*The state and metropolitan statistical area teams coordinated closely to design four applications[[1]](#footnote-2) that avoid redundancies and leverage respective strengths and expertise. The result is a package of proposals that ensures every county in Washington receives climate pollution reduction benefits. The four proposals represent avoided emissions of over six million metric tons of emissions by 2050, which represents an additional six percent of statewide emissions outside regulated emission reduction efforts. Applications are separate but represent the coordinated efforts underway in Washington to, as stated by Governor Inslee,[[2]](#footnote-3) “decrease climate pollution and hazardous air pollutants, increase community resilience, and support high quality jobs for the most vulnerable populations in our state.” These proposals are also supported by both Washington Senators and seven members of the House. [[3]](#footnote-4)*

# **1. Accelerating Washington's Climate Commitments: A Bold & Inclusive Path to Net Zero Emissions**

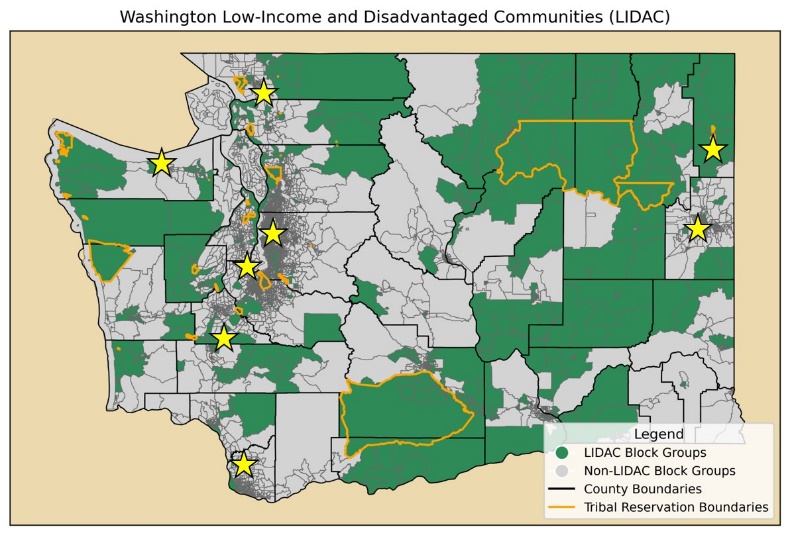
Washington State Department of Commerce (Commerce) is requesting $81,896,196 for projects championed by Tribes, local agencies and communities in Washington.[[4]](#footnote-5) These measures address emissions reductions in hard-to-decarbonize sectors, promote workforce development in rural communities and create transformational—and lasting —change across Washington, including for low-income and disadvantaged communities (LIDACs). Measures focus on transportation, electric power sector, built environment and agriculture—as well as centering Tribal energy sovereignty. These measures represent over **340,000 metric tons of carbon dioxide equivalent (MTCO2e) of avoided greenhouse gas (GHG) emissions through 2050** and leverage the expertise of Tribes and communities to reduce climate pollution.

Figure 1 CPRG Project Sites in Washington

## 1a. Detailed Description of GHG Reduction Measures

All GHG reduction measures are included in the Washington State Priority Climate Action Plan (PCAP).[[5]](#footnote-6)

**Vehicle miles traveled reduction through water transportation ($9,000,000 requested)**

The measure funds the Port of Port Angeles (PPA) to use barging in lieu of long-haul trucking to reduce emissions from freight in LIDACs. The Washington State Transportation Carbon Reduction Strategy (CRS)[[6]](#footnote-7) cites mode shift to maritime freight transport as an efficient and equitable way to move goods and people while also reducing vehicle miles travelled (VMT). On the Olympic Peninsula, these efforts have the potential to reduce GHG emissions by over 3,600 MTCO2e by 2030, and over 18,000 MTCO2e by 2050 by adding a new route from Port Angeles to Everett. This project aligns with CPRG objectives by creating transformational solutions to reducing carbon in hard-to-decarbonize sectors.

**Features**: Barges are non-motorized, cargo-carrying vessels that are pushed or pulled between ports by towing vessels. Barging is a less carbon-intensive modality that will lead to a measurable reduction in VMT and GHG reductions compared to long-haul trucking by: (1) allowing freight to be moved in bulk which reduces emissions (one barge can transport approximately 50 truckloads of freight); (2) not consuming fuel and instead pushing or pulling freight by a towing vessel, which can be electric or electric-hybrid; (3) reducing VMT by taking long-haul freight trucks off the highways; and (4) lowering wear and tear on truck tires due to reduced VMTs. Currently, PPA participates in two barge routes running to Everett, WA and to Coos Bay, OR. In 2023, freight movement along these water routes produced 41% fewer GHG emissions compared to long-haul trucking (see Technical Appendix).

**Tasks**: This measure funds critical infrastructure to increase regional barging capacity. To implement this measure, PPA will undertake three activities:

* **Activity 1:** Purchase an inland barge to provide increased space for water-based freight
* **Activity 2:** Purchase a “spud” barge to mitigate tidal limitations at PPA’s barge loading facility
* **Activity 3:** Create and administer a pilot incentive program to encourage companies to adopt water transportation and help new and expanding tug-and-barge businesses establish sustainable, reliable operations in the region

**Milestones**:

* Purchase 2 barges by 2025, doubling barge freight traffic by 2026 once routes open
* GHG emission reductions at double the current rate (725-ton reduction/yr. based on 2023 barging rates) once routes come online by 2026
* Reduced long-haul trucking VMT starting in 2026, resulting in immediate and permanent reductions of GHGs, HAPs and CAPs in LIDACs along trucking route
* Establish incentive program by 2026 allowing reliable operation and stable pricing for routes

|  |  |
| --- | --- |
| Risk | Mitigation |
| Low success rates in encouraging manufacturers to barge freight in lieu of long-haul trucking due to unreliable barge availability or high costs | Incentive program encourages competitive prices during the startup period and enables the growth of regular, reliable barge service in the region. |
| Low success rates in encouraging manufacturers to barge their freight in lieu of long-haul trucking due to status quo approach to operations | This measure will dovetail with national and state-level climate policies – like the Federal Sustainability Plan – and make cleaner water freight transportation a viable option for the North Olympic Peninsula |

**Enable decarbonization of rail infrastructure ($12,207,200 requested)**

Funding will be used for the design and build of a new repair and maintenance shop, run by Pend Oreille Valley Railroad (POVA), for locomotives, large industrial vehicles, and smaller commercial vehicles as well as a new hydrogen fueling station. The state rail plan[[7]](#footnote-8) provides a framework for meeting efficiency standards for diesel locomotives. These standards are based on the application of high-efficiency catalytic after-treatment technology for newly manufactured engines built in 2015 and later and can reduce particulate matter (PM) by up to 90% and oxides of nitrogen (NOx) by up to 80%. The rail industry in Washington is seeking ways to continue to lower its environmental footprint and there is growing interest in powering trains with hydrogen fuel cells.[[8]](#footnote-9) It is estimated that POVA could complete up to 150-200 locomotive conversions with a new 4-bay facility, impacting at least 1% of the total North American Fleet. This measure supports CPRG goals through transformative pilots that address hard-to-decarbonize sectors in the state’s highest emitting sector.

**Features:** A larger facility will allow POVA to increase their labor force and convert more engines. POVA will be able to do at least 30 Tier 4 and 5 Tier 3 conversions in the next 3 years, with increased conversion in the following years. POVA also plans to pilot a hydrogen fueling station and engine conversions, which will avoid all diesel-powered emissions. The new repair and maintenance shop will also incorporate sustainable development and design practices and pursue LEED Certification. In addition to GHG reductions, these facility upgrades will also increase public safety, future proof POVA assets, and provide new job opportunities.

**Tasks**: Due to limited availability for these types of conversion services nationwide, POVA will expand its facility in Usk, WA, through the following activities:

* **Activity 1: Repair shop:** Design and construct a 40,000+/- sq. ft. repair and maintenance four-bay shop for locomotives, large industrial vehicles, and smaller commercial vehicles.
* **Activity 2**: **Blast booth**: Convert current blast booth from a wet to dry blasting process. Dry-blast booths generally consume less energy compared to wet-blast booths, since they do not require water heating or wastewater treatment. Additionally, dry-blast processes often produce less waste and require fewer chemicals which further reduces environmental impacts.
* **Activity 3**: **Hydrogen fueling station:** Install a new fueling station for hybrid locomotives.

**Milestones:**

* 35+ locomotives upgraded by 2028
* 150 locomotives upgraded by 2050 resulting in 177,000+ MTCO2e
* 1 hydrogen fueling station added by 2030 for first-in-nation H2 locomotive
* 1 blast booth conversion from a wet-to-dry process by 2030
* 6-8 new jobs created by 2030
* 100 apprenticeships offered annually

|  |  |
| --- | --- |
| Risk | Mitigation |
| Hydrogen fuel cell technology and production logistics (including transport) are still limited while in a research and development phase. | POVA will work with Pacific Northwest Hydrogen Hub partners in Eastern WA to support analysis of supply and demand for hydrogen. |
| Increases in supply chain gaps and/or inflation costs for equipment and materials for either the building construction and/or continued engine conversion service work. | Leverage established relationships with multiple suppliers. Use fixed-price contracts to mitigate inflation risks; support local sourcing to reduce dependencies on international supply chains. |
| Potential negative environmental impact (including local concerns and/or wetland challenges) that may come from any kind of new construction. The property is already zoned for “industrial use” so a conditional use permit will not be required. | POVA works with Economic Development Council (EDC) to mitigate environmental risks including both SEPA and NEPA evaluations, a cultural resource study, LEED Certification, fire flow design, shoreline management, a topographic and geotechnical survey of the site. |

**Vehicle-to-grid integration for resilience ($13,587,544 requested)**

This measure will electrify 87 light-duty vehicles within the City of Spokane – over 90% of the City’s light-duty fleet. This proposal includes a demonstration of smart charging technology that will communicate with Avista Utilities to minimize peak loads and overall grid impacts. During peak power usage and/or during extreme weather events, Spokane will also look to deploy electric vehicles (EV) to provide backup power to critical loads on the system, thus avoiding extended power outages and loss of critical public services. This proposal supports CPRG objectives by creating a double benefit of both GHG reductions through vehicle electrification and grid resilience for LIDACs.

