

**BIL – Grid Resilience and Innovation Partnerships (GRIP)**  
**DE-FOA-0002740**  
**TOPIC AREA 3: Grid Innovation Program (40103(b))**

**Project Title:** Confederated Tribes of Warm Springs (CTWS) and Portland General Electric (PGE)  
Regional 500kV Transmission Innovative Partnership

**Lead Organization:** CTWS

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PROJECT LOCATIONS (COUNTIES IN OREGON STATE)
Marion, Wasco, Jefferson

**Submitted to:**  
Department of Energy (DOE)  
Grid Deployment Office (GDO)  
Office of Clean Energy Demonstrations (OCED)  
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## TABLE OF CONTENTS

Project Overview.....	3
Background & Project Goals .....	3
Project Impacts .....	7
Community Benefits Plan: .....	7
Climate Resiliency Strategy .....	9
Additional Considerations.....	10
Technical Description, Innovation & Impact.....	10
Project Relevance & Alignment With State & Tribal Energy Goals.....	10
Grid-Benefitting Outcomes .....	11
Technical Feasibility .....	13
Project Readiness & Expected Timing.....	13
Innovation & Impacts.....	14
Alignment with Grant Objectives.....	15
Workplan.....	17
Project Objectives .....	17
Buy America Requirements for Infrastructure Projects .....	17
Technical Scope Summary .....	17
Work Breakdown & Milestones .....	19
Technical Milestones .....	20
Project Schedule Summary .....	21
End-of-Project Goal.....	21
Project Management Plan .....	22
Technical Qualifications & Resources .....	23
Project Team Qualifications .....	23
Relevant Previous Work.....	24
Facilities, Equipment, & Materials .....	25

## PROJECT OVERVIEW

### BACKGROUND & PROJECT GOALS

#### Organization Background:

The Confederated Tribes of Warm Springs (CTWS or Tribes) is a federally recognized, self-governing, sovereign Indian Tribe. CTWS consists of three Indian Tribal groups: the Warm Springs, the Wasco and Paiute. CTWS is the legal successor in interest to the Indian signatories to the June 25, 1855 Treaty between the United States of American and the Tribes of Middle Oregon. The 1855 Treaty recognizes the CTWS as a sovereign entity, possessing inherent rights to provide for the general welfare of its people, including the right to manage its natural resources for their benefit.

Since time immemorial CTWS tribal groups prospered with abundant resources, including valuable fisheries, in their ancestral homelands along the Columbia River. The 1855 Treaty created a permanent homeland for the Tribes in the Warm Springs Reservation but also removed them from their ancestral Columbia River settlements and livelihoods, and hydroelectric development has forever altered access to fisheries along the Columbia River. Over the intervening 168 years, CTWS has endeavored to generate new avenues of sustainable economic development on its rural 650,000 acre reservation, located about 85 miles east of the state's most important population centers and infrastructure.

The Tribes' 1992 Declaration of Sovereignty states that the Tribes "shall always exercise our sacred national sovereignty in order to achieve the highest of all goals: to preserve our traditional cultural ways that have existed for so many centuries in harmony with our homeland; and to provide for the well-being of our people for the many centuries that lie ahead. We shall, as we always have, live in balance with the land and never use more of our precious natural resources than can be sustained forever."

Economic sovereignty is, therefore, integral to the Tribes' ancestral rights, cultural identity and prosperity. Renewable energy is a culturally compatible resource that can support energy independence, cultural resiliency and critical tribal economic development goals while insulating the Tribes' economy and cultural practices from further climate change impacts. CTWS has established specific goals to advance its sovereignty by embracing participation in innovative and sustainable energy projects:

- Creating and approving a policy that supports sustainable development and renewable energy projects
- Creating and communicating an energy education program for residents focused on renewable, sustainable, and green practices and policies
- Decreasing energy use by 10% annually for Tribal facilities
- Implementing a large-scale solar project in which Tribal members and services serve an integral role in construction and operation processes
- Measuring and reducing the CTWS carbon footprint by 25% by 2025, and
- Utilizing 50% of energy from renewable sources by 2030.

#### CTWS and PGE Historic Partnership:

In 1955, the Tribes signed an agreement with Portland General Electric (PGE), an Oregon electric utility company, authorizing PGE to build the 440 MW Pelton-Round Butte

Hydroelectric Project (FERC Project 2030 [“Pelton-Round Butte Project”]) on the Deschutes River on lands within the Warm Springs Reservation. With the dedication of the three-dam complex in 1964, the Tribes began receiving annual charge payments for the use of its lands. The Tribes have gained significant hydroelectric project operational experience through the operation of Pelton-Round Butte, Oregon’s largest renewable hydroelectric facility. CTWS is also the 100 percent owner of the Pelton-Round Butte Reregulating Dam Hydroelectric Project, an 18.9 MW hydroelectric facility in the Pelton Dam tailwater, which has produced renewable, carbon-free energy since its construction in 1980.

In 1999, the Tribes’ pursuit of economic sovereignty through renewable energy development and utilization led CTWS to file a competing relicensing application with FERC for the Pelton-Round Butte Project. This resulted in a historic agreement between the Tribes and PGE, under which the parties agreed to become co-owners of the Pelton-Round Butte Project, with CTWS initially owning a one-third share. In 2021, CTWS exercised an option to acquire an increased ownership share and now has a 49.99% ownership, with an additional option to secure majority ownership at a future date.

This increase in ownership not only advances the Tribes’ proprietary interests in the Pelton-Round Butte Project, but materially advances the Tribes’ regulatory, cultural, economic and social welfare interests, including reintroduction of anadromous fisheries above the Round Butte dam with the goal of restoring self-sustainable, harvestable runs of Chinook salmon, steelhead, and sockeye salmon. In 2005 FERC issued a 50-year renewed license for the Pelton-Round Butte project, with PGE and the Tribes as co-licensees.

#### **Future Vision and Enabling Partnerships:**

Warm Springs Power and Water Enterprises (WSPWE), a wholly-owned enterprise of the Tribes, was incorporated in 1979 to promote the development and utilization of the power resources of the Reservation for the benefit of tribal members, the State of Oregon, the region and the nation. WSPWE manages the Tribes’ ownership interest in the Pelton-Round Butte Project and further acts to review and assist in developing energy and water projects that utilize the Tribes’ available resource base, while minimizing impacts to the resource for future generations.

The historic and successful CTWS/PGE Pelton-Round Butte project partnership, and the Warm Springs Reservation’s vast renewable energy potential, present an opportunity to significantly accelerate the achievement of CTWS’ goals. However, between these carbon-free resources on reservation lands and the load centers of Oregon’s Willamette Valley lie the Cascade Mountains, a rugged, heavily-forested region prone to severe storms and wildfires. To date, investment in the reservation-based renewable energy resource potential has been constrained due to limited access to transmission west into these load centers. Unlocking the reservation’s energy potential requires significant additional cross-Cascades transmission capacity. Through the CTWS/PGE Regional 500kV Transmission Innovative Partnership Project, PGE will expand its existing Bethel-Round Butte 230 kV transmission corridor to 500 kV, advancing both Tribal goals and regional clean energy/decarbonization, resource availability and grid security objectives.

This project will further the CTWS/PGE innovative partnership by enhancing major infrastructure (transmission and broadband fiber communications capacity) on and off the Warm Springs Reservation, reducing wildfire risks to regional watershed ecosystem resources and communities. Importantly, it will advance new transmission expertise and knowledge capacity within the CTWS, enhancing the CTWS/PGE partnership participation in the Bethel-

Round Butte project. It will create new opportunities for CTWS to partner with PGE to develop carbon-free resources to meet shared carbon-reduction goals. It will provide opportunities to leverage high-capacity fiber communications for underserved areas (including reservation lands) to catalyze potential new industrial development, providing new workforce development opportunities for Tribal members.

