



2022  
**TCFD Report**

# Contents

- CONTENTS..... 2**
- INTRODUCTION..... 3**
- GOVERNANCE AND ENGAGEMENT..... 4**
  - Board oversight..... 4
  - Management responsibilities ..... 4
- RISK MANAGEMENT ..... 5**
  - Scenario analysis process ..... 5
- STRATEGY..... 7**
  - Summary of risks ..... 7
  - Enterprise risk management ..... 8
  - Opportunities ..... 8
  - Building resiliency ..... 9
- METRICS AND TARGETS..... 11**

## Introduction

Climate change is one of the most pressing issues facing society today. At Puget Sound Energy (PSE), addressing climate change and supporting a cleaner energy future are central to our business strategy. As Washington's largest electric and natural gas utility, we play a critical role in the transformation to a low-carbon economy for state residents. PSE's core business operations include electric power transmission and distribution, electricity generation, natural gas distribution and natural gas storage and our operations are regulated by the Washington Utilities and Transportation Commission (WUTC). We were an early leader in addressing climate change, investing billions in wind, solar and other renewable resources and energy efficiency for homes and businesses and working to shut down coal-fired resources.

Now, we are delivering on our commitment to transform our business to meet the current and future needs of our customers, as outlined in our [Greenhouse Gas \(GHG\) Policy Statement](#). To further support the low-carbon transition, we have adopted a long-term goal to be a Beyond Net Zero Carbon (BNZC) energy company by 2045. To achieve this vision, we are pursuing a collection of commitments and aspirational goals to reduce our own carbon emission to net zero, in addition to enabling carbon reduction in other sectors across our region. Throughout our climate efforts, we embed an unwavering commitment to energy equity and seek to gather perspectives from and broaden engagement with the communities we serve, specifically focusing on historically underrepresented populations. For more information on our BNZC plans, please visit our [Pathway to Beyond Net Zero Carbon by 2045](#).

Our climate aspirations and interim targets fully align with Washington State's clean energy commitments. This includes the [Clean Energy Transformation Act \(CETA\)](#), which commits Washington to an electricity supply free of GHG emissions by 2045, and the [Climate Commitment Act \(CCA\)](#), which puts a price on carbon for resources generated in Washington State or delivered to serve Washington's energy demand.

In 2022, we conducted our first assessment to identify and assess our potential climate-related risks and opportunities aligned with the climate-specific recommendations of the Taskforce on Climate-Related Financial Disclosures (TCFD). A central part of our assessment was conducting a scenario analysis, which included a CETA scenario that considered emission reductions that align with the Intergovernmental Panel on Climate Change (IPCC) well-below 2°C global temperature rise objective.

We are excited to publish our first TCFD report that details our approach identifying and managing our climate-related risks and opportunities. This report demonstrates our commitment to enhancing our company's resiliency in the face of a changing climate and our dedication to transparency for all our stakeholders.

For more information on our progress and performance on key environmental, social and governance (ESG) topics, including climate change, please visit our [2022 ESG Report](#).

## Governance and engagement

### Board oversight

The PSE Board of Directors has formalized oversight for corporate responsibility. The Board oversees ESG-related matters broadly, including climate-related risks, and has delegated oversight of select matters to both the Audit and Compensation and Leadership Development Committees. The Audit Committee is responsible for reviewing ESG-related disclosures included in PSE's financial statements, and the Compensation and Leadership Development Committee oversees our executive compensation practices, ensuring alignment with our operating goals and ESG objectives. The Audit and Compensation and Leadership Development Committees are both comprised of five Board members. The Board generally has at least four regularly scheduled meetings each year, and both Board committees hold regularly scheduled special meetings as necessary to carry out their assigned duties and responsibilities, as outlined in our [Corporate Governance Guidelines](#). Our Chief Executive Officer (CEO) has ultimate responsibility for the implementation of PSE's ESG strategy, including approval and oversight of our BNZC strategy and goals.

