

Puget Sound Zero-Emission Truck Collaborative

Meeting Summary | January 30, 2024

Attendees

- **Collaborative Members:** Aaron August (Puget Sound Energy), Sheri Call (Washington Trucking Associations), Steven Hershkowitz (WA Department of Commerce), Sara Hetrick (Puget Sound Clean Air Agency), Colin Lay (Kenworth), David Logsdon (Seattle City Light; *Alternate: Angela Song*), Michael Mann (Clean and Prosperous Washington), Betz Mayer (PNWER), George Mitchell (Mercer Logistics), Steve Nicholas (Northwest Seaport Alliance; *Alternate: Nicola Graham*), Laura Quinlan (HTEC), Clarisse Reiter (IKEA), Margaret Sonnen, (Tri Pak, Inc.), Jeremy Stewart (Tacoma Public Utilities), Tracey Whitten (City of Seattle), Marcos Wanless (Latino Metropolitan Chamber of Commerce)
- **Project Team:** Tom Beierle (Ross Strategic), Heather Christopher (Ross Strategic), Dennis McLerran (Cascadia Law Group), Patrick Couch (GNA), Erik Neandross (GNA), Tania Park (Port of Seattle), Jason Jordan (NWSA), Andrea Sanchez (Northwest Seaport Alliance)

Meeting Overview

This fifth Collaborative meeting was held virtually on January 30th, 9:00am to 1:00pm Pacific. The objectives of this meeting were to:

- Review and affirm initial draft recommendations on secondary markets and ZEV business models (from December meeting)
- Understand ZEV transition funding needs and near-term state funding opportunities; discuss strategies for unlocking future investments
- Identify key issues and needs for utility infrastructure planning and investments for drayage charging

Meeting materials and presentation slides can be found on the [Zero Emission Truck Collaborative webpage](#).

Opening

Tom Beierle (facilitator, Ross Strategic) reviewed the objectives and agenda for the meeting.

Quick Funding and Policy Updates

Climate Pollution Reduction Plans

Sara Hetrick (Puget Sound Clean Air Agency) provided an update on the [Climate Pollution Reduction Grants \(CPRG\)](#) program. The CPRG program is part of the Inflation Reduction Act and provides \$5 billion in grants to

states, local governments, tribes, and territories to develop and implement plans for reducing climate and air pollution. CPRG is comprised of two phases; the first a non-competitive grant to develop climate pollution reduction strategies and the second a competitive grant process for implementation. Competitive applications are due April 1st. PSCAA is serving as the lead organization for the phase two planning grant for the Seattle, Tacoma, Bellevue Metropolitan Statistical Area (MSA). Sara emphasized the importance of coordination, given that EPA will only consider two awards from a specific state or MSA. Sara also highlighted that the CPRG has five funding tiers, and projects are evaluated within each funding tier, further emphasizing the need for careful planning to avoid unnecessary competition.

Steven Hershkowitz (Washington Department of Commerce) shared additional information on transportation-related proposals for the state-level CPRG application. One particular proposal, led by Ecology, focuses on a \$100 million scrap-and-replace program for the heaviest fuel users in the medium and heavy-duty space, covering vehicles over 8500 lbs. This includes diesel-powered drayage trucks, which given their high mileage, could be a good fit if funding and financing align. Ecology is designing this program to integrate with the state-level program informed by recommendations to the Joint Transportation Committee (JTC) on a voucher program for electric vehicles. The scrap-and-replace proposal is aiming to impact approximately 200 to 1500 vehicles, depending on the specific vehicle types targeted based on fuel usage data. There are additional proposals to electrify ferries and transit buses and promote active transportation.

Northwest Seaport Alliance

Steve Nicholas (Northwest Seaport Alliance) discussed NWSA's involvement in the regional CPRG application process. NWSA is proposing the inclusion of a \$50 million program in the regional CPRG proposal to incentivize the deployment of zero-emission drayage trucks, covering both vehicle purchases and infrastructure development. If successful, this funding will complement other grants the NWSA is securing for the zero-emissions drayage demonstration program, set to launch later this year.

In further efforts to bring in state and federal funding, the NWSA has secured a \$12 million charging and fueling infrastructure grant from the Federal Highway Administration (FHA). This highly competitive grant aims to incentivize the development of shared truck charging hubs in the Puget Sound region. Once funding agreements with FHA and WSDOT have been finalized, NWSA will issue an RFP for infrastructure developers to compete for grant funding, requiring them to contribute least 50% of the total project costs. The goal is to use this funding to encourage the development of at least two shared truck charging hubs in the region.

Steve also shared information about the new Clean Ports Program, set to launch next month. This initiative will involve IRA funding administered by the EPA. The NWSA is crafting its proposal for this program, which offers a maximum award of \$500 million. The proposal encompasses various components, including shore power installations, incentives for transitioning to zero-emission cargo handling equipment, and a segment focused on zero-emission drayage. The specific details are still to be determined.

