Port Gamble S'Klallam Tribe:

PRIORITY CLIMATE ACTION PLAN

April 1, 2024

Prepared for:
U.S. Environmental Protection Agency
Climate Pollution Reduction Grant Program

Prepared by:
Port Gamble S'Klallam Tribe Natural Resources Department
With support from Cascadia Consulting Group

This project has been funded wholly by the United States Environmental Protection Agency (EPA) under assistance agreement 5D-02J43601 to the Port Gamble S'Klallam Tribe. The contents of this document do not necessarily reflect the views and policies of the EPA, nor does the EPA endorse trade names or recommend the use of commercial products mentioned in this document.

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1 Executive Summary

The Port Gamble S'Klallam Tribe (PGST) were originally known as the Nux Sklai Yem (the Strong People) and are the descendants of the Salish people, who have been well established in the Puget Sound basin and surrounding areas since 2400 B.C. S'Klallam peoples have inhabited the shoreline of the Strait of Juan de Fuca and Puget Sound from Hoko to Port Gamble since time immemorial, with culture and subsistence tied inextricably to the sustainable natural bounty of the seas and coastal forests. PGST exercises treaty rights and works towards the preservation of traditional lands and waters ceded under the 1855 Treaty of Point No Point.

The Port Gamble S'Klallam Tribe reservation, located on the northern tip of the Kitsap peninsula in Washington state, was established in the late 1930s, 88 years after lands were ceded through the Point No Point treaty. Many of the Tribe's members, who total about 1,400, still live there today.

1.1.1 EPA's Climate Pollution Reduction Program

Climate change poses a serious threat to tribal sovereignty. The Port Gamble S'Klallam Tribe received funding through the U.S. Environmental Protection Agency (EPA) Climate Pollution Reduction Grant (CPRG) to develop a Priority Climate Action Plan (PCAP), followed by a Comprehensive Climate Action Plan (CCAP), between 2023 and 2027, to reduce greenhouse gas (GHG) emissions and other harmful air pollution.

The PCAP establishes a baseline understanding of GHG emissions and potential measures the Tribe can utilize to reduce emissions and store carbon. To develop the PCAP, the Port Gamble S'Klallam Tribe's Natural Resources department,[1] with support from Cascadia Consulting Group (collectively referred to as the planning team), prepared a simplified GHG inventory; projected GHG emissions based on anticipated growth; qualitatively evaluated and prioritized measures to include in the PCAP; quantitatively estimated emissions reductions, cost, cost effectiveness, and co-pollutant reductions; and assessed authority to implement. The PCAP will serve as a foundation for the Tribe to create a robust CCAP.

1.1.2 Our Carbon Footprint

In 2022, the Port Gamble S'Klallam Tribe **community** (residents, businesses, and visitors) generated an estimated 8,098 metric tons of carbon dioxide equivalent ($MTCO_2e$); the Tribe's **government operations** generated an estimated 1,994 $MTCO_2e$ in the same year. In 2022, the **community** generated 19.74 MT carbon monoxide (CO), 1.03 MT nitrous oxides (NOx), 0.01 MT sulfur dioxide (SO_2), 0.85 MT volatile organic compounds (VOC), 0.05 MT fine particle pollution ($PM_{2.5}$), and 0.17 MT particle pollution (PM_{10}) across stationary and mobile combustion sources. The same year, **government operations** generated 0.98 MT CO, 0.20 MT NOx, <0.01 MT SO_2, 0.04 MT VOC, <0.01 MT $PM_{2.5}$, and 0.01 MT PM_{10} across

[1] The Port Gamble S'Klallam Tribe's Natural Resources department manages, protects, enhances, conserves, and restores culturally-relevant species, landscapes, and seascapes integral to the unique identity of the S'Klallam People. This includes protecting the treaty rights of the natural and cultural resources of the Point No Point Treaty. The Natural Resources department's vision is to provide optimal and sustainable management of the Tribe's natural and cultural resources for now and, at least, seven generations to come.

stationary and mobile combustion sources. An analysis was also performed on the Tribe's landcover, which revealed an estimated 1,204 $MTCO_2e$ was emitted from forest disturbances and land use alterations ,and 7,512 $MTCO_2e$ was sequestered from undisturbed forest and reforestation, resulting in a net benefit of 6,308 $MTCO_2e$.

The Port Gamble S'Klallam Tribe completed a wedge analysis that forecasts anticipated future GHG emissions and emissions reductions based on 2022 emissions and projected growth. The analysis included business-as-usual (BAU) and adjusted business-as-usual (ABAU) scenarios and analyzed the impact of several PCAP measures. An ABAU scenario accounts for the impact of key state and federal climate regulations; it is a best practice to account for these emissions in sustainability planning. If ABAU emissions are not accounted for, emissions reductions achieved through PCAP measures would appear higher.

Figure 1. Communitywide GHG emissions by emission source (8,098 $MTCO_2e$ in 2022)

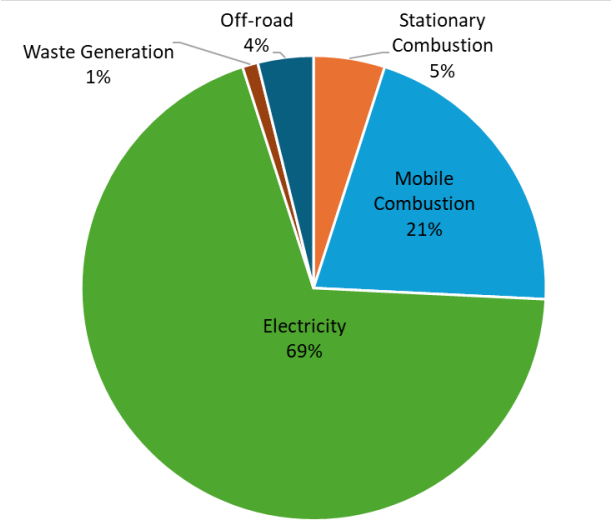
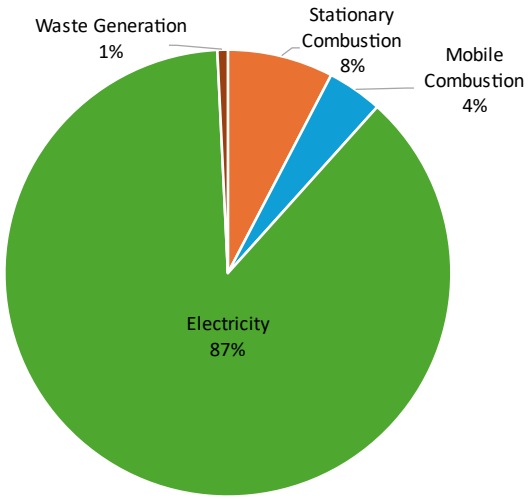


Figure 2. Government operations GHG emissions by emission source (1,994 $MTCO_2e$ in 2022)



1.1.3 PCAP Measures

In developing PCAP measures, the Tribe sought emissions reduction and carbon storage opportunities that align strongly with tribal climate goals, are well-supported by tribal staff, are fully within the Tribe's control to implement, and would benefit community members, especially those in low- and moderate-income households. The Tribe's climate goals are:

- Ensure the protection of Treaty Rights and Treaty-protected resources against climate impacts.
- Store carbon on natural lands to support resource protection and resiliency to climate change (e.g., for forests, fish, and shellfish).
- Increase energy independence and resilience through renewable energy, energy efficiency, and other means (e.g., fleet electrification to reduce reliance on fossil fuels).

