the energy comes from burning fossil fuels. I drive an electric car and have switched to electric heat. We no longer use natural gas for heating.

There are things PSE could do to get off fossil fuels. You could expand solar in Eastern Washington. You could get more wind turbines online. Geothermal and nuclear energy are possibilities. You could implement demand response with varying rates eliminating the need for a gas peaker plant.

Our children live in a world that is being ruined by burning fossil fuels. Please think of their futures.

Source: Web comment

Comment:

I am writing on behalf of the Washington Department of Fish and Wildlife (WDFW) to request that the Draft 2021 PSE Clean Energy Implementation Plan (Plan) acknowledge the importance of project siting in the protection of wildlife habitat in Washington. We recognize that PSE faces a complex, multi-faceted task in complying with the Clean Energy Transformation Act along with other legal requirements. While this requires the development of new electric generating sources, WDFW recommends that, in the development of new energy infrastructure, the Plan emphasizes habitat protection. Specifically, we request that the Plan addresses potential impact of solar development on wildlife habitat, particularly for that of threatened and endangered species.

WDFW strongly supports efforts to decarbonize the Northwest's energy supply, and we welcome the prospect of solar energy playing a major role in our region's clean energy future. At the same time, as stewards of wildlife habitat in Washington, WDFW wants to see solar energy sited in least impact, least conflict sites so that it is compatible with conservation of shrub steppe and other valuable wildlife habitat. We request that the Plan highlight the need for solar development that is sited in a manner compatible with the protection of shrub steppe habitats.

Shrub steppe habitat in Washington's portion of the Columbia Basin is already proving highly attractive to industrial solar proponents. As of October 2021, there were 40 industrial solar proposals in Washington with a footprint of 54,000 acres or 84 square miles. Over 90% of these are in the Columbia Plateau Ecoregion, and the majority would impact the functions and values of shrub steppe habitat.

Facilities sited on shrub steppe significantly compromise the function of sagebrush and grassland ecosystems and serve to fragment and degrade habitat for deer, elk, greater sage

grouse, ferruginous hawk, pygmy rabbit, and many other species. The impacts of siting a facility on sensitive habitat are, at least as configured to date, largely unavoidable. Thus, mitigation cannot typically prevent a net loss of productive shrub steppe habitat.

WDFW recommends that the Plan acknowledge that while building new renewable energy is an urgent matter, so is assuring that it is sited in a manner that protects sensitive ecosystems like shrub steppe. Specifically, the Plan should focus solar development consistent with least conflict siting practices and by developing resources and supporting incentives for siting on brownfields, parking lots, the land of willing farmers, and rooftops, including large industrial rooftops common in the Columbia Basin (e.g., cold storage facilities, server farms, warehouses, and schools).

WDFW would be eager to be a resource for PSE as it considers locations for the development of solar infrastructure. Thank you for your consideration, and please contact me with any questions or feedback.

Source: Web comment

Comment:

I believe the plan fails on at least two counts: 1) maintaining reliability, 2) cost of electricity to consumers.

Reliability: 25 MW of battery storage is to be implemented 2022-2025. Considering battery production is already strained by the demand for electric vehicles (EVs) and projected to fall short the next few years, is it reasonable to assume that PSE can procure the batteries needed? Electric utilities must compete with the EV industry on availability and cost. Does PSE currently have contract commitments for the batteries, and at what cost?

Relying on short-term transactions to meet peak needs introduces lots of uncertainty in the grid. Does PSE have the commitments in hand, and again, at what cost?

I believe the example of California's experience with the transition-to-renewables plan is useful to cite here. CA has experienced widespread blackouts the past few years because of loss of reliability. They, too, were to rely on the same measures PSE is proposing. Having shutdown many of their fossil fuel and nuclear plants, they were not able to count on short-term transactions as they had hoped. To meet peak needs, over 30,000 diesel-fueled generators throughout the state are called upon for back-up. The result - poor reliability and an actual increase of carbon emissions instead of a reduction while the cost of electricity has skyrocketed.

Cost of Electricity: PSE rightly predicts higher costs for electricity but are the estimates too low? I ask this because every plan for transition to renewables has so far greatly underestimated the resulting costs. This is true in CA which now how the highest cost of electricity in the country, about twice the country average. This is true of every country in Europe with the exception of France which relies on nuclear for 70% of their electricity. The result of the much higher cost for electricity is driving industry from CA and reducing manufacturing competitiveness and GDP in Europe, especially in Germany, Sweden and the United Kingdom. The PSE plan must consider

the cost of lost manufacturing and jobs in Washington given these examples. What impact will this have on electricity demand and revenue base as the plan moves forward.

Source: Email

Comment:

My comments on your Clean Energy Plan are provided as follows:

Speed up the transition to clean energy. The draft CEIP does not move rapidly enough in this direction

Re-consider building a Gas Peaker Plant in 2026 and instead move forward with more battery storage options that are tied to renewable sources. If a Gas Peaker Plant is determined to be absolutely necessary then it must only burn green hydrogen or biofuel.

Please shut down existing gas plants as soon as possible and get out of any coal producing plants immediately.

More battery storage everywhere but especially at solar and wind distribution centers

Faster implementation of demand response and variable rate pricing to help even out load demand

Implement latest climate change modeling data into your projections

---

Source: Web comment

Comment:

How is it possible that you are only at 15% renewable with all of the wind and hydro we have? Wind is now the cheapest form of power, and the dams on the Columbia have to sell to you at cost, so charging customers extra for green power is just profiteering.

Source: Web comment

Comment:

I think you should update your baseline weather assumptions -- summers are hotter, people will need air conditioning. Also, I think it is a mistake to invest in gas peaker plants given our need for clean energy, and our state's coming requirements. These will just be stranded assets as the price of solar and wind continues to fall. Battery backup storage (these are also getting way cheaper) may be much more cost effective, and certainly more popular

with your customers. Please work to accelerate your plans for clean energy, the ones who are last will be the ones left holding the bag.

Source: Web comment

Comment:

your plan needs to have more unicorns

and Rainbows!!!

so..you tell people this is "Green"..I may not be smartest bulb...just saying stringing MILES..and MILES of electrical cables thru "supposed" windmil farms is

anything..but GREEN!!!!

So show me cost per maintaining or upgrading damn version installing bird killing machines ????

Source: Web comment

Comment:

Would love to have affordable solar panels on my house!

Source: Web comment

Comment:

Please do everything you can to avoid doing a gas-fired peaker plant. With intelligent use of demand management, better grid connections to dispatchable wind in say, Montana or solar in California, we can avoid that scenario. The existing HVDC BPA grid inter-tie to CA is woefully inadequate, both for sending energy north and south (in the winter). The kids and grandkids will thank you for trying to keep their world livable!

Source: Email

Comment:

Thank you for the opportunity to provide comments on the Draft PSE CEIP. It is an ambitious plan and hopefully it will help us move forward on doing our part to reduce greenhouse gas (GHG) emissions. I had two main comments:

CEIP needs to account for climate change impacts.

2. While I assume not required now, the reductions in GHG emissions from the different investment strategies need to be completed and needs to include the social cost of carbon.

CEIP needs to Account for Climate Change Impacts

A fundamental flaw in the analysis contained in the CEIP is that none of the summer or winter load forecasts account for climate change. The science is clear and there are mountains of information available from various organizations (Climate Impact Group at the UW, NOAA, USGS, etc.) that PSE could use to assist in their load forecasting.

By not considering the climate change impacts they cannot accurately determine during what periods they need energy and what are the best sources to supply that energy.

PSE does acknowledge this flaw in the CEIP in several areas. For example:

On page 23 the CEIP it states that:

- PSE's commitments for this iterative process include:

*Implementing a climate change analysis and updating resource-specific effective load carrying capability (ELCCs) as part of the updated load forecast and resource adequacy.

On page 88 of the CEIP it states that:

Phase 2 of the RFP will also include an updated load forecast, which incorporates climate change (bold added), as well as updated effective load carry capabilities of resources. This work will be used in the 2023 IRP update. PSE aims to execute contracts with shortlisted bidders by the end of 2022.

On page 209 of the CEIP it states that:

Specifically:

PSE will include the following in the Phase 2 evaluation of the 2021 All-Source RFP and 2022 Targeted DER/DR RFP analysis:

a. Climate change analysis, which will be used to update the load forecast and resource adequacy (RA) analysis in 2022.

So, while this analysis is being promised, it is difficult to accurately evaluate the current CEIP without climate changing being considered.

It is also ironic that reduction of climate change impacts is one of the main "Customer Benefit Indicators" in the document yet PSE does not include climate change impacts in its own analysis.

Greenhouse Gas (GHG) Emission Reductions

The CEIP contains several customer benefits indicators including the reduction of GHG emissions. I assume that because this is an Implementation Plan PSE is not required to provide the anticipated GHG emission reductions from its different investment options. It appears this will be done, but I would think it would make sense to provide that information sooner rather

than later in order for the public to get a chance to evaluate how the different elements contribute to reducing GHG emissions.

Source: Email

Comment:

Greetings,

I was pleased to see your outreach and Draft CEIP.

As I read the Draft, it occurs to me that it would be a good idea for a program outreach to builders.

Building low energy usage / high energy efficiency is much less expensive than retrofit.

Adding resilience battery backup and EV charging is less expensive to build in.

Getting VPP buy-in means fewer "outlier" microgrids to manage.

Planning and managing PV + Battery + EV solutions is a natural value proposition for PSE.

This could help simplify the regulatory and supplier environment and reduce customer confusion.

On a personal note, I would be interested in a household battery backup and at some point potentially working with neighbors on a (federated) microgrid solution.

In my case, I have a net-zero house and am pleased to write a small check every January covering my connection costs for the year. This is an "electric" house -- we use no propane. I hope to purchase an EV next year and have pre-installed PV and 14-50 socket, but have yet to purchase a battery-backup system. Power does not go out much, so we do not have a generator.

I suspect my wife and I are good candidates to work with to prototype your household battery strategy.

In any case I wish you good luck with your efforts.

PS: I am particularly interested in robust solutions in the face of internet outages. E.g. PS: I am particularly interested in robust solutions in the face of internet outages. E.g.

https://urldefense.proofpoint.com/v2/url?u=https-3A__cleantechnica.com_2021_10_26_high-2Drenewables-2Dsystems-2Dare-2Dscalable-2Dresilient-2Dsecure-2Dwith-2Dcommunication-2Dless-2Dcontrols_&d=DwICAg&c=2qU16x-MyLBBsjp4ZR92ow&r=Pw6HOBp4zFeNX533Rd9D4A&m=_U6gAZp3VG5KpyPFcmALlPto4qMPJcnEV2zSurBzhHvT94ikmWZIpHNX6uiZ9ZPU&s=11WOutX4e1-W4-0uLWNZIg0nzXaquskso9K-xUC2fYY&e=

Source: Web comment

Comment:

Dear Puget Sound Energy,

As part of your commitments to a sustainable energy future, I would urge the Board and the corporate leadership team at Puget Sound Energy to strongly consider "Waste to Energy" plants as part of your future energy mix. It could be a major "win-win" for the region by greatly reducing the need for landfills, would provide a major reduction in methane releases now occurring from landfills, and would provide sustained energy throughout the day and evening hours from a 24-hour waste to energy operation. These plants would provide needed energy in evening hours when solar energy is not available, and when wind reduction impacts turbines.

Waste to energy plants can be an important part of the overall energy mix for our region, and have the added benefit of providing a major reduction in landfill material costs. Well worth a look.

Source: Web comment

Comment:

Seven years ago, PSE provided my family a rebate to upgrade our electrical outlet so that we could charge our electric vehicle. My family contributes clean energy to the grid through solar panels on our roof. Individuals actions can benefit our community, and working with business and government systems can provide even wider benefit.

Being a long time PSE customer, I am very much interested in how and when PSE will transition to clean energy. I want my energy company to be a leader in doing what it takes to rapidly replace one of the biggest causes of our greenhouse gas emissions—fossil fuels. I want my energy company to benefit the well-being of the communities it serves. That means staying current on the data and effects of climate change and investing in the research needed to resolve this problem in a genuine, timely, and transparent way. It means implementing the new Clean Energy Transformation Act (CETA) faithfully and with vigor!

To that end, here are my comments on your draft plan to implement CETA

The plan is not clear enough in showing how the proposed actions will result in Net Zero by 2030. And even this goal allows 20% continued fossil fuel use through carbon offsets. Strengthen timelines to get 100% off fossil fuels much sooner than 2045.

Invest in more solar, wind, and other clean energy sources so that you can close down natural gas plants as soon as possible.

Avoid investing in the Peaker Gas Plant in 2026; that seems opposed to the clean fuel transition. If you have in mind a “cleaner” gas, how clean and cost effective will it be? There are so many unknowns at this time for that direction, when you have other cleaner alternatives which are getting more and more cost effective.

Fewer new energy sources such the Peaker Gas Plant would be needed if you increase efficiency sooner. Implement the Demand Response and Time Varying Rates Programs (pages 66-72) more rapidly. You could do this by researching other successful utilities’ programs and applying them to your own data, rather than taking four years to do a pilot.

Invest in battery storage to hold energy from non-peak time to be used at peak times. I just read an article by a high level investment advisor about energy storage being one of the best investments we can make now and into the future.

Aim to make your special Green Energy Program (from renewables for those who know about and can afford it) into the normal energy service you provide as a matter of course all of your customers!

Embracing CETA in a more forthright way is a great opportunity for PSE to show that it can be a good partner with government, that is can change with the times, and that earnestly supporting the common good will be the source of its own survival and success.

Thank you for this opportunity to share my perspective,

Source: Web comment

Comment:

I totally support clean energy. However, I don't think we have to sacrifice our landscapes in order to achieve clean energy. I refer specifically to the blemished natural viewscapes of Kittitas County, where PSE's wind factories have marred the views of mountain and desert that I have valued my entire life. There are so many more efficient forms of clean energy, including offshore wind, wave/tidal, solar, and improved efficiencies at existing hydro plants. If terrestrial wind factories must be built, they should be placed in areas with minimal impact on views, birds and the land. For instance, existing agricultural lands would be suggested as long as acceptable to the rural communities impacted. Please, we do not need to wreck we what most value about our state in order to save it.

Source: Web comment

Comment:

I would like to know what obstacles (technical, economic, policy) hold us back from moving more quickly. What would it take to move to complete renewables by 2030? To what extent has distributed generation (home PV, solar water heating, etc) been considered as a way to move more quickly?

Source: Web comment

Comment:

Renewable energy: Does hydro power meet your clean energy requirements? I know that when the wind mills produce power at times the hydro electric plants have to idle down or take units off line because wind has no storage capacity, and open slush gates to ensure sufficient water is flowing down the Columbia river. Hydro power is pennies per kilowatt to produce and maintain, but wind and solar power is more like a S1.00 per kilowatt to produce and maintain only way to sell to the public is with subsidies. Tell the truth about the costs or charge us the real price and see how much support you would get for the so called renewable clean energy. I do agree we need to have several sources of power production but for some reason no one talks about Natural Gas power plants or Nuclear plants and their costs per kilowatt. Lets have an open forum for discussion of costs and what is renewable besides wind and sun. There are uses and needs for all but discuss all along with environmental impacts and costs.

Source: Web comment

Comment:

I do not see nuclear power being considered in your CEIP and would like to know why. As a former Navy Nuclear Reactor Operator, I know it works! It doesn't require either wind or sun and has far fewer problems with regard to waste disposal than do solar panels and wind turbines! Yes, the initial cost of a reactor may be higher than the cost of either solar panels or wind turbines but far cheaper in the long run! Nuclear Power is the most feasible source of green energy and I believe it needs to be considered in your plan!

Source: Web comment

Comment:

I urge PSE to move quickly to transition to clean energy. You do not need to build a new gas peaker plant in 2026. Instead you can implement battery storage faster and use batteries to back up wind and solar sources. Shut down existing gas plants as quickly as possible. Please move ahead rapidly on substituting clean energy for your gas plants.

Source: Web comment

Comment:

Please provide more solar, wind and batteries to your mix of energy inputs. We need to transition right now, as soon as possible. Storms are getting worse, tempatures higher and fire seasons worse. Please we don't have a choice about how our electricity is produced. You control that. I have two grand-children. I want them to have a planet to live on with air and water still there for them.

Source: Email

Comment:

Subject: Why all the rebates for gas home systems and gas appliances?

If you are trying to go to clean energy, why are you pushing rebates for gas home systems and gas appliances especially for folks who are low income?

In order for everyone to switch to renewables they will have to electrify and that is best done by changing out gas home systems and gas appliances at the end of their usual lifetimes. If you are giving them rebates for new gas appliances they will be on gas for even longer.

You should instead be helping everyone to switch to renewables as quickly as possible. This will take time indeed, but you also need to be focusing on developing new technologies to implement renewables and improve batteries quicker. And helping people afford the changeover. Offer only rebates for energy efficient electric home systems and electric appliances and help with the new interior electric lines needed to power them.

Your timeline is way too long because you want to make easy money as long as you can. We do not have that time.

Source: Email

Comment:

Dear PSE officials working on the Clean Energy Implementation Plan,

Thank you for the opportunity to comment on Puget Sound Energy's CEIP. My name is Jennifer Keller and I live at [ADDRESS], Bellevue, WA 98007.

I am a PSE ratepayer, and have been watching the unfolding of COP26 with great concern. We must all do our part to make the transition to clean energy as quickly and equitably as possible.

I'm using the following acronyms: PSE = Puget Sound Energy / CEIP = Clean Energy Implementation Plan / CETA = Clean Energy Transformation Act / IRP = Integrated Resource Plan / CBI = Customer Benefit Indicator

I have a number of requests and concerns regarding the CEIP:

Move more quickly. The CEIP describes slow action in many areas. This does not align with the intent in CETA of rapidly reducing greenhouse gas emissions. PSE's plan should aim to use 100% clean energy well before 2045. The plan should not hang back with a level of 80% clean energy in the 2030 timeframe, with dirty fossil fuels making up the other 20%.

No new gas peaker plant in 2026. As scientists have clearly stated in recent reports, in the 8-9 years left between now and 2030, we must make an absolute commitment to move rapidly away from dirty fossil fuels, not toward them. Making vague claims about some kind of "clean fuel" for a peaker plant do not excuse this. This vague "clean fuel" won't be available, from everything I've seen.

Shut down existing gas plants as quickly as possible. Anyone looking at the CEIP and related plans such as the IRP should see a clear outline of how existing gas plants will be shut down as quickly as possible, and clean energy substituted. That's the energy transition we need, and why we have CETA.

Speed up the Demand Response and Time Varying Rates programs (pages 66-72). A pilot program does not need to take such a long time. Focus efforts on studying successful programs in other utilities and on reviewing your own data. Use programs such as these to shave off peak energy use, so you can avoid the need for a gas peaker plant.

Speed up implementation of battery storage. This is another important strategy for eliminating any need for a new gas peaker plant. Use batteries to back up renewables such as wind and solar.

Increase your targets for Distributed Energy Resources (DER). These valuable resources need to be part of the rapid transition outlined by CETA.

Revise the CBI metric to encompass job quality as well as job quantity. Aim to have new clean energy jobs bring benefit to highly impacted groups, and increase low income wages. As much as possible, projects should include union provisions or high-road labor standards.

For future stakeholder engagement, actively engage with impacted workers and labor unions. Use certified payroll reporting to ensure adequate labor data.

Bring your weather data up-to-date with climate change. Winters aren't as cold as they used to be, and summers are hotter. Use up-to-date data.

Don't charge costs to CETA if they're required by other statutes. Don't exaggerate costs attributed to CEIP implementation by adding in costs required by other statutes.

I would be very excited if upcoming plans from PSE show a strong commitment to move quickly into the energy future we so urgently need. I want to see plans that clearly aim for moving as quickly as possible, not following the slowest possible transition allowed by law. Possibilities are being demonstrated right now by future-oriented utilities around the country in areas such as renewables, batteries, Demand Response, and many other areas. I want to see plans from PSE that pick up on the best possibilities out there and move rapidly to make the energy transition we need.

Source: Web comment

Comment:

We need to move toward 100% green energy, but proceed with caution. For example, we need to start, by admitting certain energy sources as not green, such as hydro.

Source: Email

Comment:

Hi

I have responded twice now about our interest in solar for our home. No one has responded.

Who do I need to call to get a response?

Br

Source: Email

Comment:

Thank you for this chance to comment on your draft CEIP.

I live on Bainbridge Island, so PSE is my utility. I have reviewed the draft CEIP and find that PSE proposes to move much too slowly on shifting to renewable energy and enacting efficiency measures. We see our Earth and its people suffering right now from Climate Change. We need to move to get off of fossil fuels with a sense of great urgency.

Specifically I urge PSE to abandon plans to build a new 255 MW Gas Peaker plant in 2026. We are trying to get off of gas. This is no time to build new gas infrastructure. I realize there are vague plans to use clean fuels. The better path is not to build the plant.

Shut down existing gas plants as rapidly as possible. Do not wait for the 2045 deadline and then -- oops, fail to meet it. Our Earth is burning. Get off of gas fast.

Speed up your leisurely rates of adoption of Demand Response and Time Varying Rates. It should not take 4 years to do a pilot project. Learn from other utilities that have run successful programs.

Implement Battery Storage much faster. Battery technology is improving quickly. It can help you avoid your gas peaker plant.

Update your weather data to recognize climate change. Our peak usage is likely to be in summer, not winter. Revise your plans to recognize that shift.

Do much more on Distributed Energy Resources -- they add to the resiliency of the system.

Do not charge to CETA costs anything that is already required by a different statute.

Revise the CBI's to encourage family-wage, high quality jobs.

I look forward to a substantially revised final CEIP from Puget Sound Energy that shows that your company recognizes the imperative to get off of fossils fuels as rapidly as possible.

Thank you for your attention to these recommendations.

Source: Web comment

Comment:

Hello, to improve the CEIP, please:

Speed up the transition plan to 100% clean energy before 2045. Is there a way to do 2035?

Do not build a new gas peaker plant in 2026.

Include a plan to phase out all existing gas plants.

Prioritize battery storage and implement it faster.

Include impacted workers and union reps at the stakeholder table.

Source: Web comment

Comment:

Two questions:

1. is there a role for solar panels in farm fields? Farming can be done under the solar panels and the panels may provide shade for appropriate crops and reduce water usage.

2. Can we finally get smart meters and variable pricing so we can, for example, charge an e-car or dry clothes when demand is low and supply is high?

Thank you.

Source: Web comment

Comment:

Costs are too high; need to find a way to reduce costs. Perhaps make an option for people to pay a higher price for 100% clean energy? This would allow PSE to move towards cleaner total energy without forcing everyone to pay the costs.

Source: Web comment

Comment:

Do not sell Coalstrip Coal Mine plant in Montana as it will burn coal past the date promised to stop burning coal for Washingtonians (2025 I think). Net Metering needs to have a bigger max and %. Biomass should not be included as clean energy portfolio unless it is COMPLETELY a closed loop system. Solar power needs to be a larger mix of the clean energy portfolio. Community-scale solar needs to be encouraged and supported. DNR and other public lands need to have larger-scale solar systems installed as part of the energy portfolio.

Source: Web comment

Comment:

I have the following comments on PSE's CEIP for 2022-2025:

I applaud PSE's commitment to end its reliance on any coal by 2025. This timeline is essential given coal's high Greenhouse Gas and other polluting emissions.

Given the huge crisis facing our planet (see for example the 2021 IPCC report), a goal of 59% clean renewable electric power by 2025 is too low. PSE should step up to the plate and aim much higher by for example, investing now in construction of more solar generation facilities, windfarms and battery storage.

I applaud efforts to increase energy efficiency. However, I note that 33% of the increase in clean renewable electric power to 59% electricity sourced from clean renewable electric power by 2025 relies on energy efficiency. I am concerned that this goal will not be met by reliance on energy efficiency where much of it relies upon voluntary residential and business customer uptake to make building improvements which PSE can merely incentivize and not control. PSE has had energy efficiency programs; such a percentage increase seems optimistic, not realistic.

I also note that some of the anticipated energy efficiency will come from future pilot programs. PSE's documentation points out that, by their nature, pilot programs may not lead to significant reductions in emissions.

It is anticipated that some energy efficiency/saving will come from Demand Response programs.

• It is essential to keep all customers informed as to the most efficient times to use appliances or use less energy whether or not they sign up to a specific DR program.

• I welcome a range of Demand Response programs. PSE's CEIP documents suggest that the programs will give PSE the authority to shut off DR customers' power at certain times. This could be dangerous or highly inconvenient; customers should always have the final choice at any given time to retain power.

The plan estimates that 60.7% of the increase will come from new large scale renewables. I understand that RFPs have been put out for both purchasing clean power from existing sources and/or from new build sources. If PSE meets this goal by increasing its purchase of existing renewable generated power, it does not appear to be taking meaningful steps to increase the amount of overall renewable energy generated and used in the US, merely taking it from another region. (PSE's Green Power and Solar Choice programs also share this major drawback.) This also means this power will be more expensive if many are chasing an existing supply. I urge PSE to:

• Purchase renewable energy only from new build sources or that is increased generation from existing sources; and/or

• Invest in construction of more renewable energy generation such as more wind farms, solar generation and more battery storage. This makes particular sense as the cost of this infrastructure has come down dramatically in recent years.

• I encourage PSE to expand its various distributed solar and "non-wire" programs. I am concerned that there is no plan to expand new Community Solar programs to all residents. I urge PSE to invest far greater amounts in all solar programs including Community Solar. PSE should actively build out more solar projects in every area in which it provides power and not just invite customers to invest in existing solar projects.

The current Community Solar program requires customers to invest in the program. PSE should also create a large number of Community Solar programs that do not require customer investment. There seems to be no good reason why PSE should not invest in these using PSE's own funds. PSE must create a large number of solar projects.

In sum, PSE should do more immediately to increase its investment in the generation and distribution of new clean renewable energy so that the proportion by 2025 is higher than 59% and the proportion by 2029 is 100%.

Source: Web comment

Comment:

I believe the PSE Clean Energy Implementation Plan needs improvements in the areas listed below.

In the Seattle Times article Friday March 5th 2021 I was interested to read that biogas ie from landfills makes 1.3% of the state's natural gas consumption with the potential to maybe get to 10%. Given the low supply of biogas, please don't build a new gas peaker plant in 2026.

The emphasis needs to be on energy efficiency and electrification of buildings. With this emphasis, our clean energy sources, hydro, wind and solar can go further and require less "topping up" with peaker plants.

Speed up the Demand Response and Time Varying Rates programs (pages 66-72). You can learn from successful programs in other utilities and your own data. These programs can shave off peak energy uses and avoid the need for the gas peaker plant.

Implement battery storage faster. This can also eliminate the need for the gas peaker plant in 2026. Use batteries to back up wind and solar sources.

The plan does not have enough emphasis on conservation, which is the cheapest and most effective way to reduce our GHGs. Only $30,000/year is budgeted for "(Energy efficiency) program development, operations, and customer incentives." Inspections, with recommendations by a professional, should be free. What about electrification? Will you encourage customers to go electric? Or just weatherize?

There is a mention on page 198 to multi-family residences and renters. The number of renters in Burien is >50% and climbing. Many of the homes and apartment buildings are old. In my opinion, this situation is crucial to controlling GHGs from existing buildings.

PSE's Multifamily Retrofit rebate program should be expanded, and electric appliances should receive more generous rebates than gas. After all, the tenants are the ones who will benefit from the cleaner air, more comfortable temperatures, and lower utility bills. Landlords need to have strong outreach, inspection, and incentive programs.

If the cost of energy to the prospective tenant would be lower than average because of Energy Star appliances and weatherization, maybe the rent could be higher. PSE should provide this information by disclosing its past bills to prospective tenants, the same way the expected gas mileage of a car for sale is disclosed to prospective buyers.

There needs to be more clarity around what you consider clean fuels and where they will be coming from. Clearly biogas will not be sufficient to fill the pipelines.

Increase your targets for Distributed Energy Resources (DER).

Not enough emphasis on public education/outreach. $10,000/year? That's not even .2 FTE. PSE should work with Seattle City Light (many customers are served by both) and with the King County Housing Authority and other agencies to raise awareness, especially among homeowners and renters.

We only have 8 years left to get going our clean energy future. We must be thinking about our customers in 2045 and what type of life they will be having. Will they be enjoying many of the same benefits we have today or will they be living in a world with multiple heat domes every summer, wild fires, no snow pack in the winter and utility companies continuing to contribute to those hazardous conditions because they were not sufficiently innovative when we had the chance to create a more stable future.

Source: Email

Comment:

I am concerned with eliminating current sources of electric generation without replacing them with with ones of the same capacity as they are doing in California. This will result in much more expensive and reduced amount of available power. Wind works sometimes and solar works sometimes we need generation that works all the time! We do not want power black outs or brown outs

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Source: Web comment

Comment:

The current ideas appear to favor wind and solar both have serious faults and are not reliable. Nuclear has a good reliable record in spite of earlier problems and bad publicity. Hydro has been reliable and with the improvements in fish migration has proven itself. Natural gas has been given a bad reputation but is clean and efficient and there is a lot of it available. It is very sad that politics try to control this movement due to lobbyists trying to control common sense and reliable engineering.

Source: Email

Comment:

Dear PSE,

Thank you for hearing our comments on PSE's Draft CEIP.

Please increase the speed of your Time Varying Rate (TVR) program roll out! Completion of pilot and start of impact evaluation in early 2023 rather than 2025! Customers are ready to enroll now! Many other Utilities have successful TVR programs and we can learn from them. Let's save crucial time and money by learning from other utilities and utilizing PSE data to make a successful program!

Please do your best to complete the RFP process ahead of schedule and start construction on clean energy projects ASAP! When hiring construction workers please pay fare union wages and hire with diversity in mind.

As consistent thermal power is retired please also retire Firm Transmission. As more renewables come online let's move to a whole system approach to transmission with the aid of software and storage to utilize our transmission lines to the fullest.

No new Gas Peaker Plant in 2026!!! While this plant can run on bio diesel there will be a high demand for bio diesel in the future from companies with no other choices. As demand increases so might price. What will PSE's other NG plants run on? We can do this without new peaker plants with efficiency, DR, TVR, renewables and storage!! More storage can eliminate the need for Peaker plant in 2026. Batteries and other storage can be used continuously giving and taking from the grid and work well with wind and solar.

It is good to see your DER programs but the MW's targets are low. Please increase MW targets! As you look for places to put solar consider this Idea...Can placing Solar under power lines and in other creative spaces reduce the need to purchase land and save money?

Page 90-Thank you for choosing Issaquah for Non-Wire Alternatives (NWA) – Issaquah Area Capacity and Reliability program. In Issaquah we are finishing up our Climate Action Plan and will be looking forward to learning about this program and working with PSE!

I look forward to PSE incorporating our comments into the final CEIP and working with the new PSE to a clean energy future!

Source: Web comment

Comment:

I believe in wind and sun renewable energy to reduce the warming trend of the world.

Source: Web comment

Comment:

As a 62 yr. old WA native currently living on a Salmon Spawning Creek, your strategies for environmentally cohesive energy production need to include changes to help our dwindling salmon population that threaten the N.W.'s iconic whales. What lower snake river dam would be the most cost effective to remove and create a better and cooler water flow? Is there a less empactful way to collect Hydro Electricity? It's imperative we do something. You have a tremendous opportunity to be heros. Thank you. Linda Nothstein

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Source: Web comment

Comment:

A friend brought my attention to your CEIP and suggested I read and comment on it, because of my interest in carbon emission mitigation and electrification. It's very difficult to read for the average person, and I suggest you publish a summary identifying your primary action steps toward become more green. (More than the few bullet points of generalities on your publicity. A

summary of about 7-10 pages would be adequate.) It would assist the public in understanding your vision, and assessing the efficacy of your proposed changes. Part of your responsibility as a utility company is to educate the public on energy issues, including carbon emissions, climate crisis as it relates to personal utility consumption, efforts of PSE, SCL, and other utility companies to work together and make a difference, and – most important of all – information on how to reduce energy waste in both the private and public sector. That education includes making your documents and vision accessible and readable by the public.

I am a widow, who recently moved to a multi-family residence for both single people and families. It was built in the 1970's and is equipped with outdated waterpipes, old electrical boxes and old appliances. Fortunately, there is no gas energy. SCL is our utility, but I was a customer of PSE for many years until I moved here, so I feel qualified to add my voice to your proposal.

Your Retrofit rebate program is much too limited in scope and in funding. Please adjust your proposal to reflect stronger incentives for landlords and renters to replace gas appliances with electric, upgrade existing electric appliances with Energy Star appliances, install heat pumps, and upgrade electric boxes, security systems, and lighting with more energy efficient models with a smaller carbon footprint. Again, emphasis on reduction of energy usage is a key element, and rewards for decreases in usage over time would assist in this effort. Your role, as we face the growing climate crisis, should no longer be increasing profits, but reduction of carbon emissions. Take less profits, and reward efforts to reduce! My life will end in a few years, but I want my grandkids to have a future. Please do more to insure that they, too, have grandkids to love and cherish.

Source: Email

Comment:

I appreciate the great detail PSE provided in drafting the Clean Energy Improvement Plan and for soliciting feedback. As with most members of the public, it's hard to absorb that much information and make refined comments. As Senior Energy Engineer for the WSU Energy Program for 30 years I have learned a lot about energy efficiency and realize the complexities of planning how to invest limited funding to the greatest advantage. I'm now retired (so speaking as a member of the public) and surprisingly busy, but did what I could on the last day of your window for feedback and hope you will consider my comments and find them useful.

It is fair to acknowledge that PSE's "business as usual" investments in efficiency has been impressive over the 30 years I've been a PSE customer, but I still contend that it is under-represented in the CEIP funding. Governor Inslee has been clear that this is a time for truly aggressive measures that are the most cost-effective possible in achieving the goals of CETA.

CETA requires a staged phase-out of non-renewable energy resources. The emphasis of your CEIP is on replacing these with renewable resources, specifically solar and wind power. But a strong case can be made to focus more funding on reductions in energy use, which are generally more cost-effective and reliable than investments in renewable resources. Solar is reliable in the summer, but Western Washington peaks in the winter and hydropower peaks in

the summer, so power has been historically sold to California during the summer. But California's much more aggressive investments in solar now satisfy their summer needs, so additional power generation in that season has very little value. And wind generation is more erratic.

PSE's 2021 Integrated Resource Plan predicts the generation of 7.6 million MWh in 2022, so the CEIP efficiency goal of 1.1 million MWh over the next four years is a reduction of 14%, or 3.6% annually. The UTC reported PSE's efficiency savings as 221,000 MWh in 2020, so the CEIP efficiency goal is only a 25% increase (1.1M/882k) over "business as usual". Table 5.2 of the CEIP shows the incremental funding for efficiency as only $121M out of $445M, or 27%. Increasing this to 30% would provide roughly $13M to invest in another aspect of energy efficiency; energy code training and enforcement.

While the new state energy code is aggressive in requiring substantial improvements in the energy efficiency of new homes and facilities, the enforcement of the code has been documented as being quite lacking for years—and contractors know that well. Additionally, there is a lack of understanding of the new code by designers, contractors, and even some building officials. I therefore suggest that $13M be used to co-fund a more robust energy code technical information hotline as well as on-line and on-site trainings around the state to building professionals as well as to fund a substantial improvement in energy code enforcement quality monitoring.

Thank you for your consideration.

Source: Web comment

Comment:

The Clean Energy Implementation Plan is a good step toward advancing the region's climate and equity commitments. However, these issues are systemic and as such must be addressed across multiple organizations for the progress required. PSE needs further commitment from the State, utility regulators, and the state's other energy utilities to work together to meet the climate and equity challenge ahead.

2. Equity efforts should focus on reaching the considerable number of PSE customers who are renters, who despite subsidizing energy efficiency through their energy bills are unable to reap many energy efficiency benefits. Residential retrofits, rebated appliances, and other higher cost, high saving measures are largely inaccessible to renters due to 1) PSE's program eligibility rules, and 2) unpopularity with property owners due to insufficient incentives for adoption of 'big ticket' energy efficiency measures. PSE should commit to pursuing strategies to achieve widespread adoption of residential retrofits for rental properties, including studying the efforts of the City of Seattle, the Energy Trust of Oregon and others who are putting into effect both incentives and compliance requirements for property owners to adopt such measures.

3. Our energy utilities, local and state governments, and other interested public and private entities should be working together to create a unified climate safety plan that includes transition to electrification.

4. PSE should accelerate its efforts, and engage various stakeholders, in developing values for non-energy-benefits, and in identifying and pursuing them in tandem with various energy efficiency and clean energy efforts. For example, PSE has a record of success in collaborating with the King County Housing Authority to provide residential retrofits that provide health and safety as well as energy saving benefits. By providing valuation of additional benefits (including job creation, carbon reduction and climate resiliency, and reduction of arrearage) across all programs PSE can capture a more accurate assessment of the true contribution of energy efficiency and clean energy to the health of the public and the climate.