This partnership can serve as a national model for advancing the renewable energy green economy through the integration of indigenous knowledge and traditional ecological wisdom into project design and stakeholder decision-making discussions. In short, this partnership and project will support a transformational change for the CTWS while enhancing tribal economic sovereignty and environmental goals.

### **Proposed Project Goals:**

In this project, CTWS and PGE will form an innovative, transformational, and mutually beneficial transmission partnership that advances Tribal leadership in the energy industry. Together, they will build a bridge between PGE customers and the immense, but islanded, renewable generation potential of the Warm Springs Reservation – up to 1800 MW of carbon-free solar resources – 87 miles to the east. The new transmission capacity will also enable PGE’s customers to access renewable resources from other states, regions and markets via a more robust connection with the greater West Coast transmission network.

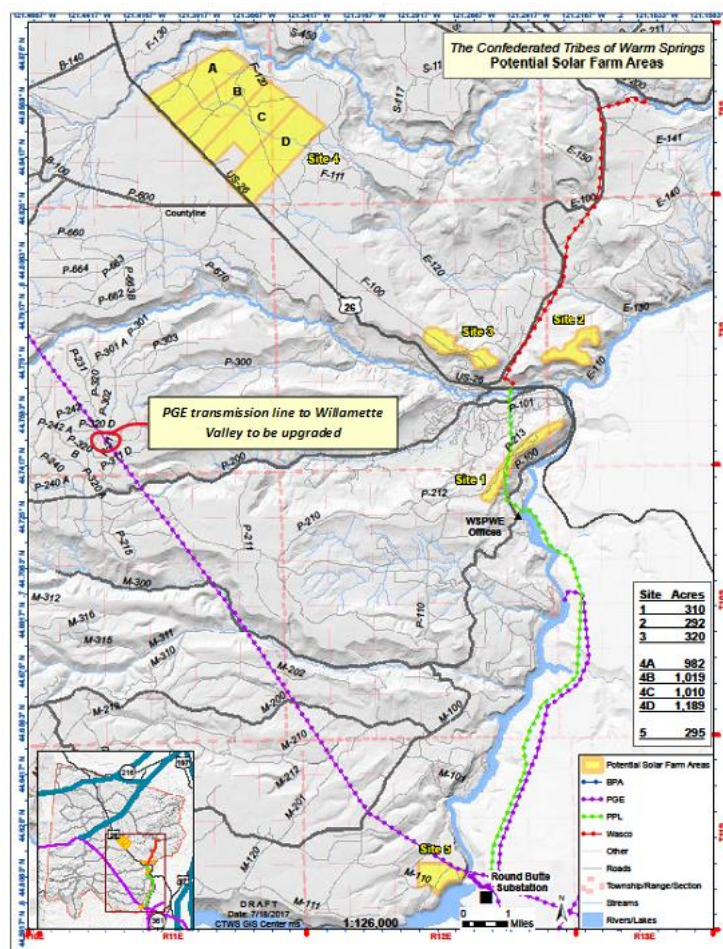
This innovative partnership approach to developing transmission capacity within Oregon will advance the GRIP program goals by:

- Enhancing grid flexibility and the resilience of the West Coast power system to ever-evolving security and meteorological threats
- Upgrading the reliability of power sector infrastructure, measurably increasing the energy security of Pacific Northwest communities (particularly those located on Tribal lands), and ensuring that all communities in PGE’s service territory have access to clean, affordable and reliable electric power
- Strengthening CTWS’ ability to enter into mutually beneficial partnerships (with PGE and others) to achieve shared clean energy objectives
- Accelerating the deployment of these crucial regional transmission system capacity, reliability, security and wildfire protection upgrades while transforming the energy and economic futures of Tribal members, making them full partners in Oregon’s major east-west transmission corridor.

The Willamette Valley and PGE’s service territory are not renewable resource-rich areas primarily due to climate factors and a lack of appropriately sized and sited available land parcels. These resources are most abundantly available east of the Cascade Mountains. The CTWS/PGE Regional 500kV Transmission Innovative Partnership will relieve the energy transfer limitations on the current 230 kV Bethel-Round Butte transmission path, unlocking renewable energy production on Tribal lands and creating opportunities to increase Tribal government revenues, open new industrial siting opportunities via bi-directional power contracts and the addition of high-bandwidth fiber communications capacity, and provide skilled job opportunities for Tribal members. These benefits will advance Tribal sovereignty and self-governance, building generational wealth within Tribal communities – outcomes that are in direct alignment with the objectives of the Bipartisan Infrastructure Law (BIL).

If approved, this DOE GRIP grant will allow CTWS and PGE to connect Central Oregon's vast renewable energy potential to major load and population centers, home to roughly two-thirds of the state's commercial and industrial activity, including PGE's service area. It will provide a solution to the prohibitive cost of transmission upgrades critical to achievement of regional decarbonization goals, and build new and innovative partnerships that integrate indigenous knowledge and traditional ecological wisdom into key stakeholder design and decision-making discussions, impacting the regional energy market for decades to come. This project will directly support CTWS' economic sovereignty by enabling self-determination of its renewable resource development participation, while accelerating the achievement of PGE and State of Oregon zero-emission goals by 2040. Achieving these goals is crucial to combatting damaging climate change impacts that disproportionately impact Tribal communities.

The map below depicts potential sites for future solar development within the Warm Springs Reservation. Additional locations are also envisioned, bringing the total buildout to nearly 1800 MW.



**Figure 1: Initial Solar Development Sites within the CTWS**

## **PROJECT IMPACTS**

Before they can benefit utility customers, newly developed renewable energy resources must be connected to the transmission system in compliance with existing regulations and interconnection processes. However, the high cost and complexity of transmission system and network upgrades can delay or render infeasible renewable energy projects that could be extremely beneficial to customers and utilities. Upgrading PGE's existing 100+-mile Bethel-Round Butte 230 kV transmission corridor to 500 kV is expected to cost as much as \$650 million – without grant funding, a nearly-insurmountable barrier to renewable resource development and integration.

This proposed partnership between the CTWS, PGE, and the DOE builds on a unique existing relationship and uses an innovative approach to remove the most significant barrier to the development of carbon-free renewable resources – cost. GRIP funding will ensure the feasibility of a project that otherwise would not become operational for many years and enable a secure financial foundation for Tribal social and economic welfare initiatives. It would open vast new territories to renewable energy development, including 9,000 acres of Tribal lands, by creatively building on the long-standing partnership between the Tribes and PGE to improve regional transmission infrastructure.

Tribal participation in the transmission project and expanded transmission service to Tribal lands will enable additional new revenues and economic development opportunities for the Tribes, including participation in clean energy projects, which will create opportunities for Tribal member employment, knowledge transfer and skills development that advance growth of intergenerational wealth. The funding will efficiently leverage existing transmission linkages east of the Cascade Mountains to the major load centers in the Willamette Valley, opening opportunities for green renewable resource deployment throughout the Northwest. Quite simply, the GRIP grant program offers a once-in-a-generation opportunity to create a win-win-win scenario for the Tribes and its members, PGE and its customers, and for the State of Oregon. Ultimately, these wins will culminate in victory for the Department of Energy and the environment.

## **COMMUNITY BENEFITS PLAN:**

Economic sovereignty is integral to the Tribes' ancestral rights, its cultural identity and prosperity of its members. As the CTWS Declaration of Sovereignty explicitly says, "We shall, as we always have, live in balance with the land and never use more of our precious natural resources than can be sustained forever."

Renewable energy is a culturally compatible resource available to the Tribes, and enabling the Tribes' participation in its development will support direct economic development goals and insulate the Tribes' overall economy and cultural practices from further climate change impacts. CTWS has established specific goals to advance the sovereignty of its people through participation in innovative and sustainable energy projects, including

- Creating and approving a policy that supports sustainable development and renewable energy projects
- Creating and communicating an energy education program for residents focused on renewable, sustainable, and green practices and policies

- Implementing large-scale solar projects in which Tribal members and services serve an integral role in construction and operation processes.