Through a prioritization process, the Tribe identified four PCAP measures: two carbon removal measures, one buildings measure, and one transportation measure. They are described below, along with their emissions reductions, costs, cost effectiveness, and key implementation details.

Table 1. Overview of PCAP measures, GHG reductions, net costs, cost effectiveness, and co-pollutant reductions for 2025-2050.

Measure	Emissions Reduction ($MTCO_2e$)	Net Costs ($)[2,3]		Cost Effectiveness ($/$MTCO_2e$)	Co-Pollutant Reductions (MT)
		Government	Community		
1. Forest, wetland, and riparian understory protection and restoration *Lead:* Natural Resources *Timeline:* 2024–2030 *Funding:* Existing grants, CPRG	42,457	$2,623,750	$0	$62	N/A
2. Eelgrass, surfgrass, and kelp protection and restoration *Lead:* Natural Resources *Timeline:* 2025–2030 *Funding:* Existing grants, CPRG	40,974	$2,031,787	$0	$50	N/A
3. Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings *Lead:* Facilities *Timeline:* 2024–2030 *Funding:* Existing grants, CPRG	3,786	$597,114	($1,065,035)	($124)	CO: 1.34 NOx: 3.65 SO_2: 0.03 VOC: 0.14 $PM_{2.5}$: 0.17 PM_{10}: 0.19
4. Tribal fleet electrification and charging *Lead:* Natural Resources *Timeline:* 2025–2030 *Funding:* Existing grants, CPRG	3,218	($368,747)	$0	($115)	CO: 37.75 NOx: 1.31 SO_2: 0.03 VOC: 1.55 $PM_{2.5}$: 0.03 PM_{10}: 0.03
Total	**90,435**	**$4,883,904**	**($1,065,035)**	**$42**	**CO: 38.92** **NOx: 4.96** **SO_2: 0.05** **VOC: 1.69** **$PM_{2.5}$: 0.20** **PM_{10}: 0.22**

[2] If the net cost value has parentheses around it, it indicates cost savings (i.e., the estimated cost savings outweigh the estimated costs).

[3] Estimated costs are separated by government and community costs. The community costs include the costs and cost savings associated with PCAP measures that impact community members and businesses; for example, measure 3 will result in energy cost savings for residents and businesses, but the Port Gamble S'Klallam Tribe will incur the costs of building upgrades and retrofits.

1.1.4 Next Steps

Building on the analyses completed for the PCAP, the Port Gamble S'Klallam Tribe will develop the CCAP. The CCAP will outline a clear, equitable, and feasible pathway to implementing a comprehensive set of emissions reduction and carbon storage measures, with clear, robust analyses showing how measures will contribute to achieving community-supported emissions reduction targets and delivering community benefits. The CCAP will include all required elements, as well as an engagement process with community members, tribal staff, and tribal leadership. It is anticipated that input from community members, tribal staff, and tribal leadership will inform selection of GHG reduction targets, CCAP measures, and implementation plans.

2 Tribal Organization and Considerations

The Port Gamble S'Klallam Tribe is governed by a six-person, duly elected Tribal Council. Tribal operations are managed by a robust governmental structure that provides services to Tribal members and protects the Tribe's land, culture, and resources. Climate change is a priority for Tribal Council. The Natural Resources Department led PCAP development and will continue to lead development of the CCAP, collaborating across Tribal departments and with Noo-Kayet Investments (NKI),[4] with oversight of planning and implementation by Tribal Council.

2.1 Special Considerations for the Port Gamble S'Klallam Tribe

The Port Gamble S'Klallam Tribe reservation is located on the northern tip of the Hood Canal, one of Washington's many water bodies that constitute the Salish Sea. Given its unique geographic position, Port Gamble S'Klallam Tribe's PCAP measures embrace a comprehensive approach that not only addresses mitigation but also recognizes the importance of adaptation to climate change impacts. In addition to reducing emissions, the PCAP measures will help protect against the impacts of coastal erosion along shorelines caused by sea level rise, protect critical aquatic species and ecosystems, and improve the health of forests, wetlands, and riparian areas.

The Port Gamble S'Klallam Tribe holds and manages around 1,200 acres of forest lands fully in trust. Through the PCAP, the Port Gamble S'Klallam Tribe will enhance the resiliency of the tribal community and natural resources to climate change. This focus on natural lands protection and carbon storage supports tribal ways of life and economic development. The Port Gamble S'Klallam Tribe is working towards energy independence to support the economic sovereignty of the Tribe, as well as creating resilience and protection from natural disasters.

[4] Noo-Kayet Investments is the PGST commercial entity and operates the casino, hotel, grow facility, and gas station.

3. PCAP Elements

To develop the PCAP elements, the Port Gamble S'Klallam Tribe:

1. Completed community and government operations GHG inventories using the Global Protocol for Community-Scale GHG Emissions and Local Government Operations Protocol, respectively.
2. Prepared two emissions projection scenarios through 2050, a business-as-usual (BAU) scenario assuming no further action to reduce emissions and an adjusted-business-as-usual (ABAU) scenario that accounts for emissions reductions anticipated from state and federal policies.
3. Identified four measures for inclusion in the PCAP, based on a review of key tribal planning documents, tribal staff input, and qualitative screening for alignment with the Tribe's goals and priorities, CPRG implementation grant evaluation criteria, and overall benefits to the Tribe.
4. Calculated estimated emissions reductions ($MTCO_2e$) and expected costs and cost effectiveness ($/$MTCO_2e$) for the four measures.
5. Estimated baseline co-pollutants (CO, NOx, SOx, $PM_{2.5}$, PM_{10}, VOC) and calculated estimated reductions in co-pollutants from measures, in accordance with the EPA's reference document (Climate Pollution Reduction Grants Program: Technical Reference Document: Benefits Analyses: Co-Pollutant Impacts).
6. Developed detailed implementation plans for each measure, including review of authority to implement and identification of funding mechanisms (CPRG or other).

The following sections summarize the results from these elements.

3.1 Greenhouse Gas Inventory

A **greenhouse gas (GHG) inventory** refers to a list of emission sources and sinks and the associated emissions quantified using standard methods and protocols.