5. I am pleased to see both existence of, and the composition of, a customer committee dedicated to advising on equity issues. I recommend that, as one of the first tasks, they committee will develop

equity benchmarks and related goals, and a proposed schedule for measuring and tracking of those goals.

6. The CEIP applies traditionally accepted planning scenarios based on PSE taking business-as-usual approaches to providing energy and energy efficiency; it seems to reflect the best that the region can do absent any bold leadership to advance climate safety and resiliency. PSE should work with future-oriented public and private entities, urban and regional planners and to develop an aspirational scenario that would reflect the vision of state and local leaders and their constituencies pursuing carbon-safe futures.

7. I recommend that the committee, and PSE, adopt the following definition of equity:

Equity is the fair treatment, access, opportunity, and advancement for all people, while at the same time striving to identify and eliminate barriers that have prevented the full participation of some groups. Improving equity involves increasing justice and fairness within the procedures and processes of institutions or systems, as well as in their distribution of resources…' Tackling equity issues requires an understanding of the root causes of outcome disparities within our society.'

Source: 'Why Diversity, Equity and Inclusion Matter, Independent Sector.org, referenced October 19, 2021.

https://independentsector.org/resource/why-diversity-equity-and-inclusion-matter/

Source: Web comment

Comment:

The document desperately needs an acronym glossary.

There is not enough emphasis on conservation, which is the cheapest and most effective way to reduce our GHGs. Only $30,000/year is budgeted for "(Energy efficiency) program development, operations, and customer incentives." Inspections, with recommendations by a professional, should be free. What about electrification? Will you encourage customers to go electric? Or just weatherize?

There is not enough emphasis on public education/outreach. $10,000/year? That's not even .2 FTE. PSE should work with Seattle City Light (many customers are served by both) and with the King County Housing Authority and other agencies to raise awareness, especially among homeowners and renters. Why would anyone, especially those without children or grandchildren, want to reduce their carbon footprint? We must raise awareness of the co-benefits of energy efficiency and clean energy – of spending money on greener homes and electric cars, planting and retaining trees, choosing public transportation and locally-produced food, eating less meat, etc.

I didn't see any $ allocated for EV charging stations. Maybe I missed it.

There is finally a nod on page 198 to multi-family residences and renters. The number of renters in Burien is >50% and climbing. Many of the homes and apartment buildings are old. In my opinion, this situation is crucial to controlling GHGs from existing buildings. PSE's Multifamily Retrofit rebate program should be expanded, and electric appliances should receive more generous rebates than gas. After all, the tenants are the ones who will benefit from the cleaner air, more comfortable temperatures, and lower utility bills. Landlords need to have strong outreach, inspection, and incentive programs.

If the cost of energy to the prospective tenant would be lower than average because of Energy Star appliances and weatherization, maybe the rent could be higher. PSE should provide this information by disclosing its past bills to prospective tenants, the same way the expected gas mileage of a car for sale is disclosed to prospective buyers.

The time for further delays securing our independence from fossil fuels has passed. In fact, delays over the last 30-40 years have only made the transition to clean energy much more difficult and urgent. I like living on planet earth and don't have an alternative. Neither does any other life form we share this planet with. Don't get bogged down in a corporate morass of 'reasons' to slow the process: That will only contribute to our failure to keep Earth livable for my seven grandchildren. I know PSE is a privately-owned, for-profit company. But corporations are greening up right and left these days, choosing altruism over profit. It would be so wonderful if PSE would follow that model and pay Earth back for all those natural resources you've extracted. Don't be greedy at the expense of our future.

Source: Web comment

Comment:

I concerned about PSE management of trees 1. 2. Renewable energy sources

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Source: Web comment

Comment:

Why wasn't it decided to continue to use all forms of energy that America has at it's disposal, while so called "clean energy" is developed and is able to compete fairly without causing a complete economic collapse?

Source: Email

Comment:

Thank you for sharing the draft CEIP plan for public review. I've included my comments below and look forward to working with PSE staff to increase both clean energy and energy efficiency offerings and incentives for our community.

- The CEIP needs to account for climate change impacts now. While the CEIP includes multiple mentions of the need to conduct a climate change analysis in future load forecasting, none of the current summer or winter load forecasts account for climate change. Thus, it is difficult to accurately evaluate the current CEIP without knowing when PSE will need more energy and what sources will be best equipped to supply that energy at that time.

- Battery storage plays an important role in ensuring reliable service for PSE customers. We appreciate the proposed battery storage approach for Bainbridge Island and encourage the deployment of more battery storage devices (at all scales and of all types) as a priority action to help address climate change impacts, especially for vulnerable and highly impacted communities.

- Energy efficiency, demand response and renewable energy programs are important strategies to reduce future greenhouse gas emissions, especially as communities like ours work to increase the number of vehicles using electricity as a fuel. We encourage PSE to dedicate adequate resources over a sustained period of time to support these programs to ensure a) they are easy for customers to understand and enroll in, and b) sufficient capacity exists for all interested customers to participate.

- We encourage PSE to include the social cost of carbon in evaluating reductions in greenhouse emissions from the different investment strategies. This evaluation should be done sooner rather than later to both capture the full range of costs and benefits associated with each strategy and provide ample opportunity for public review and feedback.

- Local governments are key partners in engaging residents and businesses to both reduce energy use and increase renewable energy. We encourage PSE to proactively partner with local governments in developing and implementing programs that help meet the goals of CETA and municipal climate action plans.

Source: Web comment

Comment:

PSE must accelerate their transition to carbon-neutral electricity. Global warming is accelerating and climate change effects are already real, and disastrous. PSE has an opportunity to lead by example - for utilities nationally and globally.

Source: Email

Comment:

My name is Candace Smith and I live at [ADDRESS], Issaquah, WA 98027. I am submitting the following comments on your Clean Energy Plan:

The transition to clean energy should ramp up way sooner than 2045. The climate crisis demands urgency. This plan is far too gradual.

Why a new gas plant. And where are the COMMITMENTS it would be run on biofuel or hydrogen? Instead, increase battery storage options for renewable sources.

Where is the time table for shutting down existing gas plants? It needs to be ASAP.

Why a four year pilot for the demand and variable rate pricing? Learn from existing successful programs of other utilities and start now.

Implement battery storage broadly and quickly.

Implement climate change modeling data into your projections.

Source: Email

Comment:

Hello,

I recently was reading a Implementation of Clean Energy for PSE on Facebook. My wife and I research solar energy options for our home in Olympia. We use around 1,000 kw hours per month. I am curious if there are any programs to help us get a portion of our energy through solar power; specifically are there any program to help us mitigate or cover the cost of install solar energy on our home? We are currently customer of PSE. Our address is [ADDRESS], Olympia, WA

I look forward to learning more.

Source: Email

Comment:

Subject: comment

Do not build a new gas peaker plant in 2026. Our state is trying to get off of fossil fuels. This is no time to build new gas plants. I understand you are considering running this plant on clean fuel (biofuel? clean hydrogen?) but statements on this have been vague with no commitments.

Source: Web comment

Comment:

As a PSE customer in Whatcom County, I have been repeatedly disappointed with the company. In the last month, we have lost power multiple times for extended periods of time. Despite this, I am writing today because the CEIP is woefully inadequate to meet the needs, and requirements by WA state law, to have a clean-energy future. It is imperative that PSE commit to a complete transition to clean energy. The Clean Energy Transformation Act (CETA) was written with the intent of rapidly reducing GHG emissions, but the Clean Energy Implementation Plan shows too few actions that are all too slow. PSE is obligated to use 100% clean energy far before 2045. It is simply not acceptable to reach 80% clean energy by 2030 with the remaining 20% continuing to be sourced from fossil fuels.

Source: Web comment

Comment:

What is being planned in terms of storage of energy technology. Especially for renewables like solar and wind?

Source: Email

Comment:

Dear PSE,

Thank you for the opportunity to comment on The Plan.

I may sound critical of certain aspects of your Plan, but I know the faults are not necessarily yours. You are driven by Washington State Law, to which you have to at least show obeisance in the short term. More realistic re-planning must follow, as failures become evident. The law is unrealistic and unjust, and the goals are unachievable.

The only way carbon-free energy can become realistic is by the introduction of nuclear energy to Washington state. I see nothing in your Plan for introducing nuclear into your generation mix.

In order for solar and wind energy to become staples of energy generation, huge energy storage capacity would have to be developed to account for the daily and seasonal variability of those sources. Those sources tend to become less productive at the very times when their energy is needed the most, such as during very hot or very cold weather conditions.

Other than merely mentioning certain storage technologies, like battery storage and pumped hydro, your Plan does not include any specifics on planned use of storage mechanisms. The free market is already experiencing shortages of lead and lithium metals that would be required for battery storage. Your Plan would greatly increase those demands and compete with electric vehicle production. Even if the necessary quantities of those metals could be provided, great environmental damage would be done in extracting them. Storage by other means, such as hydrogen or anhydrous ammonia production, and the use of fuel cells as backup generation are things your plan does not mention, and understandably so, because those storage mechanisms have their own sets of, as yet, unsolved problems.

Your Plan calls for widely distributed solar on rooftops to be integrated into the grid. I would submit that the technology for load balancing, if significant rooftop solar does indeed come online, does not currently exist. Although that sounds really good, with rooftops representing a large collection area that does not directly harm the environment, practical implementation technology while stabilizing the grid does not currently exist. Until such technology is developed, wide area rooftop solar collection will cause frequency instability. Baseload generation cannot be varied quickly enough to account for rapid changes in solar collection as clouds move through an area. Your plan does not even specify what will be used as baseload generation after all sources of carbon energy are removed. I thought the plan was to switch from coal to natural gas turbines, but I guess now natural gas is also considered a global warming carbon fuel.

The Plan seems to be mostly an exercise in socialist political planning, with great emphasis being given to social justice, equity, and protecting vulnerable communities. The Plan creates large forums where groups of customers can vent their frustrations and vie for lower rates. The management of those forums will be another expense that is unaccounted for in the Plan. Overall, the Plan seems to indicate that electricity rates are going to get much higher in order to fund the development of solar and wind resources. And the Plan pretends to pacify so-called vulnerable communities by telling them that they will be protected from significant rate increases. (They won't.) The only references I can find for utility rates in the Plan, or the law, say that rates should not go up by more than 2 to 3%. That is disingenuous. Even if we stayed on carbon fuels, rates would go up by that much or more, simply due to monetary inflation. To state those kinds of expected rate increases, with such a huge change in capital investments being required, is nothing more than a lie intended to pacify the people until they fall into the trap. Neither you nor the government are honest with the people on how much the Transition will cost.

The Plan creates rate structures based on ethnicity, social class, income, and geographical location. That is racially, socially and politically divisive. One group of people will say: "You are charging me more per kWh because I'm white and middle class." Another class of customers will respond: "You need to pay more because you make more money, and you have white

privileges and a bigger house, and you owe us reparations." So, the Plan and the law will both create social division and hatred amongst the classes. Conservatives will say the Plan favors political candidates who promise the most benefits to the lower classes at the expense of the middle class, thus purchasing political support by spreading middle class wealth to the poor, while destroying the middle class. And that is exactly what the law is intended to do. It is communist in its inception, and designed to cause class warfare.

If implemented, the Plan will destroy the so-called American dream home. It will drive families into smaller homes, extremely well insulated, and poorly ventilated. It will be bad for human health. It will also cause a drop in suburban home prices as nice family homes will become too expensive to heat and cool. Thus, the property tax base will erode. The communities will become overall less wealthy and less healthy.

A proper plan should provide for an overwhelming increase in the availability of cheap electrical energy. (If fossil fuels are eliminated, that can only be accomplished with nuclear energy.) The propaganda machine should be turned around and turned on to let the people know just how safe new nuclear plant designs have become. Small modular nuclear plants should be promoted. The goal should be that Washington should become an energy exporting state. Rates should be uniform to every customer and inexpensive – no political class division in rates or energy distribution should be required or permitted. As written, the Plan seems to plan for engineered shortages of electricity. That is not progressive; that is regressive.

I can remember when customers were rewarded with lower rates for using more electricity, because utilities were in the business of producing and selling energy, and the more energy they sold the happier they were. Too bad those days are gone. We need for those days to come back.

Source: Email

Comment:

I suggest that when mentioning a resilient electrical grid in the PSE CEIP document, this would mean a climate change resilient infrastructure as presented and agreed in the UN COP 26 held in Glasgow, Scotland this year on November 2021. See this link:

https://infrastructure-pathways.org/key-concepts/#climate-resilient-infrastructure

The PSE CEIP document shall state that all of its prospective customers, whether they are residential, commercial, or industrial, maybe free to pursue the electrification of their households and buildings that they own, without having to request electricity services from PSE.

Throughout the CEIP document, the services provided by PSE are referred to as clean energy services. Since electricity is the motion of electrons in a conductive material, or through the air, or through out of space, wouldn't PSE consider to be called a plain electricity provider company?. I hope the UTC also takes note of this comment. Here is a link that might help in settling this argument:

https://grist.org/article/2010-12-07-how-can-clean-electrons-compete-with-dirty-electrons/

Source: Email

Comment:

CEIP comments from City of Bellingham

Ch 1

• The quality of purchased RECs is important. Purchase RECs from sources that are 100% additional.

• Cities will need regular assurance of progress as they will be depending on PSE's success to meet their climate goals. Provide annual reporting on progress with CETA.

• Cities such as the City of Bellingham will need PSE's assistance in switching home fuels from natural gas to electric to be able to make use of the decarbonizing grid. Fuel switching could help with demand leveling. Create programs and facilitate legislation to assist the transition from natural gas to electric space and water heating.

• In addition to fuel switching, financing will be key for many residents. Create financing programs, including on-bill financing for the switch to electric space and water heating.

• Please explain how "improved home comfort" and "indoor air quality" will come about in a home where someone is heating with natural gas.

• 24-7 green power is key to reducing carbon emissions given that demand and energy supply may be offset. Use a 24-7 power supply analysis when providing carbon accounting.

• When the report addresses the amount of energy saved through energy efficiency and demand response, the amounts in MW don't mean much to the average reader. Use % of total carbon pollution reductions when reporting energy savings.

Ch 2

• PSE's interim 2025 target is based on "median water conditions". Please describe how limited water availability due to climate change and extreme weather events will affect these targets.

• Please describe how batteries within electric vehicles and the smart grid fit into the conversation on distributed battery systems.

Ch 3

• There is overlap between energy security and public health in terms of care facilities and at-home vulnerable populations that are served through power outages. Please add this topic to the report.

• NEI's should include reduced mortality during extreme weather events from the ability to cool buildings housing vulnerable populations. Please add this topic to the report.

Ch 4

• There is a continual challenge associated with the need for everyone to have access to the same programs due to fairness among rate payers. “Pilot programs” will work optimally if they are available to a select group of customers in the first phase of any program. Those customers will reap the reward of early adoption and risk learning lessons for other customers. Consider making pilot programs available to select customers only.

• Focus demand response on highest users of electricity, not customers in the low-income category.

• The report covers short-term market purchases from more distant markets. Indicate whether transmissions losses accounted for within purchases from distant markets.

• Report should cover battery storage relative to vulnerable populations and cooling.

Ch 5

• No comments.

Ch 6

• No comments.

Ch 7

• Re quantitative data: Obtaining quantitative data is the only way we can ensure that GHG emissions are being reduced. Unintentionally, over-estimations of GHG reductions frequently occur with RECS and renewable energy purchases and exchanges. PSE should report real-time (at 1-minute intervals or shorter) accounting of their jurisdiction’s carbon intensity (g CO2e / kWh). The carbon intensity of electricity flowing through electric grids varies by location, season, and time of day. An annual average of carbon intensity reported once a year (as planned in the report) fails to capture these variations. Variations that are crucial to informing electric heaters, appliances, and car charges as to what is the best time to operate in order to reduce carbon emissions. Real-time GHG accounting is already available in the CAISO and privately from WattTime. Implementing real-time GHG accounting for PSE should not be difficult. PSE could create internally, or with the help of a consultant, a simple computer script that can automatically report these values. A Python or R script which, when given a data set of all generation resources and their power rate as well as purchased electricity with a given carbon intensity at any given time (PSE has this information), will accurately estimate the real-time carbon intensity of a power grid by simply calculating a weighted average. This is especially crucial for PSE’s power grid as it is one of the most carbon heavy in the Western United States. However, to properly estimate carbon intensity, accurate and specific real time data will be necessary. This is data PSE does not make available to the public. Use real-time accounting for all carbon calculations.

Ch 8

• No comments.

Source: Web comment

Comment:

Here are my comments regarding your draft CEIP:

Speed up the transition to clean energy. The Clean Energy Transformation Act was written with the intent of rapidly reducing GHG emissions, but the Clean Energy Implementation Plan shows slow action on many fronts. I urge you to speed up all actions that enable PSE to use 100% clean energy far before 2045. Don't depend on just reaching 80% clean energy by 2030 with the ability to burn dirty fossil fuels to reach the other 20%.

Do not build a new gas peaker plant in 2026. Our state is trying to get off of fossil fuels. This is no time to build new gas plants. I understand you are considering running this plant on clean fuel (biofuel? clean hydrogen?) but statements on this have been vague with no commitments.

Shut down existing gas plants as quickly as possible. Currently you seem to have no plans for shutting down your existing gas plants. Please move ahead rapidly on substituting clean energy for your gas plants.

Speed up the Demand Response and Time Varying Rates programs (pages 66-72). You don't have to take four years for a pilot program! You can learn from successful programs in other utilities and your own data. These programs can shave off peak energy uses and avoid the need for the gas peaker plant.

Implement battery storage faster. This can also eliminate the need for the gas peaker plant in 2026. Use batteries to back up wind and solar sources.

Increase your targets for Distributed Energy Resources (DER).

Minimize rather than maximize costs attributed to CEIP implementation. Only charge costs related to CETA that are not required by other statutes.

Update your weather data to take climate change into account. Winters are no longer as cold as they once were and summers are hotter.

Revise the Customer Benefit Indicator (CBI) metric so that it considers job quality as well as job quantity. New clean energy jobs should benefit highly impacted groups and increase low income wages. I urge you to invest in projects that include union provisions or high-road labor standards.

Actively engage with impacted workers and labor unions in future stakeholder engagement and use certified payroll reporting to ensure adequate labor data.

Source: Web comment

Comment:

This whole program is disturbing. A sustainable E-power grid requires; a large-quantity, of large-power, rotating-generators - along with available Energy (hydro-pools, or fossil or nuclear fuels) to drive or convert into steam for their turbines. Wind and solar are not

sources of Energy - they are intermittent and diluted sources of Power. Wind and Solar are not storables by nature (as Energy sources are). Batteries can 'store' E-energy (as a 'can' can store gas) - however, by themselves they are not a 'source' of Energy - so why the emphasis? Your justifiable concern relative to 'demand' is understandable - what's not is the fact that PSE is also promoting BEVs - which will (if realized at the level promoted) be a massive increase in 'demand'. There is a lot more I'd love to question and have input into. Please contact me if you actually are concerned about 'reliable' E-Power provision. For it to be realized - reliable sources of Energy are required. There is a huge difference between Energy and Power. So - only someone who 'understands' the difference should bother contacting me - unless it's for their education.

Source: Email

Comment:

Even if increased(ing) atmospheric CO^2 were to be of concern (CO^2 also provides valuable fertilization), moving to, at the grid level, E-Power being produced by Wind Turbines and Voltaic Solar, and the promotion of BEVs for general transportation, are all highly questionable - and very likely seriously problematic. Wind Turbines and Voltaic Solar sources are NOT sources of Energy - they are very simply - potential intermittent and diluted sources of Power. Neither, in their natural form, can be stored. And, they are only harvestable under unique weather conditions. Batteries are the only reasonable method of storing Electrical Energy. However, they are no more a 'Source' of Energy than a gas can is a 'Source' of fuel. BEVs, although suitable for some defined-radius transportation applications, can not satisfy most general-transportation objectives - especially in adverse climate environments. If the initial concern (CO^2) were justifiable, equal interest should be given to fusion induced steam turbines - not ignoring it! My prediction (and many other technical leaders) is that BEVs (for broad range transportation) will be the first failure - with serious complications. Attempting to rely more heavily on Wind and Solar will take longer to prove ineffective, and be, very and needlessly, costly - both in utilization and then the recovery to the very real need to rely on large scale steam-turbine rotating generators. Please listen to technical sources - not simply well meaning activists.

Source: Web comment

Comment:

I spend 10-15 hours a week volunteering for a climate justice organization. I'm a homeowner who has invested in rooftop solar and I drive an electric vehicle. I live less than 3 miles from two large stationary energy-intensive manufacturers. When I open my front windows, carbon dust collects on my windowsills. I believe that the world's continued use of fossil fuel, be it solid, liquid, or gas, is the primary cause of global warming and resulting extreme weather events causing death and destruction worldwide.

I have reviewed PSE's Clean Energy Implementation Plan and find it falls short of results that would comply with Washington's Clean Energy Transformation Act (CETA). I urge you to make the following changes.

Speed up the transition to clean energy. CETA was written with the intent of rapidly reducing GHG emissions, but the Clean Energy Implementation Plan shows slow action on many fronts. I urge you to speed up all actions that enable PSE to use 100% clean energy far before 2045. Don't depend on just reaching 80% clean energy by 2030 with the ability to burn dirty fossil fuels to reach the other 20%.

Do not build a new gas peaker plant in 2026. Our state is trying to get off of fossil fuels. This is no time to build new gas plants. I understand you are considering running this plant on clean fuel (biofuel? clean hydrogen?) but statements on this have been vague with no commitments.

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Minimize rather than maximize costs attributed to CEIP implementation. Charge only those costs related to CETA that are not required by other statutes.

Update your weather data to take climate change into account. Winters are no longer as cold as they once were and summers are hotter.

Revise the Customer Benefit Indicator (CBI) metric so that it considers job quality as well as job quantity. New clean energy jobs should benefit highly impacted groups and increase low income wages. I urge you to invest in projects that include union provisions or high-road labor standards.

Actively engage with impacted workers and labor unions in future stakeholder engagement and use certified payroll reporting to ensure adequate labor data.

Thank you.

Source: Email

Comment:

I believe PSE's CEIP is inadequate. 2045 is much too late to reach a clean energy goal of 100% clean energy.

Shutting down your existing gas plants asap is critical. Please move ahead rapidly to substitute clean energy for your gas plants.

Implementing battery storage to back up wind and solar sources is urgent--this will allow PSE to shut down existing gas plants more quickly than it currently plans.

In short, take all actions necessary to achieve 100% clean energy much quicker than 2045!

Source: Email

Comments:
I can't figure it out -- where is the hourly input data to Aurora?

***

Okay, thanks, except I do not see any "Temperature" and "Hydro" hourly data there. Do you have hourly "Temperature" and "Hydro" data inputs to Aurora?

***

Thank you for the clarification, I now understand that PSE considers all these things to be "confidential."

Source: Email

Comments:
Hi PSE,
I'm writing to share my thoughts on the CEIP.
I'm concerned that the effects of global climate changing are increasing exponentially. We need to throw everything we have at developing solutions rapidly. Is this timeline absolutely the most aggressive that PSE can realistically achieve?
The CEIP seems to include quite a few profit-generating "green" initiatives, such as the leasing of batteries and solar panels to the public. Since this leasing customer base will be those of low and moderate income, how will you ensure the prices will be affordable? Or is this something UTC will regulate?
Another leasing plan is to lease people's rooftops. How will you ensure this is equitable? Will your lease payments be based on sharing a percentage of the profits on the sale of the electricity on those rooftops?
Lastly, about net metering, why only "pay" people in PSE credits? Why not financially incentivize people to conserve electricity? One way to do this would be to pay them actual dollars if -- at the end of the month -- they have pumped more energy into the grid than they've used. Would you please consider adding this to your CEIP plan?
Thanks.

Source: Email

Comments:
I would like to see PSE NOT use “retained Renewable Energy Credits” and other provisions to offset their use of fossil-fueled electricity. The intent of CETA was for Washington State to work quickly toward 100% of our electricity coming from renewables,

yet PSE appears to plan to continue operating fracked gas power plants across the state. This violates the intent of CETA and I'd like to see as much emphasis on eliminating gas as there is on clean electricity.
Thank you.

Source: Email

Comments:
Hi,
We are developing a new supercapacitor technology using special graphene that will have more than 2-3 million cycle-life and cost less than Li-ion batteries. No over-heating issues, and can charge/discharge at greater than 100C; which will handle the highest possible power input from solar or wind farms. More than 98% round-trip efficiency. Using this new energy storage technology at coal-fired or nuclear power plants will save all the energy being thrown away during off-peak hours, since they can only decrease power output by 15%. The wasted energy captured at night will be enough for peak-shaving or load-leveling the next day. Using this new energy storage at EV charging stations and in EVs, utilities can have free energy storage and tap the storage banks during the day as needed. Plenty of investors are willing to install EV charging stations if they can get low-cost energy at night for resale the next day. Is there a group at PSE that I can discuss this idea in more detail?

Thanks,

Source: Email

Comments:
I couldn't find one word about cleaning up, reducing or replacing Gas sales. This is only reflecting current and future electric power sources.

Source: Email

Comments:
Hi,

Tendrán más información de programas de solar panels en Seattle. Ahi ayudas para poner sonar panels en mi casa?

[Will you have more information about solar panel programs in Seattle. Could you help put solar panels on my house there?]

Gracias
Jose Sahagun

Organization: BlueGreen Alliance
Source: Email

Comment:

Dear Director Maxwell and Mr. Piliairs:

On behalf of the Washington BlueGreen Alliance and the undersigned labor organizations, thank you for the opportunity to provide input on Puget Sound Energy's draft Clean Energy Implementation Plan.

Our comments focus on strengthening the customer benefit indicator on clean energy job creation and improving Puget Sound Energy's public participation plan.

As labor leaders and representatives of workers impacted by the clean energy transition, we strongly support Puget Sound Energy in creating a customer benefit indicator focused on clean energy job creation. This is a major non-energy benefit associated with the transition to 100 percent clean energy. However, our coalition is deeply concerned at Puget Sound Energy's proposed metric: increase in the number of clean energy jobs. It is not only the quantity but also the quality of those jobs that matters.

Jobs thought of as typical clean energy jobs, such as "solar installers", are often low-wage work and limit opportunities in the construction and electrical industries. Workers learn one skill and are left with nowhere to turn when a project ends or during an economic downturn. Unless we proactively and intentionally prioritize high-road labor standards in clean energy development, the transition away from fossil fuels will exacerbate growing economic inequality and entrench an unfair economic system based on low-paying jobs with little to no benefits.

It is clear from the Clean Energy Transformation Act (CETA) that the Legislature's intent was to look more broadly than a simple jobs tally; its intent was to evaluate the quality of jobs created as well. RCW 19.405.010 includes a number of references to the Legislature's view of economic development in the wake of passing this law, including a desire to produce "family wage job creation" and "creating high quality jobs in the clean energy sector". The law also enacted first time tax incentives that were contingent on job quality achievement, which provides an indication about the job quality metrics that the Legislature envisioned. The tax performance statement found in RCW 82.08.962 for those incentives reads: "It is also the legislature's specific public policy objective…for more of the projects…to be constructed with high labor standards, including family level wages and providing benefits including health care and

pensions, as well as maximizing access to economic benefits from such projects for local workers and diverse businesses."

Puget Sound Energy's proposed community benefit indicator metric for clean energy job creation is insufficient to achieve the economic and workforce values incorporated in CETA's passage. The company has included a preference for project labor agreements in its most recent All-Source Request for Proposals, which is a crucial step forward that we applaud. We now ask Puget Sound Energy to incorporate the workforce outcomes attendant in that decision into its Clean Energy Implementation Plan as well.

It is with this intent that the Washington BlueGreen Alliance strongly recommends the following changes to the utility's draft Clean Energy Implementation Plan:

Puget Sound Energy should collaborate with impacted building and construction trades and independent economic development experts to revise the customer benefit indicator metric for clean energy job creation to consider job quality in addition to job quantity. For example, this could include tracking 1) hours done by local workers, by members of named populations, and by registered apprentices; 2) combined wages and benefits; 3) occupation classification; and 4) where applicable, the share of Puget Sound Energy projects eligible for the incentives in RCW 82.08.962(1)(c) and RCW 82.12.962(1)(c).

Additionally, in the interest of centering job quality and growing high-road careers, Puget Sound Energy should build in accordance with RCW 19.28 and employ electrical contractors and certified electricians (EL01 and EL02).

Centering job quality will help ensure that the clean energy transformation benefits highly impacted communities and vulnerable populations. Prevailing wage laws reduce disparities in the construction industry by decreasing the employment gap between racial and ethnic groups and significantly increasing wages at the lower end of the income distribution.1 Training metrics should similarly consider both quantity and quality. For example, in addition to the number of workers trained, Puget Sound Energy could track 1) the number and type of credentials awarded; 2) the number of trainees enrolled in state-registered apprenticeship programs; 3) the number of placements and the associated wages and benefits; and 4) the demographic and geographic profile of trainees. This last variable is especially important in ensuring that named populations are benefiting from the clean energy transition.

Puget Sound Energy should invest in and require certified payroll reporting. Even a perfect metric is of little use without reliable data. Certified payroll reporting guarantees access to the necessary demographic information and high-quality data on hours worked, wages, and benefits, while maintaining every individual worker's privacy.

PSE indicates in Chapter 3 that it intends to perform an in-depth qualitative assessment of the customer benefits indicators for Phase 2 of the All-Source RFP evaluation.2 To operationalize the clean energy job creation community benefit indicator for this purpose, the Washington BlueGreen Alliance recommends that Puget Sound Energy preference projects that include union provisions or, where applicable, expect to be eligible for the incentives in RCW 82.08.962(1)(c)(iii) and RCW 82.12.962(1)(c)(iii). This will prioritize projects that utilize a Project Labor Agreement or Community Workforce Agreement and is consistent with Puget Sound Energy's stated intent in Chapter 4 to require that future Green Direct Projects include union provisions in their agreements.

1 F. Manzo, A. Lantsberg, & K. Duncan, The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry, Feb. 9, 2016. Available online: https://illinoisepi.files.wordpress.com/2017/03/pwnational-

impact-study-final2-9-16.pdf.

2 Puget Sound Energy's current All-Source RFP includes a preference for projects that utilize a Project Labor Agreement or Community Workforce Agreement for major construction activities associated with the construction of the project. In future All-Source RFPs, the Washington BlueGreen Alliance recommends that Puget Sound Energy require a Project Labor Agreement or Community Workforce Agreement.

Opponents of requiring high-labor standards for clean energy development often point to cost as a barrier. However, recent research from Princeton University's ZERO on wind and solar development shows that increasing wages has very little cost impact. Any increase in cost is offset by an increase in productivity. States that have prevailing wage laws enjoy 14 to 33 percent higher worksite productivity, such as more efficient use of labor, materials, and fuel.3

Additionally, high-road labor standards, including prevailing wage standards, maximize the indirect benefits associated with the clean energy transition. Higher wages and improved job security mean more money flowing into local economies and greater community resilience. States with strong labor protections have lower taxpayer burdens and less work done by out-of-state contractors than states that permit low-road contracting.4

Finally, high-road labor standards are vital for protecting worker safety. As we have seen with previous Puget Sound Energy clean energy projects, like the Skookumchuck Wind Farm, the absence of these protections can lead to tragic results.

The Washington BlueGreen Alliance strongly urges Puget Sound Energy to actively engage impacted workers and labor unions in future stakeholder engagement. Available records suggest that the utility did not actively engage labor in drafting its Clean Energy Implementation Plan, and there is no labor representative on the Equity Advisory Committee. Puget Sound Energy has also indicated no intent to engage workers in the public participation plan outlined in Chapter 6. Workers and labor unions have valuable expertise in how to ensure high-road job creation and will be an invaluable resource in further refining Puget Sound Energy's proposed community benefit indicators metrics and the utility's ongoing research to develop strategies for tracking turnover and operations and maintenance jobs.

These recommended changes will bring Puget Sound Energy's Clean Energy Implementation Plan more in line with Washington's vision for a robust and equitable clean energy economy embedded in the landmark Clean Energy Transformation Act and the utility's history as a leader in the clean energy transition.

Please do not hesitate to be in touch if we can answer questions or provide any additional information. Jessica Koski, Washington State Policy Coordinator, BlueGreen Alliance will serve as a point of contact and can be reached at [EMAIL] or [PHONE].

3 E. Mayfield & J. Jenkins, Influence of high road labor policies and practices renewable energy costs, decarbonization pathways, and labor outcomes, April 2021. Available online:

https://netzeroamerica.princeton.edu/img/Working_Paper-High_Road_Labor_and_Renewable_Energy-PUBLIC_RELEASE-4-13-21.pdf.

4 F. Manzo, A. Lantsberg, & K. Duncan, The Economic, Fiscal, and Social Impacts of State Prevailing Wage Laws: Choosing Between the High Road and the Low Road in the Construction Industry, Feb. 9, 2016. Available online: https://illinoisepi.files.wordpress.com/2017/03/pwnational-

impact-study-final2-9-16.pdf.

Organization: Front and Centered
Source: Email

Comment:

Hello PSE CEIP Team,

Please find attached Front and Centered's comments on the PSE CEIP draft. I addressed them to the UTC and filed them in docket 210795, but forgot to send them your way yesterday. I hope you will accept and have a chance to review them before our meeting on Wednesday.

In summary, in the final CEIP PSE needs to include baselines, details on applying the CBIs and securing the equitable distribution outcomes for named communities, and a framework for program design that goes beyond principles and includes structural components and performance metrics. There is more that PSE can do with this plan to be transparent in your reasoning and demonstrate a commitment to equity, even with constraints around the unknowns of RFP results, design and future public participation inputs. We will look forward to connecting with your team to discuss further.

I've cc'd Nico Wedekind who is supporting our efforts to center frontline community interests in energy policy. He will join on Wednesday.

Dear Amanda Maxwell:

Thank you for the opportunity to weigh in on the Commission’s considerations on utility funding for organizations to participate in Commission proceedings (Docket U-210795), ie. PSE’s CEIP.

Front and Centered is a climate justice coalition of organizations led by and serving communities of color in Washington. Our mission is to advocate for the interests of frontline communities, who are first and worst impacted by the climate crisis, in advocating for a just transition from an extractive to a regenerative economy. We have been following the implementation of the Clean Energy Transformation Act (CETA) and are offering these comments on Puget Sound Energy’s (PSE) Clean Energy Implementation Plan (CEIP) in support of an equitable transition to 100% clean energy in Washington and to encourage policies and practices that center the interests of impacted communities in decision-making.

Comment Summary

PSE's CEIP proposes a resource plan and timeline for shifting off of GHG emitting power sources to renewable in the CETA timeframe, and the assurances to conduct this transition in an equitable manner are encompassed in the discussion of the Customer Benefits Indicators (CBIs). Front and Centered is concerned that the substantive analytical and design work needed to connect the stated intention to actions is shallow and needs to be reinforced. The draft CEIP demonstrates that PSE has undergone work to align the transition plan with equity objectives.

The CBIs have been in development at least since PSE's Integrated Resource Plan filed earlier this year, and they remain largely the same with additional detail around metrics and applications. Yet the CEIP does not sufficiently speak to the reasoning and structure of the proposed mechanisms to secure the equity objectives. For example, the draft CEIP offers distributed energy resource planning as an approach to benefitting customers in named communities through localized generation and economic opportunities; but there is little discussion of how battery leasing and rooftop solar programs will result in improved participation, jobs creation, home comfort, affordability, emissions reduction, demand response, pollution reduction, improved community health, fewer outages, and greater customer access to emergency power.

By not including baselines and critical design elements for the proposed applications of the CBIs, PSE's plan by and large fails to account for how the company will manage the benefits and mitigate the burdens of the transition to communities at large. Attributes of named communities are discussed extensively, demonstrating PSE's recognition of the diverse characteristics of customers sensitive to the material risks and harmful impacts of poorly planned services and programming. The final CEIP must name clear elements of an equitable distribution process to reach these customers and highly impacted communities and produce measurable beneficial outcomes. As the largest energy utility in Washington, PSE's operations significantly impact health, wealth, comfort and security within and beyond their customer base. The company must set a higher bar with this CEIP and plan to reach and exceed it to secure a just transition to 100% clean energy Washington.

We recommend the following for the CEIP:

Name communities first and then explain how the Customer Benefit Indicator list and its application as an evaluation tool will provide benefits and reduce burdens for those named

Include baselines and narrative and analysis for how they are determined and will be tracked over the course of the compliance period

Refine the CBIs to include a greater depth of understanding about what they mean, and to which populations, as well as a wider breadth of energy and non-energy impacts with clear long and interim term targets

Provide greater clarity around the methodology for applying the CBIs to investment and resource decisions

Adopt principles for an equitable distribution of benefits and reduction of burdens applicable to utility energy operations broadly

Address how Specific Actions adopted to attain equity targets will be designed with an actionable accountability framework

Participation opportunities in planning are frequent but consideration varies

The CEIP references how input from customer surveys, advisory group consultation, and direct engagement with key customer and sector stakeholders influence planning decisions. As a member of the PSE Equity Advisory Group, Front and Centered participated in planning discussions, particularly around customer benefits and harms and risks they face. We also jointly with other concerned groups submitted a list of recommended CBIs and metrics to offer guidance on indicator elements and outcomes to consider. Front and Centered member organizations received regular updates on the planning process and information about opportunities to participate for those in the PSE customer base. PSE is hearing from many interested parties with customer experience, sector knowledge, community familiarity and other unique expertise in the actual and potential reach of PSE's operational decisions.