ESG expertise on the Board derives from experience in asset management in the U.S. and internationally, and corporate responsibility in the U.S. We have one board member with climate-related competencies and experience derived from setting inaugural state-wide carbon emission reduction goals as governor and another who drives corporate ESG strategy, including climate considerations, for a major airline.

Annually, the Board reviews and assesses our governance guidelines to ensure effective oversight of ESG and climate matters. This includes a review of progress toward ESG objectives.

For more information, please visit the Leadership section of our [2022 ESG Report](#) and the [Board of Directors page](#) on our website.

### Management responsibilities

Our ESG/Sustainability Executive Committee, a cross-functional leadership group, provides management oversight of our ESG strategy, including on climate-related issues. Our Chief Sustainability Officer (CSO) chairs the ESG/Sustainability Executive Committee and leads our enterprise-wide sustainability strategy. Other committee members include our Chief Operating Officer, Vice President (VP) Clean Energy Strategy and Planning, VP Energy Supply, VP External Affairs, Chief Human Resources Officer and Treasurer.

The committee facilitates regular communication and collaboration across departments to promote the integration of our BNZC goal and other ESG objectives into business planning and project execution. The committee meets quarterly and reports to the CEO and Board annually on ESG and climate issues. The committee will approve PSE's sustainable financing framework and projects to be funded by use-of-proceeds bonds in accordance with the framework.

For more information, please visit the Leadership section of our [2022 ESG Report](#) and the [Leadership page](#) on our website.

## Risk management

### Scenario analysis process

PSE conducted a scenario analysis to understand and quantify potential climate-related impacts on our business and assess our resiliency under a range of possible climate outcomes to better inform our decarbonization pathway. The scenarios evaluated physical risks—such as more intense and extreme weather and temperature events—in addition to risks related to the transition to a low-carbon economy, including emerging climate regulation and carbon pricing initiatives in Washington State.

In 2022, PSE conducted interviews with a combination of business leaders and subject matter experts throughout the organization to identify and assess climate-related risks and opportunities that PSE may face in the short-, medium- and long-term time horizons. This process aggregated several potential climate-related risks and opportunities, which were then qualitatively assessed and prioritized in terms of likelihood, severity and velocity of impact aligned with our Enterprise Risk Management (ERM) framework.

We assessed the top physical and transition risks using various publicly available climate scenarios to quantify the potential impacts on PSE’s business. Six scenarios are from the IPCC and International Energy Agency (IEA), three of which are all aligned with a well-below 2°C world.

We also modelled an additional scenario defined by the stipulations of CETA, which requires Washington electric utilities to eliminate coal generation by 2025, reach a GHG-neutral electric supply by 2030 and provide 100% of electric supply from renewable or non-emitting sources by 2045. The CETA scenario is aligned with the Stated Policies and Announced Pledges scenarios, which incorporate CETA into its forecasts. The CETA scenario requires steep emission reductions by 2030 for electric utilities, which aligns with the IPCC’s well below 2°C global temperature rise objective.

The table below details the seven physical and transition scenarios PSE used to identify potential climate-related risks and opportunities. The scenarios are listed in order of potential temperature outcomes.

Risk Assessment Type	Scenario	Source	Key assumptions and outcomes <sup>1</sup>
Physical	SSP3-RCP7	IPCC	SSP3-7.0 represents a business-as-usual and high GHG emissions scenario where it is likely that average warming greater than 3.5°C would occur by 2100. This scenario is generally associated with greater increases in potential acute and chronic hazard exposure than a more optimistic scenario, such as SSP1-RCP2.6.
Transition	Stated Policies	IEA	The Stated Policies Scenario (STEPS) is representative of existing policies where there is some climate investment and adoption of climate policies. The temperature outcomes of STEPS are a range of 2.4°C to 2.8°C and a median temperature of 2.6°C by the end of the century.