The Port Gamble S'Klallam Tribe completed **communitywide** and **government operations** GHG inventories for the year 2022. Both inventories used the U.S. EPA's Tribal GHG Inventory Tool; the Community Module calculates emissions in accordance with the Global Protocol for Community-Scale GHG Emissions, and the Government Operations Module calculates emissions in accordance with the Local Government Operations Protocol. The tables below outline the emissions sectors, data sources, and methods for each inventory.

Table 2. Communitywide GHG inventory emissions sectors, data sources, and methods.

Emissions Sector	Data & Method
Stationary Combustion	Downscaled WA state energy data using number of households for residential energy and number of jobs for commercial energy (Census & Energy Information Administration (EIA)).
Mobile Combustion	**On-road:** Downscaled Kingston, WA vehicle miles traveled (VMT) data by population from Puget Sound Regional Council's (PSRC) transportation model. The transportation model had VMT separated out by vehicle type. Estimated fuel mix using the EPA's vehicle mix defaults.

Emissions Sector	Data & Method
	Off-road: Ran the EPA MOVES model for Kitsap County and scaled to PGST's population. *Population data came from US Census.*
Electricity	Downscaled WA state energy data using number of households for residential energy and number of jobs for commercial energy (Census & EIA). Obtained Puget Sound Energy's utility-specific emissions factor from the Edison Electric Institute (EEI).
Waste Generation	**Residential:** Received residential specific bin size, number of serviced bins, and pickup frequency of bins to estimate landfill tonnage. Assumed an average fullness of 75% and used the EPA's average weight of residential waste of 225 lbs/yd.[3] Applied this estimated tonnage to WA's 2020–2021 Waste Characterization Study's Table 18 (Residential Disposed Waste Sector, Detailed Composition, 2020–2021) and EPA WARM's material types. Input tonnage separated by material type into EPA WARM 16. Since the landfill is not within the Tribe's boundaries this was classified as a Scope 3 emissions source. **Commercial:** Downscaled WA commercial tonnage using number of jobs (Census). Applied this estimated tonnage to WA's 2020–2021 Waste Characterization Study's Table 16 (Commercial Disposed Waste Sector, Detailed Composition, 2020–2021) and EPA WARM's material types. Input tonnage separated by material type into EPA WARM 16. Since the landfill is not within the Tribe's boundaries this was classified as a Scope 3 emissions source.

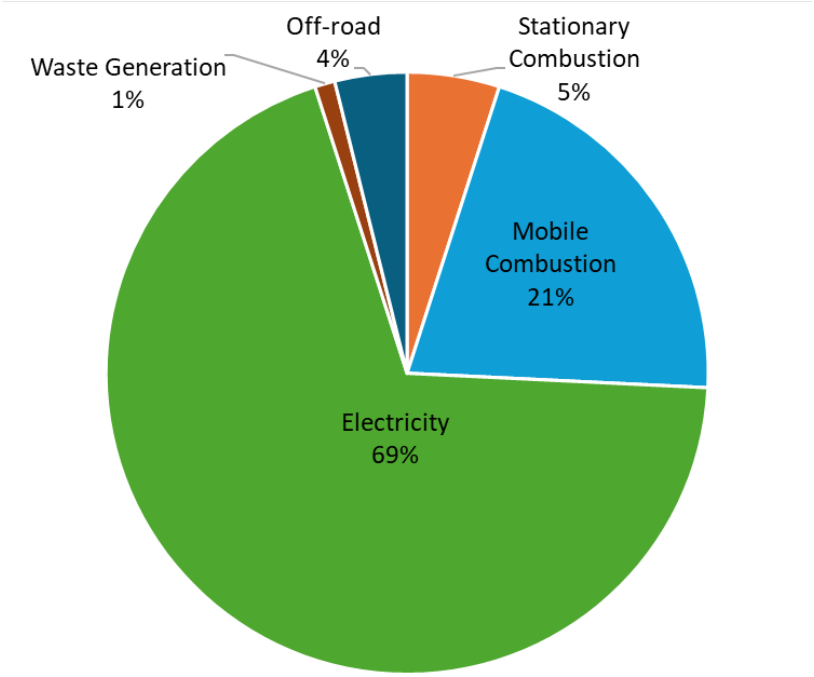
Table 3. Government operations GHG inventory emissions sectors, data sources, and methods.

Emissions Sector	Data & Method
Stationary Combustion	Received municipal specific propane consumption data for Nov 2022 – Oct 2023. We assumed 2022 calendar year data was the same as the provided total.
Mobile Combustion	Received VMT by vehicle type for approximately one third of PGST's fleet in 2022. Used EPA vehicle mix defaults to estimate fuel types. Scaled data up by two thirds to estimate emissions of the total fleet.
Electricity	Received municipal specific electricity consumption data for the 2022 calendar year. Obtained Puget Sound Energy's utility-specific emissions factor from the Edison Electric Institute (EEI).
Waste Generation	Received municipal specific landfill tonnage data for 2022 and applied that tonnage to WA's 2020–2021 Waste Characterization Study's Table 16 (Commercial Disposed Waste Sector, Detailed Composition, 2020–2021) and EPA WARM's material types. Input tonnage separated by material type into EPA WARM 16. Since the landfill is not within the Tribe's boundaries this was classified as a Scope 3 emissions source.

In 2022, the Port Gamble S'Klallam Tribe **community** (residents, businesses, and visitors) generated an estimated 8,098 metric tons of carbon dioxide equivalent ($MTCO_2e$).

- Electricity was the largest source of 2022 communitywide emissions included in this inventory, responsible for 69% of total emissions (5,611 $MTCO_2e$).
- Mobile combustion (transportation) was the next largest source, responsible for 21% of emissions (1,685 $MTCO_2e$).
- The remaining emissions came from stationary combustion (5%; 401 $MTCO_2e$), off-road vehicles and equipment (4%; 313 $MTCO_2e$), and solid waste generation (1%; 88 $MTCO_2e$).

Figure 1. Communitywide GHG emissions by emission source (2022).



The table below summarizes communitywide GHG emissions in 2022 by type of gas.