**Features**: Spokane and Avista will identify locations that have a history of micro instability and install the needed equipment to allow a mobile unit to seamlessly plug EVs into the station to provide backup power. Locations may include water booster stations and sewer lift stations, which are typically placed within neighborhoods and use continuous power to pump during peak usage times.

* **Activity 1: Fleet electrification**: Purchase 87 electric light-duty vehicles; Design, procure equipment, and install utility infrastructure including medium-voltage, 3-phase line extensions, new service points, and dedicated service transformers to each facility; Design, procure equipment, and install EV supply equipment at each facility
* **Activity 2: Smart charging systems for vehicle-to-grid integration (V1G)**: Issue a Request for Proposals (RFP) and review, select and execute contract with selected vendors; Develop, deploy and test hardware and software; Deploy V1G systems at each facility, collect data, analyze, and iterate.
* **Activity 3: Mobile Power Solution (Vehicle-to-Load or V2L)**: RFP process; Confirm load centers and select EVs to configure with V2L hardware and software systems, install at each facility, and test.
  + **Activity 4: Education and Information** Procure a communication firm to develop a communication plan that will educate the community and take feedback on the two demonstrations. The final report and conclusions will be shared publicly.

**Milestones**:

* Convert 87 light duty vehicles to EVs: 2025-2028
* Installation of utility infrastructure and charging equipment: 2026-2028
* Demonstration of smart charging (V1G) and mobile power solution (V2L): 2027-2029

|  |  |
| --- | --- |
| Risk | Mitigation |
| Delivery of EVs by manufacturers may be slowed due to supply chains | Assumed a 20% contingency for higher costs to meet the schedule. |
| EVSE is new technology and performance may not meet expectations of modeling | Robust monitoring and maintenance by experienced Avista staff and contracted technicians will ensure team can make necessary pivots in deployment |
| V1G and V2L are new technology and performance many not meet expectations of modeling | Third party support contractor will include comprehensive review in RFP process, requiring demonstrated success with products and systems |

**Tribal fleet electrification ($7,921,622 requested)**

This measure will implement the Cowlitz Tribe Fleet Electrification and Resilient Energy Plan, focusing on zero-emission vehicles and strategic deployment of EV charging infrastructure to support the increased use of renewable energy for charging. This measure will increase the Tribe’s energy and economic resiliency, providing the Cowlitz Indian Tribe (CIT) with back-up power for community needs during grid electrical outages and other emergencies. CIT leadership has identified energy resiliency and vehicle electrification as core strategies to benefit Tribal members and it is the Tribe’s intent to transition at least 80% of their fleet to zero emissions vehicles by 2030. This measure aligns with CPRG objectives, with the purchase of 40 electric vehicles and solar plus storage adding both scalable decarbonization and resilience to Tribal infrastructure.

**Features**: In addition to fleet electrification, CIT will install a 60kW solar array onto the Tribal Administration building, an 80kW solar array onto the Substance Use Disorder Medical Facility, and three 30kW Solar Canopies at different Tribal owned locations across Washington. Each solar array will have a backup battery storage system to store excess power created. The renewable energy produced will be directed to a fast-charging and battery storage facility, EV chargers and other battery energy storage. Coupling the solar array with the EV charger, the CIT will be able to generate renewable power for the new fleet of zero-emission vehicles.

* **Activity 1**: **Fleet Electrification Plan:** Conduct a comprehensive evaluation of the entire CIT vehicle fleet, identifying and prioritizing vehicles with the greatest potential for electrification. Plan also includes a report on current use cases, a needs assessment for the next five years, an electric vehicle market analysis, fleet optimization and electrification plan, fleet management strategy, and emissions reduction analysis. Target goal to transition 10 vehicles/yr. over a 5-year period. CIT will produce a yearly financial analysis estimating the capital and operating costs and savings associated with the Fleet Optimization and Electrification Plan.
* **Activity 2: Solar Array/Carports Installation:** Conductsite assessment and energy analysis to confirm design with load calculations for final design. CIT will work with City of Longview to secure electricity and permits.

**Milestones**:

* 40 EVs purchased by 2026 saves 180 metric tons CO2/yr.
* $2,351,400 = 10 yr. fuel cost savings
* 230 kW solar installed by 2030 with $24,000 in economic benefits/yr.

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| Risk | Mitigation |
| Schedule impacts due to manufacturing delays | CIT has identified a team of subcontractors to perform the specific tasks described in this grant. |
| Grant award process causing funding delays | Commerce will support each subaward with experienced staff and will work with its Office of Tribal Relations to leverage streamlined processes for contracting with Tribes. |

**Tribal clean energy grants program ($15,935,694 requested)**

This measure funds Commerce $15 million for an additional round of the Tribal Clean Energy Grant program[[9]](#footnote-10); a newly designed program that makes at least $16 million of state funding available to federally recognized Tribal governments. Projects funded through this program align with state requirements[[10]](#footnote-11) to use funding for efforts to mitigate and adapt to the effects of climate change affecting Tribes, including capital investments in support of the relocation of Tribes in areas at heightened risk due to anticipated sea level rise, flooding, or other disturbances caused by climate change. This measure is modelled on a Tribal microgrid, which provides both climate pollution reduction and resilience. This measure supports CPRG objectives through a program that funds long-term environmental benefits while upholding Tribal treaty rights and protecting critical habitat.

**Features**: The current state-funded program opened in Feb. 2024. In response to feedback from a Request for Information (RFI) issued in fall 2023, as well as listening sessions and previous stakeholder input, Commerce will collect applications on a rolling basis. Projects include those that modernize the electric grid, promote innovation and solar energy deployment, enhance community resilience, support low-income communities, target industrial decarbonization and siting and permitting of clean energy projects[[11]](#footnote-12), and address any other climate pollution reduction projects important to Tribes. CPRG will fund another set of funding rounds in 2025. In alignment with the current request for applications, Commerce will award as many eligible contracts as funding allows, with no minimum award amount. Priority will be given to fund first time Tribal applicants

* **Activity 1: Outreach to Tribes**: Current outreach includes a “Dear Tribal Leader” Letter to Tribal leadership, informational sessions, the start of a CPRG Tribal coordination workgroup and participation in Tribal conventions. Feedback from the current round of state funded program will be used to inform pivots in design to the federally funded round.
* **Activity 2: Program development and design:** In compliance with state environmental justice laws, Commerce will undergo an Environmental Justice Assessment, including public meeting and listening session(s) on program design, a public comment period and meetings with individual Tribes.
* **Activity 3: Grant process**: Using Commerce best practices, extra time for engagement and equity ahead of program release will allow for further access to opportunity and include pre-application conferences and a Q&A period.

**Milestones**:

* Additional round of funds open to Tribes in winter 2025
* Deploy over $15 million towards projects that support Tribal sovereignty by 2026

|  |  |
| --- | --- |
| Risk | Mitigation |
| Funding for this program could compete with direct awards to Tribes through the CPRG grants | Commerce supports EPA prioritizing Tribal applications over the funding for this program to ensure a more direct path for funding to Tribes |

**Decarbonize district energy systems: Seattle Central College ($10,533,521 requested)**

This measure funds Seattle Central College (SCC) to replace its fossil-fueled steam with an all-electric, heat pump based heating and cooling system to serve a network of campus buildings. Decarbonizing district heating and cooling systems is identified as a key action in the State Energy Strategy[[12]](#footnote-13), with publicly owned buildings presenting an opportunity to lead by example. SCC will connect this decarbonization project to green workforce programs through the Sustainable Building Science Technology degree, and skilled trade and technical programs, as well as a recently awarded DOE Building Training and Assessment Center. This measure aligns with CPRG funding as it accelerates GHG reductions in a hard-to-decarbonize sector, lowering emissions by 95% for the campus, as well as adding redundancy and resiliency and lowering maintenance, operating, and utility costs.

**Features**: SCC has invested significant time and capital to evaluate the feasibility of the project, working with consulting partners who have completed the permit design drawings. All elements of the conversion have been bid out through competitive process run by the state and supported through an interagency agreement. The initial implementation is sized to serve over 500,000 square feet (sf) of buildings as well as being sized for future expansion to four additional districts on campus. To support grid resilience and peak load shifting, SCC has invested over $4 million in recent years on energy conservation measures, including conversion to LED lighting, insulation and previously installed heat pumps and high-efficiency motors. The project scope of work is a two phased approach to develop the core heating and cooling infrastructure at SCC’s Broadway Campus in three buildings. Follow-on phases will incorporate the remainder of the campus.

* **Activity 1: Phase 1**: The first phase of work includes the 404,000 sf Broadway/Edison Bldg., the 83,000 sf Science and Math Building, and the 41,000 sf Broadway Performance Hall.
* **Activity 2: Phase 2**: Phase two of the EcoDistrict includes the 14,765 sf Student Activities Bldg. and 78,600 Mitchell Activity Center.