Steve emphasized the crucial distinction between the funding from the US DOT (including the FHA) and EPA funding. Federal transportation funds come with strict Buy American requirements, posing challenges for incentivizing truck purchases as truck manufacturers struggle to meet these stringent criteria. Conversely, EPA funds are expected to have less stringent Buy American requirements—encouraged but not necessarily mandatory. As a result, NWSA is considering allocating US DOT funding for infrastructure development incentives and EPA funding for incentivizing truck purchases. Steve also noted that NWSA applications are integrating continued funding for the Puget Sound Zero-Emission Truck Collaborative, beyond the current year.

Draft Recommendation Review from Previous Meeting: Secondary Markets and ZEV Business Models

Tom reviewed the draft recommendations related to secondary markets and emerging business models for zero-emission drayage, coming out of the December Collaborative meeting and Vehicle Affordability and Access Subgroup meeting. See meeting [slides](#) 11-14.

Key items from the discussion:

- Participants discussed the 50% used vehicle incentive proposed to the JTC, considering it a positive step but acknowledging the need for further refinement.
- Participants highlighted the importance of aligning the Collaborative's recommendations in the Roadmap with the JTC study report.
- One participant pointed to legislative proposals from Clean and Prosperous Washington's Medium and Heavy-Duty Working Group, indicating that secondary market incentives may not be included in the first round of proposals but should be carefully developed for future appropriations or legislative sessions.
- Participants discussed the potential role of vehicle conversions from diesel to zero-emissions as another way that used vehicles can become part of the zero-emission drayage fleet.
- One participant highlighted the value of exempting biofuels from the cap-and-invest program as a way to lower the costs of biofuels and increase adoption.
- Participants noted the importance of managing used batteries from electric vehicles, including battery disposal, recycling, and potential reuse.

ZEV Drayage Transition Cost and Recommendations for Near-Term Funding

Patrick Couch (GNA) presented on the estimated costs associated with the transition to zero-emission drayage. The analysis considers various factors affecting total cost of ownership (TCO) for zero-emission trucks compared to diesel trucks. See meeting [slides](#) 16-27.

Key items from the discussion:

- One participant raised several points in response to Patrick's presentation, including:
 - The cost of tires, which may need to be more frequently replaced on battery electric trucks due to additional weight and torque.
 - The federal excise tax, which the industry has long advocated for repeal, as it's seen as a barrier to upgrading to newer, cleaner vehicles.
 - The profit motive is a significant barrier to the adoption of zero-emission trucks. Companies need to be able to make a profit when purchasing a truck, which can hinder adoption.
 - Operational considerations include upfront costs and the availability of infrastructure, particularly charging infrastructure outside existing terminal networks. Companies are wary of relying on public infrastructure and may need to consider infrastructure availability when planning routes.
 - Several companies are experimenting with electric vehicles or alternative fuel vehicles, taking advantage of incentives available in California. There has been positive feedback regarding cost parity with diesel vehicles when these incentives are factored in.
- Patrick's response included the following points:

- Early deployments of electric trucks experienced high tire wear rates, attributed partly to axle design issues and the prototype nature of the vehicles. The increased weight of electric trucks puts additional stress on tires, leading to faster wear.
- Fleets and manufacturers are learning about the stresses that electric trucks place on tires and are adjusting power and torque to mitigate excessive tire wear. There's an expectation that tire wear rates will moderate over time as these adjustments are made. Tire wear rates may eventually decrease through tire technology improvements, but this could come with increased costs due to advanced materials like carbon fiber or carbon black.
- These points reflect typical market adoption patterns, where innovators may be willing to bear higher costs for the sake of experimentation, while the majority of the industry tends to be more conservative, preferring to understand potential pitfalls and operational considerations before fully adopting new technologies.
- One participant highlighted the importance of helping people understand what resources they can access, including tax credits and utility incentives. Many may only be aware of one program, such as the city program or the state program, but assistance can help them tap into additional resources, potentially reducing the TCO of electric vehicles.

Betz Mayer (PNWER) gave an update on the program design for the medium- and heavy-duty ZEV infrastructure and incentive program that came out of the JTC study. Betz reviewed the purpose of the study, key attributes of the proposed incentive program, and next steps, including the anticipated report release in February 2024. See meeting [slides](#) 28-50.

Key items from the discussion:

- One participant asked if Betz had any insight into whether there will be additional funding in the future for a state program to incentivize purchase of zero-emission vehicles.
 - Betz responded that the program relies on CCA funding, so its longevity depends on developments with CCA. Strategically, signaling the importance of a reliable program is crucial to its continuity. However, it's challenging to guarantee its permanence at this stage. Continued advocacy and communication about its necessity are essential for legislative support.
- Another participant asked about a projected timeline for the release of these incentives, and how it aligns with other incentive programs like Seattle's.
 - Betz replied that the timeline for releasing incentives is uncertain as it's now in the hands of WSDOT. Factors like staff hiring and the efficiency of the RFP process will influence the timeline. Coordination with other incentive programs, including those at the city level, is desired but challenging to predict given these uncertainties.