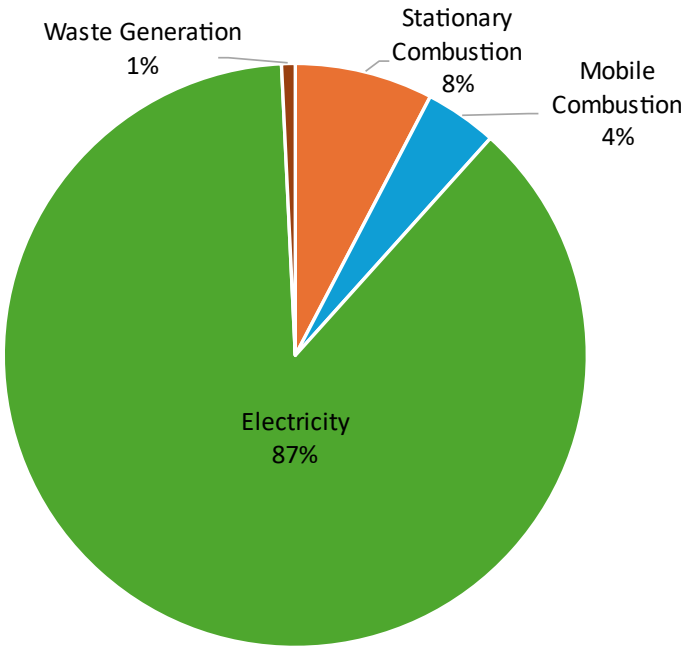
Table 4. Communitywide GHG emissions by source ($MTCO_2e$).

Source	CO_2	CH_4	N_2O	Total
Stationary Combustion	400	0.5	0.9	401
Mobile Combustion	1,610	18	57	1,685
Electricity	5,611	-	-	5,611
Waste Generation	-	88	-	88
Off-road	313	-	-	313
Total	**7,934**	**106**	**58**	**8,098**

In 2022, the Port Gamble S'Klallam Tribe **government operations** generated an estimated 1,994 $MTCO_2e$.

- Electricity was the largest source of 2022 government operations emissions included in this inventory, responsible for 87% of total emissions (1,744 $MTCO_2e$).
- Stationary combustion (propane and fuel oil) was the next largest source, responsible for 8% of emissions (152 $MTCO_2e$).
- The remaining emissions came from mobile combustion (4%; 83 $MTCO_2e$) and solid waste generation (1%; 15 $MTCO_2e$).

Figure 2. Government operations GHG emissions by emission source (2022).



The table below summarizes government operations GHG emissions in 2022 by type of gas.

Table 5. Government operations GHG emissions by source ($MTCO_2e$).

Source	CO_2	CH_4	N_2O	Total
Stationary Combustion	152	0.2	0.4	152
Mobile Combustion	80	0.8	3	83
Electricity	1,744	-	-	1,744
Waste Generation	-	15	-	15
Total	**1,975**	**16**	**3**	**1,994**

In addition to estimating emissions produced within the Port Gamble S'Klallam Tribe's boundaries, this PCAP also includes annual emissions and sequestration estimates from the Tribe's natural lands within the Reservation boundary. The Tribe used the Land Emissions and Removals Navigator (LEARN) tool, which was developed by ICLEI to help communities in the United States estimate the local GHG impacts of their forests and trees. The tool estimates GHG emissions and carbon sequestration from forests,

trees, and land use changes. Because permanent land use changes occur over multiple years, the LEARN tool calculates annual emissions over a range of three or more years, so this analysis used 2016–2019.

The LEARN tool estimated that land use changes in the Port Gamble S'Klallam Tribe's boundaries produced 1,204 $MTCO_2e$ annually in 2016–2019 from land use changes. The LEARN tool estimated that trees in the Tribe's boundaries sequestered 7,512 $MTCO_2e$ annually in that same period.

These estimates are provided for informational purposes only and are not included in the emissions summaries above.

3.2 GHG Emissions Projections

To better understand future emissions, the Port Gamble S'Klallam Tribe completed a wedge analysis that forecasts anticipated future GHG emissions and emissions reductions based on 2022 emissions and projected growth. The analysis included business-as-usual (BAU) and adjusted business-as-usual (ABAU) scenarios and analyzed the impact of several PCAP measures (see the *GHG Reduction Measures* section below). An ABAU scenario accounts for the impact of key state and federal climate regulations; it is a best practice to account for these emissions in sustainability planning. Each regulation is described below and reduces the amount of GHGs the Tribe is responsible for neutralizing through their PCAP measures. If ABAU emissions are not accounted for, emissions reductions achieved through PCAP measures would appear higher.

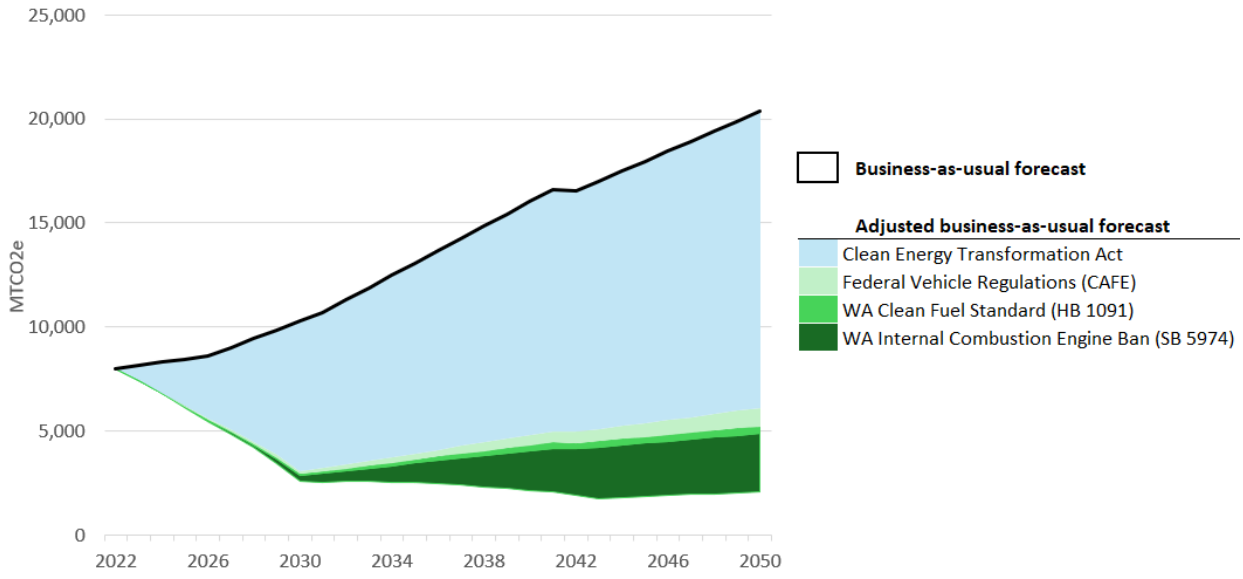
Table 6. Scenarios, policies, and assumptions used in GHG emissions projections.