**Milestones**:

* 583,000 sf of buildings retrofit resulting in a 95% reduction in campus emissions achieved by 2027

|  |  |
| --- | --- |
| Risk | Mitigation |
| Improvements will be too disruptive to allow continuous occupancy for ongoing classes | Construction planned in phases to allow campus operations to continue throughout the project |
| Location in busy Seattle district may result in disruptions to the neighborhood | Communication with community will roll out according to community engagement section. |

**Decarbonize district energy systems: Western Washington University ($4,862,172 requested)**

This measure funds Western Washington University (WWU) to expand the exhaust air heat recovery systems at two main science buildings and upgrade heating, ventilation, and air conditioning (HVAC) control in six other buildings. These upgrades target incremental reduction towards the 97% of GHG emissions on campus from buildings.[[13]](#footnote-14) The campus is heated by a steam district energy system that uses natural gas combustion and the majority of buildings are more the 30 years old, predating modern energy efficiency (EE) code requirements. A 2021 study[[14]](#footnote-15) identified the nine highest demand buildings where EE projects could reduce heating demand up to 22%. This measure aligns with CPRG funding as it accelerates GHG reductions in a hard-to-decarbonize sector by funding EE upgrades that can be applied across other campus buildings and similar private sector buildings.

**Features**: The science buildings were both built in the 1990’s and require 100% outside air delivered at six air changes per hour to maintain a healthy lab environment. The measure installs a complete heat recovery fluid loop for these buildings, which will pre-heat incoming supply air with energy otherwise wasted in the fume exhaust air stream. By upgrading the HVAC controls in six other high energy demand buildings, WWU will take advantage of state-of-the-art electronic controls that monitor occupancy and indoor air quality (CO2) and provide fresh air ventilation only to the extent necessary for the occupant load.

**Tasks**: The proposed EE projects were identified by an ASHRAE Level II Energy Audit that WWU commissioned in 2022 for its highest energy use buildings. Conceptual designs were completed as proofs of concept thus enabling the team to move right into detailed construction design & permitting. To implement this measure, WWU will undertake the following activities:

* **Activity 1:** Complete detailed design, submit for construction permits, and commence construction.
* **Activity 2:** Engage with the building users to set expectations for timing and disruptions.
* **Activity 3:** Complete digital controls programming and commission the upgrades.
* **Activity 4:** Begin measurement and verification process.

**Milestones**:

* 1,291 MTCO2 reduced per year starting in 2027
* Electrical grid benefit of 680,000 kWh avoided and available for other uses by 2027

|  |  |
| --- | --- |
| Risk | Mitigation |
| Improvements will be too disruptive to allow continuous occupancy for ongoing classes | Construction is planned during summer with lower occupancy and warmer temperatures. |
| Heat recovery in the science buildings requires coil installation in the contaminated fume hood exhaust air stream | Cost estimates include allowances for worker PPE and redundant fan units allow the building to remain operational during the work. |

**Community anaerobic digesters ($3,056,000 requested)**

Two anaerobic digesters (AD) systems will be deployed in Western Washington: in an agricultural community and at a rural transfer station. The use of community scale AD systems as close to the food waste source as possible preempts methane from being released in the atmosphere and captures it for beneficial use. These decentralized systems benefit the communities in which they are located. This measure aligns with recommendations from state plans[[15]](#footnote-16) to increase the use of small-scale ADs to reduce methane emissions from food waste. Local governments can use AD as an effective diversion solution for implementing the new Organics Management Law, which require a 75% diversion rate of food waste from landfills. This measure aligns with CPRG objectives as modular prefab models are easy to deploy and can scale the benefits of resource recovery through the use of diverted food waste into beneficial use products while reducing GHGs in communities.

**Features**: Each site presents a replicable use case and will showcase to other communities how to install and operate a successful AD system. These types of modular systems are manufactured domestically and take about six months to build. Both projects will be able to share best practices around sourcing food waste, training the operator, finding use for energy and measuring and monitoring GHG reductions. Commerce will work as the lead for this project and deploy subawards for purchasing ADs as well as contract for a third-party implementer to support project implementation and reporting for each project. Activities for each project will include:

* **Activity 1**. **Purchase AD** (owned and operated by local governments). Part of this work will be to secure site, feedstock (inputs) and decide on (bio)energy use.
* **Activity 2**. **Implementation plan**. These will include community outreach, training the operation and reporting GHG reductions and monitoring progress.

**Milestones**:

Projects will be complete and begin operating in 2025, and result in:

* Transfer Station (AD185): ~122 tCO2e/yr.
* AgPark (AD500): ~335 tCO2e/yr.

| Risk | Mitigation |
| --- | --- |
| Process interruption, reduction of output and seasonality | Budget for: winter shortage of digestate, spare parts and redundancy for key equipment |
| Increases in operating costs over time | Budget for intermittent increases in product delivery as a contingency |
| Odor from operations | Prepare a standard operation procedure for feedstock preparation and food waste receiving |

## 1b.Demonstration of Funding Need

In addition to specific funding available per measure listed in Table 1, Commerce recognizes the importance and complexity of clean energy tax credits and has received funding in the current legislative session to support eligible entities on guidance and direct pay requirements. Commerce is also applying for a DOE Clean Energy Innovator Fellow to support direct pay guidance.

**Table 1. Demonstration of Funding Need: Available Funding and Funding Gap**

|  |
| --- |
| **VMT reduction through water transportation** |
| Federal   * **EPA Clean Ports Program (anticipated summer 2024):** Does not fund efforts to shift freight mode. * **MARAD Port Infrastructure Development Program** Applying for cargo-handling equipment ($1-4 million); at a disadvantage due to smaller port size * **EDA Recompete Pilot Program (due April 25, 2024)** PPA is part of the North Olympic Peninsula Recompete Coalition (NOPRC) which has been selected as a program finalist for Phase 2.   Non-federal funding None identified.  Funding gap: CPRG will fill a **$10 million funding gap** unaddressed by other grant programs. The CPRG application will allow PPA to bundle multiple activities, like purchasing equipment and establishing a temporary barge operator support program, into one grant. |
| **Enable decarbonization of rail infrastructure** |
| Federal   * **FY2023 EDA Public Works and Economic Adjustment Assistance Program.** Applying for $8,957,200 in capital costs for infrastructure support, construction, and consulting costs for the new shop. * **FY2024 US DOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE).** Applying for between $11.9 – 11.4 million depending on grant writing support and potential state matching funds.   Non-federal funding   * **WA Commerce Community Economic Revitalization Board Planning Grant.** Received $50,000 planning grant to support a feasibility study in Jan. 2024. * **The Families and Workers Fund to Power Climate and Infrastructure Careers Challenge.** Applied for $1,392,800 in gap funding dollars pending the EDA grant submission/award and would support equipment costs and project consultant fees. Awards have not been announced at this time.   Funding gap: The estimated funding gap based on current funding received is **$12 million**. This funding could come from a combination of the CPRG and RAISE grants. |
| **Vehicle-to-grid integration for resilience** |
| Federal   * **DOE Grid Resilience and Innovation Partnerships (GRIP)**. Avista and Commerce applied for, but did not receive, a $50 million grant to support grid resilience around Spokane. * **DOE Grid Resilience Formula Funding for States and Tribes** (anticipated fall 2024). Competitive state funding that will be available for grid resilience measures only. Washington received $23 million in first two fiscal years.   Non-federal funding   * Spokane’s vehicle replacement is historically from **City General Fund** (~$146,000/yr), but has not been sufficient to keep up with a regular replacement schedule, resulting in an aging fleet. * **Ecology Air Quality Volkswagen EV Charging Infrastructure.** $85,823.70 to install charging stations for City of Spokane employee use. * **WA State Commerce Clean Energy Fund**: Up to $2.5M in 2021 to the Spokane Regional Transportation Council partnered with Avista, the Spokane Transit Authority, the City of Spokane, and other local municipalities, to install public and fleet charging at 51 different locations throughout the county. This project is currently underway and will be deployed through 2025.   Funding gap: The estimated funding gap for transitioning these 87 vehicles and 2 pilots is **$13.5 million**. |
| **Tribal fleet electrification** |
| Federal: NA  Non-federal funding   * **WA State Commerce EV Charging Program:** $400,000 for DC fast chargers   Funding gap: The total funding gap based on the Tribal fleet decarbonization plan is **$9 million** after recent state and federal awards. |
| **Tribal Clean Energy grant program** |
| Federal   * **DOE Grid Resilience Formula Grants for Tribes and States**: Formula funds available to WA state Tribes total ~$8 million in FY22. (Unknown how much was accessed by Tribes.) * **DOE Clean Energy Technology Deployment on Tribal Lands**: $25 million; grants from $100,000-$5 million; FOA due out spring 2024, applications due 90 days after FOA issued   Non-federal funding   * **WA Commerce Tribal Clean Energy fund grant program** ($16 million dollars, open Feb. 15, 2024- Nov. 2024): basis of this measure. CPRG funds will add another round to this program.   Funding gap: While both federal and state funding is a good start towards supporting Tribal energy sovereignty, the current needs far outweigh the combination of any existing programs |
| **Decarbonize district energy systems (SCC)** |
| Federal   * **IRA Direct Pay**: Only the thermal storage tank meets current IRS interpretation of IRA direct pay eligibility. The cost of that tank is $1.2 million, and the capital stack anticipates $400,000 coming from federal direct pay subsidy.   Non-federal funding   * **WA 23-25 state capital budget appropriation**: $4 million to pilot demonstration project for financing the decarbonization of district heating systems using an “Energy as a Service” model * **WA Commerce EE Retrofit program**: $750,000 (partnered with Seattle City Light, electric utility) * **Capital infusion** through Energy as a Service contract: $12 million for purchase of new equipment * **SCC has invested $2 million** dollars of its own savings in the planning and design of the EcoDistrict.   Funding gap: Out of $29 million total for EcoDistrct, the current gap is **$10.5 million**, which will fund: **$3.65 million** (Phase 1), for installation of supplemental water-to-water heat pumps and all associated controls for the thermal collection and storage system and **$6.45 million** (Phase 2) of EcoDistrict. |
| **Decarbonize district energy systems (WWU)** |
| Federal: None identified. Proposed EE measures aren’t incentivized by the IRA  Non-federal funding: Majority of WWU Capital Funding comes from the state Capital budget. There are limited statewide funds for minor works projects that only address 20% of WWU’s documented needs. Safety improvements and critical operational demands must take first priority. ESCO programs are available, but the ROI business case exceeds a normal 10 year threshold.  Funding gap: The current funding gap is **$4.9 million**. Utility rebates aren’t available for natural gas commodity. WWU purchases on the open market, local utility doesn’t incentivize transportation only. |
| **Anaerobic Digesters** |
| Federal   * **USDA Rural Energy for America Program (REAP) grant** Available quarterly. REAP funding in rural areas but only provides 25% of funding and is burdensome for applicants. * **Inflation Reduction Act Tax Credits**: up to 40% for bioenergy projects   Non-federal funding  **WA State Conservation Commission**: one time $30 million for AD (50% cost share required)  Funding gap: Estimated need to meet Washington’s organic management goals to divert 50% or 75% from landfills by 2030 as legislatively mandated[[16]](#footnote-17) is **$2 billion** in total. |

