

# Puget Sound Zero-Emission Truck Collaborative

## Meeting Summary | April 29, 2024

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### Attendees

- **Collaborative Members:** Alec Cervenka (PACCAR; *Alternate: Colin Lay*), Christine Cooley (Puget Sound Clean Air Agency; *Alternate: Mary Cho*), Peter Gishuru (African Chamber of Commerce of the Pacific Northwest), Jamie Hearn (Duwamish River Community Coalition), Jim Jensen (WSU), Dan Marshall (Tacoma Public Utilities), Betz Mayer (PNWER), Leah Missik (Climate Solutions), George Mitchell (Mercer Logistics), Steve Nicholas (Northwest Seaport Alliance), Laura Quinlan (HTEC), Clarisse Reiter (IKEA), Angela Song (Seattle City Light), Marcos Wanless (Latino Metropolitan Chamber of Commerce), Tracey Whitten (City of Seattle)
- **Additional Presenters:** Nafiso Samatar and Shekinah G. (Somali Independent Business Alliance)
- **Project Team:** Tom Beierle (Ross Strategic), Heather Christopher (Ross Strategic), Dennis McLerran (Cascadia Law Group), Tania Park (Port of Seattle), Kate Nolan (Northwest Seaport Alliance), Patrick Couch (GNA), Erik Neandross (GNA)

### Meeting Overview

This seventh Collaborative meeting was held virtually on April 29<sup>th</sup>, 8:30am – 12:15pm Pacific. The objectives of this meeting were to:

- Review and affirm initial draft recommendations on drayage characterization and infrastructure location (from March meeting)
- Discuss best practices for ZEV truck incentive program design and implementation lessons learned
- Discuss role of hydrogen in the ZEV transition

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 and led introductions for a new Collaborative member alternate: Mary Cho (Puget Sound Clean Air Agency).

### Draft Recommendations Review: Drayage Characterization and Infrastructure Location

Tom reviewed the draft recommendations related to drayage characterization and infrastructure location, coming out of the March Collaborative meeting and Charging/Fueling Infrastructure and Equitable Transition Subgroup meeting (see meeting [slides](#) 10-14).

## Key items from the discussion:

- Jim Jensen (WSU) suggested exploring opportunities to co-locate facilities that could maximize the use of available real estate and provide additional services or value to truck drivers and ports. He mentioned the potential for co-locating facilities where trucks line up to enter ports, such as maintenance facilities, places where drivers can grab food, or other related businesses. He emphasized the importance of finding opportunities to co-locate facilities that serve not only drayage trucks but also medium- and heavy-duty vehicles generally.
- Steve Nicholas (NWSA) highlighted the potential of co-located facilities, especially as charging technologies improve. Steve noted that places like truck stops and travel centers could become viable locations for fast charging solutions in the future, and these sites could integrate well with evolving charging technologies. He also highlighted the importance of aligning with larger corridor-based charging initiatives, particularly along major routes like the I-5 and I-90 corridors. This alignment could help ensure that charging infrastructure development is comprehensive and supports the needs of additional heavy-duty transportation, such as buses and long-haul trucks. Steve also noted that areas like Sumner and the Kent Valley could be key locations for future development, particularly as they relate to charging-as-a-service companies.
- Steve also touched on the dynamics within the trucking industry, particularly the challenges faced by smaller trucking companies and independent owner-operators regarding the adoption of electric trucks due to high costs and unfamiliarity with new technologies. He suggested that while larger companies might lead in adopting new technologies, there needs to be a strategy to engage and support smaller operators. He emphasized the need to explore ways to make advanced technologies accessible to a broader range of companies, blending ownership and operational models to include both large fleets and independent owner/operators.
- Laura Quinlan (HTEC) discussed the current landscape in the hydrogen vehicle space, noting that while larger trucking companies are interested in leasing hydrogen vehicles, it's typically medium-sized companies that show the most enthusiasm and interest. She emphasized that medium-sized firms are often independently operated and have more autonomy and flexibility, which makes it easier to access company decision-makers and get buy-in for adopting new technologies. Larger companies tend to have several layers of approval processes and bureaucratic hurdles, which often includes scrutinizing all the details of leases, changing terminology related to hydrogen and battery electric technologies, and essentially treating the lease similarly to a diesel vehicle lease.
- Peter Gishuru (African Chamber of Commerce of the Pacific Northwest) emphasized the importance of understanding where drivers spend most of their waiting times, suggesting a need to gather data to better support these workers. He noted the challenges faced by truck drivers regarding waiting times, living conditions, and involvement in decision-making processes, and suggested potential solutions like onsite charging stations during wait times and better engagement with drivers to address their concerns more effectively.
- Erik Neandross (GNA) suggested the concept of “fence line stations,” which are private fueling depots that have been successful in the natural gas industry. He proposed considering similar setups for hydrogen and EV charging infrastructures, potentially incentivizing such configurations through grants or other means to facilitate easy access for ZEV fleets.