Scenario & Policy	Description & Assumptions
BAU No action	The BAU assumes no policy interventions. The model used population projections from the Port Gamble S'Klallam Tribe's Water System Plan. It assumed jobs will grow at the same rate as population and assumed a static resident/household rate, based on resident growth. Baseline population and jobs numbers are from the census.
ABAU Clean Energy Transformation Act (CETA)	CETA applies to all electric utilities serving retail customers in Washington and sets specific milestones: by 2030, utilities must be GHG neutral, with flexibility to use limited amounts of electricity from natural gas if it is offset by other actions. The model assumed this goal is achieved.
ABAU Federal Vehicle Regulations (CAFE)	Corporate Average Fuel Economy (CAFE) standards are regulated by the DOT and supported by the EPA, calculate average fuel economy levels for manufacturers, and set related GHG standards. Based on PSRC Vision 2050 modeling, the model assumed the following changes in vehicle emissions intensity (gCO_2e/mile): • light duty vehicles: 28% reduction from 2018 to 2050. • heavy duty vehicles: 23% reduction from 2018 to 2050.
ABAU WA Clean Fuel Standard (HB 1091)	The Clean Fuel Standard requires a 20% reduction in the carbon intensity of transportation fuels by 2038, compared to a 2017 baseline level. The model assumed the 2022 transportation fuel emissions factors are applicable for 2017-2023 (2017 is policy baseline year). Compared to baseline, the model assumed the following fuel carbon intensities:

Scenario & Policy	Description & Assumptions
	• 3.5% reduction in per-gallon gasoline & diesel vehicle (passenger, heavy duty, transit) emissions from cleaner fuels by 2030. • 10% reduction in per-gallon gasoline & diesel vehicle (passenger, heavy duty, transit) emissions from cleaner fuels by 2040. • Maintain 10% reduction levels to 2050.
ABAU WA Internal Combustion Engine Ban (SB 5974)	As part of the Move Ahead Washington program, WA would ban sale of gasoline/diesel ICE passenger vehicles starting in 2030. The model assumed a 15-year vehicle turnover rate, with the following proportion of new sales being EVs (a conservative estimate given that the ICE ban is currently a goal and lacks a clear accountability mechanism): • 25% by 2026. • 65% by 2030. • 100% by 2035. • Maintained at 100% thereafter.

Under the BAU scenario, the Port Gamble S'Klallam Tribe's emissions are forecasted to increase 154% by 2050 compared to the 2022 GHG baseline. Under the ABAU scenario, assuming significant emissions reductions from the key federal and state climate policies listed above, the Tribe's emissions are projected to decrease 74% by 2050. The model also forecasted expected emissions reductions from local PCAP measures; these results are summarized below in the *GHG Reduction Measures* section.

Figure 3. BAU and ABAU emissions forecasts through 2050.



3.3 GHG Reduction Measures

The Port Gamble S'Klallam Tribe's PCAP priority measures are identified in Table 7. These measures were collected from existing tribal plans and materials and identified as priority measures for achieving PGST's goals for GHG emissions reductions. This is not an exhaustive list of PGST's priorities. The selected priority measures included in this PCAP are focused on measures that can be completed in the near term – all funds could be expended, and the project completed, within the five-year performance period for the CPRG implementation grants. Some measures have a short design phase to properly target the work; these are included due to the high priority for the Tribe, the strong potential for near-term emissions reductions during the implementation period and through 2050, and due to having existing funding for the design phase.

For each PCAP measure, the Port Gamble S'Klallam Tribe estimated the following expected impacts resulting from implementation of the measure:

- GHG emissions reductions.
- Costs and cost savings for the government.
- Costs and cost savings for the community.
- Pollutant reductions (see the *Co-Pollutant Estimation* section below for these results).

The expected GHG emissions reductions and cost estimates were modeled based on available information and case studies, including data on historic and projected energy usage, forecasted population and job growth, and technology and policy impact. The GHG impact and cost modeling assumptions were drawn from literature, case studies, and experience and expertise of Tribe and consultant staff. The cost estimates include initial start-up costs, ongoing costs, and staffing costs.

To improve the accuracy of expected emissions reductions and avoid double counting, the GHG reductions in the tables below are *in addition to* the expected reductions from state and federal climate policies modeled, described above in the *GHG Emissions Projections* section.

Table 7. PGST Priority GHG reduction measures.

Measure ID	Sector	Priority Measure
1	Carbon Removal	Forest, wetland, and riparian understory protection and restoration
2	Carbon Removal	Eelgrass, surfgrass, and kelp protection and restoration
3	Buildings	Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings
4	Transportation	Tribal fleet electrification and charging expansion

3.3.1 Carbon Removal

Measure 1. Forest, wetland, and riparian understory protection and restoration

Continue to implement forest, wetland, and riparian understory protection and restoration projects on PGST trust lands to store carbon in natural systems, preserve traditional practices and ways of life, and protect critical migratory pathways to Hood Canal for salmonids. The Tribe will leverage Heronswood Garden to highlight the ongoing conservation and restoration projects and will collaborate for community outreach with the Education Department and Youth Center.

Protection and restoration of forests, wetlands, and other natural systems is a significant, ongoing focus of tribal staff work within PGST's traditional territory, both independently and with local partners. Tribal staff are deeply experienced in these topics, and the Tribe has a long history of successfully acquiring, protecting, and restoring land through its own action as well as local partnerships. As such, this measure is scalable and replicable on other lands within the Tribe's traditional territories. Existing wetland and forest assessments and geospatial data have and will continue to aid these and other protection and restoration activities.

Since this measure will expand the Tribe's current land-based protection and restoration activities, implementation is expected to require 1–2 additional full-time-equivalent staff (FTE), which could be new staff or external contractors, along with seasonal work crews.

Measure 1: Forest, wetland, and riparian understory protection and restoration	
Implementing agency	Port Gamble S'Klallam Tribe Natural Resources Department, in coordination with Utilities Department.
Implementation timeline	2024–2030
Implementation milestones	2024–2025: Feasibility design & modeling 2025: Work season, begin storing carbon 2026–2030: Work seasons, store carbon
Implementation authority	Article 1-B of the Tribal Constitution extends jurisdiction over all property interests in the lands within the reservation or acquired by the Tribe, including natural resources. PGST currently exercises protection and conservation of natural resources and environmental quality under Title 24 of the Tribal Code.
Metrics tracking	Acres restored Acres acquired & protected Carbon stored $/MTCO$_2$e
Funding sources *(if relevant)*	PGST has further funding to conduct climate planning and resilience under the WA Climate Commitment Act, through grants from the WA Depts. of Commerce and Ecology. The Tribe has also received a grant specific to shallow groundwater and vegetation modeling on reservation forests under the Bureau of Indian Affairs.
Geographic location	PGST trust lands
Net cost to government	$2,623,750

Measure 1: Forest, wetland, and riparian understory protection and restoration	
Net cost to community	$0
Total net cost	$2,623,750
Estimated GHG emission reductions	2025–2030: 6,323 $MTCO_2e$ 2031–2050: 36,133 $MTCO_2e$
Estimated cost effectiveness	$62/$MTCO_2e$

Measure 2. Eelgrass, surfgrass, and kelp protection and restoration

Continue to protect and restore eelgrass, surfgrass, and kelp populations in Port Gamble Bay along reservation shorelines to store carbon in natural systems, protect against coastal erosion, and support critical migratory pathways to Hood Canal for salmonids.