Yet it has been challenging to participate meaningfully in planning when questions and recommendations are not directly responded to, input is filtered through consultation processes that are not results-oriented, the logical flow between the input and utility takeaways for application to planning is not clear, and participants are not receiving complete information around value calculations related to customer benefits and impacts on communities. For future planning, PSE needs to be more responsive to participant contributions that include alternative perspectives and recommendations to the scenarios that PSE has presents. PSE needs to hear what is challenging and grapple with it directly in order to meaningfully incorporate critical insights from diverse contributors into the planning process. And the learning from public participation processes needs to feed into the company's culture and not be limited to a small team's time bound work output.

Presentation and definition of Named Communities

Front and Centered recommends that PSE place the definitions of highly impacted communities and vulnerable populations at the forefront of its discussion of customer benefit indicators to keep with the intent of CETA.

Though the definitions included in Chapter 3 for highly impacted communities and vulnerable populations are robust, they are placed at the tail-end of the discussion of how customer benefit indicators were selected. The definitions should be placed at the forefront of the conversation, both to set context and to mirror the intentions of CETA to emphasize the consideration of utilities' effects on named communities. In CETA and the regulations utilities are called to identify and distribute benefits and reduce burdens for named communities in their service area [RCW 19.45.040(8), WAC 480-100-640(4)(a-b)]. These definitional requirements come before the requirement that utilities identify and explain their selected mechanism for distributive equity.

Placing the definitions of highly impacted communities and vulnerable populations before discussion of customer benefit indicators helps to (1) center focus on named communities and (2) contextualize discussion of customer benefit indicators. Readers would be able to understand exactly PSE what the company means when they use those terms in discussions of named communities. Further, the positioning of the definitions first would place predominant focus on those terms as they are used throughout the discussion of customer benefit indicators.

PSE adequately explains how it came up with attributes used to define the term "vulnerable populations," but the repetition of statements about PSE's work with EAG on the definitions and duplicative table material are distracting. In particular, Tables 3-13, 3-14, and 3-16 could be

combined into one larger and more comprehensive table. PSE needs to go further in describing, and preferably showing through visual representation, how the defined named communities will be reached in - including an opportunity to map where vulnerable populations are and how they experience their particular sensitivity attributes, in overlay and complement with the assessment of highly impacted communities.

Customer Benefit Indicators need justification and refinement

There is a notable lack of baseline data and narrative description of individual CBIs included in the draft CEIP. This makes it very difficult for the public to comment on the substantive choices that PSE has highlighted in both its identification of CBIs and, as a result, the expected efficacy of the specific actions proposed. While PSE does note that baseline data will be addressed in the 2021 Final CEIP, the lack of inclusion in the draft does not allow for as much public feedback in the development process.

As PSE plans to include baseline data in its Final CEIP, Front and Centered urges PSE to better represent baseline data in an easily accessible format. In particular, PSE should use graphics and detailed narrative descriptions for each individual CBI in a manner that is non-technical and easily comprehended in the body of the plan.

PSE has chosen to focus predominantly on describing the process by which it selected the proposed CBIs. The lack of substantive discussion around each CBI in PSE's draft CEIP means that the public cannot understand how PSE actually interprets the CBIs to function. Even with further discussion of the CBIs in Appendix H, there are few details about how named communities in particular will be served by the indicators, as a planning scheme, scoring mechanism or performance evaluation tool. PSE must develop the narrative and substantive discussion of each individual CBI proposed, including baseline and target figures, as well as a substantive description of the CBI and how PSE understands it to fit into CETAs equity mandate.

Similarly, the methodology for applying CBIs to options for the portfolio of clean energy solutions appears arbitrary and will need to be refined for application to utility investment planning. The draft shows that the CBI assessment of equity values for different options result in some rising to the top, but without any real discussion of how that assessment takes place. The value of customer participation in programs, clean energy jobs, home comfort, affordability of clean energy, emissions, climate impacts, air quality, community health, outages and emergency power access is barely discussed before the prioritization and DER scorecard are presented, with scores determined through an opaque internal process. How does the weighting work? It is not clear that there are values assigned to reaching the highest number of named community customers, or diverse geographic areas, or customers with a mix of particular vulnerability or high-risk attributes, or whether and for how long the benefits distributed will be sustained. PSE needs to connect the value assigned to local generation, education, storage, workforce, contracting, siting, and other areas of investment to measurable, discernible outcomes that are maximally beneficial to named communities in particular and minimally burdensome to customers at large.

PSE's CBIs do not go far enough and can be refined, and the list expanded, to encompass a greater reach of equity performance measures. In addition to setting aspirational targets for generally good and lasting outcomes that PSE would like customers to experience, PSE needs to embed measures to proactively notice and address disparities in program reach in the

program design. PSE's approach to data collection and analysis needs to be laid out alongside the forthcoming baseline measurements, within an iterative process to track and understand persistent barriers to access and participation in benefits.

The potential non-energy impacts (NEI) listed in the draft should be incorporated into the CBI list in the CEIP in conjunction with a dedicated cost-benefit valuation through participatory planning and learning and leading on industry-wide standards. The Joint Advocates' recommended list of CBIs offers a number of indicators and metrics associated with an equitable transition that are within PSE's ability to track and improve but are not in the draft, including:

• Reduced Cost Impacts - Energy burden (not just electricity costs)

• Reduced Emissions - Continuous reduction of localized emissions and Electrification

• Outdoor Air Quality - Absences due to related illness, asthma admissions, wood use for heat

• Access to Reliable, Clean Energy - increased distributed energy as a metric, going beyond PSE's Improved participation CBI

• Efficiency - As a CBI metric, not just a part of the Improved participation assessment

• Arrearages, bills, collections, disconnections, credit scores

• Translation services and improved outreach

• Vehicle and transit electrification

Front and Centered recommends that PSE better define and detail the CBIs to draw a clear connection to the outcomes sought, consider additional metrics for their customer benefit indicator framework, and build into their CEIP benchmarks and related accountability mechanisms to set a clear direction for making progress on an equitable transition.

Specific actions need justification for how they will advance equity outcomes

A number of other specific actions proposed by PSE in its draft CEIP lack substantive descriptions of how those programs would actually take shape. For instance, in the discussion of the "Time-varying Rates Pilot Program" on pages 70-72 of the draft CEIP, the language used is particularly abstract ("design and offer rates and programs that consider needs and effects on low-income and vulnerable populations"). While PSE acknowledges that it is still in discussion with stakeholders in order to develop the program further, the lack of substantive description of how the utility actually plans to design and offer programs renders the ability of the public to comment on such programs through administrative methods nonexistent. At best, the language used parrots that of CETA and UTC regulations but adds nothing more.

The CEIP draft proposes specific actions, including a DER solar program, linked to an assessment of Customer Benefits or direct CBI evaluation. But the analyses are underwhelming. How did PSE come up with one program over another? The beneficial character of the proposed actions appears conclusive without sufficient substantiation. Front and Centered is concerned that the impact on communities - both benefits and burdens - are not discussed in enough depth to conclude that these actions are an effective approach to an equitable transition. While we acknowledge that PSE will know more in the future about costs and program design once they go through RFPs and solicit additional community input, the

company should plan for programming that is more clearly oriented to reaching equitable outcomes aligned with all of the proposed CBIs.

The logical thread between proposed actions and outcomes is missing and needs to be supplemented with baselines, targets, and reasoning. PSE should detail in the planning stage how they will offer programs (eg DER build out) that privileges:

• near and long term ownership by community institutions and community solar programs,

• far reaching battery storage solutions at no cost or with deep discounts for named community customers in particularly energy insecure areas,

• program and asset governance mechanisms that are community-led,

• more frequent and public calculations of company-wide emissions and local air quality monitoring data and funding local pollution reduction strategies,

• resources for home comfort inputs directly targeted to the highest impacts and most vulnerable community customers,

• minimum thresholds for employing workers from named communities,

• generating data on customer usage and need with respect to efficiency and assistance measures that facilitates stronger standards and actions to support energy and security and resilience,

• and other mechanisms to secure an equitable distribution of benefits and reduction of burdens.

PSE should adopt more explicit commitments to an equitable transition and include more substantive descriptions of its proposed projects in the final CEIP so that members of the public may offer meaningful feedback and all customers benefit from the transition.

Front and Centered is grateful for the opportunity to comment on this matter and looks forward to further opportunities to engage on this docket. Please contact us if you have any questions or would like to discuss any of our comments. Sincerely,

Mariel Fernandez Thuraisingham

Clean Energy Policy Lead

Front and Centered

Organization: Northwest Energy Coalition
Source: Email

Comment:

The attached are the comments from NWEC on the PSE Draft CEIP, along with two memos, one a legal interpretation of “Consistent with” as used in CETA and the other a technical analysis of the cost calculations in used in the draft.

If you have any questions at all, please contact me.

Cordially,

Joni Bosh

Dear Ms. Maxwell:

The NW Energy Coalition ("NWEC" or "Coalition") appreciates the opportunity to comment on the draft Clean Energy Implementation Plan ("CEIP") submitted by Puget Sound Energy ("PSE")

on October 15th, 2021. While the Utilities and Transportation Commission ("UTC" or "Commission") did not issue a Notice of Opportunity to File Written Comments in this docket, we submit these comments hoping that they will help inform the development of the Final CEIP, to be filed with the Commission on December 17th, 2021. We have also provided these comments directly to the company.

The Coalition is an alliance of more than 100 organizations united around energy efficiency, renewable energy, fish and wildlife preservation and restoration in the Columbia basin, lowincome and consumer protections, and informed public involvement in building a clean and affordable energy future. In addition to these comments, we have filed multiple comments on PSE's 2021 Integrated Resource Plan (Dockets UE-200304/UG-200305), and NWEC staff participates as members of PSE's IRP Technical Advisory Group, Conservation Resources Advisory Group, and Low-income Advisory Group. NWEC has also observed the Equity Advisory Group meetings. We joined with the Public Counsel Unit of the Attorney General's Office, The Energy Project, and Front and Centered in submitting a Joint Proposal on Customer Benefit Indicators. That proposal was originally filed on July 30th, 2021 in Docket UE-210297, and refiled in this docket on November 5th, 2021. These comments are in addition to comments we have already submitted and to the feedback provided by NWEC staff at advisory group meetings.

We appreciate the work of PSE staff and the members of PSE's Equity Advisory Group (EAG), Integrated Resource Plan Technical Advisory Group (IRPTAG), Low Income Advisory Group (LIAG) and Conservation Resources Advisory Group (CRAG), which have committed a significant amount of time and effort into developing and reviewing the CEIP over the past months. We offer these comments on the Draft CEIP in the spirit of improving the final product, and in a good faith effort to help PSE fulfill the intent and purpose of CETA – to achieve an equitable transition to a 100-percent clean electricity grid.

General Comments

Since this is the first time CEIPs have been developed by Washington utilities, we expect the first efforts to be the springboard for clarification, refinement, and improvement. A CEIP should be a relatively short, concise, stand-alone document that clearly delineates the specific actions a utility will undertake over the four-year implementation period. It is not intended to be a mini-integrated resource plan weighing many options, but an explanation of the specific actions that will be undertaken in the short term, just the next four years. While a CEIP is informed by the information in the Clean Energy Action Plan (CEAP), it is not limited to the information in the CEAP. In this case, the CEAP was prepared long enough in advance of the CEIP that more up-to-date information and data should be incorporated and reflected in the CEIP. In the future, it would be appropriate for PSE (and all utilities) to conduct its CEIP planning concurrently with its Integrated Resource Plan (IRP) and CEAP, to avoid this issue.

Supporting details should be either in the CEIP or electronically linked. As much data as possible should be easily available in the CEIP and the methodologies clearly explained so stakeholders can understand and vet PSE's process and results. The reader should not have to jump between the CEIP, the Biennial Conservation Plan (BCP), the Integrated Resource Plan (IRP), and other appendices to get a full picture of PSE's CETA compliance plan. All relevant information should be distilled and contained in the CEIP, with the other sources serving as supporting documentation in appendices.

Summary of Concerns

In general, we are disappointed to see that PSE's Draft CEIP falls short in some important respects of both the minimal requirements and our overall expectations for this first round of CEIPs. We recommend that significant changes be made to the document to ensure that the information is clearly presented and supported by analysis, and that the Final CEIP meets the requirements of WAC 480-100-640 and RCW 19.405.060.

The rules at 480-100-640 are very clear as to what must be included in a CEIP. There are significant shortcomings in the draft CEIP relative to the contents. Most notably:

• resource costs are unreasonably high. PSE did not update its resource cost assumptions for the CEIP. Reasonable resource cost assumptions are necessary in order to ensure that the CEIP contains a least reasonable cost portfolio (WAC 480- 100-650(6)(f) and (7)). See the technical memorandum from Moment Energy Insights attached to our comments for further explanation of this issue.

• The Social Cost of Greenhouse Gas ("SCGHG") calculation methodology used for the CEIP is flawed. NWEC has submitted multiple rounds of comments explaining why the SCGHG should be applied to resource dispatch in the model. See the technical memorandum from Moment Energy Insights attached to our comments for further explanation of this issue.

• The CEIP lacks specific actions for Energy Efficiency ('EE"), Demand Response ("DR") and Renewable Energy ("RE") resources, as required by WAC 480-100- 650(5) and (6). Only general categories of kinds of actions are provided, resulting in Appendix L CEIP Programs and Actions Master Table lacking significant required data. PSE has explained that it cannot complete the tables and narratives required by WAC 480-100-640(5) and (6) until the results of the various RFPs have been finalized in mid-2022. This trade-off between submitting a complete plan and waiting for RFP cycles to complete is simply a false choice, and should be remedied in the Final CEIP. The lack of complete information is inconsistent with the intent and purpose of the CEIP, and has the effect of delaying PSE's implementation of CETA for more than another year. Further, this choice by PSE places the Commission in the impossible position of reviewing a plan without a thorough understanding of those specific actions that should comprise the plan.

• Estimated incremental costs cannot be accurately calculated without the specific action and resource cost updates (WAC 480-100-640(7)). This information is particularly important if a utility intends to meet the compliance by relying on the 2% incremental cost compliance option at RCW 19.405.060(3)(a), because the Commission will ultimately decide whether the actions taken to comply with the standards in sections 4(1) and 5(1) allow the utility to rely on the 2% incremental cost. This alone will require a thorough understanding of each action, the underlying business case and financial aspects of the action. Instead, it would be appropriate

for the first CEIP to include the best information available to PSE for the Commission to consider at the time it is submitted, with the caveat that specific actions can be updated as the various RFP cycles are completed.

• Customer Benefit Indicators (CBIs) need improvement. PSE applies CBIs in a restricted and convoluted manner, resulting in misleading comparisons and applications that seem to undercut the purpose of those indicators (WAC 480-100- 640(4));

• CETA's resource prioritization is not clearly represented. RCW 19.405.040(6)(ii) and (iii) clearly identify the order of resource acquisition required of utilities under CETA. First, utilities are required to pursue all costeffective, reliable and feasible conservation and efficiency resources and demand response, then existing renewable resources, then renewable resources and energy storage before acquiring new resources per RCW 19.405.040(6)(ii) and (iii). PSE's implementation of this provision is not clearly mapped out in its CEIP. We expand on these concerns and provide recommendations below. Resource costs and SCGHG

While the CEIP actions should be "consistent" with the twenty-year IRP and "informed" by the 10-year Clean Energy Action Plan (CEAP), that does not mean the information in the CEIP should be limited to the data from the longer-term plans (See Attached legal memo "Consistent with" in CETA from EarthJustice dated October 8, 2021) To ensure the plan is the least reasonable cost portfolio, the resource costs for the specific actions in the selected portfolio should be updated. In this particular cycle, PSE's Request for Proposal(s) should have been issued in summer of 2020, so that the most recent cost data would have been available for this CEIP. However, PSE requested and was granted waivers to delay the RFPs until 2021 with results not expected until the last half of 2022. PSE's generic resource cost assumptions used in its IRP are now seriously out of date, and should be updated in the CEIP with current data from NREL's 2021 Annual Technology Baseline (ATB) and other publicly available sources for the assessment of the portfolio used in the CEIP. Using up-to-date cost information, even without the results from the RFP, would have significant impact on the resources selected.

We submit with these comments a Technical Memo on costs and how they impact the selected portfolio. With the help of GridLab, NWEC engaged Moment Energy Insights ("MEI"), author of the Technical Memo reviewing PSE's Renewable Resource Economics, to analyze the cost assumptions and methodology underlying the Draft CEIP.

MEI found that PSE's capital and transmission costs for renewables used in its Draft CEIP are unreasonably high. Combined, the excessively high resource costs along with the decoupling of SCGHG from dispatch distorts and masks the signal for PSE to invest in clean resources (see pages five through eleven of the Technical Memo). Updating resource and transmission costs alone would increase PSE's 2025 renewable acquisition target from 500 MW to 900 MW (corresponding to a 66% CETA interim target) at similar incremental costs to those that PSE has deemed acceptable in their draft plan. The full memo is attached to our comments, and we present just the summary here:

Variable and fixed transmission costs are unreasonably high: MEI's analysis of the Draft CEIP revealed that variable transmission costs were vastly overstated – nearly thirty times higher than what they should have been. We raised this issue with PSE, and they confirmed the error and committed to fixing the variable transmission costs and rerunning the relevant models between the Draft and Final CEIP. PSE also confirmed the fixed transmission cost escalation rates were incorrect, and committed to fixing the WA wind fixed transmission costs and

rerunning the relevant models to correct the transmission cost issues between the Draft and Final CEIP.

Renewable capital costs are unreasonably high. Using updated resource cost assumptions is foundational to developing an optimized portfolio of clean resources, including EE, DR, RE and RE + storage. Moment Energy Insights found that renewable capital costs in the Draft CEIP are unreasonably high due to calculation errors and outdated cost assumptions and that these high costs have a direct impact on PSE's incremental cost analysis and the CEIP interim targets. PSE has stated that they plan to update cost assumptions for near-term acquisitions based on the actual costs resulting from the ongoing all-source RFP and to update generic resource costs in the next IRP. We contend that these costs should be updated in the Final CEIP, consistent with the transmission costs. Since PSE has already committed to re-running the model, it would not be appropriate to re-run the model with out-of-date resource cost assumptions. Waiting until 2023 to correct this would undermine near-term renewable procurement targets for CETA compliance. the Technical Memo illustrates that updating resource and transmission costs alone would

increase the 2025 renewable acquisition target from 500 MW to 900 MW (corresponding to a 66% CETA interim target) would yield similar incremental costs to those that PSE has deemed acceptable in their draft plan. This is a significant change from the current CEIP portfolio, one that moves PSE towards compliance with the CETA standards more rapidly. Recommendations on Costs and the SCGHG MEI also found the impact of the SCGHG depends strongly on resource costs, and that understanding this relationship of excessively high costs to resource selection is critical for calculating accurate incremental costs associated with CETA. MEI's Technical Memo explains that, because of the unreasonably high resource costs, it doesn't matter what methodology PSE uses to apply the SCGHG, the analyses counterintuitively result in no impact on the level renewable resource acquisition, because the price signal is removed by the high resource costs. Since a full accounting of the impact of PSE's approach is impossible outside of PSE's model, we strongly support the recommended actions presented in the Technical Memo - that PSE re-run their CEIP models to better align planning with market realities and fully account for the SCGHG in resource planning and CETA incremental cost calculations, and that these changes be incorporated in the Final CEIP.

We recommend that PSE:

• Update resource costs to align with more recent overnight capital cost estimates and fix the variable transmission cost and fixed transmission cost errors identified in this report.

• Re-run the CEIP Preferred Portfolio and No-CETA portfolio with these cost updates.

• Identify whether the SCGHG treatment materially impacts incremental costs by testing the No-CETA portfolio under the alternative SCGHG treatments employed in the IRP (Scenario I and Scenario J).

• If the SCGHG treatment is found to materially impact the amount of near-term renewables added in the No-CETA portfolio, calculate and report out incremental costs for all three SCGHG treatments. Specifically, compare the following portfolios SCGHG Test With CETA Without CETA

1 CEIP Preferred Portfolio with Fixed

SCGHG approximation

No-CETA portfolio with Fixed

SCGHG approximation

2 CEIP Preferred Portfolio with IRP

Scenario I SCGHG treatment

No-CETA portfolio with IRP

Scenario I SCGHG treatment

3 CEIP Preferred Portfolio with IRP

Scenario J SCGHG treatment

No-CETA portfolio with IRP

Scenario J SCGHG treatment

• Based on these updates and a more thorough investigation of the impact of the SCGHG on resource selection and incremental costs, provide updated incremental cost estimates and modify the interim CETA target and resource acquisition targets accordingly.

Other Cost Considerations

There are a number of assumptions carried over from the CEAP into the RFP, such as the large decrease in market reliance from 1500 MW to 500 MW over five years and the inability of the

models to choose from a full suite of storage resources in place of “flexible capacity” that skew the resource choice portfolio outcomes.

PSE proposed the reduction in market reliance very late in the IRP process, long after NWEC had pointed out that the volume of transactions for the Mid-C trading hub has fallen by about half in the last five years, due to the effect of the Western Energy Imbalance Market and other factors.

While PSE’s over-reliance on the market for many years is close to a consensus finding, the abrupt shift has not been fully justified, though recent increases in price spikes, general volatility and the recent upward shift in commodity natural gas prices support at least a moderate reduction in the expectation of what the market can deliver, especially during peak periods. But PSE has offered only very limited analysis supporting a two-thirds reduction in the market limit for planning purposes, and the draft CEIP only makes general reference to the IRP finding.

Likewise, the market limits adopted in the IRP led to undervaluation of storage resources in the IRP (and therefore the draft CEIP) which in turn affected valuation for the All-Source RFP, a topic that received extensive discussion and a special technical workshop. NWEC participated with other organizations in a technical analysis and provided several rounds of informal and written comments1. While the issue was not entirely resolved, PSE’s consultant, E3, provided several suggestions for improving the analysis that should also be incorporated in the Final CEIP.

Recommendations on ELCC and Market Assumptions

• We urge that the methodological corrections to the Effective Load Carrying Capacity (ELCC) calculations being addressed in All-Source RFP (UE-210220) be incorporated into the Final CEIP as well.

1 See, for example, Comments of Renewable Northwest, NW Energy Coalition and Rye Development, Docket UE-210220, Puget Sound Energy's Effective Load Carrying Capability Estimates and Use in the Company's All-Source Request for Proposals, October 22, 2021

• We suggest that PSE include a more thorough summary of its analysis of market

constraints and propose a plan of action for further review of this issue during the CEIP period.

Energy Efficiency

The Energy Efficiency specific actions are not included in the Draft as required by WAC 480-100- 650(5) and (6). What is listed in Appendix L, CEIP Programs and Actions Master Table, are general categories of efficiency programs – residential, commercial, large power user, etc. Each category provides an "energy contribution in MWh" and an "estimated cost", but it is not at all clear where the program costs that were evidently summed to reach the category sub-totals come from.

A footnote in Appendix L states that conservation "updates" will be provided in the Final CEIP, as the Biennial Conservation Proposal (BCP) was filed the same day as the Draft CEIP. Those updates should detail the specific programs PSE will undertake and provide the information required by 480-100-650(5) and (6). The Final CEIP should also clearly detail what "the New Energy Efficiency" listed in Table 2-1:2022-2025 Interim Target Calculation consists of, since the footnote to that table states the "New Energy Efficiency" does not include the updated target from the 2022-2023 draft Biennial Conservation Program. Going beyond the minimum efficiency required by CETA would be a plus for the CEIP. The specific "new efficiency programs", just like the other efficiency programs and actions, should be thoroughly described per WAC 480-100-650(5) and (6), and added to Appendix L, as there is no mention we could find of "New Energy Efficiency" in Chapter 4 or in Appendix L.

Recommendations on Conservation and Energy Efficiency

• PSE should fully complete the required tabular summary and narratives for each and every program that will be used for compliance under 19.405.040(1). The narrative should clearly explain what "new energy efficiency" is and how that differs from the specific actions and programs in the updated BCP.

• The narrative should clearly explain the projected large increase in "new energy efficiency" which nearly doubles between 2023 and 2024 and then increases again by more than 45% between 2024 and 2025.

• While there are category costs listed in Appendix L, there is not a summary of all the costs for conservation/EE.

• PSE should more clearly specify which actions or portions of actions are strictly due to CETA and would not have been undertaken if not for CETA.

Demand Response (DR)

The Demand Response (DR) specific targets (23.66 MW through 2025 - less than the 29MW in the CEAP) fail to meet the requirement of RCW 19.405.040(6)(a), which calls for aggressive

Demand Response investments prior to acquiring new resources, such as the distributed solar and battery DERs discussed at length in Chapter 4.

The amount of DR is significantly smaller than what has been proposed by other utilities with fewer customers, as shown in the chart below:

2025 DR Target 2025 Peak Demand (est.)

PSE Draft CEIP 23.66 MW 4800 MW

Avista Final CEIP 30 MW 2200 MW

Pacific Power Draft CEIP 37.4 MW 800 MW

Actual program implementation does not even start until 2023. This is somewhat frustrating, as commencement of DR programs has been continually deferred despite previous pilot programs and two previous DR RFPs.

While we are pleased that PSE is now addressing DR, we are concerned that actual program implementation would not even commence until 2023, and that PSE has not fully considered all available programs. We have raised the concern multiple times that PSE has, until now, offered no development strategy for capturing the peak savings that might be achieved from taking advantage of the CTA-2045 enabled electric storage water heaters that are entering the market. Under the recent extension of the compliance date for the Washington state standard, almost all new electric resistance and heat pump water heaters for the residential market will be equipped with CTA-2045 interfaces starting in March 2022.

The magnitude of the grid-interactive water heating resource for demand response should not be under estimated. For example, assuming about 500,000 existing residential electric water heaters for PSE customers, a replacement rate of 40,000 units a year, a 50 percent customer acceptance rate for program participation with new CTA-2045 enabled water heaters and coincident peak load reduction of 0.5/kW per unit, this single measure represents about 10 MW per year of DR potential.

The cost of the CTA-2045 interface and the associated communications device is estimated to be a few dollars per unit. Along with program administration and customer incentives, this resource is anticipated to be highly cost-effective, especially when compared to the cost and risk of relying on market purchases or gas peakers for constrained winter peak demand periods other system stress conditions. In addition, grid-enabled water heaters can effectively act as a storage device for capturing and shifting surplus renewable energy to high demand periods while also reducing transmission and distribution congestion.

Yet PSE indicates very little interest in this resource. The Draft CEIP (table 4.1) proposes 5.8 MW of residential direct load control (DLC) grind-enabled electric resistance water heater acquisition by 2025, and 0.08MW for heat pump water heaters. Despite extensive discussion of the issue in NWEC's comments on the draft IRP, neither the IRP nor the draft CEIP explain why this resource is considered to be so limited.

Recommendations on Demand Response

• PSE should prepare and include a program around the CTA-2045 water heaters as part of their residential water heater program.

• PSE needs to clarify exactly which venue they discuss DR programming with stakeholders. It is important to consider all customer side resources together, and ensure wide review of DR by all stakeholders.

• PSE should accelerate the TVR/TOU pilots. It is not clear why PSE would derate TOU/TVR by 50 percent; TOU/TVR is valuable year-round. Many utilities have long experience with these programs and PSE should be able to incorporate that learning to move the program forward.

Incremental costs analysis

PSE's estimated incremental cost analysis raises many questions. NWEC disagrees with PSE's interpretation of the two percent increase in required revenue due to incremental expenditures (Page 72 "PSE seeks to meet an incremental cost in 2022–2025 that meets the 2 percent annual average incremental cost guidance. To determine which resources to use to meet this target, we consider the relationship between the different targets"). However, RCW 19.405.060(3)(a) establishes that "if, over a four-year compliance period, the average annual incremental cost of meeting CETA standards or interim targets equals a two percent increase in the weather adjusted sale revenue to customers above the previous year", the utility must be considered to be in compliance with the requirements of CETA (emphasis added). This "compliance cost" was added to the legislation to ensure customer protection from large annual rate increases. It is not appropriate for a utility to plan to meet this cost threshold as if it were a target. The annual average two-percent incremental cost is not a "guidance", nor has the UTC to our knowledge issued guidance on this section of the statute. The point of the statute was to shift electricity resources from emitting generation to clean generation to meet the CETA standards, not to guarantee an automatic increase of two percent in rates every year. The expenditures to comply with the interim and specific targets may well amount to less than an annual two percent increase in incremental expenditures and that is all that is required. The goal is to costeffectively meet the standards, not plan to attain an annual two percent incremental expenditure increase. There are also costs attributed to CETA compliance that we question. PSE acknowledges that, "the investment in grid modernization in its entirety is needed for successful transition irrespective whether work occurred before the effective date of CETA or whether it facilitates additional benefits not specifically envisioned by CETA" (Chapter 4, page 129). Most of the proposed integration activities described at the end of Chapter 4 are baseline expectations for a modern utility – these should not be treated as special actions to comply with CETA. PSE's justifications for grid modernization are understandable, but not necessarily driven by CETA; for example, justifications for some upgrades to meet new customer demands; continuing concerns about cybersecurity; increased rate of technology development; other federal and state laws, such as Distributed Energy Resource Planning; electric vehicle adoption; environmental extremes; and backbone infrastructure are laudable and appreciated (Ibid, page 130), but not necessarily entirely due to CETA.

Rather than just qualitatively explaining why some investments support CETA, in order to justify incremental costs, PSE needs to demonstrate why those investments wouldn't be done, were it not for CETA. We agree there will probably have to be investments to keep pace with EV adoption and there may even have to be some localized investments to keep voltages at

adequate levels if PSE sees really high DER penetrations without smart inverters. But these are going to happen with or without CETA. What PSE is proposing to do, such as a Virtual Power Plan or an integrated Distributed Energy Resource Management System, should, in theory, offset some of those other distribution system investments – otherwise why do it? We strongly urge a review of the grid costs attributed solely because of CETA in the Final CEIP.

As for the actual incremental calculation itself, the formula looks correct (Chapter 5, page 163). However, we question the assumption that weather adjusted sales revenue will rise at an inflation rate of 2.5 percent per year, before CETA incremental costs are added. We looked for the narrative or a link to other studies, but could find no explanation to substantiate that underlying assumption. Categorizing investments by category provides some information, but may well obscure the actual costs of comparing portfolios. WAC 480-100-660 clearly requires the portfolios to be compared for estimating incremental costs and for reporting on actual costs in the compliance reports, so the categories should be incorporated into portfolios at some point.

As we have stated multiple times, the CEIP was intended to be a stand-alone document, that any reader could pick up and understand. The explanation of incremental costs in PSE's draft CEIP illustrates how important it is for the necessary data to be compiled in the CEIP itself, in a smart and clear manner, per WAC 480-100-640. It is not clear or helpful to refer readers (on page 156) to Appendix FI-EE costs, which contains nothing but a reference to BCP details in Appendix B, which in turn only states that the BCP will be filed on November 1, 2021, with no links to the filed report. The same daisy chain of references happens with Demand Response (page 156) which points to details in Appendix J, but Appendix J just links to the 2021 IRP Appendix E; the poorly formatted summary of costs in Appendix F-2 shows only six programs, two of which have not even been authorized yet, with no explanation of the terms.
Recommendations on the incremental cost analysis and narrative

• Rerun the incremental cost calculations after all resource cost corrections have been made, as recommended above.

• Make clearer which actions would not have been done if not for CETA.

• Review grid costs attributed solely to CETA.

• Change narrative to make clear that the two percent cost cap is not "guidance" or the driver of CETA action.

Climate Change Assumptions

Another assumption that warrants corrections in the Final CEIP is the use of outdated weather and temperature data. There is no logical reason to use weather data that does not recognize the serious climate trends we are already experiencing; using data that goes back to 1929 to inform resource planning in 2021 amounts to planning for the past, not the future. We have recommended that PSE run additional ELCC and loss-of-load studies based on datasets from 1980 onwards in the All-Source RFP docket to ensure that the effects of climate change on load and temperatures are clearly analyzed and evaluated; that analysis should be accounted for in the Final CEIP.

Recommendation on Climate Change assumptions consistent with the definition of "lowest reasonable cost" in RCW 19.280.020.

• ELCC and loss-of-load studies should be based on climate datasets from 1980 onward to ensure that the effects of climate change on load and temperatures are clearly analyzed and evaluated.

CBIs/DERs

Working with Customer Benefit Indicators ("CBIs") is a new requirement meant to ensure that all customers benefit from the transition to clean electricity (RCW 19.405.010(1), (2) and (6); RCW 19.405.040(8); RCW 19.405.060(1)(c)(iii) and (2)(b)(iii)). A utility must intentionally evaluate each specific action and program through the lens of each CBI and indicate if the CBI is applicable or not to that action. It is understandable that the first time working with CBIs would prove challenging, and we acknowledge PSE's efforts to try to update the PSE-devised CBIs for the IRP, with input from the various advisory groups and agree there is still work to be done. Within the Draft CEIP, PSE applied the CBIs only to Distributed Energy Resources ("DERs") options, not to any other specific actions, so our comments here are limited to that narrow actual application. In the Final CEIP PSE should clearly explain how the CBIs will be considered in the selection of all EE, DR and RE specific actions. This clarification should not wait until 2023, but be clearly explained in the Final CEIP.

In this first application of CBIs, it is not clear just how the CBIs influenced the DER choices. It seems some of the choices were determined prior to any application of a CBI. For example, PSE selected twelve battery and ten distributed solar options, without explaining the reasoning behind the choices, for their contractor, Black & Veatch ("B&V") to analyze for programmatic and resource costs (Appendix K). B&V also analyzed the achievable market potential for each option, except for three concepts, "PSE Mobile Batteries", "PSE Substation Batteries" and" PSE Utility Scale batteries". We have yet to find an explanation of what impact that lack of market potential had on the final rankings, but it must have had some impact, as neither the "mobile batteries" concept or the "Utility scale battery substation" concept were placed in any of the DER "Suites" for consideration (Table D-2) for the CEIP. Two new programs, "multi-family unit battery" and "C&I rooftop solar leasing" were added "based on stakeholder feedback" (CEIP page 41). In fact, PSE received feedback from several of the advisory committees that stakeholders had concerns about "leasing" programs, particularly those aimed at named communities, yet those programs remain on the options list. Advisory groups repeatedly supported reliable renewable resources to named communities, with control of those resources in the community, a very different proposition from a leasing approach, which is not included here. PSE's weighting system for CBIs is difficult to understand. As far as we can tell, twenty-two DER options were "scored" in Table 3-15, but Table 3-5 presents the summarized scores incorrectly. Corrected or uncorrected, it is hard to figure out why options that have identical or nearly identical scores as other options were dropped for further consideration – for example, "PSE substation batteries" and "Mobile Batteries" have identical scores, yet the "Substation batteries" option is dropped from further consideration. "C&I battery install incentive" scores a bit higher than "Mobile batteries", "third party utility scale distributed battery PPA" or "Battery stations", yet "C&I battery install incentive" is also dropped from further consideration. There is no explanation as to how the level of scoring was determined or applied. For example, under the CBI labeled decrease in time and duration of outages, how was it decided the "PSE Substation batteries" option might decrease the number and/or duration of outages (score 1), but the "3rd party customer-sited distributed Battery PPA" option would directly decrease the number or duration of outages (score 2)? The difference is not explained and the result is

confusing. Overall, we feel that utilities need more guidance from the Commission on how to formulate and use CBIs in planning. The approach taken by utilities in this round was inconsistent and burdensome for stakeholders, and the impacts of using CBIs to facilitate an equitable distribution of benefits are not apparent. NWEC joined with the Energy Project (TEP), the Public Counsel Unit of the Attorney General's Office, and Front and Centered to prepare CBIs that are more focused, detailed, and that directly support the CETA statutory elements for which CBIs must be developed. Being more specific or detailed might avoid the confusing weighting system presented in the Draft CEIP and we would strongly urge PSE to look at amending the CBIs to be more specific, with clear definitions and explanations of what the CBI is intended to achieve. Recommendations on CBIs and DERs

• PSE must revise the current scoring system of CBIs to better distinguish between options and explain how particular options received particular scores.