Following presentations from Patrick and Betz, Collaborative members were invited to share their thoughts on the question: ***What will it take to unlock private and public investment at the scale needed for the transition to ZEV drayage?***

Key items from the discussion:

- Sheri Call (WTA) highlighted the importance of having vehicles available for purchase in the region at the scale needed to meet demand. She raised concerns about manufacturing capacity and the timeline for charging and hydrogen fueling infrastructure development.
- George Mitchell (Mercer Logistics) highlighted for a fleet their size, Mercer Logistics would rely on public funding, internal financing where possible, and have to borrow as well. George raised concerns about charger reliability, noting that Fife has frequent power outages.
- Margaret Sonnen, (Tri Pak, Inc.) noted profit motive as a key factor for trucking companies to replace existing diesel vehicles with ZEVs. Margaret pointed to successes of cleaner truck adoption in Long Beach, noting that it's taken twenty years of trial and error. For the transition in LA/Long Beach, Margaret highlighted successes of working with both state and federal programs, truck manufacturers, infrastructure vendors, and bringing in individual grants. Margaret also shared the positive impact of customer incentives on fleet decisions for shippers to use zero-emission vehicles.
- Matt Schrap (Harbor Trucking Association) highlighted California's Capital Access Program, which minimizes risks for finance lenders by covering shortfalls in case of deal failure. Matt highlighted the importance of private investment and the need for robust incentive programs to drive private investment in zero-emission vehicles.
- Colin Lay (Kenworth) discussed partnerships with other OEMs, like Daimler, to invest in a battery manufacturing plant in Mississippi. Colin emphasized the need for government grants and incentives to support OEMs in transitioning to zero-emission production.
- Michael Mann (Clean and Prosperous Washington) highlighted the gap in medium- and heavy-duty infrastructure expenditure and the challenges in obtaining funding for charging infrastructure. Michael advocated for pilot projects and funding for early charging infrastructure development and stressed the importance of private sector incentives for charging infrastructure, in addition to subsidies.

Utility Infrastructure Investments and Planning for HDV Charging for Drayage: Panel

Moderated panel discussion and Q&A

Three Collaborative members, Aaron August (Puget Sound Energy), David Logsdon (Seattle City Light), and Jeremy Stewart (Tacoma Public Utilities) shared their insights on the role of utilities in the transition to zero-emission trucks. Dennis McLerran (Cascadia Law Group) moderated the conversation and began with a set of prepared questions before opening up the discussion to Q&A with Collaborative members.

Key items from the discussion:

- Until recently, Puget Sound area utilities have not experienced large increases in demand. They are now looking at rapid load growth projections from transportation but also buildings, data centers, AI, etc. This is a transformative time for utilities.
 - To manage load growth, utilities are looking for demand-side solutions like managed charging, demand-response, etc. Traditional approaches of meeting growth with increased energy efficiency are no longer sufficient.
- Rules and approaches influencing utility investments in charging infrastructure differ from utility to utility—and between customer-owned utilities and investor-owned utilities regulated by the Utilities and Transportation Commission.

- To show that investments are prudent, some utilities need a customer application; the ability to make proactive infrastructure investments for future HDV charging at scale can be limited by prudence requirements.
- Utilities need early engagement with customers to support project planning.
- Ultimately, utility investment costs are covered by ratepayers, raising equity issues for low-income customers (which can be one-third of customers in some Puget Sound-area service areas).
 - State and federal funding for infrastructure to support charging is not rate-based and can avoid increases in customer rates.
 - Regressive tax structures in Washington (e.g., compared to California) exacerbate the equity impacts of higher utility rates.
- Generally, there is a gap in federal and state funding for HDV charging investments/incentives.
 - The federal \$40k tax credit is insufficient.
 - The cope of hydrogen tax credit depends on decisions about “color” (lifecycle emissions).
- It is important for utilities to accurately map loads and forecast future system needs, but it can be challenging to forecast where power will be available in the future for specific charging sites and/or customers because of dynamic conditions on the grid, project-specific needs (e.g. energy demand, location, etc.), and lack of information about future demand from customers.
 - Utilities need better data on customers' medium and long-term charging plans (loads and locations) to inform system planning.
- Planning and investment timelines vary greatly based on project characteristics (e.g., size, location, current infrastructure); it is difficult to put any consistent timeline to projects.
- Reliability (e.g., charger "uptime"), security, and safety are key considerations for charging providers and drivers that should be factored into infrastructure planning and investments.