## 1c.Transformative Impacts

To achieve Washington’s emissions reduction mandates[[17]](#footnote-18), the state will need to reduce emissions 53% over 2018 levels. These measures represent innovative, replicable and scalable local and Tribal projects that prioritize hard-to-decarbonize sectors, support market transformation and provide quantifiable economic benefits across the state. **VMT reduction through water transportation** supports small ports like PPA, which handle appreciable annual volumes of cargo. The region is part of the federal Marine Highway Program, which seeks to make better use of the nation’s navigable waterways and will leverage barging best practices to support widespread adoption. This measure also pioneers a replicable incentive program to encourage mode shift and help new and expanding tug-and-barge businesses establish sustainable, reliable operations in the region, which could be adopted by other small ports. **Enable decarbonization of rail infrastructure:** POVA aims to reduce their carbon emissions by up to 90% through locomotive conversions. Currently, there are only five other facilities nationwide that perform these types of locomotive upgrade services. POVA aims to be the first Port in the US to pilot freight trains powered solely by hydrogen fuel cells and will leverage the newly awarded PNW H2Hub to ensure these goals are included in statewide hydrogen infrastructure planning. Making these system improvements to the railway ensures job retention and promotes job growth in the future for this rural part of the state. **Vehicle-to-grid integration for resilience:** Projects will benefit from community input and the private and public sector collaboration and act as a model that can be used across the US. Leveraging municipal fleet electrification for innovative smart charging that minimizes peak loads on the electric grid could become best practices. Avista will deploy standards, work practices, and tools required to design, deploy and operate fleet charging stations that can be tested and deployed to other cities and businesses throughout the region. **Tribal fleet electrification**: Pairing renewable energy generation with fleet electrification provides an adoptable model for other Tribes and communities. The installation of the solar array and charging infrastructure will create exposure to clean energy career pathways and training, as well as apprenticeship and internship opportunities. CIT will conduct a Solar 101 seminar to educate Tribal and community members about solar energy and career pathways in renewable energy. **Tribal Clean Energy grant program:** Commerce has previously funded 35 clean energy projects with federally recognized Tribal governments and Tribes’ contracted service providers. This funding will provide access for Tribes to design clean energy and climate pollution reduction projects that promote Tribal values. Commerce is prioritizing first time Tribal applications. **District energy systems (SCC):** The project will serve as a case study in the Sustainable Building Science and Technology Program at SCC, which will help educate the next generation of sustainability professionals on electrification projects and technology. The college will also investigate opportunities to establish a direct connection between this project and educating skilled labor on heat pump maintenance. There are 33 other community colleges in Washington, and it is SCC’s intent to document all of its steps in decarbonizing the Broadway campus and promote duplicating EcoDistrict approach with their sister colleges. **District energy systems (WWU):** The buildings included in these projects represent a variety of occupancy types that require high fresh air ventilation and must address indoor air quality needs that were highlighted by the recent pandemic. The specific strategies deployed can be applied to all building types with variable occupancy schedules and density. The measures have wide applicability for improved Energy Use Indexes, and are test-case improvement strategies to deploy “Smarter Buildings” and leverage GHG reductions. **Anaerobic digesters:** Cities and counties are looking for solutions to solve the waste problem and having these decentralized, community systems will reduce GHGs and build sustainable economic models within a circular economy model. These investments will lead to private sector investment for larger, right-sized systems attracting carbon asset investors.

# **2. Impact of GHG Reduction Measures**

Table 2 lists the total cumulative GHGs reduced in the short and long term as well as cost effectiveness. The total cost effectiveness of $2,342/MTCO2e includes staffing to contract subawards and support implementation. Factors that may impact cost are supply chains and procurement for vehicles, solar panels, and other construction materials. The cost effectiveness does not include impacts due to increased resilience from most measures. Please see Technical Appendix (“Techappx”) for documentation of all GHG reduction assumptions and the “GHGCalcs” for the GHG emissions calculations spreadsheet.

**Table 2. Impacts of Washington Measures**

|  |  |  |  |
| --- | --- | --- | --- |
| **Measure** | **Cumulative GHG 2025-2030 (MTCO2e)** | **Cumulative GHG 2025-2050 (MTCO2e)** | **Cost of GHG Reductions ($/MTCO2e)** |
| VMT reduction | 3626 | 18,130 | $2482 |
| Rail infrastructure | 3858 | 177,456 | $3164 |
| Vehicle-to-grid | 1016 | 5808 | $13,374 |
| Tribal fleet electrification | 2267 | 12,132 | $3494 |
| Tribal clean energy | 13,930 | 69,651 | $1144 |
| District energy (SCC) | 2916 | 15,878 | $3612 |
| District energy (WWU) | 5170 | 31,021 | $940 |
| Anaerobic digesters | 2190 | 10,155 | $1395 |
| TOTAL | **34,973** | **340,231** | **$2342** |

# **3. Environmental Results – Outputs, Outcomes, and Performance Measures**

## 3a. Expected Outputs and Outcomes

Table 3 provides a roadmap for tracking success for each measure. All measures include short- and long-term GHG reductions as well as measure specific key performance indicators.

**Table 3. Environmental Results of Washington Measures**

| **Outputs** | **Outcomes** | **Performance Measures** |
| --- | --- | --- |
| **VMT reduction through water transportation** | | |
| * 6 barge roundtrips per week (2x increase) * Incentive available to qualified barge operators * 1-2 barge operations established or expanded in the Puget Sound/Strait of Juan de Fuca region | * GHG reduced: 3626 MTCO2e (2025-2030) and 18,130 MTCO2e (2025-2050) --2x current rate * 700,000 VMTs reduced on Highway 101 per year, 17 million VMTs reduced in LIDACs through 2050 * Reduction of 150 tons of NOx through 2050 * 2x increase in freight volumes moved by barge | * GHGs, HAPs and CAPs * Amt. of Increased barge traffic and freight volumes in the Strait of Juan de Fuca and Puget Sound |
| **Enable decarbonization of rail infrastructure** | | |
| * 24 additional locomotives upgraded by 2030 * 144 additional locomotives upgraded by 2050 * 1 H2 fueling station added * 1 blast booth conversions from a wet-to-dry process * 6-8 new jobs created * 100 annual apprenticeships | * GHG reduced: 3,858 MTCO2e (2025-2030) and 177,456 MTCO2e (2025-2050) * First-in-nation zero emission hydrogen fuel cell locomotive * Improved air quality * Apprenticeship program to support 20-25 students per quarter or six-month rotation | * GHGs, HAPs and CAPs * # of locomotives upgraded to Tier 3 and 4 (and increase from expected) * Workforce development program participation * # of apprenticeships that result in career wage jobs |
| **Vehicle-to-grid integration for resilience** | | |
| * 87 vehicles electrified * 33,000 gallon reduction in annual gasoline consumption * 2 sites for V2G to support grid resilience | * GHG reduced: 1,016 MTCO2e (2025-2030) and 5,808 MTCO2e (2025-2050)-- 80% reduction in vehicle emissions * Increased grid benefit emissions reductions—especially for LIDACs during extreme heat events | * GHGs, HAPs and CAPs * Grid benefit emissions reductions (develop grid benefit metrics) * LIDACs impacted during extreme heat events |
| **Tribal fleet electrification** | | |
| * 40 vehicles electrified * 230 kW of solar arrays installed (5 total) * 5 battery energy storage systems * Solar 101 seminar for Tribal and community members about career pathways in renewable energy. | * GHG reduced: 2,267 MTCO2e (2025-2030) and 12,132 MTCO2e (2025-2050) * 80% of fleet to zero emissions vehicles by 2030 * Economic value of solar = $24,000/yr., $640,000 over lifetime of panels * Displace over 18,000 gallons of gasoline and/or diesel fuel | * GHGs, HAPs and CAPs * Fuel cost savings/year |
| **Tribal Clean Energy grant program** | | |
| * 6 -50 new Tribal projects * Specific carve out for federally recognized Tribes in WA | * GHG reduced: 13,930 MTCO2e (2025-2030) and 69,651 MTCO2e (2025-2050) * Increased Tribal energy sovereignty and resilience * Deploying projects to Tribes not having received funding in previous Commerce grants | * GHGs, HAPs and CAPs * Amount of renewable energy capacity constructed * Amount of storage capacity constructed * Health disparities on Tribal lands |
| District energy systems (SCC) | | |
| * 5 buildings upgraded as part of Eco District * 1 electric boiler * Coursework on building assessments | * GHG reduced: 2,916 MTCO2e (2025-2030) and 15,878 MTCO2e (2025-2050) for entire EcoDistrict * 25 students engaged (through coursework and outreach) per year | * GHGs, HAPs and CAPs * Cost of steam service * Electric boiler operation metrics (e.g. electricity consumed, GHGs emitted) * # maintenance tasks * Hot water BTUs produced |
| District energy systems (WWU) | | |
| * 2 science buildings w/exhaust heat air recovery retrofitted * 6 academic buildings HVAC controls upgraded * Total 774,000 sf improved | * GHG reduced: 5,170 MTCO2e (2025-2030) and 31,021 MTCO2e (2025-2050) * Electrical Grid benefit of 678,937 kWh avoided and available for other uses * Co-pollutant reduction from less Natural Gas combustion | * GHGs, HAPs and CAPs * Natural gas usage * Electricity usage |
| Anaerobic digesters | | |
| * 2 installations * 2 local communities engaged * Guild formed to further technology advances and apprenticeship programs * 3-8 local jobs created | * GHG reduced: 2,190 MTCO2e (2025-2030) and 10,155 MTCO2e (2025-2050) * 3,550 tons of food waste diverted from landfills (2025-2030); 14,200 tons (2030-2050) | * GHGs, HAPs and CAPs * Energy (BTUs) generated * Carbon credits created * Tons of food waste diversion |