Like Measure 1, protection and restoration of coastal and nearshore areas is a significant, ongoing focus of tribal staff work within PGST's traditional territory especially in Port Gamble Bay, both independently and with local partners. Tribal staff are deeply experienced in these topics, and the Tribe has a long history of successful marine restoration activities. As such, this measure is scalable and replicable within the Tribe's traditional territories, and other tribes and partners could replicate the Tribe's approach in their own jurisdictions.

Since this measure will expand the Tribe's current coastal and nearshore protection and restoration activities, implementation is expected to require 0.25 FTE of a Climate Change Coordinator's time, plus contractor costs. Current tribal staff would conduct monitoring.

Measure 2: Eelgrass, surfgrass, and kelp protection and restoration	
Implementing agency	Port Gamble S'Klallam Tribe Natural Resources Department
Implementation timeline	2025–2030
Implementation milestones	2025-2026: Site assessment 2026: Implementation work season, begin storing carbon 2027–2030: Implementation work seasons, store carbon
Implementation authority	Beaches adjacent to residential lots are retained by the tribe per Tribal Code 10.01.04c.
Metrics tracking	Acres restored Acres acquired & protected Carbon stored $/$MTCO_2e$
Funding sources *(if relevant)*	PGST has further funding to conduct climate planning and resilience under the WA Climate Commitment Act, through grants from the WA Depts. of Commerce and Ecology.
Geographic location	Reservation shorelines and nearshore areas
Net cost to government	$2,031,787
Net cost to community	$0
Total net cost	$2,031,787

Measure 2: Eelgrass, surfgrass, and kelp protection and restoration	
Estimated GHG emission reductions	2025–2030: 6,103 $MTCO_2e$ 2031–2050: 34,872 $MTCO_2e$
Estimated cost effectiveness	\$50/$MTCO_2e$

3.3.2 Buildings

Measure 3. Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings

Implement an energy efficiency, weatherization, and electrification retrofits and upgrades program for existing homes, commercial buildings, and tribal facilities. Ensure commercial and municipal buildings are retrofitted to current green building standards and to the highest disaster-resistant standards.

Build on the success of the Elders Generator Program, which ensures reliable operation of generators during inclement weather. As part of these upgrades, work with WA Dept of Ecology to reduce use of hydrofluorocarbons (HFCs) for refrigeration and air conditioning in commercial buildings, especially small and medium sized grocery stores. All ~40 commercial and government buildings on the Reservation are included in this measure, including all critical facilities that are buildings:

- The **Youth Center,** where many retreats and information sessions are held.
- The **Main Administration Campus** area, as the buildings are connected to propane, either powering heating systems or for kitchen stoves. This includes the cedar sweat lodge, Wellness building, and Cultural building.
- The **Integrated Health Facility**, which may serve as a resilience hub during disasters.
- **Critical facilities:** Tribal Administration Building including cafeteria, Gliding Eagle Store Gas Station, Police Department, Health Clinic, Tribal Casino, Propane Tank Farm, Tribal Wastewater Treatment Facility.

This measure will also ensure that retrofits of buildings built between 2004 and 2007 (Longhouse, Education Center, Library and Senior Center) maintain their cohesive architectural and functional "House of Knowledge" features (wood frame with concrete slab).

Tribal staff will be able to leverage their experience from prior construction efforts and the current E-TIPP/Solar+Storage grant to support implementation of this measure. Additionally, implementation is expected to require 0.4 FTE of the new climate action coordinator's time, given the significant scaling up of building efficiency and electrification activities over time.

Measure 3: Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	
Implementing agency	Port Gamble S'Klallam Tribe Facilities Department, with support from Planning Department
Implementation timeline	2024–2030
Implementation milestones	2024: Admin building assessment 2025: Hiring and initiation of residential and commercial outreach, admin implementation

Measure 3: Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	
	2026–2030: Residential/commercial implementation
Implementation authority	• Tribal Council retains authority over the sale and purchase of tribal assets (Tribal Constitution Article 4). Tribal Administration is delegated with the responsibility to manage assets owned by the Tribal Government to provide services to the community. • Noo-Kayet Investments (NKI), the PGST commercial entity, operates the casino, hotel, grow facility, and gas station. NKI will be responsible for conducting energy efficiency programs under its own authority unless further prompted by Tribal Council. *June 2025 is a key milestone to reach understanding with NKI.* • Except in limited instances of tribally-owned housing, improvements on tribally-assigned lots are considered the personal property of residents under Tribal Code 10.01.07, and these residents will be responsible for efficiency improvements with support from any incentives devised by PGST.

Metrics tracking	kW electricity conserved
	$ saved on energy bills, overall and by income level
	$ saved on energy bills, overall and per occupancy
	Average $MTCO_2e$ avoided

Funding sources *(if relevant)*	Administration building energy audits will be completed in 2024 with support of the US DOE E-TIPP program.
Geographic location	PGST trust lands
Net cost to government	$597,114
Net cost to community	($1,065,035) (this is a cost savings)
Total net cost	($467,921) (this is a cost savings)
Estimated GHG emission reductions	2025–2030: 313 $MTCO_2e$ 2031–2050: 3,473 $MTCO_2e$
Estimated cost effectiveness	($124)/$MTCO_2e$ (this is a cost savings)

3.3.3 Transportation

Measure 4. Tribal fleet electrification and charging

Replace older and under-used PGST combustion engine vehicles with electric alternatives. Aim to transition 10 passenger vehicles, five trucks, and one bus per year from 2027–2030. To support the transition, this measure also includes:

- A medium- and heavy-duty (MHD) scrap and replace program, offering point-of-sale vehicle incentives to scrap diesel vehicles and replace them with zero-emission models, as well as charging infrastructure incentives.
- Installation of 2–4 level 2 chargers at five key facilities, which might include the fish hatchery, Point Julia shelter, in the Old Red Cedar neighborhood, Warrior Ridge, Transitional Housing, the administration campus gathering shelter, Ball park, Wellness Center, or elementary, middle, and high school.

The Tribe has completed some evaluation of electrification infrastructure, but has not thoroughly assessed the fleet for transition. Following a feasibility assessment and EV plan, this measure is planned to scale up over time, resulting in electrifying a significant portion of the fleet. Managing this process is expected to require 0.1 FTE of a Climate Change Coordinator's time.