• PSE needs to explain in the Final how the CBIs will influence, if at all, the selection of other resources. Order of Resource Acquisition RCW 19.405.040(6)(ii) and (iii) require that a utility consider the order of resource acquisition, namely first all cost-effective, reliable, and feasible conservation and efficiency resources and demand response, then existing renewable resources, then renewable resources and energy storage before acquiring new resources. However, this draft CEIP does not explain how and in what manner this requirement was considered. Recommendations for Order of Resource Acquisition

• PSE should explain how it determined new renewable resources and thermal builds were more appropriate choices than acquiring additional conservation or demand response. Conclusion We believe the purpose of the CEIP is to provide certainty, accountability, and transparency to the implementation of CETA. Unlike the IRP, the CEIP is not merely the "utility's plan," but should be a collaborative work product, supported by the participation of customers, and approved by the Commission. As PSE maps a path to achieving an equitable transition to a 100- percent clean electricity grid, the CEIP will be an important document for communicating to customers how PSE plans to supply them with 100-percent clean electricity, and meet the requirements of the law. We offer these comments on the Draft CEIP in the spirit of improving the final product, and in a good faith effort to help PSE fulfill the intent and purpose of CETA – to achieve an equitable transition to a 100-percent clean electricity grid. FINAL CEIP's from all three utilities set a solid foundation for our state's clean energy transformation. Thank you for the opportunity to comment, and we look forward to continuing to work with PSE, the UTC, and stakeholders to develop a robust Clean Energy Implementation Plan that the Commission can approve.

Respectfully,

NW Energy Coalition

Organization: Renewable Northwest
Source: Email

Comment:

Good afternoon,

Please find attached the feedback of Renewable Northwest regarding PSE's draft 2021 CEIP.

Thank you,

Katie Ware

November 12, 2021

Puget Sound Energy CEIP Team

RE: Feedback of Renewable Northwest, PSE Draft 2021 CEIP

Puget Sound Energy's September 14, 2021, Webinar Relating to the Draft 2021 Clean Energy Implementation Plan.

I. INTRODUCTION

Renewable Northwest thanks Puget Sound Energy ("PSE" or "the company") for this opportunity to provide feedback on the company's Draft 2021 Clean Energy Implementation Plan ("CEIP"). Renewable Northwest has been an active stakeholder throughout the public participation phases of PSE's 2021 Integrated Resource Plan ("IRP") and CEIP processes, and our feedback also considers information learned in workshops and communications with PSE with relation to the company's 2020 All-Source Request for Proposals ("RFP").

II. FEEDBACK

Renewable Northwest appreciates the efforts of PSE's CEIP team to find small gains from its 2021 IRP, setting targets that reflect more clean energy procurements than manifested in the IRP preferred portfolio. And again, we acknowledge this first CEIP process will be a learning experience. However, we urge PSE to reflect on the last year of stakeholder feedback imploring PSE to be more transparent and proactive in its effort to transform its energy mix to comply with state policy. With this public comment deadline falling so close to the filing date of PSE's final CEIP, we already anticipate the company's response that there is too little time to make changes to the substance of the plan. But the recommendations made in these comments stem from concerns that, if not addressed, will lead stakeholders to request that the Commission impose more stringent targets or otherwise use its authority under RCW 19.405.060(1)(c) to ensure PSE achieves CETA's binding clean electricity standards. And as the company enters its next planning cycle, it should revise its overarching strategy of holding firm to its stale data and outdated planning methods and instead keep pace with this fast-evolving sector, as required by CETA.

PSE should revise resource cost inputs to the AURORA portfolio model to incorporate the latest National Renewable Energy Laboratory ("NREL") Annual Technology Baseline ("ATB") data, or anonymized information gathered from the 2021 All-Source RFP respondents.

Throughout the public participation phase of PSE's 2021 IRP process, in comments regarding PSE's final IRP, and in feedback regarding PSE's September CEIP meeting, Renewable Northwest flagged some of the company's outdated resource assumptions.1 The draft CEIP notes that apart from the distributed energy resource programs, "generic resource characteristics and costs from the 2021 IRP were used in the CEIP." During workshops and

sideline stakeholder meetings, PSE indicated that the CEIP could include updated resource costs from the IRP. In those workshops and discussions, PSE has also referred to the "CEIP model" as separate from the IRP model. Thus, it is quite frustrating to hear about separate modeling efforts and the potential for a refresh to resource costs, and then ultimately read in the draft CEIP that PSE did not complete a meaningfully-revised model run to inform the CEIP; rather, the model was updated in a fragmented manner (e.g., to update costs for the distributed solar and distributed battery storage programs, to incorporate two new hydro contracts, and to match investments to the two percent incremental cost of compliance).

Renewable Northwest has consistently recommended that PSE incorporate the resource assumptions reflected in NREL's 2020 ATB.2 And since we began making that recommendation, NREL has released yet another refresh to the data.3 In our most recent feedback, we urged PSE to further optimize its resource assumptions by using anonymized RFP bid information from the company's 2020 All-Source RFP. We do understand the latter recommendation would be more difficult to adopt considering the company's deadlines, but our requests that PSE use the most accurate industry-supported data posed no time constraints on the company. This data is easily accessible, and PSE's IRP and CEIP teams have had access to it via, at minimum, the comment submissions of Renewable Northwest.

Given the ready availability of more up-to-date inputs, the process-oriented justification given in the draft CEIP for use of outdated cost assumptions is not sufficient to overcome CETA's core requirement of identifying a compliant portfolio at the lowest reasonable cost. The draft CEIP says that "To be consistent with the IRP resource plan modeling process and leverage the assumptions and best practices of the IRP, the AURORA modeling for CEIP follows the same load forecast, cost model, plant operating characteristics, system constraints, and AURORA

[Footnote 1 May 6, 2021, Comments of Renewable Northwest, Docket UE-200304, available at

https://apiproxy.utc.wa.gov/cases/GetDocument?docID=1967&year=2020&docketNumber=200304.]

[Footnote 1 2 NREL Annual Technology Baseline, 2020, available at https://atb-archive.nrel.gov/electricity/2020/data.php.]

[Footnote 1 3 NREL Annual Technology Baseline, 2021, available at https://atb.nrel.gov/electricity/2021/data.]

setting as we documented in Appendix G, Electric Analysis Models of the 2021 IRP." 4 Instead, PSE should use the CEIP as an opportunity to refresh its modeling inputs to determine an optimal compliance approach.

PSE's resistance to revising its generic cost assumptions to reflect the data in NREL's latest ATB illustrates that the company has not been resource agnostic in this planning cycle. Revision of these model inputs in the IRP would likely have made CETA-compliant resources more competitive in PSE's AURORA model. Instead, the company used favorable assumptions for biodiesel-enabled peakers, an unproven resource with an uncertain fuel supply. As noted above, the CEIP offered the opportunity for a refresh, including new analysis using better-vetted data on biodiesel-enabled peakers. And yet the company will not refresh either its renewable resource assumptions (which would likely make these resources more competitive) or its biodiesel assumptions (which would likely make biodiesel-enabled peakers less competitive).

Instead the company maintains that it must wait to consider resource-specific information from the 2021

All-Source RFP to better understand the viability of biodiesel-fueled peaker plants. This approach seems to reflect a preference for peaking units that has been baked in since the IRP and continues to be reflected in the draft CEIP.

One consequence of this unbalanced approach to planning is that, should PSE procure fossil-fueled peaker plants to fill a 2026 capacity need -- a distinct possibility should PSE select peaking units in its 2021 All-Source RFP on the assumption that they can run on biodiesel that later proves expensive or unavailable -- the company will be in noncompliance with with WAC 480-100-620(11)(e), which requires a utility to "rely on renewable resources and energy storage [in the acquisition of new resources constructed after May 7, 2019], insofar as doing so is at the lowest reasonable cost"5 and may be opening itself to the risk of penalties under RCW 19.405.090(1)(a)(ii).

If PSE continues to plan its CETA compliance strategy without remaining resource agnostic, Renewable Northwest may advise the Commission to reject PSE's final 2021 CEIP or approve the CEIP with the condition that PSE rerun its portfolio model to consider all resources equitably.

To conclude, PSE has chosen to stay consistent with its 2021 IRP in some aspects and has diverted from the IRP in others. Having seen the company complete a portfolio model run upon receiving stakeholder feedback that its variable transmission rates were being modeled at a rate thirty-five times too high ($9.53/MWh versus $0.27/MWh), we know the company has had the

[Footnote 4 Puget Sound Energy Draft 2021 Clean Energy Implementation Plan, p. 33.]

[Footnote 5 WAC 480-100-620.]

turnaround time required to refresh its resource cost assumptions. We again request that these changes be reflected in PSE's final 2021 CEIP.

2. PSE should refine the "Resource Enablement and Delivery" section in the Incremental Cost chapter to describe how the company determined what grid modernization costs are relevant to compliance with CETA and not needed otherwise.

PSE notes in the draft plan, "To accommodate the rapid increase in DERs the grid needs to support over the next 10 years, portions of the grid modernization investments need to be accelerated to match that pace." However, the rapid increase in distributed energy resources ("DERs") projected for PSE's system cannot be fully attributed to the passage of CETA for a number of reasons (e.g., increased customer interest and decreased cost of these technologies). Thus, we recommend that PSE detail in the final CEIP how the company determined the share of grid modernization investments and other grid upgrades which are a direct result of the clean energy investments related to CETA compliance and unrelated to business as usual trends.

3. PSE should explain its planning process leading up to the company's projected 2026 procurements of two new biodiesel-fired peaker plants, as the identified capacity need falls directly after this CEIP planning period (i.e., the company must be planning to fill this capacity deficit within this CEIP compliance period).

As noted in multiple previous comment submissions to PSE in the IRP, RFP, and CEIP processes, Renewable Northwest maintains that PSE's consideration of resource adequacy and resource capacity contributions is flawed: 1) the company is disadvantaging storage resources, as supported by E3's near-term recommendation that PSE revise its effective load carrying capability ("ELCC") methodology for storage resources;6 2) the company is drastically reducing market availability in its Resource Adequacy Model (RAM), ignoring that the most current data shows there will be sufficient Mid-C availability during particular hours and a minimal regional loss of load probability ("LOLP");7 and the company's preferred portfolio from the 2021 IRP assumes that the volume of biodiesel required will be available at the lowest reasonable cost considering WAC 480-100-620(11)(e). And not only are the specific assumptions identified above problematic, but the self-imposed reduction in market reliance similarly has a direct bearing on the size and timing of PSE's capacity need. We recommend PSE address in the final CEIP the steps it will take to better understand its capacity needs beyond this compliance period,

[Footnote 6 E3's Review of Puget Sound Energy Effective Load Carrying Capability Methodology (Oct. 2021), available at https://www.pse.com/-/media/PDFs/001-Energy-Supply/003-Acquiring-Energy/PSE--ELCC-StudySept-2021100720 21FINAL.pdf?sc_lang=en&hash=AB72B5C439BDF50E3B931DCC4A11D40B.]

[Footnote 7 See pg. 3, Oct. 22, 2021, Joint Party Comments, Docket UE-210220, attached to these comments as Exhibit A.]

considering E3's key findings from its review of PSE's ELCC methodology and considering that PSE's constrained modeling of market availability is not supported by the most recent analysis.8

III. CONCLUSION

Renewable Northwest thanks PSE for its consideration of this feedback. We look forward to continued engagement as a stakeholder in this 2021 CEIP process.

[Footnote 8 See, e.g., Northwest Power and Conservation Council's draft 2021 Northwest Power Plan, available at

https://www.nwcouncil.org/sites/default/files/2021powerplan_2021-5.pdf.]

EXHIBIT A

October 22, 2021

Mark Johnson
Executive Director and Secretary
Washington Utilities and Transportation Commission 621 Woodland Square Loop SE
Lacey, WA 98504-7250

RE: Comments of Renewable Northwest, NW Energy Coalition and Rye Development, Docket UE-210220

Puget Sound Energy's Effective Load Carrying Capability Estimates and Use in the Company's All-Source Request For Proposals.

I. INTRODUCTION

Renewable Northwest, NW Energy Coalition and Rye Development ("Joint Parties") thank the Washington Utilities and Transportation Commission ("the Commission") for this opportunity to comment in response to the Commission's August 31, 2021, Notice of Opportunity ("Notice") to File Written Comments related to Puget Sound Energy's Effective Load Carrying Capability Estimates and Use in the Company's All-Source Request For Proposals Pursuant to WAC 480-107, which Puget Sound Energy ("PSE" or "the Company") originally filed on April 1, 2021, and updated on May 10, 2021.1

While we still have lingering concerns about PSE's methodology to calculate ELCC values for both short- and long-duration storage resources, we appreciate PSE's willingness to consult with E3 to provide an unbiased review of PSE's methodology and present their findings and recommendations before the Commission and stakeholders. Our comments below reflect discussions during the ELCC workshop including E3's presentation and report as well as previous discussions and comments that we submitted before the Commission. We hope to discuss this further going forward.

[Footnote 1 Unless otherwise noted, all references in these comments will be to the May 10, 2021, updated RFP.]

II. COMMENTS

E3's Report highlights the inherent deficiencies existent in treatment of market availability in PSE's ELCC modeling methodology

Puget Sound Energy hired Energy and Environmental Economics ("E3") to review the ELCC methodology emanating from the Integrated Resource Plan which flowed through to the Request for Proposal filed on Apr. 1, 2021. In their review, E3 looked at the model input, outputs and assumptions which were key to inform PSE's ELCC values. Based on their review, E3 pointed out several methodological concerns or flaws that were apparent based on prudent utility practices in the region and across the United States. E3 found that PSE's treatment of the Mid-Columbia ("Mid-C") market's capacity undervalues both short- and long-duration storage resources because it underestimates the capacity available and being procured in the region. This underestimation inaccurately reflects a market that is short on energy during particular hours of the day when, in reality, recent analysis from the Northwest Power and Conservation Council ("NWPCC") for their 2021 Northwest Power Plan shows that the region has enough capacity to ensure a reliable and adequate supply for the year 2025. In our previous comments and related technical memo, we highlighted a similar issue in which PSE's treatment of Mid-C's availability is artificially constraining the system and causing an energy shortfall, consequently preventing battery and pumped hydro storage facilities from being able to charge prior to peak load hours. This is causing the extremely low ELCC values coming out of PSE's RAM modeling which, in turn, would have negative consequences for the Company's resource acquisition, leading to neither a cost-effective nor a reliable supply for PSE's customers.

In our previous comments, we pointed out that the reduction in availability of market purchases in PSE's IRP may be artificially constraining the ability of storage resources (including battery and pumped hydro storage) to meet PSE's capacity needs. By revising assumptions to reduce the availability of market purchases across the board, the GENESYS model artificially imposes a significant market import limitation across the full 24-hour window on all days in January and February instead of only during "super-peak" and "heavy-load" hours.2 As a result, PSE's modeling suggests there may be insufficient energy to charge storage resources even though

PSE has not presented analysis to support this lack of available energy in low loss-of-load hours. In other words, the IRP's modeling assumption does not appear to reflect expected system conditions. Rather, it creates artificial conditions where storage resources do not have enough

[Footnote 2 Final PSE IRP at 7-36 to 7-43.]

energy to charge during off-peak hours, thereby reducing their capacity contribution and availability to dispatch when PSE's needs are the highest.

In their recommendations, E3 note that "[t]o assess the impact of changes in PSE's approach to Mid-C on ELCC values, E3 recommends an additional GENESYS model run assuming regional capacity additions such that the region meets a 5% LOLP standard before recalculating ELCC." E3 points out that "adding capacity to the region would increase the reliability of the Mid-C resource but would also reduce the need for reliability-driven capacity additions to PSE's system."

E3 in their review of PSE's ELCC modeling methodology also point out that "[f]ailure to consider the availability of surplus energy in the regional market would result in over-procurement and higher costs for PSE ratepayers. It is reasonable for PSE to assume that some amount of energy would be available in the market due to the nature of the region's hydroelectric resource base, which produces surplus energy during most years. PSE must therefore strike a careful balance between the potential reliability implications and cost savings associated with reliance on the regional market."3

The concerning aspect of PSE's treatment of Mid-C availability lies in the fact that PSE does not model the assumption that reliability-driven capacity additions are made to the broader Pacific Northwest region to achieve a reliability standard. Instead, it relies on outdated model (NPCC's GENESYS) cases which portray that regional system's reliability degrades below accepted resource adequacy thresholds as load continues to grow and plants retire. This is not a prudent observation because NPCC's recent adequacy analysis, as well as active large-scale procurement of capacity resources,4 shows that the region is procuring enough capacity resources to stay below the Council's 5% LOLP threshold even under an early coal retirement scenario.5

In their review of market access assumptions, E3 shows an illustrative example for which "increasing the Mid-C market availability by an additional 500 MW would reduce outage durations substantially by effectively segmenting the long duration outage shown above into multiple smaller-duration outages" (emphasis added). This suggests that shorter duration resources would have greater value if PSE were to fully account for their capabilities under an

[Footnote 3 Page 20, E3's Review of Puget Sound Energy Effective Load Carrying Capability Methodology. October 2021.]

[Footnote 4 PacifiCorp submits final shortlist as key part of company's largest ever renewables solicitation. https://www.pacificorp.com/about/newsroom/news-releases/shortlist-submitted-as-part-of-largest-ever-renewables-s olicitation.html]

PSE 2021 RFP: https://www.pse.com/press-release/details/puget-sound-energy-seeks-bids-for-new-energy-resources 5 RAAC-SAAC Steering Committee Meeting. July 9th, 2021. https://nwcouncil.app.box.com/s/k12r8hry1ofogeqxgjw8spgnv2n55lvm

assumption of regional adequacy, which underscores the importance of the Company following E3's suggestion to re-run their ELCC calculations with the region in a resource adequate position.

We also note that there are some inconsistencies in E3's report related to their review of the impact of potential additions to the regional capacity by replacing 500 MW of perfect capacity with 500 MW of Mid-C capacity. A close review of Figures 2 and 3 reveal inconsistencies in the reported unserved energy in the plots and inconsistencies between the data in the plots and their textual interpretation. Without additional clarification, it is difficult to discern whether E3's analysis adequately investigates the potential sensitivity of PSE's modeling to Mid-C availability and reiterates the importance of PSE conducting additional analysis on this topic.

2. Additional Comments and Clarifications

While not addressed in the report, PSE's presentation on the calculation of energy storage ELCCs raised an additional question regarding their methodology. PSE claims that they are calculating a last-in ELCC for energy storage by adding energy storage after perfect capacity.

However, PSE has not clarified whether the energy storage dispatch algorithm is able to see and access energy from the added perfect capacity resource for the purposes of storage charging. If energy storage resources do not have access to the energy delivered by the perfect capacity resource for charging, then the perfect capacity added has no effect on the storage ELCCs which causes further degradation to their value, which should be remedied. We request that PSE clarify this point with regard to the IRP modeling and ensure in the RFP modeling that the energy storage dispatch algorithm is able to rely upon other added resources, including any added perfect capacity, to charge.

In the report, E3 also points out that there are artificial limits placed on the State of Charge (SoC) of battery storage resources, contrary to their own consultant's report on standard utility practices. Folding in a Minimum SoC requirement has a rollover effect on battery storage ELCC values because of a limitation in their charge and discharge, causing inefficiencies for the PSE system. We agree with E3's recommendation that PSE should restate its ELCC values for battery storage in a manner more aligned with industry standards and align the presentation of ELCC values with the characterization of minimum, maximum, and nameplate MW values in its RFP documentation. We hope that PSE will change these artificial limits based on technical characteristics of the bids they receive for the RFP.

In addition to these two critical issues, there are several other deficiencies pointed out by E3 that warrant the Commission's attention. PSE's use of outdated weather and temperature datasets in light of severe climate change is concerning because it relies on data going back to 1929 to inform its resource planning and procurement in 2021. This is leading to a situation in which the outage events in PSE's modeling are not evenly distributed across temperature input years -- 33% and 35% of simulated draws with loss-of-load events in January 2027 and January 2031, respectively, occur with load data prior to 1948. Further, 94% of simulated draws with loss-of-load events in January 2027 and January 2031 occur with load data prior to 1972, the midpoint of the temperature year data. Using outdated weather and temperature datasets in light of climate change runs the risk of skewing the Company's analysis and leading to imprudent procurement decisions. We recommend PSE run additional ELCC and loss-of-load studies based on datasets from 1980 onwards to ensure that the effects of climate change on load and temperatures are clearly analyzed and evaluated.

3. RFP Process

PSE has stated that they intend to make ELCC methodological updates in Phase 2 of the RFP, but that they will continue to rely on generic ELCC assumptions from the IRP to screen resources in Phase 1 of the RFP. This approach could lead to poor procurement decisions if resources are screened out in Phase 1 that would otherwise have contributed to stronger portfolio performance in Phase 2. PSE has asserted that the ELCC methodology does not need to be updated in Phase 1 because resource comparisons in Phase 1 are only made between technologically similar resources. However the validity of this assertion cannot be confirmed without additional transparency into how methodological updates affect storage ELCCs and whether the generic storage ELCCs from the IRP represent reasonable proxy values for a wide range of potential storage configurations with different round-trip losses, minimum and maximum storage levels, and other key parameters. In addition to the methodological updates that we recommend in these comments, we also recommend that PSE be required to demonstrate that screening decisions made in Phase 1 are robust to any implemented ELCC methodological updates in Phase 2. In the event that the ELCC methodological updates materially affect the performance of any storage resource that was screened out in Phase 1 such that it could reasonably compete with resources (of any technological type) that were taken to Phase 2, that storage resource should be advanced to Phase 2 for full evaluation.

III. CONCLUSION

Renewable Northwest, NW Energy Coalition and Rye Development thank PSE and the Commission for their consideration of this feedback. In conclusion, we recommend that:

*PSE conducts additional GENESYS model runs assuming a regionally adequate system and folds in that analysis to recalculate the ELCC values of short and long-duration storage resources.

*PSE consults with E3, to clarify and correct the errors mentioned in our comments relating to E3's review of PSE's treatment of Mid-C output.

*PSE demonstrates that screening decisions made in Phase 1 are robust to any implemented methodological updates in Phase 2 to avoid exclusion of cost-effective capacity resources in Phase 1 of the RFP.

We are optimistic that the changes and additional analysis that have been recommended by E3 and stakeholders will help PSE to identify a least-cost portfolio that also puts the Company on a path to achieving CETA's clean energy standards and the Company's own emission reduction goals. We look forward to continued engagement as stakeholders in the 2021 AS-RFP process to ensure that PSE's resource acquisitions are prudent and based on fair and accurate valuation of all technologies.

Organization: Sierra Club
Source: Email

Comment:

Re: Sierra Club Comments on Puget Sound Energy's Draft Clean Energy Implementation Plan (Docket UE-210795)

Dear Ms. Maxwell:

Please find enclosed Sierra Club's Comments on Puget Sound Energy's Draft Clean Energy Implementation Plan. This filing has been e-filed with the commission and served upon parties via email.

Please let me know if you have any questions. Thank you.

cc:

Puget Sound Energy Service List

Re: Sierra Club Comments on Puget Sound Energy's Draft Clean Energy Implementation Plan (Docket UE-210795)

Dear Ms. Maxwell:

Sierra Club, on behalf of its more than 30,000 members in Washington, appreciates the opportunity to provide some initial feedback on the draft Puget Sound Energy's ("PSE") Clean Energy Implementation Plan ("CEIP"). We look forward to more fully engaging in this CEIP process as it continues to unfold with PSE and at the Washington Utilities and Transportation Commission ("UTC").

This is the first iteration of the CEIPs, which intended to describe "the utility's plan for making progress toward meeting the clean energy transformation standards" to be submitted to the UTC every four years.[Footnote 1] The CEIPs must include information in several categories, such as interim targets, specific targets, customer benefit data, specific actions, and incremental costs, among other areas.[Footnote 2]

Sierra Club is generally supportive of the comments made by NW Energy Coalition, and the Blue Green Alliance, among other groups.

There are a few issues Sierra Club would like to highlight at the outset, including that the Draft CEIP may fail to meet the minimum statutory requirements as written because resource costs are too high or missing and specific actions are lacking; the timing of the RFP and its negative impact on CEIP cost estimates; the potential for a gas peaker plant; the need to elevate interim clean energy targets in the CEIP; and other issues.

[Footnote 1 Wash. Admin. Code § 480-100-640(1).]

[Footnote 2 Wash. Admin. Code § 480-100-640 (2)-(11).]

I. PSE'S DRAFT CEIP MAY NOT MEET THE MINIMUM STATUTORY REQUIREMENTS

Sierra Club believes that the Draft CEIP may fail to meet minimum statutory requirements. Significant changes will be needed in the Final CEIP so it does not fall short of the requirements outlined in Wash. Admin. Code § 480-100-640 and Wash. Rev. Code § 19.405.060.

The rules at Wash. Admin. Code § 480-100-640 outline what a CEIP must include. There are significant shortcomings in the draft CEIP relative to the contents. Most notably:

A. Resource Costs

The resource costs for renewables were not updated for the CEIP to ensure the lowest reasonable cost portfolio under Wash. Admin. Code §§ 480-100-640(6)(f), (7) and 480-100-650(3)(1).

Additionally, the Social Cost of Greenhouse Gas ("SCGHG") calculations methodology used in the draft CEIP is flawed. NWEC's comments attach a detailed technical analysis from Moment Energy Insights that highlights these deficiencies and proposed ways to fix them. Sierra Club also highlighted the problem about using older renewable energy costs, which have gotten lower, in our PSE Draft Integrated Resource Plan ("IRP") comments and report from Grid Strategies, attached hereto as Attachment 1. [Footnote 3] It is also not clear whether PSE factored in tax credits for renewable energy projects particularly over the 2022-2025 timeframe.[Footnote 4]

B. Specific Actions

Contrary to the requirements outlined in Wash. Admin. Code §§ 480-100-640(5) and (6), the draft CEIP lacks specific actions for Energy Efficiency ("EE"), Demand Response ("DR") and Renewable Energy ("RE") resources. The draft CEIP only provides general categories of actions. Appendix L CEIP Programs and Actions Master Table also lacks significant amounts of required data. PSE has argued that it cannot complete the tables and narratives required by Wash. Admin. Code §§ 480-100-640(5) and (6) until the results of the various RFPs have been finalized in mid- 2022, but this delays implementation of CETA for more than another year. The Commission will also be in the position of reviewing a plan that lacks data and is incomplete in early 2022.

[Footnote 3 Grid Strategies, Report on the Puget Sound Energy 2021 IRP Plan at 8-9, Nos. UE-200304 & UG-200305 (Wash. Utils. & Transp. Comm'n Feb. 25, 2021) \[hereinafter "Grid Strategies PSE IRP Report"\] (provided as Attachment 1). PSE states that it mostly imported its costs from the 2021 PSE for the draft CEIP. _See_ Puget Sound Energy, _2021 Clean Energy Implementation Plan_ at 33 (Oct. 2021), _available_ at https://irp.cdn-website.com/dc0dca78/files/uploaded/Draft%20PSE%20CEIP_10.15.2021_vs%202.pdf \[hereinafter "PSE Draft CEIP"\].]

[Footnote 4 Grid Strategies PSE IRP Report at 4-5; _See also_ PSE Draft CEIP at 163 ("Specific areas of known costs that are not currently quantified include…updates to federal and state tax structures.")]

I. TIMING OF REQUEST FOR PROPOSAL AND THE CEIP COST ESTIMATES

The timing of PSE's All-Source Request for Proposal ("RFP") has left gaping holes in the draft CEIP. The PSE 2021 All-Source RFP seeks bids from commercially proven and CETA-compliant resources 5 MW or larger to supply up to 1,669 GWh of CETA energy resources by 2026\. PSE states that this figure aligns with their preferred portfolio's forecasts of 400 MW of renewable resource additions in 2025. The All-Source RFP also seeks up to 1,506 MW of CETA-compliant capacity resources by 2027. As part of the RFP, PSE will consider any electric generation, storage, or other resource type or technology that can meet all or part of the resource need, provided that the resource complies with all laws and regulations and meets the minimum qualification requirements of the RFP. [Footnote 5]

The Draft CEIP states in many places that it cannot provide numbers until the RFP process has been completed. For instance, “When we \[Puget Sound Energy\] complete the program acquisition request for proposal (RFP) process and develop program designs in 2022, we will learn much more about our region’s true market potential, which will allow us to update our goals in 2023.” [Footnote 6] Appendix L of the CEIP showing CEIP Actions and Costs is also deficient since the cost data is missing from many of these proposed actions. [Footnote 7] And Chapter 2 on interim and specific targets notes that “ The information \[PSE\] receive in 2022 from both the All-Source and Targeted DER/DR Request for Proposal (RFP) will help PSE refine the data necessary to refine the forecasted distribution of energy and non-energy costs and benefits.” [Footnote 8]

The timing of this RFP is disappointing as it does not allow this CEIP to include the cost estimates from it in the final CEIP draft.

Sierra Club suggests an immediate update to the CEIP once the RFP numbers are available, and, in the interim, PSE must use more recent data on renewables and battery storage in the CEIPs while it awaits RFP results. The current Draft CEIP does not contain sufficient or accurate information which is problematic.

II. GAS PEAKER PLANT/FLEXIBLE CAPACITY

Sierra Club is concerned about the mention of a peaker plant coming online in 2026. According to the PSE IRP, this could be a 255 MW resource slated to come online in 2026. [Footnote 9] While there is some talk of biodiesel as the fuel for this peaker plant, there is also concern that this could be an additional gas plant. Certainly, any new resource coming online in 2026 would need to commence construction during the first CEIP time period (2022-2025) and should be a topic of

[Footnote 5 PSE Draft CEIP at 73.]

[Footnote 6 _Id_. at 3.]

[Footnote 7 _Id_. app. L.]

[Footnote 8 _Id._ at 19.]

[Footnote 9 Puget Sound Energy, _2021 Integrated Resource Plan_ ch.3 at 3-4 fig.3-1 (Apr. 1, 2021),

available at https://pse-irp.participate.online/2021-irp/reports.]

discussion within the CEIP. Sierra Club does not believe that any new gas resources are justified or needed, and gas certainly does not meet Washington’s climate goals.

In addition to not adding more gas to the system, PSE should discuss a timetable for shutting down existing gas and coal plants as quickly as possible and developing clean energy alternatives. Increasing battery storage would be a way to eliminate a need for peaker plants and could serve as flexible capacity.

I. INTERIM TARGETS FOR CLEAN ENERGY IN CEIP SHOULD BE ELEVATED

The interim target the PSE sets for clean energy sources in the CEIP is 59% by 2025, moving from 43% in 2022.10 PSE notes that these targets are a slight acceleration from their targets in

the 2021 IRP which was 39% renewable energy in 2022, and 56% by 2025.11 While Sierra Club supports this as a move in the right direction, it is unclear why the target is not more ambitious in the 2022-2025 timeframe, especially given the urgency of our rapidly changing climate. For example, PSE proposes no new wind resources in 2022 or 2023.12 Battery storage is also only 25 MW in this time period and could easily be increased and implemented on a faster timeline.13 Similar, Distributed Energy Resources ("DERs"), here solar, could be elevated beyond the 80MW currently proposed.14

NWEC's comments and report from Moment Energy Insights make this point as well. PSE's clean energy targets can be updated to at least 66% by 2025 for similar costs. Even with conservative updates to PSE's resource costs, increasing the 2025 renewable acquisition target from 500 MW to 900 MW (to 66% of PSE's CETA interim target) would yield similar incremental costs to those that PSE has deemed acceptable in their draft plan.

II. CUSTOMER BENEFIT INDICATORS ("CBIs")

Sierra Club agrees with the Blue Green Alliance and NWEC, among other allies, that the new Customer Benefits Indicators are confusing, seem to result in misleading comparisons, and ultimately may not be applied in the spirit of CETA and the CEIP.15 Sierra Club has questions about the use and application of the CBIs, how PSE used CBIs, whether living-wage jobs were adequately accounted for in the CBIs, and whether suggestions offered by allied organizations, several of whom represent low-income ratepayers and frontline communities, were incorporated.

First, the application of the CBIs in PSE's CEIP is difficult to understand. While this is a new metric, some basic flaws exist that should be corrected in the final CEIP. There is no explanation of how the scoring for the CBIs was determined or applied. Clean energy options that scored similarly seem to be dropped from further consideration without any explanation. For example,

[Footnote 10 PSE Draft CEIP at 13 tbl.2-1, 14 fig.2-2.]

[Footnote 11 _Id_. at 19 tbl.2-4.]

[Footnote 12 _Id_. at 13 tbl.2-1.]

[Footnote 13 _Id._ at 30.]

[Footnote 14 _Id._ at 30.]

[Footnote 15 Wash. Admin. Code § 480-100-640(4) and Wash. Rev. Code § 19.405.010.]

NWEC's comments highlight that "PSE substation batteries" and "Mobile Batteries" are identically scored but the "Substation batteries" option is dropped without explanation. Other examples of inconsistencies exist as well. As another example, "C&I battery install incentive" scores a bit higher than "\[m\]obile batteries", "third party utility scale distributed battery PPA" or "\[b\]attery stations", but yet the "C&I battery install incentive" is also dropped from further consideration. The Washington Clean Energy Coalition also discusses these issues in their extensive comments on the topics. The CBI metrics are hard to understand and do not seem to follow any particular logic. PSE needs to improve the CBIs so public commenters, PSE, and the Commission can have a shared understanding of the metrics and how they are used.

Second, it appears that in the Draft CEIP, PSE applied the CBIs only to DERs options. As NWEC also notes, this application of CBIs is too narrow and the Final CEIP should clearly explain how the CBIs are considered in the selection of **_all_** EE, RE, and DR specific actions. The Final CEIP must clearly explain how CBIs are taken into account for _all_ CEIP actions and this must not wait until later years.

Third, there is a question about whether the CBIs capture the notion of creating high-quality family wage jobs. In implementing CETA, the law indicates that "the state must prioritize the maximization of family wage job creation, seek to ensure that all customers are benefiting from the transition to a clean energy economy, and provide safeguards to ensure that the achievement of this policy does not impair the reliability of the electricity system or impose unreasonable costs on utility customers."16 Blue Green Alliance offers several suggestions about ways to improve the CBIs to encourage sustainable, family-wage, high-quality jobs.

Fourth, Sierra Club encourages PSE to pay close attention to NWEC, The Energy Project ("TEP"), Public Counsel, and Front and Centered's Joint Proposal on Customer Benefit Indicators, filed July 30, 2021 and again on November 5, 2021. These comments give specific suggestions for clear metrics as opposed to the confusing weighted system the PSE employs in the draft CEIP. PSE should consider revising the draft CBIs along these lines.

I. OTHER ISSUES

A. Climate Change and Weather Assumptions

The draft CEIP uses outdated weather and climate data. Data that dates back to the 1930s does not reflect the current realities of climate change. Using more recent climate data will provide a more accurate picture of temperatures moving forward, including for the winter peak forecasts. As written, the CEIP overestimates winter peak needs. Winters are no longer as cold as they once were, and summers are getting hotter. The effects of climate change on load and temperatures need to be clearly analyzed and evaluated, and must go into the Final CEIP.

B. Demand Response

The draft CEIP specifies a DR target of 23.7 MW through 2025.17 This number is low and fails to qualify as an aggressive Demand Response investment prior to acquiring new resources_,_ such

[Footnote 16 Wash. Rev. Code § 19.405.010(2).]

[Footnote 17 PSE Draft CEIP at 17.]

as the distributed solar, battery DERs, or the need to add peaker capacity. The amount of DR that PSE proposes is significantly smaller than what has been proposed by other utilities with fewer customers. Additionally, PSE's DR programs are not slated to commence until 2023, which is too far down the road. The DR and Time Varying Rates pilots are also four years long, which is far too long when PSE can learn from other successful utility DR pilots. Pilots should be shortened and large-scale implementation of DR encouraged sooner. It is also unclear why there is a 50% reduction for winter peak in the Time Varying Rates pilot.18 This assumption needs to be further explained by PSE and its consultant and is likely too high. PSE needs to do more to implement larger amounts of DR more quickly in order to comply with the CEIP.

A. Incremental Costs

There appears to be some confusion over what costs that PSE claims are related to CEIP implementation and are not simply costs incurred by a utility in the ordinary course of business. The two percent figure referenced in the CEIP-related code refers only to costs "directly attributable to the actions necessary to comply with the requirements of RCW 19.405.040 and 19.405.050."19 The final CEIP must also make cost data accessible. In current form, the broken links and incomplete references do not suffice. As NWEC discusses in its comments, ensuring that PSE would only take actions but for CETA is an important test to make sure that CETA costs are effectively accounted for and that other routine utility costs are not inaccurately attributed to the law.

II. CEIP PROCESS AND POTENTIAL FOR IMPROVEMENTS

This is the first time that Washington utilities have developed CEIPs. As such, Sierra Club expects that the stakeholders will continue to refine and improve this CEIP process.

In Sierra Club's view, the CEIP should be a document that stands alone and defines specific actions a utility will take over the next four years to incorporate CETA goals. It is a process distinct from the Integrated Resource Plan, which merely presents a variety of options to weigh. The CEIP document should be clear and concise.