## 3b. Performance Measures and Plan

|  |
| --- |
| **VMT reduction through water transportation:** PPA will track the following metrics and compare with 2023 baseline data: weekly cargo amounts loaded onto/from barges; weekly # of barge trips between PPA and partner ports/logistics facilities; # of VMTs to haul freight (with support from partners). PPA will also calculate emissions reductions based on updated barge trips and VMTs tracked from 2025-2030 and 2025-2050. |
| **Enable decarbonization of rail infrastructure:** Locomotive conversion requires 16 different steps over the course of 4-6 months. POVA will work with partners Cummins and Western Rail to track and report progress, including through strategy planning efforts like the Growth Management Act comprehensive plan required by the county. |
| **Vehicle-to-grid integration for resilience:** Spokane will work with Avista to track and measure progress for: GHG reductions from the conversion of combustion vehicles to EV, the number of EV replacements and mileage traveled will be tracked, as well as the vehicle’s kWh/mile efficiency. EV mileage data will be tracked through the installation of telematics to ensure high quality data sourcing. Criteria air pollutants will be calculated from the annual mileage tracked and fleet exhaust emission factors available from EPA. Emission reductions from the grid benefits portion of the project will be tracked and reported by Avista, who is required to report to the state utility commission on clean energy projects and benefits. |
| **Tribal fleet electrification:** CIT will use metrics developed for forthcoming Fleet Decarbonization plan for tracking progress ($ saved, GHG emission reduced, etc.) and this information will further inform future procurement of EVs per the plan. The renewable energy produced by these solar arrays is expected to be in excess of 30,000 kWh per year. The electricity produced from the solar arrays will be monitored and measured by the solar energy contractor and a dashboard will be created for CIT use and report to EPA. |
| **Tribal Clean Energy grant program:** Commerce will evaluate funded projects and report on progress towards environmental goals as well as dollars spent per Tribe. These metrics will be used internally to inform clean energy grant programs. The Tribal Clean Energy Policy Specialist (not funded under CPRG) can design outreach and reporting to Tribes based on Tribal needs and priorities. |
| **District Energy Systems (SCC):** An Energy Management Information System will be deployed to remotely monitor the EcoDistrict system performance. KPIs that will be monitored include: electric boiler operation to ensure electric boilers will only operate as last stage of heating; thermal charging controlled to minimize annual kW and billed kW; preventative maintenance tasks to ensure completion as specified in the ESCO contract; EcoDistrict Operation Service Level Agreement to remotely troubleshoot and dispatch onsite staff for service requests; HW Plant Uptime and COP vs Outside Air, HW BTUs produced Demand Limiting, Automated Demand response to optimize system performance. |
| **District Energy Systems (WWU)**: The buildings included in these measures have individual steam and electrical sub-metering within our district energy system. Meter readings are collected monthly and will be monitored to show energy reduction. The overall progress of the project will be tracked and reported to an internal energy dashboard for on campus users, Washington State Clean Buildings required reporting, and uploaded to “SiMap” a national higher education GHG reporting platform. |
| **Anaerobic Digesters:** A consultant will develop a framework for reporting GHG reductions, renewable energy generated, food waste tons diverted with Ecology’s Sustainable Materials Management strategy and will work closely in developing data sharing with the Washington Center for Sustainable Food Management tasked with measuring data to measure progress towards the 2030 diversion goals. |

## 3c. Authorities, Implementation Timeline, and Milestones

This section provides the lead agency and role, authority for that agency to implement and partners to implement project (italics). Asterisk (\*) indicates a letter of partnership has been provided by this entity.

**VMT reduction through water transportation**

Port of Port Angeles\*: Purchase vessels and lease to qualified barge operators; establish and manage an incentive program for barge operators; pursue maritime business development and cargo handling opportunities Authority: RCW 53.08.040

*Barge Operators: Manage and implement tug-and-barge operations between ports*

*Natural resources industry partners: Role: Manufacture goods and opt to ship their cargo via water transport (\*see letters of support from Port Angeles Hardwoods and Sierra Pacific Industries)*

**Enable decarbonization of rail infrastructure**

Pend Oreille Valley Railroad\* Project Lead, Conversion Technicians and Diesel Mechanics; Authority: RCW 53.20.010 – 04; RCW 53.08.245.

*Western Rails, Inc.\*: Contract negotiations, bid procurement, and transport.*

*Cummins Diesel: Field Expertise, Supplier, Engineers*

**Vehicle-to-grid integration for resilience**

City of Spokane\*: Purchasing of EV’s; coordination with transit agency Authority: RCW 70A.15; RCW 36.70A.096; RCW 19.405; SMC 15.05.050

*Avista\*: Design, procure and install utility infrastructure and EVSE; assist with V1G and V2L development, deployment, ongoing operations and analysis/iteration. \*\*See Spokane and Avista MOU in Attahcements\*\**

**Tribal fleet decarbonization**

Cowlitz Indian Tribe Public Works Department\*: Procure vehicles and solar panels; pre-design, permitting and construction; Authority: see Tribal Council Resolution in Attachments.

**Tribal clean energy grant program**

Washington State Department of Commerce: Grant and contract management; Outreach and engagement; Tribal Coordination (with Commerce Office of Tribal Relations); Authority: ten provisos in both the 2023-25 Biennium Capital and Operating Budgets.

**District energy systems (SCC)**

Seattle Central College\*: Operations and maintenance of state owned campus; capital project management; contracting agent; Authority: RCW 19.27A.210; (RCW 70A.45)   
*McKinstry* (ESCO): Implementation of project; *Seattle City Light\*: Incumbent utility, partner on supporting new load; Washington Department of Enterprise Service (DES): Project Oversight; contract management for ESCOs*

**District energy systems (WWU)**

Western Washington University\*: Operations and maintenance of state owned campus; capital project management; contracting agent. Authority: RCW 19.27A.210; (RCW 70A.45)

*City of Bellingham Building Dept. Authority having jurisdiction to issue permits*

**Anaerobic digesters**

Department of Commerce: Grant lead; RFP coordinator for third party implementer

City of Tenino\*and Pierce County\*: Project owners; Authority: Organics Management Law (HB 1799); WAC 173-350-250

*Tenino project: Thurston EDC\* (manager of AgPark, see letter of commitment with City of Tenino), Colvin Cattle Ranch (farmer/tenant of AgPark), WSU Extension Service*

*Pierce County project: Purdy Transfer Station*

### Tasks and Milestones

The following Gantt chart summarizes measure specific tasks and milestones. All timelines include necessary quarterly reporting and close out activities for CPRG grants. Commerce will subaward funding in the quarter following funding becoming available.