<sup>1</sup> Temperature ranges are maximum temperature rise with 33%, 50% (median) and 67% confidence.

Risk Assessment Type	Scenario	Source	Key assumptions and outcomes <sup>1</sup>
Transition	Announced Pledges	IEA	The Announced Pledges Scenario (APS) assumes that the new or updated National Determined Policies and Announced Pledges of the Paris Agreement are met in the timeframe stated. The scenario represents a robust but delayed adoption of advanced technologies. As a result, APS may lead to a temperature increase range between 1.9°C to 2.3°C with a median temperature of 2.1°C by the end of the century.
Physical	SSP1-RCP 2.6	IPCC	SSP1-2.6 is an optimistic and low emissions scenario that stays below 2°C warming by 2100, aligned to current commitments under the Paris Agreement. This scenario is generally associated with smaller increases in potential acute and chronic hazard exposure than a more pessimistic scenario, such as SSP3-RCP7.
Transition	Washington State CETA and CCA	CETA and CCA	Washington State’s CETA legislation requires 80% carbon-free generation by 2030 and 100% carbon-free (zero emissions) generation by 2045. Additionally, the CCA established a price on GHG emissions starting in 2023. These two policies were modelled as part of PSE’s scenario analysis.
Transition	Sustainable Development	IEA	The Sustainable Development Scenario (SDS) represents policy and technology advancements that lead to net zero by 2070. This scenario is aligned with meeting the United Nation’s Sustainable Development Goals. As a result, SDS may lead to a temperature increase range between 1.4°C to 1.7°C with a median temperature of 1.6°C by the end of the century.
Transition	Net Zero Emissions	IEA	The Net Zero Emissions Scenario (NZE) assumes ambitious climate change mitigation policies and investments that lead to net zero emissions by 2050. The temperature outcome for NZE is to limit warming to 1.5°C by 2100.

## Strategy

### Summary of risks

As a result of our climate scenario analysis, we identified several physical and transitional climate-related risks which may impact PSE business operations. For more information on the risks our business faces, please visit the [Puget Energy and PSE Form 10-K](#) and the Risk Management section of our [2022 ESG Report](#).

### Policy and legal

PSE's operations are subject to extensive federal, state and local laws and regulations relating to environmental issues, including climate change. Complying with climate change regulations, such as CETA, requires significant investment in resource planning, monitoring and emissions-related abatement efforts, as well as investment in technology advancement to rapidly adopt renewable and other non-emitting generation, storage and the associated transmission.

Carbon pricing schemes, such as CCA, will increase PSE's operating costs from payments related to operational emissions and increase the cost of purchased goods and services assuming suppliers will pass emissions costs onto the company. PSE's compliance with the CCA could result in increased costs to customers or amounts that PSE may not be able to recover through electric and natural gas rates. Additional risks from CCA compliance could include the evolving nature of the CCA rulemaking, market uncertainty based on rule interpretation during implementation, unresolved recovery methodology for CCA's impact on energy costs, company costs, customer rate impacts and cash, liquidity and credit volatility.

Additionally, PSE primarily finances green investments through customer bill rates, and these can be impacted by the actions of regulators, which could significantly affect PSE's earnings, liquidity and business activities.

### Technology

As increased reliance on non-fossil fuel energy generation becomes a cornerstone of PSE's strategy for CETA compliance, energy generation forecasts may differ from actual generation and drive greater costs from supplementary market purchases. PSE's inability to adequately develop or acquire the necessary infrastructure to comply with new and emerging laws and regulations could have a material adverse impact on our business and the results of our operations.

Renewable energy technologies enable PSE to progress toward our climate goals; however, they currently pose risks related to reliability. This may impact PSE's ability to plan and have the potential to cause service disruption and, therefore, impact PSE's reputation and revenues.