- Angela Song (Seattle City Light) noted the use of Pantograph Down charging technology for transit buses and suggested exploring induction/wireless charging for drayage trucks. She emphasized the importance of having basic amenities like bathrooms at charging/fueling locations to improve the wait time experience for drivers during charging.
  - Participants noted the high costs and technical hurdles associated with inductive charging. A key challenge is the variability of truck routes compared to the more consistent routes of transit vehicles.
- Marcos Wanless (Latino Metropolitan Chamber of Commerce) highlighted the crucial need for driver education about transitioning to electric vehicles, especially for users of smaller trucks. His comments were based on focus groups with Latino enterprises that emphasized misunderstandings that could be prevented with better education programs.
- Dennis McLerran (Cascadia Law Group) spoke to the potential of renewable diesel to reduce climate emissions by 60 to 80% as a transitional fuel in gateways, noting its usage in California and potential in Washington under the clean fuel standard.

## ZEV Vehicle Incentive Program Design and Lessons Learned

### Washington Department of Transportation Medium and Heavy-Duty Zero-Emission Vehicle Incentive Program

Betz Mayer (PNWER) and Karin Landsberg (WSDOT) presented on the design of Washington’s medium- and heavy-duty ZEV incentive program (see [slides 16-33](#)).

Key items from the discussion:

- One participant asked about the definition of class 8 drayage, noting issues with companies trying to fit various vehicles into that definition without a clear solution on how to address eligibility concerns.
  - Betz shared that the definition and qualifications for class 8 drayage will likely be clarified in the rulemaking process, noting that the NWSA has a database that could be used in collaboration with WSDOT to determine eligibility.
- Steve Nicholas (NWSA) emphasized the importance of this Collaborative continuing beyond 2024. Given that this incentive program will just be starting, there will be many lessons to learn from these initial incentive programs. It will be important to integrate these lessons into future iterations of our roadmap.
- Steve also shared an update on NWSA’s zero-emission drayage incentive program, which has been successful in securing significant state and federal funding, including a \$16 million grant from the Federal Highway Administration, bringing the total<sup>1</sup> to about \$50 million. This funding will support the purchase of clean hydrogen and the development of hydrogen fueling stations for approximately 30 drayage trucks. NWSA is planning to issue an RFP in September and is working to ensure the program is coordinated with state efforts and that it's stackable with other funding sources.
- Erik Neandross (GNA) shared manufacturers like Volvo and Daimler are interested in a secondary market for used trucks. They are seeing trucks from early pilots in California returning with very low mileage, which presents an opportunity to offer these trucks to drayage operators at significantly reduced costs, (around \$150,000 to \$200,000), which is far less than the \$500,000 for a new truck. These trucks have 10,000 to 30,000 miles, making them virtually new in terms of drayage equipment, which typically sees much higher mileage. Erik highlighted a potential for a formal program where these trucks could re-

enter the market, backed by OEM maintenance and warranties, making them an excellent option for operators.

- Betz shared that the Washington state incentive program design includes an incentive for purchasing used vehicles, offering 50% of the voucher amount available to new vehicles. This is the first time such an initiative has been included in state program design, creating a competitive advantage for the state to attract used vehicles.
- Participants agreed that the inclusion of used vehicles in the roadmap is vital, particularly for mid-sized businesses that stand to benefit.

### **Lessons learned from City of Seattle Drayage Electrification Pilot Project**

Tracey Whitten (City of Seattle), Nafiso Samatar (Somali Independent Business Alliance), and Shekinah G. (Somali Independent Business Alliance), presented on lessons learned and engagement strategies from the City of Seattle's heavy-duty vehicle electrification incentive pilot project (see [slides 34-52](#)).