Measure 4: Tribal fleet electrification and charging	
Implementing agency	Port Gamble S'Klallam Tribe Natural Resources Department, as well as Law Enforcement, Utilities, Education
Implementation timeline	2025–2030
Implementation milestones	2025–2026: Feasibility assessment + fleet assessment + EV plan 2027: Install chargers, purchase initial vehicles 2028–2030: Vehicle purchases
Implementation authority	Tribal Council retains authority over the sale and purchase of tribal assets (Tribal Constitution Article 4). Tribal Administration is delegated with the responsibility to manage assets owned by the Tribal Government to provide services to the community.
Metrics tracking	Vehicles purchased Chargers installed $MTCO_2e$ avoided Fuel savings
Funding sources *(if relevant)*	Further assessment of charging infrastructure is being supported through the DOE E-TIPP program.
Geographic location	PGST Reservation and surrounding areas (potentially including U&A and traditional territories), as needed for tribal staff to complete their work
Net cost to government	($368,747) (this is a cost savings)
Net cost to community	$0
Total net cost	($368,747) (this is a cost savings)
Estimated GHG emission reductions	2025–2030: 221 $MTCO_2e$ 2031–2050: 2,997 $MTCO_2e$
Estimated cost effectiveness	($115)/$MTCO_2e$ (this is a cost savings)

3.4 Benefits Analysis

This section explores each of the measures discussed in the previous section and expands on

the additional benefits of the measures. The implementation of the measures included in the Port Gamble S'Klallam Tribe's PCAP will have a broad range of benefits beyond GHG emission reductions, including reductions of criteria and hazardous air pollutants and economic and ecosystem benefits.

3.4.1 Co-Pollutant Estimation

The co-pollutant impacts were estimated using the EPA's guidance document (Climate Pollution Reduction Grants Program: Technical Reference Document: Benefits Analyses: Co-Pollutant Impacts). The Port Gamble S'Klallam Tribe estimated 2022 baseline co-pollutants and expected reductions in co-pollutants from implementation of PCAP measures. The baseline co-pollutant estimates are summarized below in Table 8, Table 9, Table 10, and Table 11, and expected reductions from PCAP measures are summarized below in Table 12.

Table 8. Baseline co-pollutants from stationary combustion – community (2022).

Sector	Fuel Type	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
Commercial/ Institutional	Distillate fuel oil	0.04	0.13	<0.01	0.01	0.02	0.02	MT
Residential	Distillate fuel oil	0.01	0.02	<0.01	<0.01	<0.01	<0.01	MT
Commercial/ Institutional	LPG (propane)	0.07	0.12	<0.01	<0.01	<0.01	<0.01	MT
Residential	LPG (propane)	0.03	0.12	<0.01	<0.01	<0.01	<0.01	MT
Total		**0.14**	**0.38**	**<0.01**	**0.01**	**0.02**	**0.02**	**MT**

Table 9. Baseline co-pollutants from stationary combustion – government operations (2022).[5]

Fuel Type	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
LPG (propane)	0.10	0.17	<0.01	0.01	<0.01	<0.01	MT
Total	**0.10**	**0.17**	**<0.01**	**0.01**	**<0.01**	**<0.01**	**MT**

Table 10. Baseline co-pollutants from mobile combustion – community (2022).

Vehicle Class	Fuel Type	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
Heavy-Duty	Gasoline	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	MT
Light Truck	Gasoline	0.71	0.02	<0.01	0.03	<0.01	0.01	MT
Passenger Car	Gasoline	18.62	0.36	0.01	0.79	0.02	0.13	MT
Heavy-Duty	Diesel	0.13	0.26	<0.01	0.01	<0.01	0.01	MT
Light Truck	Diesel	0.01	0.01	<0.01	<0.01	<0.01	<0.01	MT

[5] Generally, co-pollutant emissions from government operations would be included in the scope of communitywide emissions, as the majority of government operations typically fall within the geographic boundaries of the community. For this PCAP, local stationary combustion data at the community level was unavailable, so emissions were estimated from statewide data scaled to the community level, while the government operations stationary combustion analysis used local data. Government operations emissions may be reported as greater than community emissions due to data limitations.

Vehicle Class	Fuel Type	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
Passenger Car	Diesel	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	MT
Total		**19.60**	**0.65**	**0.01**	**0.84**	**0.03**	**0.15**	**MT**

Table 11. Baseline co-pollutants from mobile combustion – government operations (2022).[5]

Vehicle Class	Fuel Type	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
Light Truck	Gasoline	0.50	0.01	<0.01	0.02	<0.01	<0.01	MT
Passenger Car	Gasoline	0.38	0.01	<0.01	0.02	<0.01	<0.01	MT
Light Truck	Diesel	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	MT
Passenger Car	Diesel	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	MT
Total		**0.89**	**0.03**	**<0.01**	**0.04**	**<0.01**	**0.01**	**MT**

Table 12. Anticipated co-pollutant reductions for each measure (through 2050, beginning in each measure's implementation start year).

		Estimated Co-pollutant Reductions						
#	Measure	CO	NOx	SO_2	VOC	$PM_{2.5}$	PM_{10}	Units
1	Forest, wetland, and riparian understory protection and restoration	N/A	N/A	N/A	N/A	N/A	N/A	MT
2	Eelgrass, surfgrass, and kelp protection and restoration	N/A	N/A	N/A	N/A	N/A	N/A	MT
3	Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	1.34	3.65	0.03	0.14	0.17	0.19	MT
4	Tribal fleet electrification and charging	37.75	1.31	0.03	1.55	0.03	0.03	MT
	Total	**38.92**	**4.96**	**0.05**	**1.69**	**0.20**	**0.22**	**MT**

3.4.2 Other Benefits

The table below summarizes the other economic, community, and environmental benefits of PCAP measure implementation. The Tribe plans to hire a full-time Climate Change Coordinator to help lead implementation in coordination with existing staff.

#	Measure	Other Benefits
1	Forest, wetland, and riparian understory protection and restoration	• Preservation and support of natural systems and species, community beautification, public health benefits from increased tree cover and ecosystem health, enhanced resilience from natural disasters, cultural preservation • Support for carbon sinks, natural resource protection, linkage to carbon markets • Support for jobs in natural resource fields

#	Measure	Other Benefits
2	Eelgrass, surfgrass, and kelp protection and restoration	• Preservation and support of natural systems and species, public health benefits from traditional gathering and support of first foods using these habitats, potential for enhanced resilience from natural disasters, supports cultural preservation • Support for carbon sinks, natural resource protection, linkage to carbon markets • Support for jobs in natural resource fields
3	Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	• Improved indoor air quality when replacing fossil-fuel powered appliances, reduced energy costs, better building quality, comfort and protection from climate impacts like extreme heat and smoke, support for potential future resilience hub • Support for goal of energy independence and resilience • Support for jobs in engineering, design and construction
4	Tribal fleet electrification and charging	• Public health benefits from reductions in fossil-fuel powered vehicles, reduced noise pollution, decreased energy costs, potential decreased lifetime maintenance costs, increased access to amenities (such as EV charging) • Support for goal of energy independence and resilience, through reduced reliance on fossil fuels

3.5 Review of Authority to Implement

Many of the entities in the region work together to carry out projects in communities within the region. Implementation of the PCAP will necessitate broad collaboration across Port Gamble S'Klallam Tribe departments, leadership, and Tribal Council. For a particular measure, the identified authority may be required to get permission from the building or system owner through a formal document. The tables above (by measure) capture current authorities to implement proposed measures based on ownership or historical project development and implementation and lines of formal or informal responsibility of the entities in the region. Broadly, this PCAP identified the entity in the region or in the community that has authority to carry out a proposed measure such as Tribal Council, Tribal staff within a specific department, the PGST commercial entity Noo-Kayet Investments (NKI), and residents with homes on tribally-assigned lots.