The Warm Springs Reservation is an officially recognized Disadvantaged Community; the CTWS/PGE Regional 500kV Transmission Innovative Partnership will create significant economic and continuous employment benefits for the Tribes and their members. In Year 1 of the project, CTWS and PGE will initiate community engagement and environmental and cultural studies to optimize project impacts and outcomes.

- The CTWS/PGE Regional 500kV Transmission Innovative Partnership will create a new ownership opportunity for the Tribes in a major regional infrastructure project. This project will benefit their sovereign lands and offer opportunities to the Tribes to exercise self-determination in the management of the Warm Spring Reservation's renewable energy resources. Tribal participation in the transmission project and in renewable energy projects will expand, build and enable new alliances and innovative partnerships that integrate traditional indigenous ecological knowledge into key decision-making and stakeholder discussions impacting the regional energy market.
- The CTWS/PGE Regional 500kV Transmission Innovative Partnership will facilitate development of carbon-free energy sources while also improving the resiliency of tribal lands and regional infrastructure to wildland fire and other climate change impacts. These actions will help to reduce or mitigate the deleterious effects of climate change on rural, resource-based communities, such as the Tribes'. This meaningfully contributes to tribal community resiliency.
- The financial benefits of the CTWS/PGE Regional 500kV Transmission Innovation Partnership will materially advance the Tribes' economic sovereignty goals. Innovative participation in reservation renewable energy projects and co-ownership in the 500 kV transmission pathway connecting up to 1,800 MW of carbon-free generation to Western Oregon load centers will allow the Tribes to accumulate capital, invest in skills building and leadership capacity, and create high-paying technical employment for its members.
- An ancillary benefit in upgrading the existing 230 kV transmission line to 500kV is that it will include a new high-capacity fiber-optic line. This will enhance communications capabilities across the Cascade Mountain range and provide added bandwidth for broadband internet services to underserved areas along the transmission route, including Tribal customers on the Warm Springs reservation. As part of the CTWS/PGE Regional 500kV Transmission Innovative Partnership, PGE has identified that the added bandwidth capacity will support the Warm Springs Telcom, a wholly-owned tribal enterprise, to serve its Tribal membership.
- Increased access to broadband internet capabilities for Tribal members will create opportunities to diversify the reservation's economy and improve access to family-wage employment. Access to significant communications bandwidth, coupled with new transmission capacity and existing Tribal natural resources, unlocks the potential for additional industrial development, further securing the Tribes' economic sovereignty. This additional benefit aligns strongly with the BIL's overarching vision of stimulating rural broadband development.



- This project will materially accelerate the achievement of the State of Oregon zero-emission goals by the year 2040. Achieving these goals is crucial to combatting damaging climate change impacts that disproportionately impact Tribal communities.
- The economic benefits associated with the CTWS/PGE Regional 500kV Transmission Innovation Partnership will open new avenues to education, the adoption of new technologies, and business opportunities that will increase the participation of the CTWS in the ongoing renewable energy transformation.
- With respect to the benefits of this project for all local communities, approximately 20% of PGE's residential customers are eligible for state and federal energy assistance and PGE's low-income bill discount program. This project will provide significant additional carbon-free generation to serve their needs.

## **CLIMATE RESILIENCY STRATEGY**

Over the past decade, climate change has increasingly and disproportionately impacted the Warm Springs Reservation communities. The rural, 650,000-acre reservation is annually subject to catastrophic wildland fire events that create hazardous air quality, degrade water quality, destroy salable timber, and threaten reservation communities, homes, and livelihoods as well as traditional foods such as fish, roots, berries, game, wild and cultivated crops.

Climate change challenges the integrity and stability of ecosystems on which CTWS members depend for subsistence and cultural purposes by changing ecosystem processes and biodiversity. It has detrimentally impacted water quality and quantity, affecting drinking water supplies, food cultures, ceremonies, and traditional ways of life; directly impacting the Tribes' cultural, economic and community health and welfare.

The negative impacts of climate change on Tribal communities – and the State of Oregon – have been extensively documented in publications such as the U.S. Climate Action Report 2014 and the U.S. 2017 Strategic Energy Plan. The CTWS and the State of Oregon are experiencing extreme weather threats and displacement, higher precipitation levels and flood events, climate-driven oxygen depletion in major water bodies, increasing threats to fish populations, lengthening and intensifying wildfire seasons, and climate-driven threats to the food supply chain. The development of new renewable energy projects catalyzed by the transmission capacity upgrade proposed under this project will help reduce the severity of these climate-driven impacts by helping to decarbonize the electric energy system while also adding regional backup power resiliency and capacity during extreme events.

The design of the proposed CTWS/PGE Regional 500kV Transmission Innovative Partnership and its steel support structures will increase the resiliency of the transmission corridor from impacts of climate-driven storms, wildfires and other natural disasters, increasing overall regional transmission system resiliency. The existing 230kV Bethel-Round Butte line has many wood pole structures which have been damaged by recent wildfire events. Replacing these poles with steel structures will increase the resiliency of this crucial transmission corridor and provide greater survivability during wind, ice, wildfire and seismic events. The 500 kV structures and line will also be taller, reducing the possibility of vegetation-caused outages (common in the existing transmission corridor).

## ADDITIONAL CONSIDERATIONS

CTWS and PGE do not anticipate significant environmental impacts resulting from the proposed project. Any impacts would be short-term and related to construction activity. Erosion control measures and revegetation steps, consistent with standard construction practices, will be implemented once construction work is complete. With respect to permitting for transmission and energy project infrastructure, CTWS implements Ordinance 74, the Integrated Resources Management Plan, and Ordinance 60, which protects and manages archaeological, cultural and historic resources. Through these self-governance measures, the Tribes ensure that project activities, including habitat-disturbing activities, are consistent with sustainable development and continued access to natural and cultural resources on the Warm Springs Reservation.

## TECHNICAL DESCRIPTION, INNOVATION & IMPACT

### PROJECT RELEVANCE & ALIGNMENT WITH STATE & TRIBAL ENERGY GOALS

The Oregon Department of Energy (ODOE) describes its vision of a safe, equitable, clean and sustainable energy future in its mission statement:

*The Oregon Department of Energy helps Oregonians make informed decisions and maintain a resilient and affordable energy system. We advance solutions to shape an equitable clean energy transition, protect the environment and public health, and responsibly balance energy needs and impacts for current and future generations.*

Oregon has crafted deliberate policy choices over time in support of this vision, detailed in ODOE's Biennial Energy Reports<sup>1</sup>, developed pursuant to House Bill 2343 (2017). The Biennial Energy Reports guide local, state, regional, and federal energy policy development and energy planning and investments.

The State's most recent Report<sup>1</sup>, from 2022, provides data and information on key energy resources, policies, trends, and forecasts, and what they mean for Oregon. It highlights the ominous and exponentially-increasing effects of climate change. Oregon has adopted landmark clean fuels legislation to improve air quality and reduce Oregon's carbon footprint. The state has also embraced programs to bolster electric vehicle adoption and improve commercial and residential energy efficiency, which direct state agencies to take actions to reduce and regulate harmful greenhouse gas (GHG) emissions.

In 2021, Oregon adopted legislation (HB 2021) requiring large electric utilities, including PGE, to reduce the GHG emissions associated with the electricity serving Oregon customers by 80% by 2030, and 100% by 2040. The legislation emphasized the importance of an equitable and inclusive transition, specifically noting the importance of supporting communities of color and rural, coastal, and low-income communities to transition to clean energy in an equitable and affordable way.