The CEIP document should also not require cross-reference to other documents, like the IRP and its appendices, in order to understand the CEIP. The other sources can be included as an appendix if relevant, or reiterated in the main text of the document itself as a linked cross-reference. This will make the document more accessible to everyone wishing to review it and engage in the CEIP process.

Finally, it would be appropriate in the future to allow discovery to commence between the Draft and Final CEIP, rather than waiting until after the Final CEIP is filed. Allowing discovery earlier in the process allows for more meaningful stakeholder engagement, and room for the draft plan to meaningfully change before the Final CEIP. The current process does not seem to be unfolding in this fashion and leaves the main action for the period of time between the Final CEIP and the UTC comment deadline. This process change should be considered in the future.

[Footnote 18 _Id._ at tbl. 4-2 at 71.]

[Footnote 19 Wash. Rev. Code § 19.405.060(3)(a).]

I. CONCLUSION

The purpose of the CEIP is to ensure accountability in the CETA implementation process. Sierra Club's comments are intended to flag ways that PSE can improve the Final CEIP to meet the requirements of the law, and help customers understand how PSE intends to transition to more clean energy sources.

Sierra Club appreciates the opportunity to comment and looks forward to continuing to engage in the CEIP process. We hope that PSE's Final CEIP will incorporate these changes and set a solid foundation for transforming Washington to a 100% clean energy grid.

Sincerely,

/s/ Jessica Yarnall Loarie Jessica Yarnall Loarie

Senior Attorney

Sierra Club [EMAIL]

Re: Docket Nos UE-200304 and UG-200305 - In the Matter of Puget Sound Energy's Draft 2021 Electric Integrated Resource Plan

Dear Mr. Johnson:

Please accept the attached report on Puget Sound Energy's Draft 2021 Integrated Resource Plan. This report is submitted on behalf of Sierra Club and its more than 842,000 members, including over 32,750 members in Washington.

This report was prepared by Michael Goggin, an expert on clean energy integration and transmission at Grid Strategies, LLC. In his report, Mr. Goggin outlines a clear path for PSE to join other utilities in retiring obsolete coal and natural gas resources in favor of clean energy technologies.

Respectfully submitted on behalf of Sierra Club on the 25th day of February, 2021.

_ /s/ Jessica Yarnall Loarie_

Jessica Yarnall Loarie Senior Attorney

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[EMAIL]

Report on the Puget Sound Energy 2021 IRP Plan

Washington Utilities and Transportation Commission Dockets: UE-200304 and UG-200305

Prepared for Sierra Club February 25, 2021

By: Michael Goggin Grid Strategies

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INTRODUCTION AND SUMMARY

Puget Sound Energy ("PSE") has a pivotal opportunity to make strategic planning decisions that can benefit and protect consumers for decades to come. PSE's exit from the Colstrip coal plant offers a once-in-a-lifetime opportunity to replace polluting resources with modern, non-emitting resources. It is critical that PSE not replace one obsolete energy source – coal – with another resource that is well on its way to obsolescence: natural gas. These comments provide a path for PSE to join other utilities in leapfrogging over obsolete technologies to the clean energy technologies of the 21st Century.

First, PSE should accelerate its deployment of renewable energy, energy storage, demand response, energy efficiency, and electrification. In particular, the recent extension federal tax credits for renewable and renewable-storage hybrid projects offers a short window in which those resources can be procured at record low costs to ratepayers. These comments also identify flaws in how PSE's Integrated Resource Plan ("IRP") models resources and the requirements of Washington Clean Energy Transition Act ("CETA").

Second, these comments explain how PSE's proposal to expand its dependence on gas generating capacity exposes its ratepayers to reliability, fuel price, and carbon price risks. The tragic events of last week, in which millions lost power across the South-Central U.S. primarily due to the loss of gas generation, are a stark reminder that gas supplies and power plants are vulnerable to interruption in all regions.

Third, our comments explain how expanding centralized power markets in the West offer an opportunity for PSE to benefit from diversity in renewable supply and electricity demand with other utilities across the West.

Fourth, we explain in detail how aggregating a diverse supply of renewable resources across a large geographic area increases the resource adequacy contribution of those resources to meeting peak electricity demand.

Finally, our comments explain that, to realize the benefits of aggregating regional diversity in renewable supply and demand, PSE must work intensively to deploy transmission that is appropriately sited to address land and wildlife concerns.

In addition, the IRP process in Washington is different than in many other states in that it lacks formal discovery. Thus, an intervenor like Sierra Club cannot access the utility's modeling and assumptions through a formal discovery process, as is the standard in most states. This analysis is more limited than it would be in other IRP proceedings due to the lack of information about PSE's modeling assumptions, methods, and results. Sierra Club respectfully requests that in future IRP proceedings, the Washington Utilities and Transportation Commission allow intervenors access to the utility's modeling and assumptions through a formal discovery process, as is standard in most states. Mr. Goggin, who assisted Sierra Club with the preparation of these comments, has testified or provided comments in IRP proceedings in Georgia, Indiana, Minnesota, Montana, and Virginia, as well as generation procurement cases in New Mexico, Ohio, Oklahoma, and Wisconsin. In all of those cases intervenors were allowed to ask questions of the utility, typically through formal discovery, and in many cases, they were provided access to the utility's modeling files including assumptions, methods, and results. Denying this access creates an inherently unlevel playing field between the utility and intervenors, and ratepayers are ultimately harmed by the lack of information and transparency. In almost all cases, access to the utility modeling revealed assumptions and methods that were not only questionable, but constituted actual errors in the utility's analysis. In cases Mr. Goggin participated in New

Mexico and Minnesota, intervenors used this access to replicate the utility's modeling and then modify assumptions to produce more optimal generation procurement choices. Having access to PSE's modeling in this case and an ability to ask questions via formal discovery, would have allowed for a more thorough evaluation of PSE's modeling and assumptions.

Many sections of the IRP, including many Appendices and results for approximately half of the modeling sensitivities, were not included in the draft IRP, depriving intervenors of the ability to comment on these important topics. For example, modeling results for PSE's stochastic analysis and market reliance analysis were not included in the draft, and sensitivities evaluating transmission expansion, more rapid deployment of energy efficiency, carbon emission requirements, gas-to-electric conversion, and the impact of climate change on demand also would have provided valuable information to inform our comments. All of the appendices for electric and gas modeling models, inputs, and results were also not provided. Unfortunately, consumers are put at risk by this lack of information and intervenors' inability to fully evaluate PSE's modeling.

I. Flaws in PSE's modeling

_A._ PSE should accelerate the transition to clean energy

PSE can reduce consumer costs and avoid the need to add fossil generating capacity by accelerating its deployment of renewable energy, energy storage, demand response, energy efficiency, and electrification. The timing of PSE's proposed resource additions in its preferred portfolio are summarized in Figure 1 copied from PSE's IRP.1 Unfortunately, PSE's plan misses opportunities to more cost-effectively deploy non-emitting resources in the near

[Footnote 1 Puget Sound Energy, _2021 Draft Integrated Resource Plan_ at 3-4 (Jan. 2021), _available at_ https://oohpseirp.blob.core.windows net/media/Default/Reports/Draft/Chapters/UE-200304-UG-200305-PSE- DRAFT-2021-IRP-Chapters-(01-04-21).pdf \[hereinafter "2021 IRP"\].]

term that could eliminate the need to add gas capacity following PSE's exit from the Colstrip coal units in 2025.

Figure 1: Timing of PSE Preferred Portfolio capacity additions

[Figure 1]

First, recent federal tax credit extensions make it possible for PSE to add large quantities of very low-cost renewable and renewable-storage hybrid resources in the near term. Spending legislation enacted in December 2020 extended the federal renewable tax credits, allowing wind, solar, and solar-battery projects receiving higher value tax credits to come online through the end of 2025.2 Solar and solar-battery projects received a two-year extension of the Investment Tax Credit ("ITC"), so projects that start construction before the end of 2022 can receive an ITC for 26% of up-front project costs, and 22% for projects that start construction before the end of 2023. The solar/hybrid ITC deadline for qualifying projects to be placed in service is also moved back two years, from the end of 2023 to the end of 2025.

[Figure 2 Jeff St. John, _Congress Passes Spending Bill with Solar, Wind Tax Credit Extensions and Energy R&D Package,_ (Dec. 22, 2020), _available at_ http[s://www.g](http://www.greentechmedia.com/articles/read/solar-and-wind-tax-credit-extensions-)reen[techmedia.com/articles/read/solar-and-wind-tax-credit-extensions-](http://www.greentechmedia.com/articles/read/solar-and-wind-tax-credit-extensions-) energy-rd-package-in-spending-bill-before-congress.]

Wind projects received a one-year extension and can now start construction through the end of 2021 and qualify for the $15/MWh (or 60% of the full $25/MWh value) Production Tax Credit ("PTC"). Most wind project developers qualify as "starting construction" by simply paying a deposit for turbines or other equipment. The IRS has previously allowed wind projects four years to come online after the start of construction, so wind projects placed in service through 2025 will likely be able to earn $15/MWh PTCs for their first 10 years of operations.3

PSE has the opportunity to contract with many wind and solar projects currently under development that either will qualify for the extended tax credits, or have already qualified for the higher value tax credits that were available in previous years. PSE's generator interconnection queue includes 4,673 MW of proposed wind, solar, and storage projects that have applied to interconnect to PSE's system.4 No power purchaser has been publicly announced for most of these projects, likely indicating that in most cases at least some of their capacity is still available to PSE.

This includes several large renewable and storage projects being developed near the Colstrip Transmission System ("CTS") in Montana that could be delivered to PSE. As documented by PSE and discussed at length below, Montana wind resources offer significantly higher capacity value for meeting PSE's peak demand needs, displacing the need for other capacity resources like gas. In addition to the 750 MW Clearwater wind project,5 the

[Footnote 3 I.R.S., Notice 16-31 at 5 (May 5, 2016), available at https://[www.irs.gov/pub/irs-drop/n-16-31.pdf.](http://www.irs.gov/pub/irs-drop/n-16-31.pdf)

[Footnote 4 _Current Transmission Queue_, Puget Sound Energy, https://www.pse.com/pages/transmission/obtaining- services/transmission-queue (last accessed Feb. 24, 2021) .]

[Footnote 5 Tom Lutey, _Montana's largest wind farm will be built near Colstrip beginning in 2021_, Billings Gazette (Jan. 4, 2021), https://billingsgazette.com/news/montanas-largest-wind-farm-will-be-built-near-colstrip-beginning-in- 2021/article_abcdfff8-21dc-5abe-b6d7-f5db319ca44a html.]

500 MW Buffalo Trail project featuring 250 MW of wind and 250 MW of solar is also slated to come online near the CTS line in 2022.6

PSE can also accelerate its proposed energy efficiency and demand response programs. PSE is very conservative in its assumption for the time required to ramp up demand response programs, arguing that "\[d\]emand response takes a couple of years to set up before savings are achieved, so even with four programs starting in 2022, the total nameplate by 2025 is only 10 MW because of the time it takes to establish the programs and enroll customers. The total DR program size grows to 161 MW nameplate capacity by 2030."7 This is contradicted by the experience of other utilities that have quickly ramped up demand response programs. In many cases, utilities issue solicitations for demand response programs a year or less in advance of when they are expected to be deployed.8 PSE can also accelerate its energy efficiency programs. We expect that the modeling results for Sensitivities F and H, which respectively ramp up energy efficiency measures over 6 years instead of 10 years and use a lower discount rate for demand-side resources, will illustrate the benefits of a more rapid deployment of energy efficiency measures. Most importantly, we expect that accelerating these clean supply and demand resources would

eliminate the need to add gas capacity following PSE's exit from the Colstrip coal units in 2025.

PSE's electrification efforts should also be accelerated. Early action on electrification is essential for cost-effectively reaching increasingly stringent carbon reduction requirements

[Footnote 6 Tom Lutey, _Broadview wind and solar farm gets new owner_, Billings Gazette (Dec. 17, 2020), https://billingsgazette.com/news/state-and-regional/broadview-wind-and-solar-farm-gets-new- owner/article_727b9178-dfde-55ae-a06f-912a30827503.html.
[Footnote 7 2021 IRP at 2-15.
[Footnote 8 _See, e.g.,_ Commercial & Industrial Demand Response Program, Pub. Serv. Comm'n of N.M, Request for Proposals – Technology and Implementation Services (Jan. 25, 2016), _available at_
http[s://w](http://www.pnm.com/documents/396023/3003075/PNM%2BCI%2BDR%2BRFP_Jan%2B25%2B2016v2.pdf/b669c9aa-7b03-4700-
)ww[.pn](http://www.pnm.com/documents/396023/3003075/PNM%2BCI%2BDR%2BRFP_Jan%2B25%2B2016v2.pdf/b669c9aa-7b03-4700-
)m[.co](http://www.pnm.com/documents/396023/3003075/PNM%2BCI%2BDR%2BRFP_Jan%2B25%2B2016v2.pdf/b669c9aa-7b03-4700-
)m[/documents/396023/3003075/PNM+CI+DR+RFP_Jan+25+2016v2.pdf/b669c9aa-7b03-4700-
](http://www.pnm.com/documents/396023/3003075/PNM%2BCI%2BDR%2BRFP_Jan%2B25%2B2016v2.pdf/b669c9aa-7b03-4700-) 8556-08751dfaccb7?t=1453768593219.]

because of the slow turnover in the stock of building heating systems, water heaters, and other appliances.9 Early action on electrification, particularly for new buildings, is also essential for reducing methane emissions from gas distribution system leaks. Electrification of building and water heating and transportation loads also adds a valuable source of controllable load that can be used for demand response, particularly during winter peak periods. It is possible to shift a large quantity of these loads earlier or later in time to reduce peak demand and coincide with periods when renewable supply is more abundant. For example, buildings and
water can be preheated, or vehicle charging can be delayed. Better building envelopes also reduce building heat loss in the winter, which reduces the heating load and allows greater shifting of heating load through demand response. This reduces the amount that less efficient
resistance heat strips have to run in cold weather, in addition to co-benefits such as reduced bills
and improved comfort for customers.
The PSE IRP gas analysis does not adequately address building electrification and codes and standards. Appendix I and page 4-22 state that sections relevant to gas analysis, building codes and standards, and electrification will be completed for the final 2021 IRP, so we have been unable to evaluate PSE's analysis.

PSE gas demand forecasts do not seem to include codes and standards for new construction, or effects of the state building performance standard. PSE's electrification plans must be consistent with state and local requirements in Washington. For example:

* WA State Clean Energy Strategy (2021) which was recently released, identifies building electrification as a necessary strategy needed to help meet state greenhouse gas emission reduction goals.

[Footnote 9 Risky Business, From Risk to Return – Investing in a Clean Energy Economy at 25 (2016), available at [http://riskybusiness.org/site/assets/uploads/sites/5/2016/10/RBP-FromRiskToReturn-WEB.pdf.](http://riskybusiness.org/site/assets/uploads/sites/5/2016/10/RBP-FromRiskToReturn-WEB.pdf)]

* WA state requires that new buildings will need to be net zero by 2031.
* Seattle 2018 Commercial Energy Code will prohibit gas for space heating in all buildings as well as water heating in most buildings. We expect other jurisdictions to follow with similar energy codes.

* WA State Clean Buildings Act requires existing buildings 50,000 sq feet and above to meet energy use intensity targets starting in 2026, with a voluntary incentive program starting in the fall of 2021. Given that the Clean Buildings Act requires PSE to pursue all cost-effective gas conservation, and because accounting for the social cost of carbon has pushed more measures to be cost- effective, conservation should significantly reduce energy demand.

_A._ PSE's renewable cost assumptions are too high
PSE's source for generation costs is the 2019 National Renewable Energy Laboratory ("NREL") Annual Technology Baseline ("ATB"), which is an industry standard resource.

However, PSE misses continued cost reductions for renewable and storage technologies by using the 2019 version and not the current 2020 version of ATB. In particular, the cost of solar declined significantly in the 2020 version of ATB, relative to the 2019 version used by PSE.10

PSE's solar cost estimates are also too high because the 2019 NREL ATB cost estimate is based on a 23 MW installation size for solar.11 Data from the Lawrence Berkeley National Laboratory show that for utility-scale solar projects installed in the U.S. in 2019, the capital costs of projects between 100 and 200 MW in size were 17 percent lower than projects between 20

[Footnote 10 _Annual Technology Baseline - 2020 v. 2019 Changes_, NREL Transforming Energy, https://atb.nrel.gov/electricity/2020/changes.php (last visited Feb. 24, 2021).]
[Footnote 11 _Annual Technology Baseline – 2019 Data_, NREL Transforming Energy, https://atb.nrel.gov/electricity/2019/data html (last visited Feb. 24, 2021).]

and 50 MW (such as the 23 MW project assumed by PSE), and 40 percent lower than projects between 5 and 20 MW.12

_A._ Flaws in how PSE accounts for the requirements of CETA
PSE's treatment of carbon costs is inconsistent with the requirements of CETA. PSE admits that the cost of carbon is not accounted for in its modeling of the dispatch of generating resources, explaining that:

The SCGHG is applied as a cost adder in the development of the electric price forecast and in the portfolio modeling process when considering resource additions. The SCGHG is not included in the final dispatch of resources because it is not a direct cost paid by customers. CETA explicitly instructs utilities to use the SCGHG as a cost adder when evaluating

conservation efforts, developing electric IRPs and CEAPs, and evaluating resources options. The SCGHG cost adder is included in planning decisions as part of the fixed O&M costs of that resource, but not in the actual cost and dispatch of any resource. An SCGHG adder is also added to the unspecified market purchases using the

0.437 metrics tons CO2/MWh emission rate as specified in CETA.13

In reality, carbon costs are an externality associated with the production of electricity from fossil fuels, and thus are a variable cost and not a fixed cost. It is essential that the variable externality cost of fossil generation be modeled in power system dispatch to determine the efficient use of resources, using the resulting price signals to properly weigh tradeoffs between emitting resources, non-emitting resources, energy efficiency, and market purchases. By ignoring the externality cost of gas consumption, PSE's modeling greatly overestimates the capacity factors and economic value of gas power plants, and underestimates the relative value of non- emitting resources including energy efficiency and market purchases. Accurately modeling the cost of carbon in dispatch would have shown that gas capacity factors decline even more quickly and drastically than they do in PSE's modeling. With PSE's modeling already showing gas

[12 Mark Bolinger et. al., LBNL, Utility-Scale Solar Data Update: 2020 Edition, (Nov. 2020), available at]
https://emp.lbl.gov/utility-scale-solar/ \[hereinafter "2020 Utility-Scale Solar Update"\].
[13 2021 IRP at 2-22.]

combined cycle capacity factors declining from 70% to 5%,14 accounting for carbon costs in dispatch would have even more clearly shown new gas capacity to be at risk of becoming a stranded asset well within the 25-year planning horizon. Sensitivity J properly included the social cost of carbon in dispatch, which we expect will accurately show reduced reliance on gas generation and greater use of energy efficiency.15

The Commission should also not allow PSE to shirk its requirements under CETA by failing to make timely investments to bring cost-effective clean energy resources online. Early investments in clean energy, particularly while federal tax credits are available, reduce risks of later exceeding CETA's cap on the cost of compliance.

In particular, using transmission expansion that is appropriately sited to address land and wildlife concerns, PSE can access high capacity value renewable resources and increase ties to markets in other parts of the West, allowing PSE to operate reliably with very high levels of renewable energy at low incremental cost. PSE must take steps now that will result in that transmission, and the resources and market transactions it enables, being in place when they are needed. PSE should not be rewarded for failure by setting itself up to exceed the cap on the cost of CETA compliance.
I. Risks from increased gas dependence: correlated outages, fuel price risk, carbon price risk

_A._ Reliability risks from gas generator correlated outages
As the events of recent weeks make painfully clear, correlated failures of gas power plants are a major risk to electric reliability. Rolling blackouts in Texas and other parts of the Central U.S. were primarily caused by outages of gas generating capacity, caused by a

[Footnote 14 _Id_. at 3-8.]

[Footnote 15 _Id_. at 3-10.]

combination of gas production wells freezing, high gas demand for heating exceeding pipeline capacity, and equipment failures at gas plants.16

PSE is at particular risk from this reliability threat given its significant dependence on gas generation and lack of strong access to natural gas pipelines. PSE briefly notes this risk on page 4-24 of the IRP, accurately explaining that "\[n\]atural gas is imported to the Pacific Northwest, primarily from British Columbia and the Rocky Mountain region. Disruptions to natural gas transportation infrastructure, therefore, present a risk to reliable gas supply in the region." The IRP also discusses the October 2018 Westcoast Pipeline explosion, correctly noting how capacity on the pipeline being limited resulted in significant curtailments and price volatility for over a year, and that "prices remain significantly more volatile compared to recent historical periods."

Other recent examples of recent pipeline supply interruption events in the Western U.S. include the 2011 Southwest outage and the Aliso Canyon outage in California. Given the long distances traversed by interstate gas pipelines, events that reduce supply or increase demand anywhere along the pipeline can result in gas shortages for all customers, even if the event did not occur in their area. Given its location near the end of only two major gas pipelines, PSE is at particular risk.

Even under normal conditions, the region frequently experiences constraints on pipeline capacity during peak demand periods. This is especially concerning given that PSE's peak electricity demand coincides with maximum demand for gas for heating. PSE's proposal to add gas power plant capacity would maintain PSE's dependence on gas for about one-third

[Footnote 16 Michael Goggin and Rob Gramlich, _Observations on winter electric reliability event in South Central U.S_., Energy Central (Feb. 17, 2021), https://energycentral.com/c/gr/observations-winter-electric-reliability-event-south- central-us.]

of its peak generating capacity for decades to come.17 This poses both an economic and reliability risk for PSE ratepayers.

The electric reliability risk has been well-documented by many experts. Prior to last week, regions across the country had experienced similar events in which gas generators were forced offline by fuel supply limitations or interruptions.18 The North American Electric Reliability Corporation ("NERC") has noted how correlated outages are a major risk, particularly for gas generators.19 NERC's Winter Reliability Assessment and other NERC reports have continued to highlight this risk.20 The PJM and New England grid operators have conducted fuel security analyses, primarily motivated by reliability close calls during the 2014 Polar Vortex and other events.21

Examples of widespread correlated failures of conventional generators including gas generation include the 2011 rolling blackout in ERCOT, the 2014 Polar Vortex, and the 2018 Bomb Cyclone. Notably, wind energy output was high during almost all of these events,22 demonstrating the resilience value renewables provide by diversifying the generation mix.

[Footnote 17 2021 IRP at 3-6.]

[Footnote 18 See, e.g., PJM Interconnection, Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events (May 8, 2014), _available at_ https://www.hydro.org/wp-content/uploads/2017/08/PJM-January- 2014-report.pdf; FERC, 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 (July 2019), _available at_ https://www ferc.gov/legal/staff- reports/2019/07-18-19-ferc-nerc-report.pdf.]
[Footnote 19 NERC, Reliability Guideline: Fuel Assurance and Fuel-Related Reliability Risk Analysis for the Bulk Power System (Mar. 2020), _available at_ http[s://www.nerc.co](http://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Fuel_Assurance_and_Fuel-)m/co[mm/PC_Reliability_Guidelines_DL/Fuel_Assurance_and_Fuel-](http://www.nerc.com/comm/PC_Reliability_Guidelines_DL/Fuel_Assurance_and_Fuel-) Related_Reliability_Risk_Analysis_for_the_Bulk_Power_System.pdf; NERC, Special Reliability Assessment: Potential Bulk Power System Impacts Due to Severe Disruptions on the Natural Gas System at 3, 20 (Nov. 2017), _available at_ http[s://www.nerc.co](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf)m/pa[/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf.](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_SPOD_11142017_Final.pdf)]
[Footnote 20 NERC, _Winter Reliability Assessment_ at 6 (Nov. 2019), http[s://www.nerc.co](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC%20WRA%202019_2020.pdf)m/pa[/RAPA/ra/Reliability%20Assessments%20DL/NERC%20WRA%202019_2020.pdf.](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC%20WRA%202019_2020.pdf) 21 PJM Interconnection, _Fuel Security Analysis: A PJM Resilience Initiative_ (Dec. 17, 2018), _available at_ http[s://www.pjm](http://www.pjm.com/-/media/library/reports-notices/fuel-security/2018-fuel-security-analysis.ashx?la=en%3B).com[/-/media/library/reports-notices/fuel-security/2018-fuel-security-analysis.ashx?la=en;](http://www.pjm.com/-/media/library/reports-notices/fuel-security/2018-fuel-security-analysis.ashx?la=en%3B) ISO New England, _Operational Fuel-Security Analysis_ (Jan. 17, 2018), _available at_ https://www.iso- ne.com/committees/key-projects/implemented/operational-fuel-security-analysis.]
[Footnote 22 Hannah Hunt, _How Did Wind Energy Perform During the Bomb Cyclone_, EcoWatch (Mar. 30, 2018), http[s://www.ecowatch](http://www.ecowatch.com/wind-power-bomb-cyclone-2554824592.html#toggle-gdpr).com[/wind-power-bomb-cyclone-2554824592.html#toggle-gdpr.](http://www.ecowatch.com/wind-power-bomb-cyclone-2554824592.html#toggle-gdpr)]

During a cold snap in February 2011, ERCOT experienced rolling blackouts due to equipment failures at fossil generators and gas supply interruptions. In the 2014 Polar Vortex, PJM was forced to resort to voltage reductions to maintain reliability after extreme cold caused widespread conventional generator failures due to gas supply interruptions and equipment failures. Two other cold snaps that year, and a similar event in early 2015, also posed challenges for electric reliability in various regions of the country.23 In the January 2018 Bomb Cyclone event, New England faced reliability risks as gas supplies were interrupted and fuel oil supplies dwindled during a two-week cold spell. In January 2018, many conventional generators in the South- Central U.S. experienced correlated outages due to equipment failures and gas supply interruptions.24

Data confirm that gas generator outages tend to be correlated events. As a recent paper co-authored by experts from NERC and Carnegie Mellon University explained:

Our findings highlight an important limitation of current resource adequacy modeling (RAM) practice: distilling the availability history of a generating unit to a single value (e.g. EFORd, the equivalent forced outage rate during times of high demand) discards important information about when units in a power system fail in relation to one another. Only by incorporating the full availability history of each unit into RAM can we account for correlations among generator failures when determining the capacity needs of a power system. We strongly recommend that system planners incorporate correlated failure analysis into their RAM practice.25

NERC data used in the Carnegie Mellon analysis demonstrates that conventional generators experience correlated outages many times more frequently than is predicted under the

[Footnote 23 Michael Goggin, _For the Third Time in a Month, Wind Energy Protects Consumers in a Cold Snap_, Into the Wind (Feb. 10, 2014), https://cleanpower.org/blog/for-the-third-time-in-a-month-wind-energy-protects-consumers-during- cold-snap/.]
[Footnote 23 24 FERC, 2019 FERC and NERC Staff Report: The South Central United States Cold Weather Bulk Electric System Event of January 17, 2018 (July 2019), _available at_ https://www ferc.gov/legal/staff-reports/2019/07-18-19-ferc- nerc-report.pdf.]
[Footnote 23 25 Sinnott Murphy et al., Resource adequacy risks to the bulk power system in North America at 29 (Carnegie Mellon University Feb. 15, 2018), _available at_ [https://www.a](http://www.andrew.cmu.edu/user/fs0v/papers/CEIC_17_02R1%20Resource%20adequacy%20risks%20to%20the%25)ndrew.cm[u.edu/user/fs0v/papers/CEIC_17_02R1%20Resource%20adequacy%20risks%20to%20the%](http://www.andrew.cmu.edu/user/fs0v/papers/CEIC_17_02R1%20Resource%20adequacy%20risks%20to%20the%25)20bulk%20power%20system%20in%20North%20America.pdf.]

assumption that individual plant outages are uncorrelated independent events. The data shows that correlated forced outages tend to occur more frequently at certain types of conventional generators, with gas generators experiencing some of the highest correlated outage rates.26 Charts included in the analysis show that actual winter generation outages are much more common than would be expected under the assumption that generator outages are uncorrelated independent events.27 Even when gas supply constraints are not severe enough to cause electric reliability concerns, they can impose a major cost on consumers by triggering gas prices to spike to levels dozens or even hundreds of times higher than normal.

_A._ Gas fuel price risk and carbon price risk

Given PSE's dependence on gas for its electric generating capacity, as well as for consumer gas supply, its ratepayers are heavily exposed to carbon price and fuel price risk. Risk- averse decision-making justifies giving added weight to high fuel price and carbon price scenarios that will result in harmful outcomes for ratepayers, even if the Commission believes another fuel and carbon price scenario is more likely. Said another way, many customers would likely prefer an outcome in which fuel prices came in lower than expected but their utility may have spent a bit more by erring on the side of a risk-averse portfolio, as opposed to an outcome in which fuel prices came in higher than expected and the utility had not built a risk-averse portfolio.

On the electric side, adding renewable and non-emitting resources diversifies PSE's generating portfolio and reduces the overall supply portfolio's fuel and carbon risk, while adding gas generation would move in the opposite direction. Generating portfolios with less new gas and more renewables provide a hedging or insurance value to ratepayers by reducing the

[Footnote 26 _Id._ at 26–27.]
[Footnote 27 _Id._ at S–22.]

consumer impact of higher gas prices or carbon prices. Like an insurance policy or a financial hedge, this risk reduction has an economic value, separate from and in addition to the energy cost savings for those consumers.

Tools used in utility planning, and in the financial sector, can quantify the economic value of the risk reduction provided by renewable resources. Lawrence Berkeley National Laboratory ("LBNL") has developed one such tool for the utility industry to account for gas price risk.28 Another method developed by LBNL29 and used by utilities such as Dominion Energy, uses the cost premium for long-term gas supply contracts to calculate the cost of making a portfolio with more gas generation offer comparable risk as a portfolio with less gas generation.30

While the state of Washington has taken steps to regulate carbon emissions, the federal government has not. However, the U.S. EPA is required to regulate greenhouse gas emissions, and a federal rulemaking or legislation is likely in the foreseeable future. IRP modeling results for PSE's Sensitivity L, which models a federal tax on carbon, will likely show the carbon price risk of increasing reliance on gas.31 In addition, the state is currently drafting a rule for methane emissions from upstream gas supply, which is scheduled to be complete in August 2021.32 This will likely significantly increase the cost of gas generation. CETA's social cost of carbon of

[Footnote 28 Mark Bolinger, Lawrence Berkeley National Laboratory (LBNL), Using Probability of Exceedence to Compare the Resource Risk of Renewable and Gas-Fired Generation (Mar. 2017), _available at_ https://emp.lbl.gov/publications/using-probability-exceedance-compare/.]
[Footnote 29 Mark Bolinger, et al., LBNL, Accounting for Fuel Price Risk When Comparing Renewable to Gas-Fired Generation: The Role of Forward Natural Gas Prices, (Jan. 2004), _available at_ https://emp.lbl.gov/sites/all/files/report-lbnl-54751.pdf.]
[Footnote 30 Dominion, Dominion Virginia Power's and Dominion North Carolina Power's Report of Its Integrated Resource Plan at 144–153 (Apr. 29, 2016), available at http[s://ww](http://www.nrc.gov/docs/ML1627/ML16271A535.pdf)w[.nrc.g](http://www.nrc.gov/docs/ML1627/ML16271A535.pdf)ov[/do](http://www.nrc.gov/docs/ML1627/ML16271A535.pdf)c[s/ML1627/ML16271A535.pdf.](http://www.nrc.gov/docs/ML1627/ML16271A535.pdf)]
[Footnote 31 2021 IRP at 3-11.]
[Footnote 32 _See_ Gov. Inslee, Directive 19-18 (Dec 19, 2019), available at http[s://www.go](http://www.governor.wa.gov/sites/default/files/directive/19-18%20-%20ECY%20Climate%20Rules%20%28tmp%29.pdf)vern[or.wa.gov/sites/default/files/directive/19-18%20-](http://www.governor.wa.gov/sites/default/files/directive/19-18%20-%20ECY%20Climate%20Rules%20%28tmp%29.pdf) %20ECY%20Climate%20Rules%20%28tmp%29.pdf (to be codified as Wash. Admin. Code § 173-445).]

$74/ton also applies to acquisition, so this cost should be included any gas proposals to the 2021 RFP which is expected in March or April.

A. Assuming the feasibility of alternative fuels in PSE's preferred plan is risky

PSE's preferred plan, Sensitivity W, assumes the use of alternative fuel for peakers. Relative to Sensitivity V, which did not assume the use of alternative fuels, this sensitivity adds significantly less battery storage. PSE's modeling assumes that case adds only $60 million in net present value revenue requirement costs relative to a case without the use of alternative fuels.

While PSE has not provided enough information to determine the true cost premium it assumed for running peakers on biofuels, these costs may be a significant underestimate. Electric sector modeling by Deloitte indicates that even without accounting for continued reductions in battery costs, lithium ion batteries offer significantly lower cost carbon abatement than substituting renewable natural gas or hydrogen for natural gas consumption.33

At best, PSE is taking on significant risk by assuming that alternative fuel technologies will be available at sufficient scale at a reasonable cost. For example, the IRP states "this IRP does not analyze hypothetical RNG projects that would connect to NWP or to PSE's system and displace conventional natural gas that would otherwise flow on NWP pipeline capacity."34 A number of logistical issues in fuel production, transportation, storage, and consumption would have to be addressed before it can be assumed that renewable hydrogen or biofuels could be used at gas peakers. For example, hydrogen cannot be blended into existing natural gas pipelines beyond a relatively low threshold, due to issues related to cracking and weakening pipeline steel,

[Footnote 33 Stanley Porter et al., _Utility decarbonization strategies – Renew, reshape, and refuel to zero,_ Deloitte (Sept. 21, 2020), _available at_ https://www2.deloitte.com/us/en/insights/industry/power-and-utilities/utility-decarbonization-strategies html.]
[Footnote 34 2021 IRP at 4-13.]

leaks, and impacts on consumer appliances.35 Therefore, converting gas generators to alternative fuels would likely require dedicated fuel delivery and storage infrastructure. Burning hydrogen in a generator could also cause concerns due to its effect on steel and other materials.

A. Reliability services from wind, solar, and storage are superior to those from gas

Thanks to technological advances, wind and solar resources are increasingly providing grid reliability services as well as or better than conventional generators.36 For example, CAISO has shown that wind37 and solar38 resources that are curtailed offer dispatchable flexibility that is orders of magnitude faster than that offered by almost any conventional generator.39 Xcel's Public Service Company of Colorado routinely uses its wind plants to provide frequency regulation by adjusting their output on a second-to-second basis, while wind plants in ERCOT provide primary frequency response that quickly and accurately stabilizes frequency following grid disturbances.40

Under FERC Order No. 827, inverter-based resources like solar, batteries, and wind are now also required to at least match the reactive power and voltage control provided by conventional generators.41 Using their fast controls and inverter power electronics, batteries, wind, and solar plants are now capable of providing control of voltage and reactive power that is

[Footnote 41 35 M. W. Melaina et al_., NREL, _Blending Hydrogen into Natural Gas Pipeline Networks: A Review of Key Issues_ (Mar. 2013), available at [https://www.ene](http://www.energy.gov/sites/prod/files/2014/03/f11/blending_h2_nat_gas_pipeline.pdf)r[gy.gov/sites/prod/files/2014/03/f11/blending_h2_nat_gas](http://www.energy.gov/sites/prod/files/2014/03/f11/blending_h2_nat_gas_pipeline.pdf)_pi[peline.pdf.](http://www.energy.gov/sites/prod/files/2014/03/f11/blending_h2_nat_gas_pipeline.pdf) 36 Michael Milligan, _Sources of Grid Reliability Services_, 31 The Electricity Journal 1 (Nov. 2018), _available at_ http[s://w](http://www.sciencedirect.com/science/article/pii/S104061901830215X)ww[.sciencedirect.com/science/article/pii/S1](http://www.sciencedirect.com/science/article/pii/S1040619018302 15X)04[061901830215X.](http://www.sciencedirect.com/science/article/pii/S1040619018302 15X)
[Footnote 41 37 California ISO, ISO tests prove wind can play major role in renewable integration: Study results show wind farms' ability to supply essential grid services (Mar. 11, 2020), _available at_ [http://www.caiso.com/Documents/ISOTestsProveWindCanPlayMajorRoleinRenewableIntegration.pdf.](http://www.caiso.com/Documents/ISOTestsProveWindCanPlayMajorRoleinRenewableIntegration.pdf)]
[Footnote 41 38 Clyde Loutan et al., NREL, Demonstration of Essential Reliability Services by a 300-MW Solar Photovoltaic Power Plant (Mar. 2017), available at https://www nrel.gov/docs/fy17osti/67799.pdf.]
[Footnote 41 39 E. Ela et al., NREL, Active Power Controls from Wind Power: Bridging the Gaps (Jan. 2014), available at http[s://www.nrel.g](http://www.nrel.gov/docs/fy14osti/60574.pdf)ov/[docs/fy](http://www.nrel.gov/docs/fy14osti/60574.pdf)1[4osti/60574.pdf.](http://www.nrel.gov/docs/fy14osti/60574.pdf)
[Footnote 41 40 Michael Milligan et al., Alternatives No More: Wind and Solar Power Are Mainstays of a Clean, Reliable, Affordable Grid, 13 IEEE Power & Energy Magazine 78 (Oct. 16, 2015), _available at_ [http://www.consultkirby.com/files/Alternative_No_More-_Nov_2015.pdf.](http://www.consultkirby.com/files/Alternative_No_More_-_Nov_2015.pdf)]
[Footnote 41 Order No. 827 at 1, Docket No. RM16-1-000 (FERC June 16, 2016), available at http[s://www.ferc.g](http://www.ferc.gov/sites/default/files/2020-06/RM16-1-000.pdf)ov/s[ites/default/files/2020-06/RM16-1-000.pdf.](http://www.ferc.gov/sites/default/files/2020-06/RM16-1-000.pdf)]

faster, more accurate, and more stable than that of gas generators.42 Wind and solar can potentially even provide reactive power and voltage support when they are not producing power, such as solar plants pulling power from the grid at night to provide reactive power and voltage support to the grid using their inverters.43 In contrast, conventional generators must be operating and producing power to provide reactive power control and voltage support. This limits the value of fossil generators, as they are often offline and therefore unavailable to provide reactive power and voltage control. These generators could be started up to provide voltage support, but starting and operating the plant would incur

significant excess costs. In contrast, a battery can precisely tailor its output or charging to meet voltage and reactive power needs with no startup or fuel cost.