Table 13. This table describes the implementation authority for each measure, as well as key milestones to obtain authority.

#	Measure	Authority to Implement	Milestones to Obtain Authority
1	Forest, wetland, and riparian understory protection	Article 1-B of the Tribal Constitution extends jurisdiction over all property interests in the lands within the reservation or acquired by the Tribe, including natural resources. PGST currently exercises protection and	N/A

#	Measure	Authority to Implement	Milestones to Obtain Authority
	and restoration	conservation of natural resources and environmental quality under Title 24 of the Tribal Code.	
2	Eelgrass, surfgrass, and kelp protection and restoration	Beaches adjacent to residential lots are retained by the Tribe per Tribal Code 10.01.04c.	N/A
3	Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	PGST council retains authority over the sale and purchase of tribal assets (Tribal Constitution Article 4). Tribal Administration is delegated with the responsibility to manage assets owned by the Tribal Government to provide services to the community. Noo-Kayet Investments (NKI), the PGST commercial entity, operates the casino, hotel, grow facility, and gas station. NKI will be responsible for conducting energy efficiency programs under its own authority unless further prompted by Tribal Council. Except in limited instances of tribally-owned housing, improvements on Tribally-assigned lots are considered the personal property of residents under Tribal Code 10.01.07, and these residents will be responsible for efficiency improvements with support from any incentives devised by PGST.	June 2025 deadline to reach understanding with NKI
4	Tribal fleet electrification and charging	PGST council retains authority over the sale and purchase of tribal assets (Tribal Constitution Article 4). Tribal Administration is delegated with the responsibility to manage assets owned by the Tribal Government to provide services to the community.	N/A

3.6 Identification of Other Funding Mechanisms

The table below describes secured and anticipated funding for the Port Gamble S'Klallam Tribes implementation of the PCAP measures. To implement these measures, the Tribe plans to leverage already-secured funding as well as apply for CPRG implementation funding to fully implement measures. Existing funding sources are supporting most of the feasibility assessments and design work for all four measures, including staff capacity and external technical support. Existing funding will also support partial implementation of Measures 1 and 2. The Tribe has sufficient existing staff capacity to implement Measures 1 and 2. Additional grant funding from CPRG or other sources will be needed to provide staff capacity to implement Measures 3 and 4.

#	Measure	Secured Funding	Anticipated Funding	Total Funding
1, 2	Forest, wetland, and riparian understory	~$722,000 (Tribal Climate Resilience Program, Department of Commerce and	$3,683,537 (CPRG)	$4,655,537 to implement

#	Measure	Secured Funding	Anticipated Funding	Total Funding
	protection and restoration Eelgrass, surfgrass, and kelp protection and restoration	Tribal Consultation Grant AQTCCA-2325-PoGaIT-00030, Department of Ecology via the Climate Commitment Act) $250,000 to support modeling and design of Measure 1 (Climate Resilience Awards, BIA)		Measure 1 and Measure 2
3	Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings	Technical support for feasibility assessments and design (US DOE E-TIPP program)	$597,114 (CPRG)	$597,114
4	Tribal fleet electrification and charging	Technical support for feasibility assessments and design (US DOE E-TIPP program)	$425,179 (CPRG)	$425,179

Measure 1. Forest, wetland, and riparian understory protection and restoration

This measure will enable the Tribe to expand on their current protection and restoration efforts. This includes the northeast portion of the reservation, where WA state, BIA, and CPRG funds would be used to restore existing forest and wetland habitats and recharge shallow aquifers (to provide moisture to trees during dry months, helping protect the carbon storage investment).

Measure 2. Eelgrass, surfgrass, and kelp protection and restoration

This measure will enable the Tribe to expand on eelgrass, surfgrass, and kelp protection and restoration, which is currently limited on lands/waters under the Tribe's control. It would leverage WA state and CPRG funds for implementation.

Measure 3. Residential, commercial, and municipal energy efficiency and electrification upgrades in existing buildings

This measure will leverage the assessments funded by the current ETIPP/Solar+ grant to implement identified energy efficiency and electrification upgrades identified through ETIPP/Solar+.

Measure 4. Tribal fleet electrification and charging

This measure will provide first-time funding to modernize the PGST fleet, which has been of interest to the Tribe, but less urgent than other priorities. As the supply of reliable, affordable EVs has grown, so has interest in electrifying the fleet. CPRG funding offers the Tribe a unique opportunity to advance this work.

4 Next Steps

The next step for the Port Gamble S'Klallam Tribe's CPRG planning grant is to develop the Comprehensive Climate Action Plan (CCAP). The CCAP will outline a clear, equitable, and feasible pathway to implementing climate strategies and achieving established emissions reduction targets while benefiting the community. Together, this PCAP and the CCAP will not only continue to support the Port Gamble S'Klallam Tribe's climate action efforts, but also position the Tribe to seek upcoming implementation funding to help put climate measures into practice. The elements that are required by EPA in the CCAP include: a GHG Inventory, GHG emissions projections, GHG reduction targets, quantified comprehensive GHG Reduction measures, benefits analysis, review of authority to implement, leverage and intersection with other funding, and workforce planning analysis.

Building from the streamlined GHG inventory conducted for the PCAP, the project team will update the PCAP inventory to generate comprehensive communitywide and tribal operations inventories for GHG emissions and sinks, using data specific to the tribe as much as possible. During the CCAP development, the project team will collect data for the applicable emissions categories not included in the PCAP. The project team will recommend overall emissions reduction targets for the near-term (e.g. 2025–2030) and long-term (e.g. 2050), based in part on the emissions gap between the ABAU in the emissions forecast and the Tribe's overall emissions reduction targets. The CCAP targets will define the pathway for the Port Gamble S'Klallam Tribe to reach its overall emissions reduction targets, backed by the quantitative emissions forecast.

The Port Gamble S'Klallam Tribe aims to deepen existing connections and expand avenues for engagement during CCAP community outreach. CCAP measures will incorporate input and direction provided by Tribal staff and committee members, Tribal Council, and the broader tribal community. Multiple communication channels and both virtual and in-person community meetings will be leveraged to inform and invite interested parties and the public to participate in CCAP development.