The CTWS/PGE Regional 500kV Transmission Innovative Partnership addresses a critical constraint to the achievement of Tribal, state and PGE goals to accelerate renewable energy development and decarbonization. This project will:

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<sup>1</sup> [2022 Biennial Energy Report](#), Oregon Department of Energy

- Leverage increased transmission capacity to deliver carbon-free renewable energy generated in Central and Eastern Oregon to load centers in Western Oregon
- Significantly increase the resiliency of Oregon’s transmission system – and CTWS Tribal communities – by adding transmission capacity and associated structural, communications and control upgrades
- Advance the Tribes’ economic sovereignty goals to enable self-determination and leadership in its energy sector participation, assist the State of Oregon and PGE in reaching their 2040 decarbonization energy goals, and support regional and national climate change action strategies
- Build on the unique long-standing relationship between CTWS and PGE to innovatively partner on transmission infrastructure improvements for the betterment of communities and Tribes within Oregon.

## GRID-BENEFITTING OUTCOMES

At a time of unprecedented security and environmental volatility, the proposed CTWS/PGE Regional 500kV Transmission Innovative Partnership will provide direct benefits to the Pacific Northwest power grid. They include:

- Significantly increasing the transmission capacity of the existing Bethel-Round Butte corridor from 400 MW to as much as 1800 MW, connecting customers in the Willamette Valley load centers to abundant zero-carbon renewable resources in Central Oregon
- The integration of state-of-the-art dynamic line rating technology into the new line, optimizing and automating transmission capacity calculations and providing increased power throughput for most hours of the year
- Additional and more robust fiber-optic communications infrastructure across the Cascade Mountains, increasing the redundancy and resiliency of the grid’s control network and the reliability of the grid as a whole – a crucial national security upgrade given the importance of system protection communications to regional stability and cybersecurity. PGE and Bonneville Power Administration (BPA) have agreed in principle to exchange access to fiber optic communications lines associated with this project, thereby enhancing grid communications and regional transmission protection systems throughout the Northwest.

The proposed CTWS/PGE Regional 500kV Transmission Innovative Partnership will also

- **Increase Access to Affordable and Reliable Clean Energy:** One of the primary benefits of this partnership is improved access to reliable and affordable clean energy for Oregon’s load centers. Upgrading PGE’s transmission infrastructure will allow communities across the region to cost-effectively access locally-generated zero-carbon energy to power homes and businesses.
- **Create Tribal Social and Economic Benefits:** Innovative participation in reservation renewable energy projects and co-ownership in the 500 kV transmission pathway will present the Tribe a long-overdue opportunity to accumulate capital, invest in skills building and leadership capacity, and create high-paying technical employment for its members. Increased Tribal revenues will be used to fund critical government services,

including education, healthcare, and infrastructure development, improving quality of life and strengthening Tribal sovereignty. Project impacts on the Tribal economy can be measured through metrics such as increased clean energy production revenues, new business formation, and increased tax credits.

- **Align with State Decarbonization Requirements:** Achieving the bold electric sector decarbonization targets established by the Oregon Legislature will require the development of new non-emitting energy sources and the transmission needed to connect them to in-state population and load centers. PGE's current Integrated Resource Plan estimates PGE may need to procure and integrate between 3,000 – 4,000 MW of non-emitting resources and capacity to meet customers' energy demands and our 2030 emissions target of an 80% GHG reduction.<sup>2</sup>
- **Ease Regional Transmission Constraints:** Because BPA's existing transmission system is essentially fully allocated, the Northwest must build new transmission capacity to move new zero carbon resources across the Cascade Mountains to the load centers 85 miles to the west. Increased east-west transmission capacity is required to reinforce the critical West Of Cascades South (WOCS) energy path and increase transmission system resiliency. Project impacts on transmission constraints will be measured via changes in interconnection queue/wait times for clean energy and increasing supply (i.e. MWs) of geographically and technologically diverse location-constrained energy resources. The increase in the WOCS path capacity will be validated by a system study through the Western Electricity Coordinating Council (WECC) path rating process initiated after the project is awarded.
- **Improve Tribal, Local and Regional Community Resilience:** The development of new transmission capacity will allow new generation interconnections with the regional transmission network, most of which are anticipated to be carbon-free solar generation resources. These new connections will increase local Tribal and regional resiliency by enabling opportunities for participation in the energy economy while reducing climate change-causing carbon emissions, which disproportionately impact tribal communities. The project will enable increased throughput of generation sources between Central Oregon and the Willamette Valley by an estimated 1200 MW, strengthening the ability of the transmission system to transfer power in either direction, and providing a more robust connection between these electrically isolated areas.

The transmission partnership between CTWS and PGE has the potential to confer significant benefits to the regional power grid for decades to come. Using SMART<sup>3</sup> metrics to measure and track benefits, the project team will verify that the partnership is achieving its goals and identify areas for improvement.

The partnership will promote environmental sustainability by reducing GHG emissions and significantly increasing the proportion of zero-carbon renewable energy resources in PGE's generation portfolio. The partnership will confer additional social and cultural benefits by fostering closer relationships between PGE, Tribal communities, and other stakeholders. Finally,

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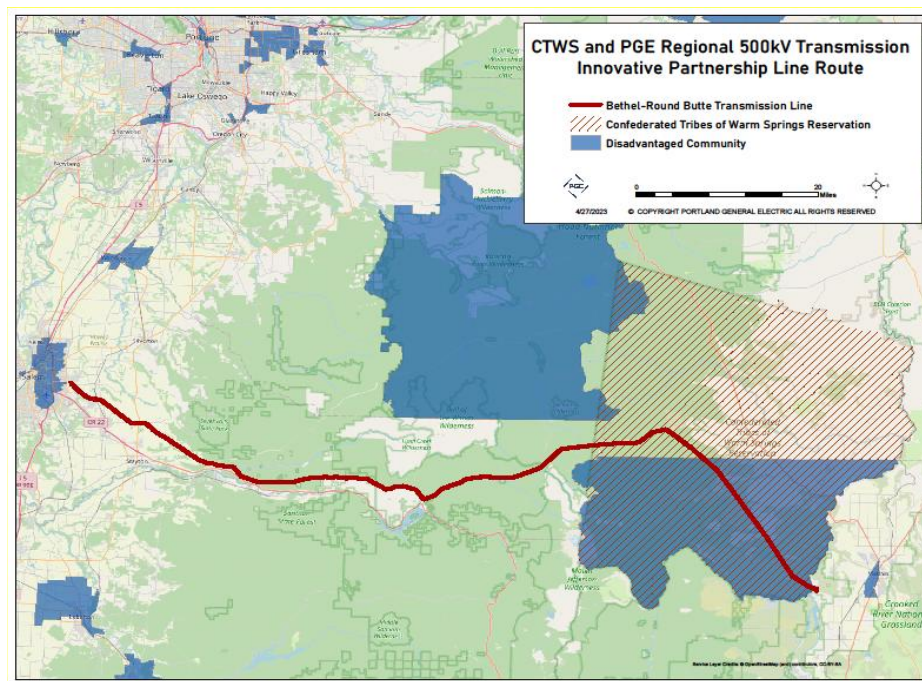
<sup>2</sup> [PGE Clean Energy Plan and Integrated Resource Plan 2023](#), Appendix F, Load Resource Balance

<sup>3</sup> SMART milestones are Specific, Measurable, Achievable, Relevant, and Timely.

the project will build trust and understanding, promote cultural exchange, and support the well-being of local communities and their members.