| **Activities** | **Milestone** | **‘24** | **‘25** | **‘26** | **‘27** | **‘28** | **‘29** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Overall Project Management – all measures** | | | | | | | |
| CPRG Reporting | Semi-annual; Closeout (X) |  |  |  |  |  | X |
| **VMT reduction through water transportation** | | | | | | | |
| Install spud and island barge | Purchase island and spud barge (X) *Q1*  Install at Port (\*) *Q2-3* |  | X \* |  |  |  |  |
| Identify firm to lease barges | Sign documents to lease barge (X) *Q3*  New inland barge begins operations (\*) |  | X | \* |  |  |  |
| Develop and launch incentive program | Legal review and Commission approval, *Aug* |  |  |  |  |  |  | |
| Application open, *Oct* |  |  |  |  |  |  | |
| Enroll 1-2 participants, *Q1* |  |  |  |  |  |  | |
| Program administration; Program close out (X) |  |  |  |  |  | X | |
| **Enable decarbonization of rail** | | | | | | | |
| Shop building design and construction  *Goal by 2027: 6-8 locomotives converted/yr.* | Finalize feasibility study and permitting *2/25*  Hire contractors and complete permits, *4/25*  Material supply order and land excavation, *5/25*  Complete construction (X) *3/26*  Conversations begin (\*) and continue |  |  | X \* |  |  |  |
| Dry blast booth | Order prefab booth (*1/25*) and install (*7/25*) |  |  |  |  |  |  |
| Hydrogen fueling station | Procurement, site prep and installation, *Q1*  Proof of concept, partnership with PNWH2Hub for market analysis, *Q2* |  |  |  |  |  |  |
| Locomotive apprenticeship program | Collaborate with partners, *Q1*  Seek national apprenticeship accreditation for certification and micro-credentialing, *Q2*  Inaugural class (X) *fall 2027* |  |  |  | X |  |  |
| **Vehicle-to-grid integration for resilience** | | | | | | | |
| Purchase 87 EV | Receive 20 EVs, *Q3;* Commission 20 EVs, *Q4* (X)  Receive 30 EVs; Q3; Commission 30 EVs, Q4 (\*)  Receive 37 EVs, Q3; Commission final 37 EVs Q4 (#) |  | X | \* | # |  |  |
| Vehicle grid integration planning | RFP for smart software, select proposal  Assess sites for placement of charging equipment for V1G demo (medium voltage, 3-phase line extensions, new service points, and dedicated service transformers)  Assess, select 2 pump stations for the mobile power solution (V2L demo)  Pre-engineering assessment and design for EVSE |  |  |  |  |  |  |
| Smart charging systems for vehicle-to-grid integration (V1G) | Purchase, test and install hardware and software at 6 locations (begin with Water Dept.) (X)  Complete construction (Water Dept. site) and begin smart charging demonstration (\*)  Finish installation at five other sites and add to smart charging demo (#)  Complete demo and close out (&) |  |  | X | \* | # | & |
| Mobile power solution for vehicle-to-load (V2L) | Select demo EVs to use for connecting btw. hardware and smart software; Install compatible systems at two pump station locations (X); Begin full demonstration at each pump station, collecting data, analyzing procedures (\*); Complete and close out demo (#) |  |  | X | \* |  | # |
| Public Education/Information | RFQ for public engagement consultant (X)  Purchase media service for 4 years of projects (\*)  Identify and communicate community feedback and demonstration outcomes through communication channels and public outreach (#) |  | X | \* |  |  | # |
| **Tribal fleet electrification** | | | | | | | |
| EV procurement | Collect bids from dealerships (X)  Order new vehicles per CIT procurement code (\*)  Sell replaced gas powered vehicles (#) | X | \*# |  |  |  |  |
| Solar arrays | Site assessment and energy analysis and complete system design (X); Permitting (dependent on utility/city processes, could cause delay) (\*); Systems installation (supply chains could cause delay) (#); Systems inspected and commissioned (&);System monitoring (^) | X | \* | # | & | ^ | ^ |
| **Tribal Clean Energy Grant** | | | | | | | |
| State funded grant program | Tribal coordination, outreach in support of federally funded program; Award $16 million in state funding by end of 2024 |  |  |  |  |  |  |
| CPRG funded program  *If necessary, further funding rounds in summer and winter 2025* | Request for Applications posted: 2/2025  Pre-Application Conferences (2): Q1 2025  Announce awards: 4/2025  Contracting Q3-4/2025 |  |  |  |  |  |  |
| **District energy systems (SCC)** | | | | | | | |
| Contracting | Review of contract by Washington DES  Development to Construction Handoff (X) – includes subcontracting, logistics and schedule dev, safety review, subcontractor preconstruction activities  Contracting complete (\*) |  | X | \* |  |  |  |
| Construction | Construction begins (X)  Phase 2 Work (\*) 7/2025-12/2025  Basement/SAM work and third party inspections (#) 1/2026-11/2026  Flushing and startup of equipment Q4/2026 (&)  Construction complete and operational (^)  Ongoing monitoring and optimization 2027-2029 |  | X\* | #& | ^ |  |  |
| Staff training |  |  |  |  |  |  |  |
| **District energy systems (WWU)** | | | | | | | |
| Contracting | Contract with turn-key construction contractor |  |  |  |  |  |  |
| Construction | Complete construction docs and apply for permits (X)  Program building controls for template modules (10/2025-12/2025)  Implement pilot controls projects during winter (12/2025-1/2026)  Advance material procurement for long lead items (Q1-2 2026)  HVAC controls and heat recovery construction begins Q1 2026 (\*)  HVAC controls programming implementation, commissioning and construction closeout Q4 2026 (#) |  | X | \*# |  |  |  |
| Communication | Coordinate any disruptive project impacts with faculty  Coordinate any end-user controls interface with stakeholders. |  |  |  |  |  |  |
| Monitoring | Begin measurement and verification process |  |  |  |  |  |  |
| **Anaerobic digesters** | | | | | | | |
| Install digesters | Build digesters (Six months for three digesters), Q4 2024- Q1 2025 (X) |  | X |  |  |  |  |
| Project development | Secure site, feedstock, and energy; partner with digestate end users; develop business plan for collecting revenue; hire and train operators Q1-2 2025 |  |  |  |  |  |  |
| Operate digesters | Start Q3-4 2025 (X); Continuous operation 2026-2030 |  | X |  |  |  |  |
| Community outreach | Conduct meetings and open house for projects (X)  Develop case study materials, Provide tours (\*) |  |  | X\* | X\* | X\* | X\* |
| Reporting | Develop data collection with Ecology (X);Reporting (\*) |  |  | X | \* | \* | \* |

# **4. Low-Income and Disadvantaged Communities (LIDACs)**

## 4a. Community Benefits

The “Areas” attachment includes the full list of LIDACs by measure. Table 4 shows the direct and indirect benefits to LIDACs. Potential disbenefits and plans and processes for continuing to assess, quantify, and report benefits to communities are detailed below the table for each measure. Grant recipients will be required to submit to EPA an analysis of these benefits.

**Table 4. Potential Benefits and Disbenefits to LIDACs by Measure**

| **Benefits to LIDACs** |  |
| --- | --- |
| **VMT reduction/water transportation** | **Enable decarbonization of rail infrastructure** |
| * 500,000 fewer VMTs/yr. * 700+ tons of CO2 reduced/yr. * 6 tons NOx reduced/yr. * Increased pedestrian safety: 1 fewer large truck/5 yrs. * Increased economic resiliency from reduced use of Hwy. 101 | * Between 10,671-11,679 annual CO2e avoided * HAPs/CAPs reduced from avoided diesel emissions * 8-10 jobs maintained * 6-8 jobs created * 100 annual apprenticeship opportunities for micro credentials |
| **Vehicle-to-grid integration for resilience** | **Tribal fleet decarbonization** |
| * Increased air quality: 43 kg Non-methane organic gases; 143 kg NOx; 1,996 kg CO; 38 kg PM; 9 kg Formaldehyde (HCHO) * Increased grid resilience[[18]](#footnote-19) | * Increased air quality from GHG reduced: 2,267 MTCO2e (2025-2030), 12,132 MTCO2e (2025-2050) and co-pollutants reduced annually: 160 lbs. NOx; 230 lbs. VOCs * $24,000 economic benefits annually   Increased resilience |
| **Tribal Clean Energy grant program** | **District Energy Systems (SCC)** |
| * Support Tribal sovereignty * Increased resilience * Increased deployment of renewable energy that supports Tribal priorities | * 95% reduction in campus emissions * More resilient campus infrastructure * Greater safety for maintenance/operations crew |
| **District Energy Systems (WWU)** | **Anaerobic digesters** |
| * Reduced natural gas combustion emissions from WWU’s Steam Plant and from nearby natural gas fueled electrical generation plants | * Reduce food waste trucking to landfills and methane emissions at landfills: * Graham, WA landfill ~40 miles from Purdy, WA * Cowlitz County, WA landfill ~117 miles from Purdy |

**Assessing Disbenefits**: Washington’s HEAL Act requires that all measures conduct an Environmental Justice Assessment to identify any disbenefits to LIDACs and determine how to mitigate those impacts as part of program design and implementation. All projects must provide formal Tribal consultation and adhere to best practices for community engagement per agency specific requirements. Best practices include working with the Department of Archaeology and Historic Preservation to conduct a Cultural Resources review process for any project that has the potential to impact culturally significant and/or historic artifacts, properties, or sites. Some measure specific disbenefits that have been identified at this time include: **VMT reduction through water transportation:** Potential disturbance/noise pollution for marine life with increased barge traffic. **Mitigation**: PPA will work with tug operators on volunteer slowdown efforts. Tug operators are required to undergo regular drydocking to clean and maintain tugs’ hulls and propeller blades, which reduces underwater noise production. Shipping freight over water avoids wear and tire on tires, which shed 6PPD-quinone.[[19]](#footnote-20) Visual Impact due to new charging and fueling. **Mitigation**: Design infrastructure and facilities that blends with the natural landscape and involve community members in the planning process to ensure their concerns are addressed. Safety concerns with handling alternative fuels and new infrastructure. **Mitigation:** Invest in training programs/safety protocols for handling alternative fuels and operating new technologies. Conduct risk assessments and implement emergency response plans to mitigate potential hazards. **Enable decarbonization of rail infrastructure:** Noise pollution from locomotive engines**.** **Mitigation:** Include noise-reducing technologies in engine conversions and noise mitigation measures, such as sound barriers or vegetation buffers along railway lines. Visual Impact due to new charging and fueling. **Mitigation**: Design infrastructure and facilities that blends with the natural landscape and involve community members in the planning process to ensure their concerns are addressed. Safety concerns with handling alternative fuels and new infrastructure. **Mitigation:** Invest in training programs/safety protocols for handling alternative fuels and operating new technologies. Conduct risk assessments and implement emergency response plans to mitigate potential hazards. **Tribal Clean Energy grant program:** Clean energy projects that are compliant with Washington state law may have long term impacts on critical habitat or ecological functions and do not align with Tribal interests**. Mitigation**: The Environmental Justice Assessment will ensure that funded projects align with Tribal land use priorities and do not result in environmental harms. **District Energy Systems (SCC+WWU):** The construction process will generate additional traffic into the area and any noise pollution will be contained within the buildings. **Mitigation:** Project leads will work with campus operations to schedule construction at low volume times. **Anaerobic Digesters:** Odor as a potential nuisance. **Mitigation**: Projects will be community-led and will build off existing outreach.