Batteries are highly modular and can be deployed in the sizes and locations on the grid where they are most needed. As a result, batteries can be located near renewable generators to absorb excess that output that would have been curtailed due to transmission congestion, and then release that output later when transmission capacity is available. More importantly, batteries have the unique ability to absorb excess renewable output by charging, which gas and conventional generators cannot do.

In contrast, inflexible fossil generators tend to increase renewable curtailment, as these resources cannot change their level of output as quickly and often have high minimum output levels. Batteries can respond much more quickly, flexibly, and precisely than gas-fired units can. Batteries can ramp from full charge to full discharge output in seconds or less in response to dispatch signals.44 Batteries do not have a minimum partial output level or a minimum shut down

[Footnote 42 _Id._ at 4.]
[Footnote 43 _See, e.g._, SMA America, LLC, _Q at Night_, _available at_ http[s://www.sm](http://www.sma-america.com/partners/knowledgebase/q-)a-am[erica.com/partners/knowledgebase/q-](http://www.sma-america.com/partners/knowledgebase/q-) at-night.html.]
[Footnote 44 _See_ Jennifer E. Leisch & Ilya Chernyakhovskiy, NREL and USAID, Grid-Scale Battery Storage: Frequently Asked Questions at 2_–_3 (Sep. 2019), available at h[ttps://w](http://www.nrel.gov/docs/fy19osti/74426.pdf)ww[.nrel.g](http://www.nrel.gov/docs/fy19osti/74426.pdf)ov/do[cs/fy19osti/74426.pdf.](http://www.nrel.gov/docs/fy19osti/74426.pdf)]

period. In contrast, even quick start natural gas generators typically take nearly 10 minutes to start and ramp up to full load. Batteries are faster and more accurate than gas generators in providing frequency regulation, which is used to accommodate second-to-second fluctuations in electricity supply and demand on the grid. Batteries also provide extremely fast primary frequency response, which is used to restore power system frequency in the seconds following a large disturbance on the grid, such as the loss of a large generator.

I. PSE's analysis should account for opportunities from regional markets

PSE's analysis significantly overstates the cost of reaching high renewable penetrations because it does not adequately account for increasing opportunities to use imports and regional markets. Western power markets are steadily becoming larger and more integrated, which is increasing the capacity value of renewable resources and reducing the cost of achieving high penetrations of renewable resources. Except for a few sensitivities, PSE's analysis assumes that transmission and market ties are fixed at their current levels, forcing PSE to look primarily within its current system to meet its needs.45 This greatly inflates the cost of achieving high penetrations of renewable resources, as PSE must greatly overbuild its own renewable and storage capacity if it cannot capture the benefits of regional diversity. For example, Sensitivities N and O incur massive costs because PSE assumes it will need dozens of GigaWatts ("GW") of battery storage to meet its peak capacity needs.46 As discussed at length below, expanding transmission to access diverse renewable resources and

[Footnote 45 In the executive summary at 1-10, PSE explicitly acknowledges that it has pivoted to looking inward for meeting its needs. However, PSE's justification for doing so is at odds with the trend through the EIM and other initiatives, discussed at length in this section, towards larger and more liquid markets in the West: "In recent years, the region has experienced periods of high price volatility and limited market liquidity. This presents a potential future risk for PSE's customers, and PSE may have to adjust its market purchase strategy going forward. PSE is evaluating the potential impacts of market purchases becoming unavailable to the portfolio." 2021 IRP at 1-10.]
[Footnote 46 _Id._ at 3-15 - 3-16.]

increase market ties to power systems with supply and demand profiles that complement PSE's would almost certainly be a lower cost solution for reaching high renewable penetrations.

PSE's filing discusses the likely transition of the Energy Imbalance Market ("EIM") into an Extended Day Ahead Market ("EDAM") construct.47 Greater regional coordination in operating the grid, planning and allocating the costs and transmission, and sharing resources across the region will provide large benefits and greatly reduce the amount of capacity needed to meet resource adequacy needs and provide reliability services. Regional Transmission Organizations ("RTOs") in other regions, including PJM and MISO have documented that their RTOs provide billions of dollars per year in benefits from reducing capacity needs by aggregating diverse loads and resources.48 However, it is essential that the governance of regional markets is transparent and enables participation of public interest stakeholders, and critical that regional market rules do not disadvantage clean energy resources or impede the achievement of state clean energy policy.

Extensive regional coordination in system planning and operations is essential if the West is to cost-effectively reach the high penetrations of wind and solar resources called for under laws in Washington and other states. As a result, PSE's planning should account for the high likelihood of this evolution over the planning horizon. PSE should take particular care that it does not invest in capacity resources that will not be needed and will become stranded assets with more coordinated planning and operations in the West, particularly given the large capacity surplus in the region, as documented later in this section.

[Footnote 47 _Id._ at 4-16 - 4-17.]
[Footnote 4748 PJM Interconnection, _PJM Value Proposition_ (2019), _available at_ https://www.pjm.com/about- pjm/~/media/about-pjm/pjm-value-proposition.ashx; MISO, _MISO 2020 Value Proposition_, _available at_ https://cdn.misoenergy.org/20210219%202020%20MISO%20Value%20Proposition%20Presentation521885.pdf.]

Large import and export ties are essential for reliable and affordable power system operations at high renewable penetrations, as these connections provide access to diverse wind and solar resources. A large body of regional49 and national50 analyses, including in the Pacific Northwest,51 conclude that a diverse mix of wind, solar, and other resources is essential for economic and reliable decarbonization of the power system. As a national study published in the journal Nature Climate Change explained,52 "the average variability of weather decreases as size increases; if wind or solar power are not available in a small area, they are more likely to be available somewhere in a larger area," so "paradoxically, the variability of the weather can provide the answer to its perceived problems." As discussed at length in the next two sections, using transmission ties that are appropriately

sited to address land and wildlife concerns to build a regional portfolio significantly increases the capacity value of renewable resources by capturing diversity in their output profiles.

NREL has identified greater use of imports and exports as one of the most economical strategies for accommodating the variability observed on power systems with large amounts of wind and solar. Specifically, NREL found that in modeling case studies of California, Florida, and the Southwest Power Pool ("SPP"), increasing exports provided the largest or

[Footnote 49 Christopher T.M. Clack, Michael Goggin, Aditya Choukulkar, Brianna Cote & Sarah McKee, Consumer, Employment, and Environmental Benefits of Electricity Transmission Expansion in the Eastern U.S. (Americans for a Clean Energy Grid Oct. 2020), _available at_ https://cleanenergygrid.org/wp-content/uploads/2020/11/Consumer-Employment-and-Environmental-Benefits-of-Transmission-Expansion-in-the-Eastern-U.S.pdf \[hereinafter "Benefits of Electricity Transmission Expansion"\].]
[Footnote 50 _See, e.g.,_ Patrick Brown and Audun Botterud, The Value of Inter-Regional Coordination and Transmission in Decarbonizing the US Electricity System, 5 Joule 115 (Jan. 20, 2021),
available _at_
http[s://www.scien](http://www.sciencedirect.com/science/article/abs/pii/S2542435120305572)cedi[rect.com/science/article/abs/pii/S2542435120305572.](http://www.sciencedirect.com/science/article/abs/pii/S2542435120305572)]
[Footnote 51 _See, e.g._, Zach Ming et al., _Resource Adequacy in the Pacific Northwest_ (Energy and Environmental Economics (E3), Inc. Mar. 2019), _available at_
h[ttps://www.ethree.co](http://www.ethree.com/wp-)m/wp-content/uploads/2019/03/E3_Resource_Adequacy_in_the_Pacific-Northwest_March_2019.pdf \[hereinafter "Resource Adequacy in the Pacific Northwest"\].]
[Footnote 52 Alexander E. MacDonald et al., Future Cost-Competitive Electricity Systems and Their Impact on US CO2 Emissions at 1 (Nature Climate Change Jan. 25, 2016), _available at_ http[s://www.vibran](http://www.vibrantcleanenergy.com/wp-)t[clean](http://www.vibrantcleanenergy.com/wp-)en[erg](http://www.vibrantcleanenergy.com/wp-)y[.com/wp-](http://www.vibrantcleanenergy.com/wp-) content/uploads/2016/09/Future_cost-competitive_electricity_syst.pdf.]

second largest benefit for facilitating renewable adoption.53 NREL's Western Wind and Solar Integration Study also showed that while large amounts of wind and solar can significantly increase power system variability in a single grid operating area, if renewable output is aggregated across the Western U.S. then power system variability actually decreases.54

A variety of studies have shown that large import and export ties are particularly important for power systems with high solar penetrations, like those in the Southwest. These power systems need large ties to both export high midday solar output, and import other resources, like wind and hydropower, in the evening and night when solar is unavailable.55 The evolution to West-wide coordinated planning and operations of the electricity system will be essential for Washington, California, and other states to achieve their decarbonization requirements.

As a result, PSE should be focused on regional solutions to meeting its needs, looking not just at its current system, but across the Northwest and across the entire Western Interconnect. Solar in the Southwest and existing hydropower reservoirs in Canada can significantly complement PSE's resources, particularly during winter peak periods.

PSE can also use transmission and market ties to access load diversity, reducing its need for capacity. Generation reserve margin analysis typically accounts for the fact that power systems across a region are unlikely to experience demand peaks or supply shortfalls at the same time, so imports can be relied on to meet peak demand.56 For example, E3's analysis indicates

[Footnote 53 Paul Denholm et al., NREL, Impact of Flexibility Options on Grid Economic Carrying Capacity of Solar and Wind: Three Case Studies at vii-xi, (Dec. 2016), available at h[ttps://www.nrel.gov](http://www.nrel.gov/docs/fy17osti/66854.pdf)/doc[s/fy17](http://www.nrel.gov/docs/fy17osti/66854.pdf)os[ti/66854.pdf.](http://www.nrel.gov/docs/fy17osti/66854.pdf)
[Footnote 54 GE Energy, Western Wind and Solar Integration Study at 83, (NREL May 2010), available at
http[s://www.nrel.g](http://www.nrel.gov/docs/fy10osti/47434.pdf)ov/[docs/fy](http://www.nrel.gov/docs/fy10osti/47434.pdf)1[0osti/47434.pdf.](http://www.nrel.gov/docs/fy10osti/47434.pdf)]
[Footnote 55 Benefits of Electricity Transmission Expansion at 21.]
[Footnote 56 _See, e.g.,_ PJM Staff, _2019 PJM Reserve Requirement Study_ at 26, (Oct. 8, 2019), _available at_ http[s://www.pjm](http://www.pjm.com/-/media/committees-groups/subcommittees/raas/20191008/20191008-pjm-reserve-).com[/-/media/committees-groups/subcommittees/raas/20191008/20191008-pjm-reserve-](http://www.pjm.com/-/media/committees-groups/subcommittees/raas/20191008/20191008-pjm-reserve-)
requirement-study-draft-2019.ashx.]

that import ties offer 74% of their nameplate capacity as capacity value.57 Idaho Power has documented the considerable seasonal load diversity among Pacific Northwest utilities, with combined winter and summer peaks being considerably lower than the sum of their parts because they peak during different seasons, as shown below. Idaho Power also noted that diversity not only occurs "seasonally, as illustrated in Table 6, but it also occurs sub-seasonally and daily,"58 so the total diversity benefits during peak load hours are even greater than indicated. The diversity benefits with California and the Southwest would also be even greater than those shown below in Figure 2 (Table 6 in Idaho Power's 2019 IRP).

[Figure 2]

It should also be noted that the availability of imports is likely to be high because regional capacity surpluses are quite large. In December 2020, NERC documented that the Northwest

[Footnote 57 Resource Adequacy in the Pacific Northwest at 45]
[Footnote 58 Idaho Power Company, 2019 Integrated Resource Plan at 43 (June 2019), _available at_
https://puc.idaho.gov/Fileroom/PublicFiles/ELEC/IPC/IPCE1919/CaseFiles/20190628Appendix%20D%20B2H%20 Supplement.pdf.]

region has a large capacity surplus well in excess of its reserve margin target through at least 2027.59

I. The capacity value of wind, solar, storage, and demand response is higher than PSE indicates

PSE assumes low capacity values for wind, solar, storage, and demand response. Capacity value refers to the percent of a resource's nameplate capacity that can be counted on for meeting peak demand. For generic resource additions, PSE's current IRP assumes a capacity value of 15-18% for Eastern Washington wind, 4% for Eastern Washington solar, 1-2% for Western Washington solar and 12-44% for energy storage, and 22-46% for Montana and Wyoming wind.60

PSE's assumptions are low relative to those found by others, and even PSE's prior IRPs. In a prior IRP, PSE found that Montana wind offers a 53% capacity value, and a 10% capacity value for Washington solar.61

As shown in the chart provided below as Figure 3, modeling by industry consultant E3 shows significantly higher capacity values than PSE's assumptions. For example, E3 finds new Pacific Northwest wind offers capacity values above 25%, and that Montana or Wyoming wind provides 50-60% capacity value. Also noteworthy is that the average capacity value does not drop below 50% until nearly 20 GW of Montana and Wyoming wind is serving the region's utilities. Montana wind resources not only offer high capacity value, but a capacity value that

[Footnote 59 NERC, _2020 Long-Term Reliability Assessment_ at 150 (Dec. 2020), _available at_ http[s://www.nerc.co](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2020.pdf)m/pa[/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2020.pdf.](http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/NERC_LTRA_2020.pdf) 60 2021 IRP at 2-10 to 2-12.]
[Footnote 61 Puget Sound Energy, 2019 TAG Meeting #5: Resource Adequacy and Gas Planning Standard at 43 (Feb. 7, 2019), available at https://pse.com/-/media/PDFs/001-Energy-Supply/001-Resource-Planning/02-IRP-02-07-19- TAG-Meeting-5-Slide-Deck-FINAL.pdf.]

stays high at very high renewable penetrations. This will become increasingly important as PSE works to meet CETA targets.

[## Figure 3: E3 Chart: Average Capacity Value of Wind in Northwest and MT/WY]

The assumed capacity values of 12-44% for energy storage in PSE's current IRP are also low too.62 Modeling of the Pacific Northwest power system by E3 shows that several GW of storage can be added with a 73% capacity value.63

PSE's assumed capacity value for demand response is also too low. PSE claims a 26-37.4% capacity value at page 2-12, yet E3 says the region can procure 2 GW of demand response with a capacity value above 40%.64 As mentioned above, electrification can increase opportunities for demand response. Electrification, and particularly building and water heating electrification, can also increase demand response's capacity value during winter peak periods.

Many forms of energy efficiency, like building envelope insulation, enable longer-duration

[Figure 62 2021 IRP at 2-12.]
[Figure 63 Resource Adequacy in the Pacific Northwest at 45, 58.]
[Figure 64 _Id._ at 59.]

demand response shifting. For example, the longer a building can maintain a comfortable temperature, the more demand response can shift energy consumption away from a peak period and to a period when resources are more abundant.

Wind plant technology improvement is expected to drive continued capacity value increases. Multiple studies have documented how taller wind turbines with longer turbines blades provide higher capacity value by increasing output during periods when older vintages of turbines had lower output.65 Larger turbines are able to access higher quality, more consistent winds higher above the earth's surface. The increasing length of turbine blades have caused the wind energy captured by turbines to increase much more quickly than the turbines' rated capacity, also driving more consistent output by disproportionately increasing output during periods of lower wind speeds.66 New wind turbines also have different output profiles from the existing fleet, reducing the correlation in their output and increasing capacity value. As new wind plants are built in new locations, this increases the geographic diversity of the wind fleet and increases its capacity value because the output of these new wind installations is inherently less than perfectly correlated with that of existing plants. These factors, as well as the capacity value complementarity among wind, solar, and storage discussed below, are likely to continue to outpace the decline in wind's capacity value as penetrations increase.

PSE's assumption of declining capacity value for solar also does not account for the potential benefit of technological improvement. The use of single- and dual-axis tracking at solar plants is becoming more common over time, which significantly boosts solar output in early

[Footnote 65 _See, e.g.,_ Ryan H. Wiser et al., _The hidden value of large-rotor, tall-tower wind turbines in the United States,_ Wind Engineering, July 7, 2020, _available at_ https://emp.lbl.gov/publications/hidden-value-large-rotor-tall-tower; Lion Hirth and Simon Muller, System-friendly wind power – How advanced wind turbine design can increase the economic value of electricity generated through wind power, 56 Energy Economics 51 (Mar. 3, 2016), _available at_ https://neon.energy/Hirth-Mueller-2016-System-Friendly-Wind-Power.pdf.]
[Footnote 66 Ryan Wiser et al., LBNL, Wind Energy Technology Data Update: 2020 Edition at 37 (Aug. 2020), available at https://emp.lbl.gov/sites/default/files/2020_wind_energy_technology_data_update.pdf.]

morning and late afternoon hours that tend to be peak demand periods in winter and summer, respectively.67 Solar inverter-loading ratios, or the ratio of Direct Current solar module capacity to Alternating Current plant output capacity, have steadily increased as solar modules price declines have outpaced reductions in the cost of balance-of-plant equipment. Higher inverter- loading ratios also help provide a flatter solar output profile across the day, with less decline in solar output in early morning and late afternoon hours relative to noon output, similar to the impact of larger blades on wind turbine output.

The "temperature sensitivity designed to capture climate change impacts on demand,"68 which PSE indicates will be included in the final IRP, should capture that continued warming will increase the importance of summer peak demand periods relative to winter

peak periods. This should also increase the capacity value of solar resources relative to what PSE has assumed.

Energy storage can also benefit from technological progress. New types of storage offering longer duration are being developed. In addition, continued cost reductions allow more MWh of batteries to be cost-effectively installed longer duration.

_A._ _Need to look holistically across a geographically and technologically diverse portfolio of_ wind, solar, and storage resources to capture complementarity in capacity value

As discussed in the previous section, PSE needs to look regionally for the reliability analysis for higher penetrations of renewable resources, given trends towards markets and greater integration across the West, and the fact that regional integration becomes essential for cost-effectively achieving deep decarbonization.

PSE's IRP provides capacity values for each resource on a stand-alone basis, but it is critical that PSE's modeling and resource selection strategy account for the capacity value

[Footnote 67 _2020 Utility-Scale Solar Update_ at 14 (November 2020), _available at_ https://emp.lbl.gov/publications/utility- scale-solar-data-update-2020.]
[Footnote 68 2021 IRP at 1-5.]

diversity benefits among wind, solar, and storage, as well as among wind and solar resources located in different areas. A resource's capacity value changes based on the penetration of other resources on the power system, which requires robust analysis of a large number of potential portfolios to identify the optimal mix of resources.

As discussed earlier in this section, Montana and Wyoming wind offers PSE capacity value that is high, and stays high. In the following chart, provided as Figure 4, E3 documents how that is driven by the correlation of those resources' output with PSE's peak loads, and the diversity complementarity with existing Northwest wind resources. As E3 explains, "\[e\]xisting wind in the Northwest today, primarily in the Columbia River Gorge, has a strong negative correlation with peak load events that are driven by low pressures and cold temperatures.

Conversely, Montana and Wyoming wind does not exhibit this same correlation and many of the highest load hours are positively correlated with high wind output."69
[## Figure 4: E3 Chart: Coincidence of Wind Output with Load]

Part of the reason Montana wind provides large capacity value is because it diversifies the region's wind fleet, as can be seen in Figures 3 and 4 above. A diverse combination of

[Footnote 69 Resource Adequacy in the Pacific Northwest at 55-56.]

Pacific Northwest and Montana or Wyoming wind retains a capacity value of 37% with 20 GW of installed wind capacity.70 This capacity value is greater than the sum of its component parts, as indicated in the chart by the fact that the capacity value line for the diverse fleet is higher than the halfway point between the Pacific Northwest and Montana wind capacity value lines. The geographic separation between Washington, central Montana, eastern Montana, and Wyoming gives each a different output profile.

They should also be complementary because of the reduced correlation among Wyoming solar, Montana solar, and Washington solar. This includes the benefit of the sun rising earlier in Montana and Washington, providing more output during PSE's morning load ramp, and the benefit of geographic diversity canceling out local or even regional weather events like widespread cloud or snow cover.71

The complementarity among wind, solar, and storage is even greater than the diversity benefits among wind resources located in different areas. Due to diversity benefits among wind, solar, and storage resources, their combined capacity value is higher than the sum of their parts. The capacity value of solar increases with more wind on the power system, and vice versa, because their output patterns are negatively correlated on a daily and seasonal basis. For example, PJM's renewable integration study showed solar provided a higher capacity value when the resource mix had more wind generation, and vice versa.72 Public Service Company of Colorado found a similar trend in a 2016 wind effective load carrying capability study.73

[Footnote 70 _Id._ at 55.]
[Footnote 71 Andrew D. Mills & Ryan Wiser, LBNL, Implications of Wide-Area Geographic Diversity of Short-Term Variability of Solar Power (Sept. 2010), available at https://emp.lbl.gov/sites/all/files/presentation-lbnl-3884e- ppt.pdf \["Implications of Wide-Area Geographic Diversity of Short-Term Variability of Solar Power"\].]
[Footnote 72 General Electric International, Inc., _PJM Renewable Integration Study: Task 3A Part F, Capacity Valuation_ at 29 (Mar. 31, 2014), _available at_ http[s://www.pjm](http://www.pjm.com/-/media/committees-groups/subcommittees/irs/postings/pjm-).com[/-/media/committees-groups/subcommittees/irs/postings/pjm-](http://www.pjm.com/-/media/committees-groups/subcommittees/irs/postings/pjm-) pris-task-3a-part-f-capacity-valuation.ashx?la=en.]
[Footnote 73 Hearing Exhibit 103, Attach. KLS-2, An Effective Load Carrying Capability Study of Existing and Incremental Wind Generation Resources on the Public Service Company of Colorado System, Docket No. 16A-0369E (Colo.Public Utility Comm'n May 27, 2016), available at http[s://www.xcelen](http://www.xcelenergy.com/staticfiles/xe/PDF/Attachment%20KLS-2.pdf)erg[y.co](http://www.xcelenergy.com/staticfiles/xe/PDF/Attachment%20KLS-2.pdf)m[/staticfiles//xe/PDF/Attachment%20KLS-2.pdf.](http://www.xcelenergy.com/staticfiles/xe/PDF/Attachment%20KLS-2.pdf)]

Adding battery storage helps keep the capacity value of wind and solar high, as battery storage can absorb wind and solar output when it is less valuable and shift it later in time to peak demand periods.74 In particular, adding storage keeps solar capacity value high by making it possible to shift midday and early afternoon solar output to later in the afternoon and evening. Similarly, battery storage can shift overnight wind output later to help meet the morning load up ramp, particularly during winter periods when morning heating demand is high and solar output is low. Less intuitively, solar also boosts the capacity value of storage. Solar output in the late afternoon and early evening helps shift peak net load later into the evening. This also shortens the duration of the peak net load period, allowing limited duration storage resources to fully meet the peak demand. As shown in the chart from E3 provided below as Figure 5, the diversity benefit between solar and storage causes their combined Effective Load Carrying Capacity ("ELCC") to be greater than the sum of their parts.75
[## Figure 5: Complementary capacity value benefit between solar and storage]

[Footnote 74 Andrew Mills & Ryan Wiser, LBNL, Strategies for Mitigating the Reduction in Economic Value of Variable Generation with Increasing Penetration Levels (Mar. 2014), _available a_t https://emp.lbl.gov/sites/all/files/lbnl- 6590e.pdf.]
[Footnote 75 Nick Schlag, et al., _Capacity and Reliability Planning in the Era of Decarbonization_ at 6 (Energy and Environmental Economics Aug. 2020), _available at_ http[s://www.et](http://www.ethree.com/wp-content/uploads/2020/08/E3-)h[ree.com/wp](http://www.ethree.com/wp-content/uploads/2020/08/E3-)-co[ntent/uploads/2020/08/E3-](http://www.ethree.com/wp-content/uploads/2020/08/E3-)Practical-Application-of-ELCC.pdf.]

Notably, the complementary diversity benefit among resources increases at higher renewable penetrations, as capacity needs shift to periods when existing resources are unable to produce. The capacity value of Montana and Wyoming wind will increase even further as PSE adds more Washington wind. As documented above, this occurs because Washington wind and Montana wind output profiles are not strongly correlated, so Montana wind tends to be available when Washington wind is not. This reduces both periods of over-generation when incremental energy has lower economic value, and periods of shortage when energy and capacity have high value.

Diversifying the type and location of PSE's renewable mix provides other benefits besides resource adequacy. Ascend Analytics,76 LBNL,77 and others project increasing price volatility in the Western U.S. as renewable penetrations increase, due to their correlated output patterns. Adding a diverse portfolio of wind and solar resources to the generation portfolio reduces that correlation by providing a more constant output profile, ensuring that the energy value of wind and solar resources remains high at higher penetrations and protecting against price volatility.

_A._ Reduced variability from a more diverse resource portfolio
PSE's IRP claims that balancing capacity will be needed to accommodate wind and solar variability.78 A diverse portfolio of renewable resources should significantly reduce this need.

Valuably, this can reduce PSE's total need for capacity, as reserves providing an upward

[Footnote 76 Ascend Analytics, WECC Market Outlook and Modeling at 9-13, available at https://www.northwesternenergy.com/docs/default-source/documents/defaultsupply/plan19/volume2/ascend-analytics-wecc-market-outlook-and-modeling-02-22-2019.pdf.]
[Footnote 77 Joachim Seel et al., Impacts of High Variable Renewable Energy Futures on Wholesale Electricity Prices, and on Electric-Sector Decision Making (LBNL May 2018), available at https://eta- publications.lbl.gov/sites/default/files/report_pdf_0.pdf.]
[Footnote 78 2021 IRP at 1-15, 3-6.]

response require capacity to be held unloaded so output can be increased if needed, and thus that capacity cannot be used to meet peak demand.

In addition, PSE currently charges variable energy resource rates that were added to Schedule 13 of its OATT in FERC case ER11-3735. In its 2018 RFP, PSE wrote that

"integration costs can range between $3.02/MWh (OATT Schedule 13) and $3.15/MWh (PSE 2017 IRP, page D-43) for a wind resource."79

It is likely that a diverse portfolio of wind resources offers significantly lower reserve needs and integration costs than a portfolio primarily comprised of Pacific Northwest wind. BPA's Montana Renewables Development Action Plan found that Montana wind resources can be dynamically scheduled into the Pacific Northwest, which would allow the variability to be managed by BPA or the receiving Balancing Authority (i.e., PSE). This would allow PSE to pay lower rates than the ancillary services rates that were approved for NorthWestern Energy's Balancing Authority in FERC docket ER19-1756. First and most importantly, Montana wind resources are distant from and therefore are not affected by the same localized weather phenomena as PSE's existing and planned wind resources in Washington. Numerous studies show that geographic distance drastically reduces the correlation in both variability and uncertainty between two wind plants.80 Second, higher capacity factor wind resources like those available in Montana tend to have less variability for the simple reason that they are producing at higher levels of output more of the time. Recent analysis by LBNL confirms that

[Footnote 79 Puget Sound Energy, 2018 All Resources RFP: Exhibit G. Schedule of Estimated Avoided Cost at G-1 (2018), available at https://www.pse.com/-/media/PDFs/001-Energy-Supply/003-Acquiring- Energy/2018_All_Resources_RFP_Ex_G.PDF.]
[Footnote 80 Hannele Holttinen et al., VTT, IEA Wind Task 25 - Design and Operation of Power Systems with Large Amounts of Wind Power at 25-28 (IEA 2009), available at https://community.ieawind.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=c7a0f97c
-b01c-713b-b51a-46f33d62b5db&forceDialog=0 \[hereinafter "Design and Operation of Power Systems with Large Amounts of Wind Power"\].]

wind plants with consistently higher output offer greater net value from reduced variability and uncertainty, lower financing costs from reduced interannual output variability risk, and more efficient utilization of transmission capacity.81

As a result, other Northwest utilities have found that Montana wind offers lower integration costs. For example, PGE's 2019 IRP found that the integration costs associated with Oregon wind ($0.33/MWh) and Washington wind ($0.31/MWh) are 4-5 times larger than those for Montana wind ($0.07/MWh).82 Given that PSE's FERC tariff identifies wind integration costs that are about 10 times higher than that, and the fact that wind integration costs significantly increase as wind penetration increases,83 PSE's current and future integration cost savings from the use of Montana wind could be quite large.

Similar benefits could likely be attainable for solar geographic diversity if PSE deploys solar in both Washington and Montana. Geographic diversity provides an even larger reduction in the intra-hour variability of solar output than it does for wind, and the considerable distance between Montana and Washington solar should prevent localized or even regional weather phenomena from causing large or sudden fluctuations in the output of the total solar fleet, as mentioned above.84

[Footnote81 Ryan H. Wiser, et al., The hidden value of large-rotor, tall-tower wind turbines in the United States, Wind Engineering, July 7, 2020, available at

https://emp.lbl.gov/publications/hidden-value-large-rotor-tall-tower. 82 Portland General Electric, 2019 Integrated Resource Plan at 160 (July 2019), available at https://downloads.ctfassets net/416ywc1laqmd/6KTPcOKFlLvXpf18xKNseh/271b9b966c913703a5126b2e7bbb c37a/2019-Integrated-Resource-Plan.pdf.]
[Footnote 83 Ryan Wiser & Mark Bolinger, LBNL, 2016 Wind Technologies Market Report at 70 (U.S. DOE 2016),
available at https://eta-publications.lbl.gov/sites/default/files/2016_wind_technologies_market_report_-_corrected_back_cover.pdf.]
[Footnote 84 Implications of Wide-Area Geographic Diversity of Short-Term Variability of Solar Power.]

_A._ With diverse renewables, PSE can add more renewable resources to existing transmission capacity

PSE could likely economically interconnect more high-quality renewable resources on existing transmission than the amount indicated in its IRP, particularly in eastern Washington and Montana. We support PSE's proposal in Appendix J for moving from requiring long-term firm ("LTF") transmission for the full nameplate capacity of resources, to instead acquiring "less than nameplate capacity of LTF transmission for renewable resources because the intermittent output of renewable resources usually leaves transmission idle, and there is often short-term transmission available (firm and non-firm) to purchase or redirect." We expect Sensitivity E, in which "\[n\]ew resources are acquired with firm transmission equal to a percentage of their nameplate capacity instead of their full nameplate capacity,"85 to confirm the value of this approach for all PSE transmission to access renewable resources. We would note that the amount of nameplate renewable capacity that can be added on a line relative to the transmission capacity varies considerably depending on the diversity of the resources on the line, and is often very high.

Due to the lack of correlation in wind output patterns across even relatively short distances,86 multiple wind plants seldom produce at their full nameplate capacity at the same time. Depending on the geographic diversity of the wind resources, it is typically economically optimal to interconnect 10-40% more wind capacity relative to available transmission capacity. For example, in its recent IRP, PacifiCorp found that in one case it could interconnect 1,100 MW of additional wind onto 800 MW of additional transmission capacity (wind capacity 37.5% higher than the available transmission capacity), while in

[Footnote 85 2021 IRP at 3-10.]
[Footnote 86 Design and Operation of Power Systems with Large Amounts of Wind Power at 25.]

another case it could add 1,920 MW of wind onto 1,700 MW of additional transmission capacity (13% more wind capacity).87

Given that the on-peak production of energy to meet PSE's capacity needs is increasingly more valuable than off-peak energy production, it may be economic for PSE to push the ratio of nameplate renewable capacity to transmission capacity even higher. This is particularly true when the transmission accesses resources that have high on-peak output, like Montana and Wyoming wind. While this will increase renewable curtailment, as renewable penetrations increase the opportunity cost of renewable curtailment caused by

transmission congestion decreases, as during periods of high renewable output, the marginal economic value of an additional MWh can be low or even zero.

PSE could push the utilization factor of transmission capacity even higher by locating solar or storage resources along transmission that connects wind plants. Solar plants tend to have opposite output profiles as wind resources on both an hourly and seasonal basis, while storage resources located on the wind or solar plant side of a transmission constraint can charge during periods when renewable output exceeds the available transmission capacity and discharge that energy once renewable output has decreased below the available transmission capacity.

Fortunately, there are fewer constraints on where solar and storage projects can be deployed relative to wind projects, so they can often be sited in advantageous locations on the grid where they can increase the utilization factor of transmission. Some large storage and solar projects are already under development in Montana, which would allow greater

[87 PacifiCorp, 2019 Integrated Resource Pan at 247 (Oct. 18, 2019), available at http[s://www.pacif](http://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-)i[corp.co](http://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-)m[/conten](http://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-)t[/dam/pcorp/docu](http://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-)m[ents/en/pacificorp/energy/integrated-resource-](http://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/integrated-resource-) plan/2019_IRP_Volume_I.pdf.]

utilization of CTS capacity than if it is only used for wind generation. For example, the Buffalo Trail project that is scheduled to come online near the CTS in Montana by 2022 will include 250 MW of wind and 250 MW of solar,88 offering a steadier output profile due to the negative correlation between wind and solar output.

Similarly, PSE's interconnection queue includes a 500 MW proposed wind and storage project and a 300 MW solar and storage project in Montana.89 In addition, a proposed 400 MW pumped storage plant located along the CTS path in Montana has received a FERC license.90 Because this project uses a "quaternary" design in which the same equipment is used for pumping and generating, it can quickly switch between pumping and generating. As a result, it provides 800 MW of flexible capacity and can provide a range of ancillary services. This project offers at least 8.5 hours of energy storage when pumping or discharging at full capacity, which can absorb relatively long periods of high renewable output and shift that output to when transmission capacity is available. While some of these projects may be too large for PSE to contract with on its own, PSE could purchase part of their output. PSE can greatly increase the utilization of its CTS capacity by assembling a diverse portfolio of Montana wind, solar, and storage resources.

I. PSE should work to expand transmission

While PSE can add significant amounts of renewables to existing transmission, as discussed above and below, PSE should simultaneously pursue opportunities to expand

[Footnote 88 Tom Lutey, _Broadview wind and solar farm gets new owner_, Billings Gazette (Dec. 17, 2020), https://billingsgazette.com/news/state-and-regional/broadview-

wind-and-solar-farm-gets-new- owner/article_727b9178-dfde-55ae-a06f-912a30827503 html. .
[Footnote 89 _Current Transmission Queue_, Positions 48 and 79, Puget Sound Energy, http[s://www.pse.co](http://www.pse.com/pages/transmission/obtaining-services/transmission-queue)m/p[ages/transmissio](http://www.pse.com/pages/transmission/obtaining-services/transmission-queue)n[/obtaining-services/transmission-queue](http://www.pse.com/pages/transmission/obtaining-services/transmission-queue) (last accessed Feb. 24, 2021).
[Footnote 90 FERC, Licensed Pumped Storage Projects (Jan. 1, 2020), available at https://[www.ferc.gov/sites/default/files/2020-04/LicensePumpedStorageProjectsMap.pdf.](http://www.ferc.gov/sites/default/files/2020-04/LicensePumpedStorageProjectsMap.pdf)]

transmission in Washington, regionally, and throughout the West that is appropriately sited to address land and wildlife concerns.