## TECHNICAL FEASIBILITY

PGE has scoped a 500kV line upgrade in this transmission corridor for a project with different business drivers within the past 10 years. A significant portion of this previous analysis can be utilized to accelerate this project to support the timelines required by the DOE funding. Because it will be an upgrade to an existing transmission path, rather than construction of a new 500 kV path (with its associated permitting, surveying, and right-of-way acquisition issues), this project will be significantly easier to complete on-schedule and within budget. The technologies supporting the upgrade – state-of-the-art tower design, conductors, communications, protection and control systems, dynamic line rating components – are established, reliable and well-understood by the utility industry. PGE will source as many materials and components as possible from American suppliers. At each phase of project development, PGE will leverage its expertise in transmission development, in-house engineering, design and construction resources and long-standing vendor relationships to drive successful execution.



**Figure 2: The Proposed Bethel – Round Butte Transmission Corridor**

## PROJECT READINESS & EXPECTED TIMING

On June 1, 2010, CTWS Tribal Council approved Resolution 11,255, a visioning report commissioned by WSPWE to explore opportunities to expand Tribal energy resources on the reservation. This includes renewable and other energy resource potential in the form of biomass, wind, geothermal, solar, hydro, and thermal. WSPWE has the full support of its Tribal Council to pursue these development efforts, including the CTWS/PGE Regional 500kV Transmission Innovative Partnership.



This project will utilize existing transmission right-of-way (ROW) for 90+ percent of its length, greatly simplifying the permitting, design and construction phases of project development. PGE has significant in-house technical expertise resources and experience in designing and successfully constructing transmission projects in the region. In addition, PGE has already completed a significant amount of preliminary engineering and permitting work for another project in this vicinity, which will provide a foundation to begin development of this transmission upgrade project.

## **INNOVATION & IMPACTS**

The greater Central Oregon high desert region in which the Warm Springs Reservation is situated has vast renewable energy potential. However, to date, investment in this resource has been constrained by limited access to transmission and the relatively low electrical loads in Central Oregon. The addition of significant transmission capacity to Oregon's east-west corridor will spur carbon-free renewable generation development in the region not only by Tribal entities but by other private-sector developers as well.

PGE has developed many transmission projects and currently owns and maintains one of the 500kV lines that connects Oregon to California. Transmission technology at this voltage level is well understood by the utility industry and has been employed by PGE for many decades. To the greatest extent feasible, project design will incorporate new technologies to optimize transmission capacity and situational awareness, including dynamic line rating devices and advanced conductor technologies to ensure the full capacity of the line can be utilized.

Interconnecting variable renewable generation resources such as solar presents unique challenges to transmission capacity optimization, particularly during the hottest summer months. Diurnal temperature fluctuations at Warm Springs Reservoir average nearly 40 degrees F during the June-September period, with maximum solar generation output occurring during the hottest time of day. Peak demand from load centers also occurs during these hours. Rather than manually-calculated static thermal ratings, PGE will use dynamic line rating technologies, which constantly recalibrate and optimize the new 500 kV line's ampacity, to maximize transmission capacity.

PGE can also deploy enhanced wildfire awareness technologies such as AI-equipped high-definition cameras, automated weather stations and video-equipped dynamic line rating devices, protection systems, and Phasor Measurement Units (PMUs) to protect the transmission infrastructure as well as regional natural resources and communities. The new PMU array installed for this project will fill a gap in system measurements in Central Oregon and improve the accuracy of transmission planning models used to ensure transmission system stability, enhancing network interconnection studies for new variable renewable energy resource integration.

The addition of significant fiber-optic communications bandwidth to support the deployment of these new technologies, including PMUs, dynamic line rating, and wildfire situational awareness devices, will provide additional communications resiliency to the region, including increased general broadband access to communities along the transmission path. The fiber line will provide the CTWS with significant additional connectivity to the greater communications network, increasing access for Tribal members, and support data-dependent economic development opportunities.

## ALIGNMENT WITH GRANT OBJECTIVES

The CTWS and PGE Regional 500kV Transmission Innovative Partnership will address many of the goals set forth in the BIL and address priority goals for Tribal communities, the State of Oregon, and PGE.

The DOE's GRIP Funding Opportunity Announcement (FOA) states that projects should show **"measurable direct or indirect investments or positive project outcomes that achieve or contribute to the following in Disadvantaged Communities (DAC):"**

1. **Decreased Energy Burden:** This proposal provides a generational opportunity for Tribes to participate in the green energy industry and increase Tribal government revenues. It will facilitate investments in vibrant community-based economic development as well as transformative energy industries.
2. **Decreased Environmental Exposure and Burdens:** This proposal will spur investments in green energy production and reduce environmental impacts from fossil-based energy generation. Increased Tribal revenues will assist the CTWS in managing the security of critical infrastructure and implementing adaptation strategies for climate change impacts such as fire hazard reduction management activities.
3. **Increased Access to Low-Cost Capital:** The use of GRIP funding will make it economically feasible to upgrade PGE's existing Bethel-Round Butte 230 kV line to 500 kV. Completion of this project will facilitate Tribal access to the low-cost capital needed to expand its renewable generation portfolio – funding which would not be available without Tribal access to increased transmission capacity.
4. **Increased High-Quality Job Creation and Job Training for Individuals:** This project will drive significant job creation and skills training potential for the Tribes in green energy production and transmission, supported by the CTWS Tribal Council's established Tribal Employment Rights Ordinance. Additionally, it will provide increased job opportunities for union workers during the transmission line construction phase for the IBEW local 125 and its signatories and for Tribal construction workers on the reservation. All workers will be paid a minimum of prevailing wage for their respective craft. The new fiber optic communications line will spur new broadband development in communities and on tribal lands, further increasing employment and skills training opportunities.
5. **Increased Clean Energy Enterprise Creation and Contracting for Minority-Owned or Disadvantaged Business Enterprises:** Tribal participation in and ownership of new transmission capacity will create opportunities for green energy development on Tribal lands, with a corresponding increase in Tribal revenues. New solar development on CTWS lands will directly facilitate Tribal ownership of new business enterprises, creating greater economic stability for Tribal members.
6. **Increased Energy Democracy, Including Community Ownership:** This project will result in significant Tribal ownership and participation in both regional transmission capacity and new green energy production facilities, supporting the Tribal goal of a carbon-free reservation, building on the unique CTWS/PGE energy partnership to integrate indigenous knowledge and traditional ecological wisdom into key stakeholder design and decision-making discussions.

7. **Increased Parity in Clean Energy Technology Access and Adoption:** The CTWS/PGE Regional 500kV Transmission Innovative Partnership will improve Tribal access to green renewable energy resources in underserved communities in Central Oregon and beyond. It will increase Tribal resources to invest in efficiency upgrades and access to distributed or community-scale renewable energy installations.
8. **Increased Energy Resilience:** The upgraded transmission capacity created by this project will significantly increase both regional generation and transmission resiliency and carbon-free renewable generation resources in Oregon. Upgraded transmission facilities also increase grid diversification and communications/control capabilities.

Additional goals for the Grid Innovation Program's Topic 3 include:

- **Increased Transfer Capacity Between Regions:** This project will increase the transfer capacity from Central Oregon into the Willamette Valley by an estimated 800-1200 MW on the WOCS path.
- **Addressing the Most Consequential System Needs and Challenges that Cause or Contribute to Long and Increasing Interconnection Queue Time For Clean Energy:** This project will significantly increase transmission capacity through upgrades to an existing fully-allocated PGE transmission path. The Bonneville Power Administration (BPA), which owns and operates the vast majority of the Pacific Northwest's transmission assets, recently stated that its system is now essentially fully subscribed, with little or no available capacity to deliver renewable energy to load centers. This constraint, and the need for infrastructure design and construction projects to facilitate renewable resource integration, currently results in excessively long interconnection and generation resource development timelines.
- **Increasing the Supply of Geographically and Technologically Diverse Sets of Location-Constrained Energy Resources to Enhance Resource Adequacy and Reduce Correlated Generation Outages:** In Oregon, new clean energy resource development is generally confined to areas east of the Cascade mountains. New transmission capacity is required to deliver this energy to load centers west of the Cascades. This project addresses that critical need and will open up more renewable energy development, including the solar projects proposed on CTWS lands.