The following recommendations were raised during the discussion with Collaborative members, and then discussed and refined in a small group session following the meeting:

Near-Term: Recommended Best Practices

- **For customers interested in charging facilities:**
 - Engage utilities early about proposed charging projects:
 - Consult with utilities before choosing a site to understand areas that may have the most suitable infrastructure
 - Consider technology/design alternatives whose load profile is easier to meet (e.g., battery-supported charging)
 - Understand and utilize applicable incentive programs
 - Work with utilities to “right-size” charging infrastructure to match power needs, vehicle duty cycles, and fleet operations—and potentially avoid demand charges
 - Explore managed charging strategies that can help utilities manage loads (e.g., battery storage, advanced controls)
 - Proactively engage communities to understand benefits/needs (e.g., parking, security) and reduce likelihood of project-related conflicts during permitting, etc.
 - Provide utilities with information about medium and longer-term plans to inform longer-term system planning

- Comprehensively plan project components and schedules to help avoid project delays (e.g., using a Gantt chart)
- Customer-side purchases and installation of electrical switch gears are a frequent source of charging infrastructure project delays
- **For other project proponents:**
 - Add a requirement to charging infrastructure RFPs that applicants communicate early with utilities
 - Support community-based planning for charging sites and local benefits
- **For utilities:**
 - Offer pre-application process for charging infrastructure projects to encourage early communications and collaboration
 - Offer customer-facing programs (e.g., comprehensive fleet assessments) that allow the collection of data on potential charging infrastructure projects, which can provide information on future loads and locations to inform system planning
 - Collaborate with other providers of infrastructure programs and incentives; help direct customers to utility/local/state/federal vehicle and infrastructure incentive programs, facilitate assist with stacking of incentives for customers
 - Southern CA Edison’s Transportation Electrification Advisory Services (TEAS) program is an example of utility-provided technical assistance: <https://cloud.sce.com/teas>
 - Understand and pursue all incentive funds available for utilities; figure out how they can be stacked
 - Collaborate with charging partners on pilot/demonstration projects
 - Partner with research organizations (e.g., EPRI, LBNL, PSCAA) to research planning and infrastructure needs

Longer-term: Challenge and Potential Solutions

- **Key Challenge:** Traditional utility planning and investment practices (governed by rules and regulatory oversight) are unlikely to allow utilities to proactively make infrastructure investments at the scale needed to fully transition drayage vehicles to ZEVs in the Puget Sound gateways.
- Specific barriers include:
 - Prudency rules requiring customer application to proceed (where applicable)
 - Equity concerns of passing utility infrastructure costs onto low-income ratepayers
 - Other demand for electricity, contributing to overall load growth (e.g., building electrification, other transportation electrification, ports electrification, data centers, AI, etc.)
- **Recommendations:**
 - Utilities explore strategies that can create grid capacity and management benefits from electrification (e.g., vehicle-to-grid, use of residual capacity of batteries for grid-services, etc.)
 - Establishing a vehicle-to-grid export rate valuable for boosting VTG opportunities; but role of high-utilization drayage vehicles in VTG strategies may be limited compared to school buses and passenger cars, which are idle for long periods
 - Proactive engagement with regulators (e.g., on prudency requirements)
 - Proactive engagement with state policymakers on infrastructure funding and program design
 - Advocate for CFS and CCA funds for utility charging investments (CA model)
 - Leverage sources of funds that aren’t rate-based and don’t raise utility rates—helping utilities maintain long-term rate affordability

- Utilities partner with charging providers, customers, or others on joint projects
- Consider utility role in owning and operating charging infrastructure for drayage
 - May be most applicable where there is a barrier to privately funded charging or a public benefit (e.g., drivers without access to private depot charging)
 - Consider use of utility property for charging
- Consider relative strengths and roles of battery-electric vs. hydrogen when planning infrastructure

Public Comment

One member of the public commented:

- One member of the public, representing an organization focused on drayage, shared valuable insights drawn from California's experience in transitioning from diesel to cleaner technologies. They emphasized the importance of a comprehensive use case study for drayage vehicles to inform decision-making regarding TCO, mileage considerations, and insurance costs. Drawing from California's challenges, including grant program limitations and tax liabilities, the speaker advocated for the restructuring of grant programs and the removal of barriers for small fleets. They highlighted the unique challenges in drayage operations, such as truck parking issues and neighborhood concerns, while expressing enthusiasm for continued collaboration and offering to contribute expertise to innovative program development in Washington.

Wrap up and Adjourn

Tom Beierle reviewed next steps coming out of this meeting, noting that a summary of today's meeting and all materials will be posted on the website. The *Funding and Finance* and *Charging/Fueling Infrastructure* Subgroups will meet on February 5th to process information coming out of today's Collaborative meeting.

The next full group meeting is planned for Wednesday, March 27th.