Furthermore, advances in power generation, energy efficiency and other alternative non-emitting energy technologies, such as solar generation via distributed energy resources, could lead to more widespread use of these technologies, thereby reducing customer demand for the energy supplied by PSE which could negatively impact our revenue.

## Physical

As the climate changes, PSE's assets may be exposed to physical risks, such as wind and ice storms, longer duration or more intense extreme temperature events, flooding, wildfires and water scarcity. These events may increase operational costs due to weather-related damages to PSE's operational assets or operating constraints in addition to damages to PSE supplier or customer assets. Physical risks may also cause business interruptions and decreases in productivity from "stop work" conditions at outdoor sites to comply with safety protocols. Furthermore, we may face changes in electricity and gas consumption patterns and production capability as a result of increased temperatures.

## Enterprise risk management

It is vital to effectively manage climate-related risks to enhance the reliability and resiliency of our energy supply for our customers. PSE uses our established ERM process to effectively assess and prioritize organizational, ESG and material climate risks on an ongoing basis. We also implement Business Continuity Plans to help ensure we can resume operations safely and efficiently following emergencies.

As part of our ERM approach, we follow a four-step process to consider holistic risk impacts on our business:

1. Identification
2. Assessment
3. Response
4. Management

For more information on how we manage climate-related risks, please visit the Risk Management and PSE's Plan to Go Beyond Net Zero Carbon sections of our [2022 ESG Report](#).

## Opportunities

Although climate change poses challenges to our business and society as a whole, addressing climate change can also lead to value creation. We are pursuing these opportunities through technology enablement, growth in new markets and stakeholder engagement.

## Alternative fuels

We believe that Renewable Natural Gas (RNG), Synthetic Natural Gas (SNG), hydrogen and renewable biofuels will play a critical role in the clean energy future as a long-term solution for natural gas. Alternative fuels can also help other hard-to-decarbonize sectors reduce their footprint. PSE can capitalize on investments and opportunities to research new technologies, conduct pilots and develop our expertise in this area.

In 2009, we became the first utility in the region to partner with a pipeline-quality landfill RNG project and in 2020, we signed a 20-year agreement with Klickitat Public Utility District to purchase RNG produced from the Roosevelt, Washington landfill. Currently, RNG accounts for 0.5% of our annual gas volume and could reach nearly 3.5% of annual gas sales by 2024.

Our teams are looking at ways in which we can "future-proof" the gas delivery system to be able to accept low-carbon hydrogen in the future. Currently, green hydrogen is not commercially available, but analysts



are predicting that it will become cost-effective within the next decade as the supply chain matures. In 2021, we conducted our first hydrogen blending pilot at our Georgetown Training Facility in Seattle, Washington and in early 2022, we conducted a second pilot at our Tacoma Operating Base.

For more information on our alternative fuels initiatives, please visit the Cleaner Energy section of our [2022 ESG Report](#) and the [Lower-Carbon Fuels page](#) on our website.

## Renewable and non-emitting energy and community development

The development of non-emitting capacity such as renewable energy and energy storage infrastructure is critical to the net zero transition. Demand for renewables is accelerating as governments and businesses invest in clean energy as a step to achieve decarbonization goals. To capitalize on this demand, we aim to add additional clean energy capacity so 80% of our electric supply is from carbon-free sources by 2030. As PSE continues to invest in cleaner energy, there are also opportunities to partner with customers and the communities we serve to mitigate short-term renewable generation and storage challenges.

For more information on our renewable energy and community development initiatives, please visit the Cleaner Energy, Our Customers and Our Communities sections of our [2022 ESG Report](#).

## Building resiliency

The transition to BNZC will require a concentrated effort in every aspect of our business and collaboration with regulators, customers and communities. Our established near- and long-term climate commitments align our business with a low-carbon future and contribute to meeting Washington State's ambitious climate pathways. We are also working to transform our grid for a better energy future by updating and improving our infrastructure to create a modernized grid that is more reliable and resilient in the face of climate change.