Specifically, this application addresses the **"Area of Interest 1: Transmission Applications"** which has the following objectives:

- **Investments and Strategies that Accelerate Interconnection of Clean Energy Generation and/or Storage:** The CTWS/PGE Regional 500kV Transmission Innovative Partnership will accelerate the development of critical transmission capacity that will enable interconnection to new green renewable resources that are currently unavailable to serve PGE customer's electricity load due to transmission constraints.
- **Projects Addressing Grid Access Challenges for Remote, Stranded, or Novel Low-Carbon Resources:** This partnership and project will unlock access to the vast pocket of currently islanded green renewable energy resources, including solar, storage and other emerging technologies, on Tribal lands. Without it, development of these resources will not be economically feasible.



- **Planning, Modeling, Cost Allocation, or Other Approaches that Enable a Transition to Innovative Financial and/or Regulatory Constructs That Accelerate Transmission Expansion:** This project represents a novel approach to transmission development in Oregon, an innovative partnership between Oregon’s largest investor-owned electric utility with an underserved and disadvantaged community in Central Oregon to jointly own a major transmission project.

The proposed CTWS/PGE Regional 500kV Transmission Innovative Partnership will address nearly all goals set forth in the FOA. CTWS is submitting this proposal to advance the social and economic welfare of its community – while it has access to significant carbon-free renewable resources, its pathway to the vital load centers in Western Oregon is blocked by regional transmission capacity gridlock. Through this innovative partnership with PGE, the GRIP grant funds will unlock the potential to create new Tribal revenue sources to alleviate the significant economic and social gaps that exist between the Tribes and other Oregonians – all while diversifying the regional generation portfolio and addressing climate impacts from energy production, helping to create a zero-carbon future for all Oregonians.

## WORKPLAN

### PROJECT OBJECTIVES

This innovative partnership between CTWS and PGE seeks to upgrade transmission capacity and establish a connection between PGE’s load centers, which contains roughly half of Oregon’s population lives and two-thirds of the state’s commercial and industrial activity, with the vast – but currently isolated -- reservoir of renewable generation resources east of the Cascades, including those on the Warm Springs Reservation.

### BUY AMERICA REQUIREMENTS FOR INFRASTRUCTURE PROJECTS

PGE and the Tribes will make best efforts to meet the Buy American goals and requirements set forth in the BIL for this project. PGE has contracted with U.S.-based manufacturers to supply the bulk of materials required for this project and fully expects to meet the Buy America provisions.

### TECHNICAL SCOPE SUMMARY

Under the CTWS/PGE Regional 500kV Transmission Innovative Partnership project, the project team will:

- Decommission the existing Bethel – Round Butte 230 kV transmission line and rebuild the corridor as a 500 kV transmission line. Sections of the existing line will be evaluated to remain in service to use for connecting new generation resources
- Install new high-capacity fiber-optic cables along the entire transmission route to provide enhanced system protection, regional communications resiliency for transmission system protection and operations, and enhanced broadband services to underserved areas with our internet partners
- Construct new 500 kV substation facilities at the termination points for interconnection into the transmission network, including space for future Tribal solar interconnection

- Reinforce existing transmission facilities at both termination points to allow greater energy transfer with the new transmission line.

The Project Approach, summarized below, will be similar to PGE's typical transmission line project execution, and is detailed further in the WBS and Task Description Summary.

**Year 1:** CTWS/PGE will engage with engineering and environmental/permitting partners to initiate detailed studies that will: begin permitting activities such as community engagement and environmental and cultural studies; conduct LiDAR survey for design and permitting; determine final route and termination points; identify additional network reinforcements to integrate the new line into the existing transmission system; identify technical details for critical materials; and refine project estimate and schedule based on preliminary engineering studies. PGE will also provide all technical inputs to the WECC path rating process to determine final incremental energy transfer capability.

**Years 2-3:** The CTWS/PGE team will work to complete all permitting, design documentation, long-lead material specifications and purchases, and contract construction proposal documents to enable construction start in the following years. Specifically, the team will: complete 30% design to support permit applications, substation land purchase, and potential transmission easement acquisition; complete 60% designs for long lead material ordering and start of geotechnical investigations for foundation design; finalize designs and develop construction proposal documents for access roads and material laydown areas and substation/transmission construction; complete construction competitive bidding process and award contracts.

**Years 4-6:** The CTWS/PGE team, in partnership with contractors, will construct all substation facilities, wreck out the existing transmission line and towers, construct new lattice steel transmission structures, string bundled conductors, install new fiber optic shield cables and communication splice points, and prepare to close the project down.

**Year 7:** The CTWS/PGE team will finalize the project, conduct restoration per permit requirements, test all substation and transmission equipment before final energization, and officially put the line into service.

## WORK BREAKDOWN & MILESTONES

Table 1 presents a work breakdown structure that outlines the methodology for achieving the project objectives.

Task ID	Description	BP1	BP2	BP3	BP4	BP5	BP6	BP7
<b>1</b>	<b>Project Execution Planning</b>	<b>X</b>						
1.1	Conduct project kick off meeting with the project team							
1.2	Perform preliminary substation, line routing and environmental study, and LiDAR survey							
1.3	Perform permitting research and outreach to ascertain permitting requirements and agencies							
1.4	Coordinate with the project team to make adjustments to the project scope							
1.5	Update project budget based on revised project scope							
1.6	Run competitive bidding process to select engineering design firm							
<b>2</b>	<b>Engineering Permitting</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>			
2.1	WECC path rating process to determine transmission capacity increase							
2.2	Conduct 30% Engineering design using LiDAR to support permitting, design and geotechnical requirements							
2.3	Perform field investigation of geotechnical parameters to support foundation design							
2.4	Perform 60% Engineering design to inform long lead material procurement and reduce project impacts							
2.5	Conduct procurement activities for non-long lead and long lead material							
2.6	Perform 90% Engineering design to complete detailed construction drawings							
2.7	Perform 15%, 30% and 90% substation engineering design to inform easement, and geotechnical requirements							
2.8	Conduct substation property acquisitions activities, obtain new easements and permits							
2.9	Conduct procurement activities for substation equipment							
2.10	Acquire Certificate of Public Convenience and Necessity (CPCN)							
<b>3</b>	<b>Construction Planning</b>				<b>X</b>			
3.1	Run RFP process to procure construction services							
3.2	Evaluate construction RFP related responses							
3.3	Award contract to the selected construction vendor , and issue purchase order (PO)							
<b>4</b>	<b>Construction</b>					<b>X</b>	<b>X</b>	<b>X</b>
4.1	Mobilization of construction vendor resources, and conduct environmental and safety trainings							
4.2	Conduct tree trimming and landscaping to prepare for construction work							
4.3	Construct new or upgrade existing access roads and staging areas							
4.4	Perform transmission construction activities							
4.5	Conduct installation of new substation facilities							
4.6	Install communication fiber cable to support grid reliability use cases							
4.7	Conduct final inspection that includes walkdown of newly constructed facilities by the PGE team							
4.8	Conduct pre-energization testing of the transmission line, substation facilities and fiber optic installation							
4.9	Energize substations and the new transmission lines							
<b>5</b>	<b>Project Closeout</b>							<b>X</b>
5.1	Conduct restoration activities, inspect construction area to validate restoration completion							
5.2	Conduct final inspection of contractor work and address outstanding items							
5.3	Conduct construction demobilization to remove temporary structure and facilities, and perform site cleanup							
5.4	Close out permits and create closeout documentation							
<b>6</b>	<b>Community Benefits Delivery</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
6.1	Partner with community organization (PDXO) and refine list of communities intended for engagement							
6.2	Conduct outreaches and detailed workshops to discuss project scope and take feedback							
6.3	Review anti-bias and anti-harassment trainings to support worksite culture							
6.4	Work with clean energy workforce advisory boards to identify opportunities for DAC students							
6.5	Track and report on planned Justice40 benefits tied to the project							

**Table 1: Work Breakdown Structure (WBS) and Task Description**

## TECHNICAL MILESTONES

Table 2 lists planned key project milestones for the project, including anticipated means of verification.