PSE describes options for transmission expansion in Appendix J, including proposing four strategies for regional transmission.91 None of these strategies are mutually exclusive, and they offer different risk/reward profiles and timelines. As a result, PSE should be pursuing all of them aggressively. Specifically, PSE can implement Strategies 1 and 2 of repurposing existing transmission reservations for renewable resources in the near-term, while simultaneously pursuing additional transmission capacity through BPA's transmission service request and cluster study process (Strategy 3), and pursuing transmission projects by itself or in partnership with other utilities (Strategy 4). There is no downside to this multi-pronged approach, as significant costs are not incurred until much later in the transmission development process under Strategies 3 and 4, and considerable upside given the central importance of transmission to cost-effectively meeting CETA's requirements. For example, PSE notes "there is no commitment risk for PSE to submit \[transmission service requests\] in constrained areas of BPA's system since contracts are not awarded until construction is underway,"92 so there is no downside to pursuing Strategy 3 alongside the other strategies.

_A._ Opportunities to increase transfer capacity on existing transmission
While building new transmission takes time, PSE has many opportunities to expand transmission capacity in the next several years. These opportunities can make sufficient low- cost and high-value renewable resources available PSE to meet its needs while longer-term transmission expansion is completed, avoiding the need to add emitting resources.

[Footnote 91 Puget Sound Energy, _2021 IRP – Appendices A-M_ at J-15 - J-16 (Jan. 2021), _available at_ https://oohpseirp.blob.core.windows net/media/Default/Reports/Draft/Appendix/UE-200304-UG-200305-PSE- DRAFT-2021-IRP-Appendices-(01-04-21).pdf \[hereinafter "2021 Appendices"\].]
[Footnote 92 _Id._ at J-9.]

First, dynamic line ratings, power flow control devices, topology optimization techniques, and similar technologies can be deployed in a matter of months and allow new renewable resources to interconnect at low cost.93 Recent analysis by the Brattle Group found that 2,670 MW of additional wind capacity could be added in SPP by adopting dynamic line ratings, power flow control devices, and topology optimization, more than doubling the

amount of wind capacity that can be added while keeping curtailment at an acceptable level.94 Brattle found a one-time investment of $85 million in these technologies would yield annual production cost savings of $175 million.

Dynamic line ratings allow more power to safely flow on transmission lines by accounting for how ambient weather conditions affect the thermal limits of those lines. Transmission line ratings are typically based on worst case weather assumptions: hot weather with full sun and no wind cooling the line. Dynamic line rating devices measure the actual thermal limit of transmission lines, which under most weather conditions are much higher than the limits based on those worst-case assumptions. Dynamic line rating devices are particularly effective for increasing transmission capacity in wind-producing areas, as high wind speeds cool transmission lines at the same time they drive high wind plant output. At a minimum, PSE could use seasonal line ratings instead of year-round ratings that are based on worst-case summer weather conditions. This would significantly increase transmission line limits during the cooler fall, winter, and spring periods when wind output is highest.

[Footnote 93 Rob Gramlich, Bringing the Grid to Life: White Paper on the Benefits to Customers of Transmission Management Technologies (WATT Mar. 2018), _available at_ https://watttransmission.files.wordpress.com/2018/03/watt-living- grid-white-paper.pdf.]
[Footnote 94 Bruce Tsuchida et al.,, _Unlocking the Queue with Grid-Enhancing Technologies_ at 8 (Feb. 1, 2021), _available at_ https://watt-transmission.org/wp-content/uploads/2021/02/Brattle Unlocking-the-Queue-with-Grid-Enhancing- Technologies Final-Report_Public-Version.pdf90.pdf.]

Power flow control devices, also known as Flexible Alternating Current Transmission Systems (“FACTS”) devices, can also be deployed quickly to increase interconnection capacity on the existing transmission system. These are power electronics-based devices used to adjust the power transfer capabilities of the system and improve stability or controllability of the system under critical conditions. These devices have been deployed on the Bonneville Power Administration system, for example.95 Topology optimization plays a similar role by taking specific transmission lines out of service to redirect power flow away from congestion transmission elements and onto more optimal paths.

Second, over the next several years, PSE could take steps that will add capacity to existing transmission rights-of-way. These improvements can typically be completed more quickly than new transmission lines because they do not typically require new land acquisition and permitting and regulatory proceedings. In some cases, a second circuit can be added to existing transmission towers, doubling transmission capacity on a path. Other options for increasing transmission line capacity on existing rights-of-way include reconductoring existing lines with advanced conductors that can operate at a higher capacity, replacing transmission towers with new towers that can support more circuits or higher- capacity circuits, and adding series compensation devices to increase transfer capacity and improve power flow.

In other cases, substation equipment may be a limiting factor for transfer capacity. Transformers, switches, and other substation equipment can be upgraded to overcome these

[Footnote 95 Mike Hulsee, _BPA Series Capacitors – Purpose, Design, Application, & Performance_ at 6, _available at_

https://na.eventscloud.com/file_uploads/d7f5c57edff3df7d19a085f064d32191_SeriesCapacitorsPresentationSPCCo mpatibilityMode.pdf.]

constraints. Because they do not require new right-of-way, these upgrades can typically be made more quickly than building new transmission lines.

_A._ PSE should expand transmission within Washington

Transmission that is appropriately sited to address land and wildlife concerns will be essential for PSE to cost-effectively expand renewable resources. We expect PSE's Scenario D, which models increasing transmission limits, will show significant net benefits for ratepayers from transmission expansion. PSE's Scenario C limited transmission access to renewable resources in Eastern Washington, resulting in $900 million in additional Net Present Value ("NPV") revenue requirement cost to PSE ratepayers relative to the IRP Mid scenario which did not have this constraint.96 The $900 million in net present value savings from accessing more Eastern Washington renewable resources represents an implicit calculation of the "budget" PSE has for building transmission to Eastern Washington. $900 million in net present value is enough to build a large amount of transmission, particularly given that the net present value cost of transmission is significantly reduced by the discount rate because it would be built later in the planning period due to the time required to plan, permit, and build transmission. The cost of Sensitivity C does not significantly increase above that of the unconstrained IRP Mid scenario until around 2040, indicating that there is sufficient time for PSE to complete the required transmission expansion.97

For reference, the Midcontinent Independent System Operator ("MISO") has estimated that the cost of building a new double-circuit 500-kiloVolt ("kV") transmission line, which is large enough to carry several thousand MW, is around $4.6 million per mile.98 Based on

[Footnote 96 2021 IRP at 3-10.]
[Footnote 97 _Id._ at 3-17.]
[Footnote 98 MISO, Transmission Cost Estimation Guide MTEP 2019 at 46 (2019), available at https://cdn.misoenergy.org/20190212%20PSC%20Item%2005a%20Transmission%20Cost%20Estimation%20G uide%20for%20MTEP%202019_for%20review317692.pdf.]

approximate transmission distances to eastern Washington and the discount rate reducing the net present value cost of transmission expansion, with the $900 million in net present value savings PSE could likely build multiple new double circuit 500-kV lines to Eastern Washington, or even lines with higher voltage and higher capacity, and provide large net benefits to ratepayers by accessing more cost-effective renewable resources. To mitigate land and wildlife concerns, PSE should utilize existing rights-of-way and corridors as much as possible.

_A._ PSE should work to expand transmission access to Montana

Two upgrades to the CTS system have been studied with a combined price tag of $213.7 million in 2012 dollars, which together would enable an additional 550 MW of transfer capacity from Colstrip to the BPA system. That included a cost of $87 million in 2012 dollars for the CTS upgrade,99 and $126.7 million in 2012 dollars for upgrades to BPA's system.100

The CTS could be redeveloped with modern Alternating Current technology, like advanced conductors and tower designs, to achieve even higher transfer capacity across the existing right-of-way. It could even be converted to much higher capacity High-Voltage Direct

Current transmission, which is increasingly the most economic option for longer- distance transmission lines like the 500-mile CTS.101 VSC converters allow the bidirectional delivery of ancillary services, providing significant value and facilitating the operation of the

[Footnote 99 NorthWestern Energy, Status of Montana Transmission Availability at 2 (Aug. 2017), available at http[s://www.bpa.gov/Projects/Initiativ](http://www.bpa.gov/Projects/Initiatives/Montana-Renewable-)es/M[ontana-Renewable-](http://www.bpa.gov/Projects/Initiatives/Montana-Renewable-) Energy/Documents%20Montana/Northwestern%20Jan%2025,%202018.pdf.]
[Footnote 100 Bonneville Power Admin., MT REDAP Planning Committee: Draft Responses to Steering Committee Guidance from March 5th at 1, (Apr. 27, 2018), available at https://www.bpa.gov/Projects/Initiatives/Montana- Renewable-Energy/Documents%20Montana/Planning%20Committee%20Narratives_Apr_25_Final.pdf.]
[Footnote 101 Liza Reed et al., Converting Existing Transmission Corridors to HVDC is an Overlooked Option for Increasing Transmission Capacity, 116 Proceedings of the National Academy of Sciences 13879 (July 9, 2019), available at https://[www.pnas.org/content/116/28/13879.](http://www.pnas.org/content/116/28/13879)]

power system with large amounts of inverter-based wind, solar, and battery generation. This can provide reliability services to PSE, but also allow PSE to sell services to other parts of the West. For example, the black start and inertia provided by the Pacific Northwest hydropower fleet could be sold to Montana and Wyoming as they move to a high penetration of wind generation.

_A._ PSE should expand transmission ties to other parts of the West
PSE should also pursue opportunities for transmission expansion to more distant parts of the West, if they are appropriately sited to address land and wildlife concerns. For example, partnering with other utilities to access low-cost and high-capacity-value Wyoming wind via Boardman to Hemingway ("B2H") and Gateway West is one potential solution. We commend PSE for its interest in 400-600 MW of capacity on B2H and corresponding capacity on Gateway West,102 and encourage it to move expeditiously to commit to the full 600 MW of available capacity and to support prompt development of the line. PSE notes B2H has a planned 2026 in-service date,103 so the project could deliver high-capacity-value Wyoming wind to replace PSE's exit of coal capacity at Colstrip.

SWIP-North, which would connect Idaho and Nevada, could give access to solar resources in Nevada and points south. Potential upgrades to the transmission links between California and the Pacific Northwest that could deliver solar output should also be investigated. This includes the DC Pacific intertie as well as the considerable capacity on the AC power system. Much of this transmission and substation equipment is quite old, so replacing it with state-of-the art equipment or adding new equipment could significantly increase transfer capacity. These ties offer considerable value for meeting resource adequacy

[Footnote 102 2021 Appendices at J-12.]
[Footnote 103 _Ibid._]

needs because summer-peaking California and winter-peaking utilities Northwest have different load profiles daily and seasonally, and because the solar capacity in California has

negatively correlated output profiles with most of the wind resources available in the Northwest and Mountain states.

Even without those upgrades, there are likely to be considerable increases in solar exports across those ties from California into the Pacific Northwest as solar capacity in California and the Southwest continues to grow. Large amounts of solar output are being exported to the Pacific Northwest during the summer now, and with growing installed solar capacities in California and the Southwest those exports will increase in the winter as well. Because this excess solar output must be curtailed if it is not exported from California, it can typically be procured at very low cost.

Winter days are significantly longer in the Southwest than the Northwest, so Southwest solar output can significantly help with meeting winter peak demands in the Northwest. These solar imports can complement resources that can shift electricity consumption a few hours in time, such as the considerable storage capacity in the existing hydropower fleet, as well as additions of storage and demand response. We encourage PSE to focus on sensitivities that examine strategies for using market purchases of increased solar imports to meet its needs.

As mentioned above, the West is transitioning to more integrated market operations. The ongoing expansion of the Energy Imbalance Market, and the likely transition to more coordinated planning and operations across the Western power system, should increase the availability of solar imports into the Pacific Northwest by reducing or eliminating market and scheduling seams between CAISO and the Pacific Northwest.

Given the long timeline needed for transmission permitting and the need to appropriately site facilities to address land and wildlife concerns, PSE should begin to pursue these opportunities now if the transmission is to be available as PSE's carbon requirements increase.

CONCLUSION
PSE should accelerate its deployment of renewable energy, energy storage, demand response, energy efficiency, and electrification. In particular, PSE can take advantage of low- cost renewable and hybrid resources due to the near-term availability of federal tax credits. By expanding access to regional renewable resources and power markets, PSE can use the powerful statistical principles behind the aggregation of diverse sources of renewable supply and electricity demand to reliably meet demand with less need for generating capacity.

Accelerating the transition to clean energy will avoid the need to add gas generating capacity, reducing the economic and reliability risks of increasing dependence on gas generation.

Organization: The Energy Project
Source: Email

Comment:

See attachment

Attachment A to The Energy Project Comments on

PSE's Draft CEIP

November 12, 2021

Table 1. CBIs Proposed by the Joint Advocates: 37% at least Partially Addressed by PSE's CBIs in Draft CEIP

[Table]

Note: The numbering of PSE's CBI's is based on the order they are shown in Table 3-1.

UE-210795 / Attachment A to The Energy Project Comments on PSE's Draft CEIP (November 12, 2021)

UE-210795 / Attachment A to The Energy Project Comments on PSE's Draft CEIP (November 12, 2021)

PUGET SOUND ENERGY

DRAFT WASHINGTON CLEAN ENERGY IMPLEMENTATION PLAN

October 15, 2021 Docket UE-210795

COMMENTS OF THE ENERGY PROJECT

November 12, 2021

I. INTRODUCTION

The Energy Project (TEP) appreciates the opportunity to comment on PSE's Washington Draft Clean Energy Implementation Plan, issued on October 15, 2021 (Draft CEIP). The Energy Project joined with other PSE Advisory Group members Public Counsel and NWEC, and with Front & Centered to develop recommended Customer Benefit Indicators (CBI) in July, and shared them with PSE at that time.1 In general, the focus of these comments is to respond to PSE's selected CBIs and to suggest where our recommended CBIs can be added to the CEIP in order to improve the plan.

These comments highlight key areas of concern for TEP based on our review of the Draft to date. However, the Draft CEIP is nearly 200 pages long and additionally contains a large volume of documents in its 12 appendices. We may have additional points to address as analysis of the draft continues, issues are clarified, and other party comments are reviewed.

General Points

The Energy Project recommends that the PSE CEIP give greater consideration to the approach reflected in the July 30 Joint Advocate CBIs. Since WAC 480-100-640(4)(c) requires

1 Joint Comments on Customer Benefit Indicators on Behalf of The Energy Project, Front And Centered, NW Energy Coalition, and the Washington State Office of The Attorney General, Public Counsel Unit, July 30, 2021. ("Joint Advocate CBIs" or "JA CBIs"). The comments have been shared with utilities and stakeholders and filed with the Commission.

that each utility must include, at a minimum, at least one CBI for each statutory element, the JA CBI recommendations are organized around the benefit areas identified in the statute and rule, with specific CBIs identified for each element, along with suggested metrics for each CBI. This approach is depicted in Attachment A submitted with these comments. In addition, Attachment A compares PSE's draft CBIs with the JA CBIs, indicating whether or not there is overlap between the two. The Energy Project's analysis finds that only a little over one third of the JA recommendations are addressed or partially addressed in the Draft CEIP. The Energy Project recommends additions or modifications to the Draft CEIP in order to improve the effectiveness of the final product.

As Attachment A shows, there are some areas of agreement between the PSE Draft CEIP CBIs and the JA CBIs. On the other hand, PSE's CBIs are not as extensive or detailed as the JA recommendations. PSE's CBIs in a number of cases are quite general and high level, and may not satisfy the definition of a CBI in WAC 480-100-605. Overall, TEP believes there is a need for more specificity in the draft CBIs, and the metrics used to measure progress. In addition, as discussed below, several important areas are not addressed in the PSE draft CBIs. The JA CBIs goal is to add some more completeness and practical specificity measuring improvement in particular tangible areas that reflect whether or not direct benefits are being experienced by customers.

An overarching concern based on TEP's review so far is a clear understanding of how PSE's planned activities will impact their CBIs, especially in areas that are critical for vulnerable populations and highly impacted communities, including low-income customers. WAC 480- 100-640(5) requires the utility to present in tabular form certain information about CBIs in connection with its "specific actions" to meet CETA requirements. It is TEP's understanding

this information is presented in Appendix L to the Draft CEIP, labeled CEIP Programs and Actions Master Table. Reviewing the Appendix, it appears that specific actions are not listed or described for several important statutory elements and related CBIs, including Reduction of Burdens, Reduction in Cost, and Reduction of Risk. The Energy Project would like to see this addressed in the final CEIP.

The Energy Project has some concerns about the weighting and prioritization process used to develop the CBIs. First, as a general matter, TEP questions whether it is appropriate to prioritize one element of the statute over another. CETA itself does not require the prioritization and as written conveys the intent that each of the statutory elements is to be given equal weight. This is consistent with the standard principles of statutory interpretation. The Energy Project appreciates the intention of the residential survey in representing marginalized populations.

However, we believe it may not be the most representative of named communities. Since the primary media through which customers learned of the survey were email or social media, the customers most likely to fill out the survey were those with internet access and skills, creating a skewing effect on the results. PSE itself acknowledge the "[t]he survey results are not scientific and are not predictive of the opinions of PSE customers or people in PSE's service area."2 This raises the question of why the survey was given weight in the selection of CBIs.

Another general comment is that the PSE framework is somewhat confusing. The Draft CEIP list the proposed CBIs and metrics in Appendix H, Figure H-13, linking CBIs and metrics to multiple statutory elements. The overlap and redundancy make it more difficult to track which

CBI and which metrics are related to a given statutory element. While there is certainly some potential overlap, TEP recommends an approach that minimizes duplication and makes

[Footnote 2 PSE Draft CEIP, pp. 176.]

[Footnote 3 This same figure/table is shown as Table 3-1 in the Draft CEIP.]

decisions about where CBIs and metrics fit in the framework, so as to give adequate weight to each discrete statutory element. This is addressed in more detail in the next section.

The Draft CEIP states that "PSE will continue to work with stakeholders in identifying and developing future customer benefit indicators and data sources for CBI metrics, and reporting on these sources and baseline data in 2022."4 The Energy Project agrees this is a long- term process and this commitment is welcome. At the same time there is still a need for more work on the current CEIP, and time to make improvements within the current schedule. With regard to data sources, the draft CEIP seems to set up barriers to adoption of metrics based on various concerns about privacy requirements and whether reports are "in common use", as well as availability and relevancy of data. While there may be some validity to these concerns as a general matter, TEP believes there are substantial sources of publicly available data, or data currently available to PSE, sufficient to develop robust metrics for the initial CEIP. The focus at this stage should be on designing metrics for the current plan based on this available data, avoiding reliance on data that has privacy concerns or is not in common use. This CEIP will be in place for four years, and requires best efforts for a strong initial framework, rather than a minimalist approach, with a promise of future CBIs to be developed after this plan is final.

II. CUSTOMER BENEFIT INDICATORS

The Energy Project continues to recommend inclusion of all the CBIs listed in the Joint Advocate recommendations in July, as reflected in Attachment A. Areas of heightened concern for TEP, in terms of some of the salient issues and metrics not reflected in the CBIs of the Draft CEIP, are described below. As a framework for identifying TEP's concerns, this discussion looks at the relevant statutory elements, focusing on the presentation of CBIs and related metrics

4 PSE Draft CEIP, p. 10.

by PSE in its Appendix H, as summarized in Figure H-1 (Draft customer benefit indicators and metrics).5

A. Energy Benefits

In Figure H-1, the Draft CEIP identifies only one CBI for this statutory element: "Improved participation from named communities." The related metric is the "count and participation" within named communities. As an initial matter, this indicator seems to be more appropriately linked to another statutory element, Reduction of Burdens, which the Figure H-1 table acknowledges, or to Reduction of Cost. 6 Participation in bill assistance programs is a financial benefit related to burden reduction or cost reduction and is not primarily energy related. If this "improved participation" indicator is tied to a more appropriate element of the statute, this leaves the Draft CEIP with no other identified indicator in the Energy Benefit category.

The Energy Project also questions whether this single "participation" indicator and metric is the best choice to address the broad range of matters covered by the concept of "energy benefits," particularly clean "energy benefits." The Energy Project recommends that PSE instead consider

for this element, adoption of the two JA CBIs which more directly focus on energy benefits, as reflected in: (1) improved efficiency of housing stock; and (2) low-income and vulnerable population access to an increasing number of renewable resources and non- emitting DER.7

[Footnote 5 The Energy Project is confused by some tables presented with PSE's CBI selection and prioritization process. First, Table 3-4 includes an additional CBI, "Improved fish and wildlife habitat", that is not included in Table 3-1. Second, Table 3-4 (CBIs and Priority) does not align with Table 3-12.]

[Footnote 6 It is also unclear from the table which types of program participation is relevant. Appendix H mentions tracking participation in the CACAP program. Tracking CACAP only could be problematic in that CACAP is a temporary program for "crisis affected" customers adopted in response to the pandemic. Broader tracking and clarity regarding the programs involved is important.]

[Footnote 7 If these indicators are used, then increased program participation does become relevant, but as a possible metric, tied to energy efficiency and/or renewable and DER programs. Other proposed Joint Advocate metrics are listed on Attachment A.]

B. Reduction of Burdens/Reduction of Cost

The Energy Project is concerned that PSE's CBIs for these two categories are virtually identical, and essentially just paraphrase the statutory element itself. The metrics proposed for both, i.e., "percentage of income spent," are also the same, except that one metric is broadly applicable to all customers, while the other specifies vulnerable populations and highly impacted communities. As a result, it is not clear if the rule requirement for "at a minimum, one or more customer benefit indicators associated with" each statutory element is actually met.8 The Energy Project encourages PSE to reach further than the bare minimum in developing unique CBIs and metrics for these and for all the statutory elements. The wording of the rule itself seems to suggest a utility may seek to do more than the minimum.

The Joint Advocates include two CBIs for the Reduction of Cost statutory element:

• Expand Bill Assistance Programs - The JA list includes four recommended metrics

for this CBI, of which only one (increase program participation rates) is reflected in the Draft CEIP. Additional metrics not reflected in the Draft CEIP include:

o Increase penetration rates overall and among highly Impacted communities and vulnerable populations;

o Increase annual program budget showing increases over prior years; Increase in customers avoiding disconnection.

• Reductions in Number and Amounts of Arrearages – This JA CBI includes a metric

regarding reductions in number and percentages of residential customers with arrearages 90+ days, with breakout for customers by zip code/census tract, renter, highly impacted communities, vulnerable populations, known low income, and

[Footnote 8 WAC 480-100-640(4)(c).]

BIPOC communities. The Draft CEIP does not include any CBIs or metrics regarding arrearages. Omitting this measurement of reduced energy costs for customers would be a missed opportunity.

C. Resiliency/Energy Security

The approach to the statutory elements of Resiliency and Energy Security again reflects some redundance. The Draft CEIP proposes to use the same two CBIs for these two statutory elements: (1) increased resiliency; and (2) decreased frequency and duration of outages. In

TEP's view, identifying "increased resiliency" as a CBI for the Resiliency element is not particularly useful, since it is simply restating the statutory element itself. This may not meet the definition of a CBI in WAC 480-100-605.

In a similar vein, identifying "increased resiliency" as a CBI for Energy Security in effect simply inserts the statutory element "Resiliency" as a CBI for another listed statutory element

"Energy Security." Ultimately this type of overlap and redundancy weakens the importance of each of the discrete statutory elements, reduces the tools to advance those elements, and narrows the scope of CETA implementation.

The Energy Project agrees that decreasing the number and duration of outages is a reasonable CBI for resiliency. However, TEP recommends that this CBI and related metrics be focused on geographic areas with vulnerable populations and highly impacted communities.

As noted, PSE also lists decreased outages as a CBI for Energy Security. A more creative approach seems called for, identifying one or more different CBIs for this element. PSE already reports SAIDI/SAIFI information, so this is hardly a stretch goal for the Company. Joint Advocates recommend two CBIs for Energy Security which are more focused on the customer experience of maintaining the security of connection to essential energy services: (1) reduced

residential disconnections); and (2) improved access to reliable clean energy. None of PSE's draft CBIs include measurement or tracking of residential disconnections, another key area of concern for TEP, or of access to renewable energy.

D. Omissions From The PSE Draft CBIs

The following issue areas addressed in the JA CBIs were not reflected in PSE's draft

CBIs.

• Arrearages, bills and credit scores

• Indoor air quality

• Energy efficiency

• Distributed Generation and Renewables

• Residential Disconnections

The Draft CEIP addresses some of these items in other sections of the Draft CEIP, sometimes at length. It is notable, however, that none were included in the CBIs. This is important because the CBIs are the chief mechanism for tracking progress toward implementation of the CETA

goal of equitable distribution of customer benefits from the transition to clean energy. These types of key indicators are necessary to ensure that the PSE CEIP is a meaningful document.

III. LEASING FOR BATTERY STORAGE AND SOLAR

A. Draft CEIP Proposals for Battery Storage

As noted above, while Demand Response and DER were addressed in some detail in the Draft CEIP, they are notably not included in any of the CBIs. However, the Draft CEIP describes two Distributed Energy Resources programs for vulnerable populations – leasing for battery storage, and leasing of solar PVs. While energy storage and solar power can definitely provide benefits for low-income communities, TEP has significant concerns with both of these

programs as proposed. Some of the specific details, and customer costs, for the programs are not fully clear. Programs intended to benefit highly impacted communities and vulnerable populations should contribute to reduced energy burden, a centerpiece of CETA. Yet, it's not at all apparent that would occur from these programs, particularly the battery storage programs.

B. Battery Energy Storage Programs for Vulnerable Populations

PSE's plans to launch a battery energy storage leasing program, including programs for vulnerable populations, is described in Chapter 4 of the Draft CEIP.9 PSE describes the battery programs for vulnerable populations as follows: "PSE will launch a program that leases battery energy storage systems to residential customers that incorporates a focus on vulnerable populations, including income-eligible residents. Customers will pay a small monthly fee for backup power services. PSE will also use batteries to manage system and local peaks."10 Residential customers, including customers from vulnerable populations, will pay a monthly fee for the battery storage equipment located at their premise. In contrast, for commercial and industrial (C & I) customers, PSE will "lease space" from customers with an option to provide backup power to the customer "for a small fee."11 For both the Residential and C & I programs, PSE intends to use the battery storage equipment to help manage system and local peaks.

However, only C & I customers would be compensated with payments from PSE. The rationale for this difference in program design is not discussed in the draft CEIP.

The Energy Project has the following concerns with the battery energy storage program concept for vulnerable populations:

[Footnote 9 See Draft CEIP, Chapter 4, "Battery Energy Storage Programs for Vulnerable Populations," pp. 102-104.]

[Footnote 10 Id, p. 102.]

[Footnote 11 Draft CEIP, p. 97.]

• Programs that require additional costs and fees to be paid by customers in vulnerable populations and highly impacted communities (as mentioned above), such as the battery storage programs, would increase energy burden. This is explicitly contradictory to the goals of CETA and highly problematic for inclusion in a CEIP.

• Battery storage should be provided to income eligible customers, highly impacted communities and vulnerable populations at no extra cost. PSE should focus efforts on areas with income

eligible customers, vulnerable populations and highly impacted communities with a history of outages and low reliability.

• As a source of backup power, some of the anticipated benefits from the battery storage program for vulnerable populations are described in the draft CEIP as follows:

In addition to delivering grid benefits during peak events, a battery energy storage system increases resiliency because customers can use their systems for backup power. As a result, this storage program will decrease the time and duration of outages for participating customers. This can increase home comfort and improve community health as an alternative to a diesel generator.12

Notably, and of serious concern, the discussion of customer benefits from these programs does not include reduction of burden. Additionally, it seems unlikely that many customers with low incomes have resources to invest in diesel generators for their home as a backup power source, as a practical matter making the "generator use avoidance" benefit unavailable.

• The estimated costs of the battery storage programs is substantial, at $51.79M (utility owned assets, non-utility owned assets, and programs for vulnerable populations).13

[Footnote 12 Draft CEIP, p. 104.]

[Footnote 13 Draft CEIP, Appendix L, p. 7.]

Certainly, battery storage can potentially play a significant role in expanding DER capacity, including for income-eligible and vulnerable populations. However, TEP recommends that such efforts be provided at no cost to customers, with a focus and priority on areas with lower reliability.

C. Distributed Solar Programs for Residential and Vulnerable Populations

The distributed solar program for vulnerable populations is also described as a "leasing" program, similar to the battery storage program.14 The distributed solar program for vulnerable populations would be one component of a broader program strategy that also includes residential, commercial and industrial rooftop solar leasing of solar photovoltaic assets owned either by PSE or a third-party, at a total cost of $82.79M.15 The Energy Project has significant concerns and questions with this program, particularly if any additional costs are borne by income eligible and vulnerable populations, which would directly contradict the goals of CETA. By contrast, the Community Solar program would provide benefits o income-eligible and vulnerable populations, apparently at no added cost and with a much larger nameplate capacity.16 Below we discuss the residential program (benefits are expected to extend to Named Communities) and the program for vulnerable populations.

Residential Rooftop Solar Leasing

The flow of payments and credits for this distributed solar leasing program, and potential net costs to customers, both for residential and income-eligible residential (vulnerable populations), is not fully clear based on the descriptions in Chapter 4 of the Draft CEIP. The residential program is contemplated to include utility owned assets (solar PVs), and PSE would

[Footnote 14 See Draft CEIP, Chapter 4, "Distributed Solar Programs for Vulnerable Populations," pp. 83-86.]

[Footnote 15 Draft CEIP, pp. 79-86. The $82.79M cost is shown at Appendix L, p. 6, and also includes community solar.]

[Footnote 16 Appendix L shows Nameplate Capacity of 25.6 MW for Community Solar, a portion of which would be dedicated to income-eligible customers, whereas the distributed solar leasing program for vulnerable populations has a Nameplate capacity of 2.7 MW. Appendix L, p. 6.]

lease rooftop space from residential customers in exchange for installation of the solar PV. The CEIP states, "[Residential c]ustomers will receive a monthly lease payment, and PSE will generate renewable energy to supply the grid. This DER approach enables customers to participate and benefit from clean energy generation without any upfront investment."17 While residential customers may receive credits for leasing of their rooftop, it also seems implied that while they would not incur "upfront investment" in solar, enrolled customers would be required to make payments for the solar generation. The draft CEIP refers to the "complex billing" systems needed for these programs.18

The expected customer benefits of the residential program reference inclusion of "named communities" but does not mention reduction of energy burden as a program benefit. Instead, the following customer benefits of the residential program are identified: non-energy, environment, and health.19 There is mention of the credit applied to the customer's utility bill, presumably for the rooftop lease, but again, it seems likely that customers would still face a net cost under the program, for the solar PV. The customer benefits of the residential program are further described in this way: "The installation of these solar PV systems will support an increase in clean energy jobs. By taking these specific actions, customers, including named communities, will face decreasing health and environmental burdens. See Table 3-1 for PSE's customer benefit indicators."20 Notably, reductions of cost and reductions of burden are not identified as customer benefits. In contrast, the Community Solar program does identify "burden reduction" as a customer benefit.21

[Footnote 17 Draft CEIP, p. 79.]

[Footnote 18 Id., p. 80.]

[Footnote 19 Id.]

[Footnote 20 Id.]

[Footnote 21 Id., p. 88.]

2. Distributed Rooftop Solar Leasing for Vulnerable Populations

The distributed solar program for vulnerable populations is described as an extension of the other programs (PSE-owned, customer-owned, third-party owned solar), as an effort to "reduce barriers for vulnerable populations to access and benefit from DERs."22 Again, however, what is not clearly explained, is whether customers would face net costs from the program, despite a possible rooftop lease credit. The program is expected to include single family residences as well as multi-family buildings.

As with the residential program discussed above, there may be two leases under the program. PSE may lease rooftop space, providing a credit to customers, but then in turn the enrolled customers may also lease the solar PV. Similar to the residential program, the distributed solar program for vulnerable populations would necessitate complex billing system upgrades. The

Draft CEIP description of the vulnerable population program states that in 2023, “PSE will also scope billing system changes to reflect monthly lease payments on customers' bills and begin complex billing enhancements as needed (see DER Enablers—Customer Enablement).”23 The reference here to “monthly lease payments on customers’ bills,” as opposed to monthly credits, suggests that customers of the program for vulnerable populations may still be faced with a net increase in costs rather than a reduction of costs. The costs associated with the required billing system upgrades may be rather large. Appendix L mentions “DER work enablement work streams, strategic procurement, customer, and operations” at a cost of $32.7 million. There is no further explanation or description of attributes associated with this expense, however.24

[Footnote 22 Id., p. 83.]

[Footnote 23 Id., p. 84.]

[Footnote 24 Appendix L, p. 8.]

The distributed solar program for vulnerable populations is expected to include multifamily buildings and residences as well, through a range of different program components. The draft CEIP describes the multifamily solar offerings in this way:

PSE will support the adoption of solar PV at multi-family unit buildings through partnerships and incentives for multi-family customers. PSE will facilitate solar PV installation on multi-family buildings by connecting with technology providers and billing support systems to share production across units. PSE will also offer multi-family unit building owners incentives to reduce their upfront cost to install and own solar in PSE's service territory.25

Again, however, what is not fully clear based upon this description, is what costs are expected to be borne by residential customers themselves in multi-family housing. Any added costs passed on to directly or indirectly to residential customers living in multi-family housing would be of concern.

The Draft CEIP identifies the same customer benefits for the solar program for vulnerable populations as the residential program: non-energy, environment, and health.26 Once again, reductions of cost and reduction of burden are not clearly identified as customer benefits. Contributing to the confusion, the discussion of customer benefits for the distributed solar program for vulnerable populations also refers to “community solar,” but that is a different programmatic effort, described in the subsequent section of the draft CEIP. The complete discussion of customer benefits for the distributed solar leasing program for vulnerable populations is provided below:

These programs provide customer benefits in non-energy, environmental, and health. The Community Solar and Residential Rooftop Solar Leasing programs will improve participation from named communities and reduce the energy burden for income-eligible customers through monthly credits at no cost to the consumer. The multi-family programs help broaden access and improve the affordability of clean energy. These programs contribute to reduced greenhouse gas emissions by allowing PSE to install solar for clean energy generation, which

[Footnote 25 Draft CEIP, p. 84.]

[Footnote 26 Id., p. 85.]

contributes to improved air quality. Finally, the installation of these solar PV systems will support an increase in clean energy jobs. See Table 3-1 for PSE's customer benefit indicators.27

While this customer benefit section mentions “no cost to the consumer,” that may apply to the Community Solar program, described later in the Draft CEIP, which would offer credits to customers. Again, although there may be some credits to customers for the rooftop lease, the reference to “improving affordability of clean energy,” and the description of the program suggest customers may also be required to make lease payments to PSE for the solar PV.

To the extent any of these programs would require customers to make an additional payment to the utility (or third-party entity), possibly including interest, would seem to directly contradict CETA’s goals to reduce energy burden for these customers. Instead, such a program concept would increase the energy costs and burdens of the very populations CETA is seeking to ensure are not harmed as a result of the transition to clean energy. As already noted, the Master Table of CEIP Programs and Actions in Appendix L does not include reference to the following three statutory elements: Reduction of Burdens, Reduction in Cost, Reduction in Risk. This absence contributes to the confusion and lack of clarity surrounding the potential impacts, benefits, and costs of the distributed solar leasing programs. We hope these statutory elements are included in the final list of CEIP Programs and Actions.

A final point regarding the proposed battery storage and solar DER leasing programs for vulnerable populations, TEP recognizes that these programs are anticipated by PSE to contribute to managing local and system peaks and to meeting peak capacity. The Energy Project recommends that PSE consider whether direct load control (DLC) programs might represent a more straightforward and cost-effective means of achieving those goals. We observe that

[Footnote 27 Id., pp. 85-86.]

Appendix L does include five DLC programs as part of its Demand Response target, with a total expected cost of $5.3 million.28 Perhaps some of these DLC programs can be expanded. In addition, none of the DLC programs appear to mention inclusion of income-eligible or vulnerable populations, another potential area for further consideration.

IV. CONCLUSION

The Commission’s CEIP rules create an expectation of significant consultation by the Company with its Advisory Groups, which would include the PSE’s Energy Efficiency and Low- Income Advisory Groups in the development of the CEIP.29 The Energy Project’s experience and perception to date is that consultation with these Advisory Groups has been relatively limited. Consistent with the rule, TEP is hopeful that the recommendations which the Advisory Group members have submitted, including the Joint Advocate CBI recommendations, will receive further discussion in the Advisory Groups and serious consideration for inclusion in the final CEIP.

As these comments suggest, TEP sees significant gaps in the Draft CEIP CBIs in addressing the statutory elements that have particular significance for low-income, vulnerable populations and highly impacted communities. These should be better addressed in order to develop a comprehensive and effective set of CBIs. The Energy Project also has concerns with the proposed leasing programs for battery storage and solar for vulnerable populations, particularly

to the extent these programs result in net additional costs to customers. The Energy Project recommends more emphasis be given to Community Solar and to direct load control alternatives.

[Footnote 28 Appendix L, p. 4.]

[Footnote 29 WAC 480-100-655(1).]

The Energy Project looks forward to working with the Company and with other member of PSE's Energy Efficiency (CRAG) and Low-Income Advisory Groups, as well as the Equity Advisory Group to try to reach consensus on the final set of CBIs for measuring equitable transition to clean energy under CETA.