The following provides measure specific plans to assess, quantify, and report benefits to communities:

|  |
| --- |
| **VMT reduction through water transportation**: To assess community impacts, PPA and its partners will carefully track where and how much freight is being moved by barge. Using distances between manufacturers and barge facilities, PPA will calculate the number of short-haul VMT and compare that with the VMT generated in a long-haul trucking scenario. From these VMT calculations, PPA can determine reductions in emissions including CO2, NOx, PM2.5, and CO and can further break down this data at a county or census-tract level. PPA will identify opportunities to share progress and impacts with the public, such as the Clallam Economic Development Council’s popular weekly “coffee chat” which features a presentation from a local leader followed by a public Q&A session. |
| **Enable decarbonization of rail infrastructure:** POVA will work with partners Cummins and Western Rail to track and measure GHGs, HAPs, and CAPs emissions due to diesel fuel reductions. Success and benefits from these projects, such as locomotive conversions and workforce, can be reported to the surrounding community throughout the grant period through a variety of means (e.g. newsletters, social media, and community engagement sessions). |
| **Vehicle-to-grid integration for resilience:** Spokane will contract for a communications consultant to share progress and technology with the community, such as Avista’s ability to address peak power needs by using newly procured EVs to reduce power outages. The use of mobile solutions support LIDACs without increasing GHG emissions. Spokane and Avista will also work together to report these emissions impacts as part of the biennial City GHG inventory, which covers both community and local government emissions, summaries of reduction estimates for NMOG, NOx, CO, PM, formaldehyde, and CO2e will be reported to the public for this measure. |
| **Tribal fleet electrification**: The renewable energy produced by these solar arrays is expected to be in excess of 30,000 kWh per year. The electricity produced will be monitored and measured by the solar energy contractor and a dashboard will be created for CIT use and report to the EPA. |
| **Tribal Clean Energy grant program:** The passage of the Healthy Environment for All (HEAL) Act[[20]](#footnote-21) in 2021 seeks to eliminate environmental and health disparities among communities of color and low income households. The law establishes a clear definition of environmental justice (EJ)[[21]](#footnote-22) for Washington that builds on EPA’s definition. It is the first law in Washington to create a coordinated state agency approach to EJ, requiring covered agencies, including Commerce, to incorporate EJ as part of agency work, including developing community engagement plans and Tribal consultation frameworks, and conducting environmental justice assessments[[22]](#footnote-23) for certain actions, including new grant programs and projects over $12 million. The HEAL Act requires agencies to focus expenditures toward creating environmental benefits for overburdened communities and vulnerable populations **and sets a goal of 40% of expenditures to these communities, in line with the Justice40 initiative**. |
| **District Energy Systems (SCC):** The EcoDistrict thermal and cooling system will be monitored for uptime, fault detection and preventative maintenance to minimize disruption to instructional spaces that serve this student population. The implementation of an Energy Management Information System as a part of this project will provide advanced analytics to ensure system performance. Washington has set aggressive targets for all state agencies to reduce GHG emissions and state agencies must report data to The Washington State Agency GHG Emissions Reporting Program. Washington has also adopted a Clean Buildings Performance program which requires owners of larger buildings to report to Commerce on the energy use of their buildings and meet or exceed prescribed Energy Usage Intensity Targets. Building owners must report on compliance with the standard by the relevant deadline and then every five years starting in 2026. In 2023, the City of Seattle adopted its own Building Emissions Performance Standard which parallels the state; this law will require continuous monitoring of GHG reduction measures and energy use, as well as reporting on progress against specific GHG reduction targets by 2030. |
| **District Energy Systems (WWU):** WWU reports emissions from the Steam Plant to the Northwest Clean Air Agency and will track and report the changes that occur during the project period. WWU also trends overall electrical consumption and will track those GHG reductions. The same statewide requirements described above for SCC apply to WWU. |
| **Anaerobic Digesters**: Commerce will hire a third party administrator (TPA) to support reporting for all three projects. The specific benefits that will be assessed and quantified include GHG reductions, renewable energy generation replacing fossil fuels, locally produced organic fertilizer for local farms, and community building around climate change and research and education. Each project will have a unique set of stakeholders and the TPA can support community engagement and reporting out to communities in line with state HEAL Act requirements. |

## 4b. Community Engagement

This section provides details on (1) input for developing measures and (2) planned engagement for implementation. Where relevant, details on planned workforce development have been included.

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| **State EJ requirements for Commerce**   * Programs will be subject to an Environmental Justice Assessment (EJA) under the State’s HEAL Act and require an assessment of environmental harms and plans to address environmental and health disparities in overburdened communities. The EJAs includes Tribal consultation, community engagement, analysis, and publication of assessment, ensuring language translation and access * To support HEAL, the state has an EJ Council with members appointed by the Governor who advise covered agencies on incorporating EJ into agency activities. |
| **VMT reduction through water transportation** |
| **(1)** PPA worked with the Clallam County Economic Development Council and the Natural Resources Innovations Center to engage with business leaders, including employers in LIDACs. In winter 2023, PPA had 2 meetings with the business community, who support increased barging infrastructure and water transport capabilities. The natural resources industry community in nearby counties have expressed strong support for barging. Business leaders representing forest products, composites manufacturing, and logistics industries have identified freight transportation as a major barrier to economic growth on the Olympic Peninsula. **(2)** PPA will continue to engage with community and industry leaders through existing monthly meetings, which could increase in cadence and scope as needed. PPA will create a public engagement plan to solicit feedback and concerns from communities throughout the grant lifecycle. Options for public engagement include open sessions at regularly scheduled Port Commission meetings, online surveys, and community newsletters. PPA will establish quarterly listening sessions to ensure opportunity for the community to share concerns or questions. |
| **Enable decarbonization of rail infrastructure** |
| **(1)** POVA’s comprehensive plan[[23]](#footnote-24) includes a mission to maximize public resources through collaborative efforts and is committed to facilitating meaningful employment opportunities across region that a) seek out businesses that will provide opportunities for long-lasting, meaningful employment at wages that support families; b) preserve multi-modal transportation in the county; and c) provide open communication to all the citizens of the county. **(2)** POVA intends to provide public communication (e.g., newsletters, newspaper articles, social media, community information sessions). POVA also supports private investment and partnerships that create jobs, provide infrastructure, and promote economic vitality across the region. **Workforce development**: Usk, WA has an unemployment rate of about 9.2% (the 2nd highest in WA). Its rural location makes attracting new businesses challenging; many residents depend on jobs from the railroad. POVA intends to scale their catalytic workforce development program to train, place, support, and retain a diverse workforce in the region that meets the growing labor demands in clean energy. POVA anticipates hiring at least 6 to 8 additional full-time staff and having at least 20 to 25 students per quarter in an apprenticeship program that will teach a variety of industry skills and provide hands-on experience while working on at least two locomotive rebuild projects during that time. For the apprenticeship program, partners include area high schools, community colleges and technical schools, as well as with the Kalispel Tribe of Indian’s Career and Technical Center (KCTC). |
| **Vehicle-to-grid integration for resilience** |
| **(1) and (2)** A public education series will be created as part of this project to raise awareness of the benefits of converting fleets to EVs, the public health benefits within LIDACs as well as City wide and to showcase this demonstration project. A communication plan will be developed that will create a 4 year strategy goals, messaging, communication channels, and measurable outcomes. Communication strategies will include existing City resources such as email, social media, partner agency collaboration, public meetings, community surveys, and more. To establish awareness, paid media will also be incorporated. The team will look to raise awareness at the beginning of the work and then maintain the awareness through ongoing outreach and with a community report at the end to report out what was learned and how GHG reductions were achieved. |
| **Tribal fleet electrification** |
| **(1)** Newsletters are sent to all Tribal Members each week that highlights changes, introduced measures or laws, and resource information. Every topic that is brought to the Tribe goes through a vigorous review and approval process. Leadership then reviews the project at Tribal Council and ensures what is being introduced coincides with the values of the Tribe and benefits the community. If leadership takes no issue with the project, the project will be taken to a vote. This project was introduced to Tribal leadership as a Resolution and was approved for implementation. **(2)** CIT will conduct a Solar 101 seminar to educate Tribal and community members about solar energy and career pathways in renewable energy. |
| **Tribal Clean Energy grant program** |
| **(1)** Commerce conducted an RFI in fall 2023 to help inform the overall approach for the new Tribal Clean Energy grant program using state funds. To collect additional feedback Commerce held 2 listening sessions in January 2024 and attended Tribal conventions to present and request feedback. **(2)** As part of the federally funded program, Commerce will host listening sessions to gather feedback from Tribal partners and continue collaboration and receive feedback on how to improve the existing program. Commerce will work in close partnership with the Commerce Tribal liaisons and leadership to engage in one-on-one meetings with Tribes as requested. The ongoing nature of the application process will allow Commerce additional engagement opportunities through fall of 2024 to further collaborate and provide guidance to less-resourced Tribal applicants. |
| **District energy systems (SCC)** |
| **(1) and (2)** The Seattle Colleges District’s mission is centered in creating economic opportunity and fostering a diverse, engaged, and dynamic community and sees accessibility, collaboration and diversity, inclusion and equity as core values. SCC will engage the Washington Community and Technical College community in the implementation of this project to share lessons learned, report on progress, and encourage duplication. The project team will have regular report outs on Eco District progress and key performance metrics. The team will also table at student events at least quarterly to raise the student body awareness of the project and of building decarbonization. The project will be presented to campus faculty as an opportunity to develop curriculum related to the project across academic, skilled trade and technical programs to maximize student engagement and benefit from the project. |
| **District energy systems (WWU)** |
| **(1) and (2)** WWU’s Institute for Energy Studies promotes cross-disciplinary energy and environmental course work and is a local think tank on energy and climate issues which hosts a speakers series. Specific community outreach for these CPRG projects is another opportunity to leverage the Facilities Departments partnership with the Institute. On campus WWU has created the Multicultural Center to support students with marginalized identities. Among these groups are the Native American Student Union and the Office of Tribal Relations. This office maintains close ties to all the Salish Sea Tribes. |
| **Anaerobic Digesters** |
| **(1)** Tenino: Previous work on the AgPark and Tenino Microgrid project have provided opportunity to bring partners together. Tenino leveraged coordinated outreach through WSU Extension Service and with Farm Operations in regions with potential digestate. Pierce County: Outreach includes Food Waste Prevention Week, existing websites, and summer outreach at farmers markets. **(2)** Commerce will hire a third party implementer for all three projects to support outreach and marketing in alignment with HEAL Act. |