Milestone	Phase	Milestone	Means of Verification/Deliverable	Year	Qtr.
M1.1	Project Execution Planning	Planning complete	Planning documents complete	1	1
M1.2		Complete preliminary engineering and environmental study	List of permitting agencies	1	2
G/NG1.1		Engineering design vendor selected	Award notice to vendor	1	4
M2.1	Engineering Permitting	30% Engineering design complete	Reviewed 30% design document	2	2
M2.2		60% Engineering design complete	Reviewed 60% design document	2	3
M2.3		90% Engineering design complete	Reviewed 90% design document	2	4
M2.4		15% Substation design complete	Reviewed 15% design document	3	2
M2.5		30% Substation design complete	Reviewed 30% design document	3	3
M2.6		90% Substation design complete	Reviewed 90% design document	3	4
M2.7		Long lead and non-long lead material procurement	Material delivery schedule	3	1
G/NG2.1		Permitting, design and material readiness	Permitting & design documents	4	4
M3.1	Construction Planning	Issue RFP for construction services	RFP documents and bid invite list	4	1
M3.2		Evaluate RFP respondents qualifications	RFP scoring criteria	4	2
M3.3		Contract negotiations complete	Award contract to selected bidders	4	4
G/NG3.1		Construction sub-contractors selected	Signed contracts	4	4
M4.1	Construction	Construction team mobilization complete	Roles and responsibilities matrix	5	1
M4.2		Tree trimming and access road construction complete	Testing complete	5	4
M4.3		Transmission line construction complete	Transmission line in service	6	4
M4.4		New Substation facilities complete	Substations in service	6	4
M4.5		Fiber optic installation complete	Fiber optic in service	6	4
M4.6		Testing, QA and final walkdown complete	QA documentation	7	2
G/NG4.1		Transmission and substation energization	Energization checklist complete	7	3
M5.1	Project Closeout	Restoration and remediation activities complete	Testing complete	7	4
M5.2		Complete construction demobilization and clean up	Vendor contracts closed	7	4
M5.3		Complete permit closeouts	Permit documents	7	4
M5.4		Complete project closeout documentation	Closeout documentation	7	4
G/NG5.1		Project closure	As built submitted	7	4
M6.1	Community Benefits Delivery	Review training and apprenticeship requirements	List of trainings and courses	3	4
M6.2		Onboard diversity suppliers and sub-contractors	Vendor contracts, DBE spend percent	4	4
M6.3		Onboard MSI students to support the project	Contract with Portland State Univ.	1	4
M6.4		Final report on Justice40 benefits	Closeout documentation	7	4

**Table 2: Milestone Summary and Go/No-Go Decision Points**

## PROJECT SCHEDULE SUMMARY

Figure 3 is a graphical representation of the project schedule, which details the tasks, subtasks, durations, milestones, and decision points for Go/No-Go.

		BP1				BP2				BP3				BP4				BP5				BP6				BP7					
Task	Sub-Task	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
1: Project Execution Planning																															
1.1	Project Kick off	M1.1																													
1.2	Preliminary studies			M1.2																											
1.3	Permitting analysis																														
1.2	Scope refinements																														
1.2	Budget refinements			M1.3																											
1.4	Select engineering partner				G1.1																										
2: Engineering Permitting																															
2.1	WECC rating process																														
2.2	30% Engineering design									M2.1																					
2.3	Geotechnical investigation																														
2.4	60% Engineering design															M2.2															
2.5	Equipment procurement															M2.7															
2.6	90% Engineering design															M2.3															
2.7	Substation design								M2.4,M2.5,M2.6																						
2.8	Permtting & Easements																	G2.1													
2.9	Procurement - Substation									M2.7																					
2.1	Acquire certifications																														
3: Construction Planning																															
3.1	Run RFP process														M3.1																
3.2	Evaluate bidders															M3.2															
3.2	Award contract																M3.3, G3.1														
4: Construction																															
4.1	Mobilization																M4.1														
4.2	Tree trimming																	M4.2													
4.3	Access Roads																		M4.2												
4.2	Tranmission line upgrades																										M4.3				
4.3	Substation installation																										M4.4				
4.2	Fiber optic cable roll out																										M4.5				
4.3	Final inspection																														
4.4	Pre-energization testing																											M4.6			
4.4	Energize the system																											G4.1			
5: Project Closeout																															
5.1	Restoration activities																												M5.1		
5.2	Final QA of contract work																												M5.2		
5.3	Demobilization																												M5.3		
5.4	Project closeout																												G5.1		
6: Community Benefits Delivery																															
6.1	Partner with CBO (PDXO)				M6.1																										
6.2	Community outreach												M6.2																		
6.3	Conduct trainings																														
6.4	Workforce advisory								M6.3																						
6.5	Justice40 benefits																												M6.4		

**Figure 3: Project Schedule and Gantt Chart**

## END-OF-PROJECT GOAL

By the end of this project, CTWS in partnership with PGE expects to achieve the following SMART Goals:

1. Successfully upgrade the existing Bethel-Round Butte 230 kV transmission corridor to 500 kV
2. Complete installation of a new high-capacity fiber-optic line on the newly expanded Bethel-Round Butte 500kV transmission corridor
3. Demonstrate measurable community benefits, as outlined in the Community Benefits Plan (CBenefits.pdf), and identified during consultations with Tribes and other DACs near the proposed transmission corridor

## **PROJECT MANAGEMENT PLAN**

### **Approach and Organization for Managing the Work**

PGE will use a centralized program management office, located within PGE's Integrated Grid project delivery team. Workstreams will be housed under the overall program and executed in parallel to gain efficiencies for each scope element and to group each task by subject matter expertise (e.g., engineering design, construction, permitting and community engagement).

### **Critical Handoffs/Interdependencies Among Project Team Members**

Critical handoffs/interdependencies among project team members will be addressed in the integrated program schedule maintained by PGE's Project Management Office (PMO). This schedule will be reviewed at weekly program meetings to ensure timely identification of risks, issue management, and handoff of tasks between workstreams.

### **Technical/Management Aspects of the Management Plan**

The PMO will maintain technical aspects of the Project Management Plan, establishing and maintaining weekly and monthly project status reporting, monthly financial reporting, a centralized hub of coordination, and the Project Management Plan itself. The PMO will keep a centralized RAID log (Risks, Action Items, Issues and Decisions) and meeting minutes, and will ensure that program governance practices are followed.

### **Approach to Project Risk Management**

Risks and issues will be tracked in a formal registry. Each entry will be scored based on its likelihood, cost impact, schedule impact, and scope impact. The Project PMO will review, prioritize, and update tracked items weekly, with the goal of logging proactive mitigation measures for each risk. PGE expects to mitigate workforce risks by working closely with IBEW Local 125 prior to and following project award to ensure alignment regarding PGE versus contractor installations and classification of work. Community and labor dispute risks will be mitigated through the labor dispute process language in existing Collective Bargaining Agreements, as well as a proactive information campaign led by existing PGE liaisons to maintain alignment. Furthermore, PGE and CBO partner PDXO will take a staged engagement approach to incorporate stakeholders' perspectives in the project plan, to facilitate transparency and reduce project risks. PGE's strong executive sponsorship and policy support will serve as a foundation for project success and risk mitigation.