Organization: Washington Clean Energy Coalition
Source: Web comment

Comment:

The current requirement for sizing transmission capacity (called Firm Transmission) is that transmission capacity be matched to the nameplate rating of the generation to ensure that overload never exists. This has worked well in the past because thermal generation sources, usually baseline power, normally generate at a capacity factor of up to 95% of nameplate rating. This results in an equivalent efficient loading of the transmission line. When renewable resources, especially wind and solar, replace thermal sources this changes. These generation outputs, dependent on weather fluctuation, vary from 0-100% capacity factor but with an average of only 20-50%. This greatly reduces the actual MWh output with respect to the nameplate rating. This means that when the current Firm Transmission requirement is applied, up to 50-80% of the MWh energy capacity of the transmission line is not used – a very inefficient use of an expensive asset. This means 2-5 times as much transmission MW capacity is needed (depending on the specific renewable capacity factor) to carry as much energy (MWh) as was needed for the thermal energy being replaced. Or said another way, 2-5 times as much energy could be loaded on an existing line if Firm Transmission were not required. Whether this is being addressed by PSE now has not been communicated.

Addressing this inefficiency is possible but requires an innovative whole system approach to transmission development that includes generation, storage, effective control, and perhaps market factors as well as the needed transmission assets. An example follows.

Referring to a histogram of a wind farm located in Eastern Montana (provided by PSE in an IRP feedback response). It shows the actual hours of output at each capacity factor over a period of a year.

Referring to the chart - if you sum up the number of MWhs produced by multiplying the hours times the capacity factors times the nameplate rating (assume 1 MW for simplicity) and divide that by the total yearly hours (8760) you see that only 42% of MWh capacity was produced. Firm Transmission requires 100% of nameplate MW, but only 42% of MWhs would be loaded, meaning the transmission line was 58% inefficient with respect to its MWh capacity. How can this be addressed?

Here is where innovation is needed. If a control system were developed that never permitted the instantaneous generation load to exceed the transmission line capacity or the demand load, the Firm Transmission requirement could be retired. This would permit the transmission line to be fully loaded at any desired time. Such a control system was not possible in the past, but we are in the age of Artificial Intelligence and 5G speed where it is not only possible but would ease the complexity of current control. With such a control system, new or existing transmission lines could carry much higher generation capacities and reduce the need for so much new transmission.

Of course, there would be many times when a generation unit with greater nameplate capacity than its transmission line and with wind blowing at its peak, when it could produce more energy than the transmission line capacity or greater than the line load – what happens then? Several options: 1) generation could be partially curtailed, 2) excess generation could be stored (batteries) for when the wind wasn't blowing or 3) excess generation could be sold to provide the low-cost energy source being sought to make green hydrogen.

This Firm Transmission issue is not even alluded to in the CEIP and will be a major factor in transmission cost that could greatly affect CETA costs. This issue needs to be addressed in this CEIP.

Organization: Washington Clean Energy Coalition
Source: Email

Comment:

Subject: Comments on PSE Draft CEIP (UE-210795)

Dear Commissioners and PSE planners,

Attached is a letter expressing concerns of the Washington Clean Energy Coalition regarding problematic Customer Benefit Indicator scoring methodology that appears to be biased against solutions that could benefit PSE's customers and the environment. We are deeply disappointed that PSE has made little progress since its questionable CBI scoring in the 2021 IRP, and these shortcomings are distorting the company's CEIP preferred portfolio.

Sincerely,

Don Marsh, Washington Clean Energy Coalition

October 25,2021

Chairman Dave Danner Commissioner Ann Rendahl Commissioner Jay Balasbas Washington Utilities and Transportation Commission 621 Woodland Square Loop SE Lacey, WA 98503

Re: Comments on PSE Draft CEIP (docket UE-210795)

Dear Commissioners Danner, Rendahl and Balasbas,

The Washington Clean Energy Coalition, an organization that includes environmental organizations that have participated in the development of PSE's Integrated Resource Plans

over many years, is concerned about defective CBI methodology in PSE's Draft Clean Energy Implementation Plan. There appears to be evidence of biased analysis by PSE that produces results that are in the best of interest of the company, not ratepayers nor the environment.

Defective CBI methodology

Despite strong criticism by IRP stakeholders and numerous suggestions of how CBI metrics and methods could be improved, PSE has made little progress in this area during the months that have passed since the publication of the 2021 Integrated Resource Plan.

On page 40 of the CEIP, PSE scores 22 different DER programs to determine which will be included in the company's preferred portfolio. There are three obvious flaws in PSE's methodology:

Each metric is scored using over-simplified metrics that have only three possible values (0, 1, 2). This unreasonably compressed range obliterates meaningful differences between the various DER programs. For example, all but 3 of the 22 programs receive identical composite scores for the first four categories that are the most directly related to the clean energy objectives of CETA (Reduced greenhouse gas emissions, Reduction of climate change impacts, Improved outdoor air quality, and Improved community health). As a result, the job of differentiating the programs falls mostly to seven metrics that are arguably less central to CETA's main purpose.

2. PSE attempts to account for the relative importance of the metrics by multiplying some of the scores by a factor of two. Table 3-4 shows five metrics that receive this boost. However, applying these weights to two of the metrics won't make any difference in the rankings of 19 DER programs that received identical scores on those metrics. Therefore, only three of the weighted metrics will make any difference in the final rankings (Affordability of clean energy, Reduced cost impacts, and Increased clean energy jobs). Among other surprising effects, this method makes clean energy jobs twice as important as reducing power outages or increasing resiliency during emergencies. Since many of PSE's residential and commercial customers are critically reliant on stable electric service, PSE should provide clear evidence that a preference for clean energy jobs over reliability is backed by advisory groups and the public participation

process, as required by WAC 480-100-640 (4) (c).

3. The individual scores are not explained. This lack of transparency and accountability makes the CBI scores vulnerable to manipulation that might serve PSE's business interests. For example, PSE gives the Substation Batteries program a relatively low score for decreasing the time and duration of power outages. This is anomalous because the DER programs that promote residential, commercial, and utility-scale batteries all receive the highest score on this metric. Why would locating the batteries partway between homes and larger battery farms be penalized? This seems to defy common sense, and PSE should justify this outcome.

The combination of these shortcomings makes the CBI vulnerable to PSE's manipulation, turning Customer Benefit Indicators into Corporate Benefit Indicators. To illustrate this concern, we provide a specific example of how PSE may have turned this CETA requirement to the company's advantage.

CBIs stacked against batteries

In table 3-5 of the Draft CEIP, PSE eliminates two DERs from the company's preferred portfolio: C&I Battery Install Incentive and PSE Substation Batteries. The latter disqualification is somewhat surprising because PSE is touting the benefits of a battery the company is installing in a Bainbridge substation:

Bainbridge Island customers benefit from battery storage, distributed solar generation, and the demand response program in three ways; increased resiliency, energy savings, and avoided infrastructure investment. Battery storage on Bainbridge Island will benefit customers through increased resiliency. The 3.3 MW battery provides frequency response which PSE estimates a benefit of 0.1hz annually because of reduced energy purchases from neighboring utilities. This benefit value is about $330,000 annually saved. BESS also defers investment in a substation. (page 90 of the Draft CEIP)

Considering the practical example PSE cites for annual savings and investment deferral, it's odd that PSE would assign the lowest possible score to PSE Substation Batteries for the Reduced cost impact metric. Is the Bainbridge Island battery an anomaly, or is it possible that other substations would benefit from co-located batteries?

PSE believes PSE Substation Batteries would play a minor role in reducing the impact and duration of power outages. This is also odd, because batteries located in homes, multi-family units, businesses, and utility-scale battery farms receive the highest score on this metric. Why are batteries in substations so different?

In a similar fashion, substation batteries are judged to be poor for increasing the affordability of clean energy. But most of the other battery DERs provide a "measurable % decrease." We don't understand why putting batteries in substations is plausibly worse for affordability than locating them in homes.

The following diagram illustrates how PSE appears to have systematically underestimated the benefits of PSE Substation Batteries compared to other DER programs, twelve of which include batteries in other locations and configurations.

PSE Substation batteries have puzzling and potentially biased scores

The cumulative effect of these low scores produced an unweighted final score of 11, the lowest total score of any of the 22 DER programs (table 3-5 in the Draft CEIP). We propose correcting the questionable scores for PSE Substation Batteries as follows:

• Affordability of clean energy: 1 (comparable to other battery DERs, although we believe PSE is underestimating the contributions of all batteries in this regard)

• Reduced cost impacts: 2 (comparable to other battery DERs)

• Increase in clean energy jobs: 1 (comparable to Multi Family Unit Battery Program)

• Decrease in time and duration of outages: 2 (comparable to other battery DERs)

These corrections produce a final unweighted score of 16. How does that rank compared to the other DER programs? To find out, it is first necessary to correct PSE's table 3-5, which appears to incorrectly sum the weighted and unweighted scores in table 3-15. Here is the corrected table according to our calculations:

A final score of 16 is better than or equal to the scores of 15 of the 21 other DERs. Unless we have made a significant error in our calculations and assessment of the true value of substation batteries, PSE should not eliminate this DER from its preferred portfolio. Given the cost-effectiveness and continuing cost reductions of products like Tesla's Megapack battery, substation batteries should be one of the primary DER programs PSE pursues to meet its CETA obligations. Or it should provide very transparent and compelling evidence, including costs, to demonstrate this is not in the best interest of ratepayers and the environment.

What are PSE's motivations?

Was the elimination of PSE Substation Batteries an innocent mistake, or is the company responding to financial incentives that compromise its objectivity in evaluating CBIs?

It's no secret that PSE has a financial incentive to prefer large transmission projects, such as the "Energize Eastside" project that would upgrade transmission lines in four Eastside cities. Although the project was proposed eight years ago to serve peak winter demand during a rare contingency scenario,

climate change and increasing efficiency has eliminated the winter need for the project. This is the finding of a 2020 report by Synapse, an independent analyst hired by the Eastside city of Newcastle.

Desperate to salvage at least $90 million that it has already spent on the project, PSE is currently attempting to justify the project to serve a smaller summer peak. However, a summer peak can be served by alternatives such as solar panels and batteries, which also align with CETA goals. If batteries were installed in local substations, Eastside customers would enjoy the same benefits that customers on Bainbridge Island will soon have: fewer power outages, greater resiliency in emergency scenarios, and cheaper, cleaner electricity during peak hours. In many substations, there is extra room to install batteries, avoiding the need to set aside valuable land elsewhere.

For example, consider the Lake Hills substation in East Bellevue, which contains four circuits serving a total of 5,500 customers in 2020. The substation has enough extra space to accommodate 12 Tesla Megapack batteries, capable of delivering a total of 18 MW for two hours. That would be enough to cover two hours of the 2024 peak demand on the Lake Hills substation predicted in 2018 WECC base cases (12 MW in a "heavy summer" scenario, 18 MW in a "heavy winter" scenario). The following photo shows a possible configuration of the batteries with standard spacing. (The dimensions of the Lake Hills substation are 135' x 100', and each Megapack is 23.5' x 5.5'.)

Lake Hills substation with potential Tesla Megapack battery locations shown in orange

Although there is room for 12 Megapacks, it would be expensive to use batteries to cover 100% of the substation's maximum load. Instead, consider the benefit of covering summer peak demand for any one of the substation's circuits for two hours. That would require only four batteries at a cost of $4.5 million. The batteries would provide some protection from power outages, some resiliency during emergencies, and cost savings by time shifting cheap renewable energy to serve peak hours.

PSE silos analysis

PSE tends to analyze solutions in silos. Even though batteries can provide many benefits, PSE appears to value only one benefit at a time in different contexts. Perhaps this is the legacy of building transmission lines, which provide only one benefit. But this practice underestimates the value of batteries and their ability to reduce ratepayer costs practically every day of the year. If this siloed analysis is allowed to continue, the CEIP will produce a grid that is more costly for customers, less reliable and resilient, and more damaging to the climate than it could be.

To justify the scores PSE assigns to all battery solutions (residential, C&I, and grid-scale), PSE must be transparent about its calculations. For example, how does PSE value the ability to time shift renewable energy and reduce peak loads on the transmission system? How does PSE value the cost of power outages that might be avoided through quick release of stored electricity? How does PSE value the ability to stabilize frequency and voltage during periods of grid instability? How does PSE value the flexibility of "just in time" infrastructure investments – just the amount of investment necessary to serve demand close to its source? How does PSE value deferral of investments in transmission and distribution systems?

Unless PSE answers these questions in a transparent and credible fashion, the public cannot believe that PSE is providing its customers with the best energy solutions for the least cost.

WAC requirements for CBIs

WAC 480-100-640 (4) (c) describes requirements for CBIs as follows: Include proposed or updated customer benefit indicators and associated weighting factors related to WAC 480-100-610 (4)(c) including, at a minimum, one or more customer benefit indicators associated with energy benefits, nonenergy benefits, reduction of burdens, public health, environment, reduction in cost, energy security, and resiliency. Customer benefit indicators and weighting factors must be developed consistent with the advisory group process and public participation plan described in WAC 480-100-655.

Although PSE may have included "associated weighting factors" for its CBIs, it seems contrary to the intent of this WAC that only 3 of the 11 possible weights would have any practical impact on the outcome of the analysis. Also, applying an identical "multiply by two" weight to different indicators is overly simplistic and not likely to produce the most beneficial and cost-effective solutions for customers.

The WAC implies that weighting factors must be consistent with feedback provided by advisory groups and the public. PSE has not encouraged feedback from the IRP Advisory Group regarding the weighting factors and has explicitly ignored the feedback we attempted to provide. Washington Clean Energy Coalition members Kevin Jones and Don Marsh patiently explained a better method for developing weighting factors. PSE employees politely listened to the feedback and, it seems, ignored it.

Sincerely,

Washington Clean Energy Coalition, Vashon Climate Action Group

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Organization: Washington Society of Professional Engineers
Source: Email

Comment:

Hi,

As the CEIP is a report with engineering data and calculations and affects the health, safety, and welfare of the public my understanding from WAC 196-23-020 is that it is required to be stamped by a professional engineer (P.E.). It appears the draft report does not have a signature page for the P.E.(s) who prepared the engineering portions of the report to apply their stamp. Does PSE intend to have a Professional Engineer stamp the CEIP? If not please provide the pertinent legal basis for omission.

Note that WAC 196-23-020 (1) states: Any final document must contain the seal/stamp, signature and date of signature of the licensee who prepared or directly supervised the work. For the purpose of this section "document" is defined as plans, ..., and reports.

Organization: Washington Solar Energy Industries Association (WASEIA)
Source: Email

Comment:

Thank you for the opportunity to comment on PSE's 2021 CEIP. Here are recommendations from Washington Solar Energy Industries Association (WASEIA) focused on Appendix D and the plans for Distributed Energy Resource (DER) programs and deployments in the initial CETA compliance period.:

*More aggressive rollout of DERs , including demonstration projects of microgrids to utilize their value for grid resilience and demand smoothing and management. Adding distributed renewables early in the CETA compliance process brings zero carbon electricity to the grid immediately and brings cumulative benefits that ease compliance burdens later in the cycle.

*Develop more partnerships to grow and sustain local solar jobs and bring solar industry expertise that ensure feasible, cost-effective deployment of DERs that both benefit PSE and minimize rate shock. These partnerships should include significant deployment of community solar projects that can rapidly bring zero carbon electricity to renters, many of whom are energy-burdened.

*Re-examine deployment schemes that stress leasing. Consider stakeholder engagement received in this process and build programs in collaboration with the distributed solar rooftop industry. Private ownership leverages private investment, tax credits, and spurs local employment in PSE's service area. "Direct pay" provisions of the federal Investment Tax Credit now before Congress will greatly increase rooftop solar+storage investments by a much bigger pool of property owners.

*Immediately modernize resource modeling with tools like WIS:dom-P (Vibrant Clean Energy) that model load, grid and renewable energy potential to the neighborhood level and identify where DER+storage deployment is the least-cost investment.

*Net metering has been one of the most important drivers of PV solar deployment in Washington. PSE should pledge to retain retail net metering past the 4 percent threshold and expand and extend that cap.

Organization: Washington Utilities and Transportation Commission
Source: Email

Comment:

Initial Staff Comments on PSE's Draft Clean Energy Implementation Plan

November 15, 2021

Commission staff (Staff) appreciates the opportunity to provide comments on Puget Sound Energy's (PSE or Company) draft Clean Energy Implementation Plan (CEIP). This is PSE's draft CEIP, providing the first opportunity for stakeholders to critique and offer feedback.

These comments state the informal opinions of Commission Staff, offered as technical assistance, and are not intended as legal advice. We reserve the right to amend these opinions should circumstances change or additional information be brought to our attention. Staff's opinions are not binding on the Commission.

Interim Targets

At the beginning of Chapter 2, PSE describes the utility's current state of CETA compliance. There is a difference between renewable energy generation and the actual energy supplied to meet retail sales. The rulemaking under docket UE-210183 should provide some clarity on what the Commission expects. In the meantime, Staff expects PSE to provide a detailed discussion in the final CEIP about how the current state of CETA implementation could affect the Company's proposed targets and actions.

Conservation / energy efficiency – The "new energy efficiency" row in Table 2-1 includes a footnote specifying that the figures have not been updated, so it is difficult to provide useful feedback. Staff trusts that the figures used for this table in the final CEIP will align with the BCP. Staff encourages PSE to include references or some narrative helping the reader connect the contents and targets proposed in the BCP with the interim targets proposed in Table 2-1.

Renewables – Based on what Staff has seen so far, the Company's proposed interim renewables target – to meet 59 percent of retail sales with renewables – appears reasonable.

Informed by / consistent with 2021 IRP – Staff understands that the Company recently found that some adjustments to its IRP modeling inputs were necessary, and that making these adjustments has led to some shifts in its CEIP targets and actions when compared to the preferred portfolio in the final 2021 IRP. Staff encourages the Company to clearly describe the modeling issues addressed and describe how the resulting CEIP is informed by and consistent with the core of the 2021 IRP. Additionally, PSE should clearly call out these and any other modeling adjustments in its data support files submitted with the Company's final CEIP

Impact of median water year – On page 12, PSE reports that 35 percent of PSE's retail sales was supplied by CETA-qualifying resources. We understand this figure to be tabulated using historical data. We recommend that the final CEIP include a calculation for 2020 compliance adjusted for a median water year, with a brief narrative explaining how this adjustment is made.

Specific Targets

Quantification of costs and benefits / forecast of distribution of energy and nonenergy impacts – Each specific target area should be accompanied by a forecasted distribution of nonenergy costs and benefits. Staff understands that additional work is underway to make a robust forecasted distribution possible. This analysis must be completed for each target to the degree information is currently available. If a full analysis is unavailable, a full narrative should be provided in the final CEIP explaining what information is still needed, how the information could modify the Company's plans, what next steps to obtain this data will be taken, and when the Company will update its CEIP with the new information.

Energy efficiency target –

Targets for 2024-2025: At this time, Staff has no reason to dispute PSE's approach of 'rolling forward' its 2022-2023 biennial conservation target for the 2024-2025 biennium, as shown in Table 2.2. We expect that the Company's CEIP update will adjust the target as appropriate as the 2024-2025 biennium approaches.

Market transformation: EE targets under CETA must include all energy efficiency without adjustments removing NEEA. While the Commission has held regional market transformation savings out of the EIA penalty threshold, they are required under the Commission approved EIA target. There is no explicit penalty for these specific targets, and Staff's intentions are to continue to establish a penalty threshold under the EIA without triggering a penalty. Staff believes the Company does a good job representing these nuances in Table 2-3.

Impact of CBIs: Staff recommends addressing why there is currently no adjustment to the EE target stemming from any additional value as considered through the Company's proposed CBIs. Staff expects that the biennial conservation plan contains significant discussion around EE for Named Communities. We will provide a deeper review of the recently filed BCP through the CRAG's process and through Docket UE-210823. While Staff supports PSE's efforts to form an internal DEI Committee, the description of this effort on pg. 64 seems out of place.

Connecting CEIP to BCP: Staff appreciates the Company's challenge in figuring out how to present the connection between the Company's biennial conservation plan to its CEIP. Staff will address specific actions related to EE below.

Conservation and Named Communities: Staff expects that the biennial conservation plan contains significant discussion around EE for Named Communities. We will provide a deeper review of the recently-filed BCP through the CRAG's process and through Docket UE-210823. While Staff supports PSE's efforts to create an internal DEI Committee, the description of this effort on pg. 64 seems out of place.

Demand response target –

Relatively low targets for this CEIP planning period: Staff struggles to reconcile estimates of DR potential provided by other stakeholders with the cost-effective DR selections in PSE's 2021 IRP. This is an area of ongoing review and discussion.

Timeline for time-varying rates pilot efforts: While the timeline for rollout of an opt-in customer pilot for time-varying rates does not strike Staff as unreasonable on its face, we wonder whether such efforts could be accelerated. Time-varying rates are not new in the utility space. Staff encourages PSE to consider whether the timeline could be adjusted to shorten the timeline between pilot launch and conclusion. Staff also encourages the Company to provide additional narrative describing a) what knowledge PSE is seeking with this pilot, and b) how that knowledge and experience might inform any system-wide rollout of TVR on a non-pilot basis.

Impact of CBIs: Staff understands that PSE's proposed DR target has not been adjusted based on any additional valuation of DR as considered through the Company's proposed CBIs. Reviewing the different portfolio suites in Appendix A shows that DR and "new DSM" selections are consistent across all suites, though we acknowledge that Appendix A may not be where we should expect to find adjustments to proposed targets or actions based on CBIs. Staff encourages the Company to clearly describe the impact CBIs have (or do not have) on PSE's proposed targets and actions. The CEIP would benefit from a more developed connection between DR and CETA's requirement to ensure all customers are benefiting from the transition to clean energy as described in WAC 480-100-610(4)(c). The draft CEIP does not offer many details regarding DR and Named Communities. To the Company's credit, it seems evident that this is a known area of weakness to be addressed through, for example, Commitments 5, 6 and 7 on pg 197.

Renewable energy target –

Updates consistent with 2021 IRP: Table 2-4 does a good job connecting the 2021 IRP to the draft CEIP's proposed specific targets.

DER program survey and analysis: We commend the Company's efforts to thoroughly assess many potential arrangements of DER programs. We encourage the Company to continue developing this framework.

Actions taken during 2022-2025 related to future resources: PSE's preferred portfolio in the 2021 IRP includes the selection of peaking capacity in 2026. Such resources would necessitate taking meaningful action during the 2022-2025 compliance window. To the extent PSE is engaging in activities that are relevant to the resources and programs to be more meaningfully pursued in the next CEIP compliance window, those activities should be described in this CEIP.

Specific actions

In general, if PSE anticipates requesting cost recovery associated with a specific action or project, then the Company should include sufficient detail in the CEIP submitted for Commission approval explaining –

how the specific action was selected;

how the specific action meets a specific need;

what the specific action is likely to cost;

any additional work to be done before PSE makes acquisition decisions; and

supporting data and analyses that justifies the above, narrative-based assertions.

Logic model for communicating PSE's decision-making process: Staff notes that a visual representation of how inputs or resources flow through the specific actions and the results of those specific actions provides strong support for the approval of those specific actions. These logic models will provide both a visual and clear demonstration of correlation between the benefits and burdens of specific actions and the outcomes for Named Communities, directly linked to the customer benefit indicators.

Energy efficiency specific actions – PSE's CEIP includes broad descriptions of the components of PSE's conservation portfolio starting on page 63. The CEIP's core content does not provide a deep level of detail regarding the proposed specific actions related to energy efficiency, but a reasonably detailed breakout of energy savings and budget forecasts is included in Appendix L. Staff has heard from other stakeholders who would prefer that PSE provide much of the details of its conservation portfolio in the CEIP. Staff has communicated to Avista Corporation that energy efficiency programs are the specific actions that will be used to meet the EE target. The breakdown provided in Appendix L seems sufficient at this time, though we encourage PSE to consider including a deeper level of detail in the body of the CEIP as well.

Demand response specific actions – PSE's CEIP includes broad descriptions of the components of PSE's fledgling demand response portfolio starting on page 66. Most of our thoughts on DR-related specific actions cross-apply were discussed in the context of PSE's proposed specific targets.

Renewable energy specific actions –

All-source RFP: PSE's specific and interim targets for renewable energy are well-described and substantiated. By contrast, the Company's renewable energy specific actions, which are described beginning on page 72, are understandably limited by the available information and future acquisitions falling from the Company's all-source RFP.

DER solar programs: The many flavors of programmatic DER acquisition are well-described. The forecasted costs and energy associated with the programs are fleshed out in Appendix K. Staff has not had a chance to give the Black & Veatch report a thorough reading. In an initial review, we do not see any consideration of CBIs in the study. We have some lingering questions around PSE's decision-making process for programs that are not selected expressly on the basis of cost-effectiveness. PSE should make the costs and benefits associated with each program variety more comparable, and should clearly describe the Company's proposed acquisition framework. This should be easy to do in the final CEIP, as the DER-focused RFP draft will be filed well before the CEIP deadline.

Non-wires alternative actions: The CEIP describes three projects presented in the context of CETA compliance. Staff will withhold assessment of the merits of each project for now. Based on what is presented in this draft, it is not clear whether these projects are driven by CETA compliance needs or by distribution system needs.

DER BESS actions: These proposed actions as described in Chapter 4 form a reasonable foundation for future, expanded programmatic acquisition of energy storage resources. Given the size of the programs and the relatively new nature of the technologies, we wonder whether

these would fairly be described as pilot programs. We encourage the Company to describe why the proposed actions are sized appropriately, and why the costs associated with the programs are preferred to expansion of other proposed specific actions.

Enabling technologies and portfolio planning – PSE's draft CEIP dedicates many pages to describing a variety of prerequisite actions and technologies the Company plans on pursuing to enable programmatic DER acquisitions. While the level of detail clearly conveys that this direction is a priority for the Company, it is challenging to assess whether each of these many proposed actions a) is a prudent decision for the Company, and b) must be pursued due to CETA's requirements. For example, "Grid modernization: Grid Enablement" has an estimated cost of $57.5 million, with the CETA-related benefit of increasing circuit hosting capacity by roughly 15 MW (pg 141). If pursued solely for this added hosting capacity, this investment seems very expensive, but perhaps in the context of expected distribution investments and with the inclusion of anticipated benefits associated with CBIs, the decision is straightforward.

Appendix G offers a helpful explanation of these many efforts, but does not connect PSE's modernization strategy to the Company's CETA obligations. While the topic is explored somewhat in the CEIP's incremental costs section starting on page 157, Staff encourages PSE to disaggregate the multifaceted benefits of these projects. This would help Staff and stakeholders to better understand PSE's proposed assignment of costs as seen in "Enablement Allocation %" in column H of worksheet "4C. Enablement and Grid Mod Bud" in Appendix E. The with/without cost estimates for EE, DR and renewables in Table 5-2 are helpful. Staff requests a similar view for the tech, marketing and admin to more clearly represent what percentage of these costs are included by PSE as CETA incremental costs.

Resource Adequacy – In Chapter 2, PSE describes how it will "maintain resource adequacy" broadly, and points to its 2021 IRP regarding a complete discussion. Further, in Chapter 8, PSE describes future work and commitments, including implementing climate change analysis, updating resource-specific effective load carrying capabilities (ELCCs), and updating the load forecast and resource adequacy analysis. Staff requests that PSE fully describe how the specific actions in the CEIP are consistent with the utility's resource adequacy requirements in WAC 480-100-640(6)(e), including measurement metrics consistent with RCW 19.405.030 through 19.405.050, and how the specific actions in this plan will allow the Company to meet this standard.

Under the Customer Benefits section in Chapter 4, it is not clear what PSE means by, "in line with regional resource adequacy program in development by the Northwest Power Pool." In terms of customer benefits, how does the evaluation of resource-specific contracts relate to, or compare with, the development of regional resource adequacy assessments?

Customer Benefit Data

Staff recommends an additional process to finalize the customer benefit indicators (CBIs) involving a discussion based on the quantitative results while considering qualitative and anecdotal feedback as well. Wherever possible, PSE should provide a goal metric for each CBI more specific than simply directional. To the extent directional estimates are all that can be provided at this time, the CEIP should describe the Company's planned efforts to collect data related to its proposed CBIs.

Assessing possible specific actions with CBIs: As PSE has heard, Staff is puzzled by the 0/1/2 scoring methodology used to assess possible specific actions in terms their impact on the Company's proposed CBIs. An explanation should be provided for this scoring methodology that demonstrates how the commission will be able to assess whether the Company is in compliance given that an equitable distribution of benefits is predicated on the amount of benefits. It is confusing that 0 conveys a negative or neutral impact and that 1 conveys some positive impact or neutral impact. Additionally, PSE should provide rationale for the scores that the Company has assigned to resources and programs. PSE should also provide an explanation for why PSE has chosen not to prioritize CBIs.

Tables 3-4 and 3-5: We understand that these tables will be corrected in the final CEIP.

Proposed CBIs: It is clear that "reduced cost impacts" and "affordability of clean energy" are the same metric, but one applies to all customers, and the other to vulnerable populations and highly impacted communities. Perhaps rename these CBIs "affordability for all customers" and "affordability for named communities," or something more transparent. Additionally, both of these metrics need to distinguish and separately capture any reductions in cost associated with resources and cost reductions associated with bill assistance.

Table 3-17: It is not clear to Staff what this table is meant to convey. We'd encourage a clearer explanation of the table's contents and how the analysis contained in the table informed PSE's proposed CBIs or its proposed specific targets and actions.

Weighting and prioritization:

Appendix L: This appendix provides some linkages between specific actions and their possible impacts to CBI categories. The analysis is qualitative, even speculative in nature. It may not be feasible for PSE to quantify these CBI impacts within its current 2021 CEIP development. However, PSE needs to provide a clearer path forward than simply saying, "it will continue to investigate ways to address [such gaps] in its 2023 CEIP update" (pg. 63). Staff recommends that PSE commit to a timetable for augmenting its existing portfolio modeling to incorporate its CBIs. The table organization is well-done, though we hope the amount of "TBD" instances can be reduced in the final CEIP, particularly regarding whether resources will be located in highly impacted communities, will be governed by, serve, or otherwise benefit highly impacted communities or vulnerable populations in part or in whole. We suggest switching CBI categories as column headers with the proposed CBIs themselves. The table could also be adopted to include quantified metrics, when available. As it is, the level of detail provided in Appendix L does not satisfy Staff's understanding of the requirements in WAC 480-100-640(5) and paragraph 64 of General Order R-601.

Assessment of current benefits and burdens and projected impact of specific actions on distribution of benefits and burdens during implementation period.: It appears that PSE attempts to briefly describe potential benefits associated with each specific action. In Staff's view, this does not satisfy the requirement in WAC 480-100-640(6)(b)(i) and (ii). PSE should provide an assessment of current burdens and benefits on customers by population and location. PSE should also provide the projected impact of specific actions on distribution of benefits and burdens during implementation period. The list of potential benefits under specific actions is not sufficient. There is no discussion of burdens. Appendix L should offer more specificity in the final CEIP. PSE must also mitigate risks to highly impacted communities and vulnerable populations. Must discuss how specific actions will specifically consider and mitigate risks to

highly impacted communities and vulnerable populations. The list of potential benefits to Named Communtiies listed after each specific action is not detailed enough.

Appendix H – CBI metrics: Staff recommends that the Company separately track and report the participation in programmatic resource acquisition (EE, DR and other DER programs) from participation in Bill Assistance programs. PSE should show both Named Communities and all customers within these two categories.

Data organization and navigability

Staff appreciates PSE's efforts to include a significant amount of background materials in its draft CEIP filing. Staff also commends the Company for its helpful use of bookmarks and links within the .PDF files, which makes the draft CEIP much easier to navigate. Staff recognizes the strides that PSE has made, highlighting the "Read Me" tab in Appendix A as an example of the Company's increased attention to this topic.

In Staff's view, what appears to be missing is a workbook representation of how PSE analyzed its 2021 IRP data and results to arrive at its various CEIP interim and specific targets. For example, Staff could not locate an underlying workbook representation with actual calculations and/or data links for Tables 2-1, 2-2, 2-4 and Figures 2-2 and 2-3. PSE appears to have provided the underlying 2021 IRP data, and the methodology narrative in Chapter 2 helps to explain how the Company arrived at its proposed interim and specific targets, but without the data analysis and connections from IRP inputs to IRP outputs to CEIP analysis to proposed targets, Staff finds it challenging to provide a deeper level of feedback.

Staff has several recommendations to improve navigation and usability of the information and data conveyed throughout the plan, as intended by CETA and the Commission's electronic file format requirements:

Use active links to supporting data throughout the plan, when available.

Ensure that, wherever possible in the filed workpapers, spreadsheets include specific formulas and cell references.

Provide more granular descriptions explaining, step-by-step, how PSE's underlying modeling and studies (e.g., 2021 IRP, 2022-23 BCP), as well as any updates or corrections to these modeling efforts and studies, inform the Company's lowest reasonable cost analysis and compliance with clean energy transformation standards. This description should reference individual supporting workpapers and including specific components of workpapers (e.g., workbook cells, tabs).

Develop a master file index that lists each filename, a summary of each file's contents, what files or models the given file informs, and a clear illustration of any required folder structure for operation of a given model or nested worksheets.

Staff requests that PSE make the following workpapers available as a part of its final CEIP filing:

Aurora modeling environments for both the CEIP and the baseline modeling effort used to determine incremental costs. Appendix A is a great start, though much of the information in the Excel files is hardcoded.

Excel workbooks used to create key tables in Chapter 2.

An Excel version of Appendix L would be helpful. Linking Appendix L to updated IRP analysis filed as workpapers would go a long way toward satisfying WAC 480-100-640(6)(f)(iii).

Excel versions and supporting workpapers for Appendices E and F.

Please provide a clear explanation of the projected differences in market sales in modeled results.

Describe the reason for relying on Revenue Requirement as a proxy for “Weather Adjusted Sales Revenue” and any alternatives considered.

Incremental Costs

PSE’s proposed incremental cost projections will be thoroughly reviewed in the final CEIP. Staff has not performed a deep review of the draft CEIP’s incremental cost estimates, partially because PSE’s spreadsheet appendices were not provided with all formulas intact. Staff requests that PSE provide Appendices E and F with all formulas intact, and with associated IRP modeling parameters and outputs. For example, worksheet “3. Incremental Resource Cost” in Appendix E references two IRP model runs. It is unclear whether the “No-CETA Portfolio” referenced in this worksheet is directly from the 2021 IRP filed in April, or if it is inclusive of updates made after that filing. Without this level of access to the analysis underpinning PSE’s targets and actions, it is challenging to understand how PSE arrived at the incremental cost estimates in the draft CEIP. The Company should provide a detailed explanation supporting each business decision contained in each category of costs as presented in Table 5-1.

Also, it appears that PSE’s revenue adjustment by inflation uses the Company’s 2020 CBR as a baseline, and does not reflect any projection of customer base growth or inflationary impacts in energy consumption. PSE should justify more clearly why a 2.5% adjustment of revenues by inflation is sufficient to capture the WASR requirement.

Public Participation

Summary of comments: Staff understands that PSE will provide a summary of comments received from advisory group members pertaining to CBI development and in the final CEIP, as required under WAC 480-100-655(1)(i).

Input from multilingual listening sessions: Staff requests that PSE include the input that was provided form the multi-lingual listening sessions. This appears to be missing, or not identified separately.

Appendix C – Future Public Participation Plan: PSE notes the "public health seat was vacant" for this iteration of the EAG. Please bring in a public health representative to the EAG.

Go-to-you meetings: Staff believes that PSE’s "go-to-you meetings" are a great model for further engagement with communities. Please consider expanding the number and variety of CBOs that PSE actively engages with through this medium – more ethnic groups, more communities, other underserved non-English speaking communities – and include these efforts in the Company’s final CEIP public participation plan.

Company Commitments

Staff commends PSE for making affirmative commitments in the draft CEI, identifying some components of the CEIP which are not yet complete. Staff has identified other items that would fit on this list. Company may not be able to complete these items in time for the final draft of its CEIP. PSE should include those items as company commitments, with an associated timeline for deliverables as appropriate.

Specific items that Staff expects to be included in the company commitments are:

DER assessments beyond EE and DR, as described in WAC 480-100-620(3), including distributed energy programs and mechanisms identified pursuant to RCW 19.405.120 and other DER potential assessments.

A detailed, comprehensive list of any items, besides those explicit in WAC 480-100-625(4), that the Company has identified to be updated in the 2023 IRP progress. Staff questions whether the items on Pages 23 and 210 are a complete list. The date that an updated workplan covering the development of the 2023 IRP progress report will be provided.

Distribution planning – PSE's grid modernization strategy filed as Appendix G should more deeply consider CETA's impact (or lack of impact) on the Company's distribution planning efforts.

A modeling workplan for the proposed approach to include named community impacts in its next IRP.

Implement RCW 19.280.030(1).

Develop a study of regulatory barriers, and potential solutions, to clean energy program implementation.