As we progress toward our goals, we need to ensure that the solutions we pursue are equitable and do not place an unfair burden on disadvantaged communities. While decarbonizing our operations and the broader economy is critical, it must be done with social and energy equity in mind. PSE has invested in several programs and initiatives that support our climate targets and decarbonization pathway and build resiliency in our business, including:

- **Clean Energy Action Plan (CEAP):** The CEAP identifies specific actions we anticipate taking over the next decade toward meeting the goals of CETA.
- **Implementation Plan (CEIP):** The CEIP is a near-term roadmap that includes specific, community-based actions we will take to meet CETA's milestones and outlines our expected resource investments. Our first CEIP was submitted to the WUTC in December 2021.
- **Equity Advisory Group (EAG):** In 2021, PSE convened our inaugural EAG to help seek perspectives from and broaden engagement with the communities we serve, specifically focusing on historically underrepresented populations, including frontline communities of low-income people and Black, Indigenous and People of Color.

- **Phasing out coal in our electric generation:** For the past few years, PSE has been phasing out coal-fired electricity from our portfolio, and we are committed to eliminating the remainder of our coal-fired electricity by the end of 2025, in compliance with CETA.
- **Methane emissions reductions:** We aim to eliminate methane leaks to the extent practical on our distribution system and reduce or offset all other methane emissions from the operation and maintenance of our gas infrastructure by 2030.
- **Renewable and non-emitting fleet expansion:** We plan to expand our renewable energy and non-emitting fleet, which includes wind, solar, hydropower and biomass generation sources and associated storage and transmission. We aim to supply 100% of our electricity from carbon-free sources by 2045, in alignment with CETA and our BNZC target.
- **Alternative lower-carbon and carbon-free fuels:** We will continue to integrate RNG into our system and pursue opportunities to incorporate hydrogen to provide alternative and lower-carbon fuel to our customers. [Residential](#) and [commercial](#) customers can replace a portion of their conventional natural gas use with local RNG supply through our RNG program.
- **Wildfire management:** In 2022, PSE published our [Wildfire Mitigation and Response Plan](#), which documents PSE's wildfire-related strategies, operational procedures and system investments and outlines methods PSE uses to address situational awareness, notification, preventative measures and response and recovery actions specific to wildfire risks.
- **Integration of physical risk scenarios in resource planning:** PSE follows an integrated resource planning process with respect to the electric and gas supply and infrastructure necessary to deliver cleaner, safe and reliable energy for the following 20 years and publishes an [Integrated Resource Plan \(IRP\)](#). The electric IRP is published every four years (to align with the CEIP), with a two-year midpoint update; the gas IRP is published every two years. PSE integrates physical risk scenarios and CETA goals into our resource planning process.

For more information on our lower-carbon programs and initiatives, please visit the PSE's Plan to Go Beyond Net Zero Carbon and Our Customers sections of our [2022 ESG Report](#).

## Metrics and targets

Our commitment to becoming a BNZC company by 2045 includes ambitious interim targets to achieve net zero carbon emissions. The following illustration shows the focal points of our pathway to go BNZC. For more information on our progress toward our commitment and our GHG emissions metrics, please visit the PSE's Plan to Go Beyond Net Zero Carbon section of our [2022 ESG Report](#) and the [GHG Inventory](#) on our website.

### Our Commitment to Beyond Net Zero

#### PSE operations and electric supply



Our goals include:

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

#### Natural gas sales customer end use



Our aspirational objectives include:

- ◆ Reduce customer end-use carbon emissions 30% by 2030
- ◆ Net zero carbon emissions for customer end use by 2045

#### Going beyond net zero



We will help other sectors reduce carbon through:

- ◆ Electric vehicles
- ◆ LNG for marine and long-haul trucking
- ◆ RNG/hydrogen or other low-carbon fuels for transportation
- ◆ Supporting upstream methane emission reduction