### **Project Changes**

Changes will be formally managed through a centralized change management log, maintained by the Project Management Office. Each change will be sequentially numbered, documented to record scope, schedule, or budget changes, and approved in writing by the program manager

and any applicable governance body. PGE will track only changes of a substantive nature, including contractual changes, schedule changes >30 days from original baseline, scope changes affecting committed project outcomes and/or features, and cost changes greater than 1% of project budget.

### **Approach to Quality Assurance/Control (QA/QC)**

PGE will perform factory quality audits for major suppliers in conformance with ISO 9001 practices. PGE has a robust supplier quality assurance program and standards in place which will be leveraged during this project. Programming of field devices will follow internal QA and testing processes developed to ensure the reliability of PGE’s Transmission & Distribution electrical system.

### **Communications Among Project Team Members**

Communications among project team members will be maintained through the following methods: weekly 90-minute program meetings (including report-outs from each workstream lead), weekly workstream status reports, a weekly program status report, monthly governance meetings with sponsoring executives, and monthly program reports published to stakeholders. Additional methods of regular communication will include email, phone, text, and MS Teams chat, and a centralized list of published contact information for all project team members.

### **PGE’s PMO Involvement On Transformational Initiatives**

PGE’s PMO has a track record of completing and meeting strategic objectives for complex and transformational projects through the application of disciplines such as Construction Management, Project Controls, Project Services, Program Management and Project Management. PGE’s PMO has a proven track record of successfully implementing multiple large transmission projects, fiber optic installations, and community engagement programs. These complex, multiyear programs have benefited from the PGE PMO’s rigorous project management processes and standards.

## **TECHNICAL QUALIFICATIONS & RESOURCES**

### **PROJECT TEAM QUALIFICATIONS**

As reflected in Table 3, key executives from CTWS and PGE will be closely involved in providing governance and oversight to ensure the achievement of successful partnership outcomes. Larry Bekkedahl, Sr. VP – Advanced Energy Delivery, and his organization possess extensive experience in transmission engineering projects, and will play a crucial role in the implementation of this project. The roles and responsibilities of other key personnel from CTWS and PGE are summarized in Table 6; resumes for personnel listed in Table 6 are included in the “Resumes.pdf” deliverable. Final staffing plan will reflect the need to deliver each workstream’s scope on schedule and with the expected quality to meet the project’s measurable outcomes.

Organization	Team Member	Title	Project Role
CTWS	Cathy Ehli	Executive Director	Executive Sponsor
	Mike Lofting	Controller	Grant Execution Lead
	Austin Smith Jr	General Manager, Natural Resources	Natural Resources Lead
PGE	Larry Bekkedahl	Sr. VP, Advanced Energy Delivery	Executive Sponsor

Organization	Team Member	Title	Project Role
	Bill Messner	Director, Grant Execution	Grant Execution Workstream Lead
	Jay Landstrom	Director, Grant Development	Grant Development Lead
	Jerry Case	Manager, Procurement	Procurement Lead
	Todd Jones	Senior Manager, Engineering (Substation and Transmission)	Engineering Lead
	Chis Bozzini	Director, Environmental Services	Environmental and Permitting Lead
	Rick Tetzloff	Director, Construction Project Management	Execution Workstream Lead
	Ian Biel	Manager, Transmission Planning	Transmission Planning Engineer Lead
	Shaun Foster	Manager, Interconnection Services	Business Lead, Transmission & Interconnection
	Steven Nakana	Manager, Community Outreach	Community Benefits Delivery Workstream Lead
	Brooke Brownlee	Senior Manager, Government Affairs	Government Affairs and Workforce Engagement Lead
	Tamara Fife	Manager, Government Affairs	Tribal Liaison
<b>Portland State University (PSU)</b>	Dr Robert Bass	Associate Professor, Department of Electrical & Computer Engineering	Training and Internship Partner
<b>PDXO</b>	Dwayne Johnson	Managing Partner	Community Outreach

**Table 3: Key Project Personnel**

#### RELEVANT PREVIOUS WORK

PGE has developed, maintained, and operated its electrical transmission and distribution system for over 130 years. PGE has a track record of successfully implementing strategic reliability and resilience initiatives of various types. PGE projects similar in scope, scale and complexity are shown in the table below.

PROJECT NAME	YEAR	DESCRIPTION OF PROJECT SIZE & SCOPE
Murrayhill-St. Marys 230 kV	2021	5 miles of 230 kV reconductor and lattice tower modifications
Horizon-St. Marys-Trojan	2019	4 miles of new 230 kV
Grizzly-Malin #2 500kV	2011-2017	Re-insulated 179-mile 500kV line
Horizon-Keeler #1 230 kV	2012	1.4 miles of new 230 kV
Carver-McLoughlin #2 230 kV	2008	5 miles of new 230 kV
Port Westward-Trojan #2 230kV Line	2006	20 miles of new 230 kV
Blue Lake-Gresham 230kV line	2018	5.9 miles of new 230 kV
Blue Lake-Troutdale #1 and #2 230kV line	1998 (#1), 2018 (#2)	1.5 miles of new 230 kV (#1 line), additional 0.15 miles of new 230 kV (#2 line)

**Table 4: List of Similar Past Project Deployments**



PGE has extensive design and construction contracting partnerships. It is anticipated that the Tribes and PGE will utilize these partnerships, where consistent with federal requirements, given their previous successful implementation of multiple grid improvement projects. The table below summarizes PGE’s prior successful partnerships. The CTWS/PGE Regional 500kV Transmission Innovative Partnership will draw on PGE’s existing partnership network as well as new partners identified through a competitive bidding process. As noted above, all contracted work will be completed by a union signatory general contractor, with additional preference being given to diversity-certified vendors.

VENDOR/CONTRACTOR	DESCRIPTION OF SERVICE	PREVIOUS WORK
<b>Henkels &amp; McCoy</b>	Line Construction	Substation & transmission line construction
<b>Michels</b>	Line Construction	Transmission line construction
<b>Potelco</b>	Line Construction	Horizon-St Marys-Trojan and transmission line construction
<b>Wilson Construction</b>	Line Construction	Blue Lake-Gresham, Murrayhill-St Marys transmission line reconductor

**Table 5:** Sample List of PGE’s Construction Partners

## **FACILITIES, EQUIPMENT, & MATERIALS**

Planning and technology development work related to this project will be conducted primarily at PGE’s headquarters at 121 SW Salmon St. in Portland, Oregon. PGE has various satellite offices across its service territory that will be leveraged as needed for project execution. PGE has existing agreements with equipment suppliers for most of the material that will be required for this project. Again, it is anticipated that PGE and the Tribes will leverage PGE’s vendor relationships, where consistent with federal requirements, for any unique materials needed for the 500kV system. Many of the standards for materials will derive from PGE’s ownership and maintenance of its existing 500kV transmission line, part of the California-Oregon Intertie (COI). PGE has been able to meet its material requirements by negotiating production slots with our vendors. Consistent with federal requirements, PGE will adopt similar strategies to fulfill requirements on this project. Many of PGE’s existing equipment manufacturers have domestic production facilities in the U.S. PGE and the Tribes will make best efforts to meet the Buy American goals and requirements set forth in the BIL for the project proposed in this concept.

VENDOR/CONTRACTOR	DESCRIPTION OF SERVICE	PREVIOUS WORK
<b>Trans American Power Poles</b>	Steel structure manufacturer	Evergreen substation/transmission project (Many Transmission projects)
<b>Sediver (Seves)</b>	Transmission Insulator manufacturer	Grizzly 500kv Insulator replacement project
<b>Hubbell power Systems</b>	Transmission Pole/Line Hardware	Most Transmission construction projects
<b>Siemens and GE Grid Solutions</b>	High Voltage Circuit Breakers	Many Transmission/Substation Projects
<b>Southwire</b>	Transmission Wire and Cable manufacturer	Many Transmission projects

**Table 6:** List of PGE’s Material and Equipment Supply Partners