Key items from the discussion:

- Peter Gishuru (African Chamber of Commerce of the Pacific Northwest) expressed gratitude for Tracey and Nafiso's ongoing outreach efforts with the African trucking community. Peter emphasized the need to include diverse African communities like Somalis, Kenyans, Ethiopians, Nigerians, and Congolese to effectively navigate this transition. The primary issues they are facing are cost and ensuring fair compensation for drivers.
- One participant raised concerns about potential legislation similar to California's Assembly Bill 5 that could impact independent contractors and owner-operator models in the trucking industry, and asked about the city's contingency plans for funding if such legislation were to pass.
  - Tracey replied that if such legislation should pass in Washington, the city of Seattle would need to revisit its approach and ensure funding aligns with new regulations while still supporting its carbon reduction goals.
- One participant asked about specific cultural traditions or dynamics within African communities that might influence their business operations differently from typical American businesses.
  - Nafiso highlighted the importance of religious practices and community respect in African cultures, particularly among Somali communities. She emphasized the need for leadership that is respectful and understanding of cultural nuances.
  - Peter added that cultural differences, such as avoiding direct eye contact, can lead to misunderstandings in the U.S., and stressed the need for support and understanding from those who manage operations involving African drivers.
  - Participants echoed similar concerns for the Latino community, emphasizing the importance of diversity and inclusion in these initiatives.

## **Role of Hydrogen in the ZEV Transition**

### **Emerging plans for hydrogen infrastructure and vehicles in the Pacific Northwest**

Laura Quinlin (HTEC) and Alec Cervenka (PACCAR) presented on the current status and future plans for hydrogen fueling infrastructure and vehicle growth in the region (see [slides 56-84](#)).

Key items from the discussion:

- Patrick Couch (GNA) highlighted expensive hydrogen fuel costs, which reach up to \$36 per kilogram at public light-duty stations in California and asked for insights on managing hydrogen costs for heavy-duty applications.
  - Laura Quinlan shared HTEC's pricing strategy for hydrogen in heavy-duty applications, noting that prices are \$13 to \$15 CAD per kilogram at their initial heavy-duty station, supported by provincial incentives. She mentioned the complexity of projecting costs in the Pacific Northwest due to regulations like the 45V initiative and aims for a price reduction to about \$9 USD per kilogram. She also noted that incentives related to electrolyzer output could further reduce costs and move away from California's high prices.
- Patrick asked about potential price variations in Washington, given the differences in the robustness of British Columbia's low carbon fuel standard program.
  - Laura replied that she anticipates variability in Washington due to different regulatory and support frameworks. Laura noted possible cost-management strategies, such as voucher programs and credit systems, and suggested that energy prices will significantly impact hydrogen costs. She estimates about \$9 USD per kilogram for Washington, based on HTEC's current models.
  - Alec highlighted the variability in hydrogen costs depending on fuel supply and production methods. He commended HTEC's target of achieving \$10 per kilogram from green sources, given that electrolysis-derived hydrogen typically costs more. He also mentioned cheaper alternatives like gray or blue hydrogen, derived from methane, which could offer cost-effective solutions depending on regulatory contexts. Alec emphasized understanding the range of feedstock options for hydrogen production and their pricing impacts. He mentioned the potential of green hydrogen to become cost-competitive with technological and infrastructural advancements, while acknowledging the advantages of traditional hydrogen sources under current regulations.
- Betz highlighted hydrogen's significance in PNWER's energy group, focusing on British Columbia and Alberta's roles, especially Alberta's production of blue hydrogen. She mentioned a cross-border hydrogen study funded by British Columbia and Washington Department of Commerce to increase Washington's hydrogen production.
- Jim Jensen mentioned logistical challenges of transporting hydrogen across the U.S./Canada border. He noted that potential Washington end users are geographically closer to British Columbia than to suppliers in Washington or Oregon, prompting a need to address cross-border transport issues.
  - Laura noted HTEC's plans to facilitate cross-border hydrogen transport and provided insights into hydrogen pricing in British Columbia and projected costs in Washington. Laura outlined HTEC's strategy to integrate hydrogen effectively, including developing hydrogen stations, production plants, and fleet operations. She highlighted plans for a new hydrogen station in the Pacific Northwest and a longer-term strategy involving supplies from British Columbia and a new facility in Ferndale, Washington.
- Dennis noted the importance of identifying policy barriers or opportunities to improve the implementation of Washington's low carbon fuel standard.

- Laura suggested that increasing the value of credits would greatly aid hydrogen adoption, noting the higher value of credits in British Columbia compared to Washington. She noted that enhancing the credit value in Washington could increase hydrogen uptake.

## Public Comment

No public comments.

## 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 *Vehicle Affordability and Access* Subgroup will meet on May 2<sup>nd</sup> to process information coming out of today's Collaborative meeting.

The next full group meeting is planned for Tuesday, June 4<sup>th</sup>.