# **5. Job Quality**

Recent modeling[[24]](#footnote-25) shows a 17% increase in energy employment in the Northwest by 2030, driven by net growth in buildings (22%), electricity (43%) sectors and clean fuels sector (19%). Employment supported by the transportation sector will increase by about 1% (approximately 2,000 net jobs) between 2021 and 2030. For all sectors, it will be important to promote strategies such as labor union pathways, prevailing wage requirements, apprenticeships, and project labor agreements to ensure job quality is a priority in the transition to a clean energy economy. Labor unions are a valuable part of the energy workforce ecosystem in Washington; the state has the country’s third highest unionization rate: nearly one in five workers belonged to a union in 2022.[[25]](#footnote-26) In alignment with state policy, Washington will continue to assess workforce opportunities to help ensure that CPRG funds will generate high-quality jobs. In 2023, Washington's legislature directed the state's Workforce Training and Education Coordinating Board to support an equitable clean energy transition by identifying future industry occupations and skill needs, the existing transferrable skills to meet those needs, and the gaps that need to be addressed. This work will be informed by a Clean Energy Technology Workforce Advisory Committee (CETWAC) that is chaired by representatives of both the labor and the business community. This work will provide more understanding of ways to provide additional training opportunities for clean energy jobs and mitigate the impact to workers and business as climate change policies are enacted. To provide a centralized repository of resources and programs, Washington has also developed a Climate Commitment Act website to provide access to clean energy career resources for programs.[[26]](#footnote-27) One example is the Washington Climate Corp Network (WCCN), which was created by the same legislation that created the CETWAC. WCCN was modeled after AmeriCorps and engages young adults and veterans in service projects that provide career training in climate resilience fields.

# **6. Programmatic Capability and Past Performance**

As a state executive-level agency tasked with implementing programs across Washington with both state and federal funds, Commerce is well-suited to effectively administer the CPRG grant and subawards to local governments and Tribes. For the 2023-2025 budget biennium, **Commerce is administering a budget of $7.9 billion, including a $5.1 billion in capital funding, one of the largest capital budgets amongst Washington state agencies**. Much of the funding is provided to Commerce from the state legislature to support direct and competitive grants to communities across the state.

Commerce is governed by a set of accounting and budget policies that ensure efficiency in how the money flows into the agency, how it is documented and accounted for, and how reporting is conducted. These policies include risk management, the federal award process, and cost allocation to programs. All of these policies are in alignment with Washington's Office of Financial Management, which sets the grounding accounting and administrative policy for the state, and following Commerce’s financial management policy, which among other requirements, directs Commerce to design financial policies, procedures, and practices “to be compliant with federal and state laws and regulations.”

As an entity that manages more than 100 programs, Commerce has robust processes around competitive procurement, which are in alignment with federal requirements. These policies include requirements around record retention, conflicts of interest, and documentation around contracting decisions. Commerce also has internal audit and control policies in place to effectively manage risk and prevent waste, fraud, and abuse of funds, and to respond to any findings of our state’s Single Audit.

## 6a. Past Performance

Commerce has wide experience in receiving, managing, and reporting on federal grants and complying with the Code of Federal Regulations’ requirements for administering grants. In addition to the awards below, Commerce will be administering and reporting on new grants funded under the Infrastructure Investment and Jobs Act and Inflation Reduction Act. All of the below grants were successfully managed or are being successfully managed, if currently funded, due to Commerce’s strong internal controls.

**State Energy Program,** U.S. Department of Energy (ALN: 81.041): This funding is for states to enhance energy security, advance state-led energy initiatives, and increase energy affordability. Commerce’s Energy Division has had multiple assistance agreements with DOE, including this recent one:

* EE0008296: 07/01/2018 - 06/30/2022, $2,871,110, Henry Fowler (DOE)

**Weatherization Assistance Program**, U.S. Department of Energy (ALN: 81.042): This funding supports the weatherization of homes to reduce energy burden of households. Commerce’s Energy Division has had multiple assistance agreements with DOE, including these recent ones:

* EE0007957: 07/01/2017 - 06/30/2022, $26,564,935, Sasha Tidwell (DOE)
* EE0009938: 07/01/2022 - 06/30/2024, $12,394,823, Sasha Tidwell (DOE)

**Lead-Based Paint (TSCA Title IV),** U.S. Environmental Protection Agency (ALN: 66.707):This funding was to Commerce’s Community Services Division to develop and/or carry out lead-based paint programs.

* PBG-01J64503: 10/01/2021 – 09/30/2022, $459,454, Kim Farnham (EPA)

**Victims of Crime Act (VOCA) Formula Grant, U.S. Department of Justice (ALN: 16.575):** This funding was through Commerce’s Community Services Division to support crime victim assistance programs.

* 2018-V2-GX-0046: 10/01/2017-09/30/2022, $73,702,737, Malgorzata Bereziewicz (DOJ)

## 6b. Reporting Requirements

For the above grants, Commerce was able to successfully complete and manage these agreements, in line with our standard processes for accepting federal awards, and following procedures. For the above grants, Commerce was successful at meeting the reporting requirements for these agreements, including conducting timely and adequate reporting for achieving progress on expected outputs and outcomes. For the agreements that have been closed, Commerce has submitted acceptable final reports.

## 6c. Staff Expertise

Washington brings a team of organizations from across the state to support this application. Each is uniquely qualified to implement these projects and all bring grant expertise to successfully manage the award. The project team will coordinate regularly to ensure the objectives are the grant award are met. See “Bios” attachment for details on agencies and staff who will be leading for each part of this project.

**Washington State Department of Commerce**: Commerce works with local governments, Tribes, business and civic leaders throughout the state to strengthen communities. The agency’s Energy Division will be the lead for this overall project, as well as for the Tribal Clean Energy Grant and for the Anaerobic Digester project. The team will include expertise in contract management, community outreach and engagement, Tribal consultation, financing, and federal grant compliance. This team will intersect with energy policy staff, the agency’s Office of Tribal Relations, the agency’s central contracting and internal controls office and the budget team, and the federal funding coordination team.

# **7. Budget**

For budget narrative see “Budget” Attachment and see “Budgetcalcs” attachment for budget details.

1. Tier A (Washington State Department of Ecology); Tier B (Puget Sound Regional Council); Tier D (King County) [↑](#footnote-ref-2)
2. See letter of support from Governor Inslee [↑](#footnote-ref-3)
3. See letter of support from the “Washington State Federal Delegation” for Senate and House members [↑](#footnote-ref-4)
4. Projects were identified through a public survey and engagement process between 11/2023-02/2024. [↑](#footnote-ref-5)
5. <https://deptofcommerce.app.box.com/folder/250208029429> [↑](#footnote-ref-6)
6. <https://wsdot.wa.gov/sites/default/files/2023-11/TCRS-Report.pdf> [↑](#footnote-ref-7)
7. https://wsdot.wa.gov/construction-planning/statewide-plans/freight-plans/2019-washington-state-rail-plan [↑](#footnote-ref-8)
8. E.g., Coradia iLint is a passenger train powered only by H2, producing zero emissions at the point of use. [↑](#footnote-ref-9)
9. <https://content.govdelivery.com/accounts/WADOC/bulletins/38a980b> [↑](#footnote-ref-10)
10. <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.260> [↑](#footnote-ref-11)
11. Projects funded under this measure should meet the state’s definitions of clean energy ([Chapter 19.405 RCW](https://app.leg.wa.gov/RCW/default.aspx?cite=19.405)). [↑](#footnote-ref-12)
12. https://www.commerce.wa.gov/growing-the-economy/energy/2021-state-energy-strategy/ [↑](#footnote-ref-13)
13. https://apps.ecology.wa.gov/publications/documents/2202055.pdf [↑](#footnote-ref-14)
14. https://fdo.wwu.edu/files/2022-07/Final%20WWU%20Heating%20Feasibilty%20Study%20Report\_2.pdf [↑](#footnote-ref-15)
15. https://apps.ecology.wa.gov/publications/documents/2104050.pdf [↑](#footnote-ref-16)
16. <https://apps.leg.wa.gov/billsummary?year=2022&billnumber=1799> [↑](#footnote-ref-17)
17. <https://apps.leg.wa.gov/rcw/default.aspx?cite=70A.45.020> [↑](#footnote-ref-18)
18. Metrics will be determined as part of pilot and could include decreased cumulative customer-hours of outages and average number of customers experiencing outage during a specified time period [↑](#footnote-ref-19)
19. A chemical lethal to salmon, harming both them and endangered Southern Resident Orcas that depend on them. [↑](#footnote-ref-20)
20. <https://app.leg.wa.gov/billsummary?BillNumber=5141&Year=2021&Initiative=False> [↑](#footnote-ref-21)
21. “Environmental justice means the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies. Environmental justice includes addressing disproportionate environmental health impacts in all laws, rules, and policies with environmental impacts by prioritizing vulnerable populations and overburdened communities, the equitable distribution of resources and benefits, and eliminating harm.” [↑](#footnote-ref-22)
22. <https://doh.wa.gov/community-and-environment/health-equity/environmental-justice/assessments> [↑](#footnote-ref-23)
23. [https://d.docs.live.net/7bec388c70843f23/Documents/Port Comp Plan/2023 Comprehensive Plan Final.pdf](https://d.docs.live.net/7bec388c70843f23/Documents/Port%20Comp%20Plan/2023%20Comprehensive%20Plan%20Final.pdf) [↑](#footnote-ref-24)
24. <https://www.nznw.org/energy> https://www.nznw.org/energy [↑](#footnote-ref-25)
25. Hirsch, B. & Macpherson, D. “Union Membership and Coverage Database.” 2021. https://unionstats.com/ [↑](#footnote-ref-26)
26. <https://climate.wa.gov/train-climate-career> [↑](#footnote-ref-27)