

Puget Sound Zero-Emission Truck Collaborative

Meeting Summary | December 11, 2023

Attendees

- **Collaborative Members:** Sheri Call (Washington Trucking Associations), Logan Danzek (Communities for a Healthy Bay), Steven Hershkowitz (WA Department of Commerce), Jim Jensen (WSU Green Transportation Program), Colin Lay (Kenworth), David Logsdon (Seattle City Light), Michael Mann (Clean and Prosperous Washington), Betz Mayer (PNWER), Leah Missik (Climate Solutions), Steve Nicholas (Northwest Seaport Alliance), Laura Quinlan (HTEC), Clarisse Reiter (IKEA), Margaret Sonnen, (Tri Pak, Inc.), Jeremy Stewart (Tacoma Public Utilities), Tracey Whitten (City of Seattle)
- **Support 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)
- **Driver Panel:** Matt LeDucq (Forum Mobility), Nick Raspanti (ZEEM), Todd Berger (PacLease), Steve Moelk (IKEA), Paul Rosa (Penske)

Meeting Overview

This fourth Collaborative meeting was held virtually on December 11th, 11am-2:45pm Pacific. The objectives of this meeting were to:

- Understand the potential development of secondary markets for used trucks and implications for affordability and availability
- Understand emerging business models for Zero-Emission trucks, including trucking-as-a-service, leasing, and sponsorship models
- Discuss how different business models and secondary market development should fit into a roadmap for transitioning to zero-emission drayage in the Puget Sound region
- Hear quick updates on key policy developments and the upcoming legislative session

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

Opening

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

Secondary Markets for Used Zero-Emission Trucks

Erik Neandross (GNA) gave a presentation on secondary markets, highlighting the role that the drayage market can play in driving primary and secondary markets for zero-emission trucks. Erik noted that GNA has been working in the commercial truck space for 30 years, with a focus on zero-emission trucks since 2018. Erik reviewed the key challenges that have been identified to accelerating the transition to zero-emission trucks, including vehicle affordability, funding and financing requirements, infrastructure needs, and ensuring an equitable transition for market participants. In terms of vehicle affordability, Erik noted that diesel trucks cost \$65k-\$85k, resulting in a monthly financing/ownership cost of around \$5,000 for operators, while new zero-emission trucks cost \$500k-\$550k with a monthly financing/ownership cost of around \$15,000. Purchasing zero-emission trucks also requires good credit, which has been a challenge for some segments of the drayage sector. On the infrastructure side, Erik highlighted the need for a regional network of knowledgeable technicians to provide reliable service and maintenance for zero-emission trucks, in addition to the need for rapid deployment of publicly accessible charging/fueling infrastructure for the trucks themselves. A secondary market for used zero-emission trucks in the drayage sector could address some of these challenges by offering cost-effective options for drayage drivers, requiring less grant money, accelerated zero-emission truck purchases by primary corporate truck buyers, and addressing infrastructure gaps and development.

Over the past few months, GNA conducted market research, engaging with major truck manufacturers, their significant dealer networks involved in used truck sales, and various rental and leasing operations. Discussions included key leasing companies that play a substantial role in selling trucks to the secondary market, particularly those leased for three to five years. Research findings indicated a lack of clear solutions for establishing a secondary market for used zero-emission trucks, but the market seems very receptive to a secondary market. Common suggestions involved depreciating the truck value to zero, which raised concerns about the impact on residual values, particularly for primary buyers and the broader market, drawing parallels with challenges faced in the natural gas truck market.

Erik shared a potential solution of selling trucks to primary corporate buyers at a reduced grant amount, running them for a few years, and then entering them into a secondary market for drayage. This model could reduce the size of the grant needed for primary buyers, making it more feasible and potentially increasing the number of trucks in circulation. The proposed model aims to create a sustainable system for zero-emission trucks, offering benefits such as reduced upfront costs, lower credit requirements, and increased feasibility for operators in the drayage sector. Erik reviewed remaining challenges, particularly in setting up a drayage pool, ensuring the quality of used trucks, and guaranteeing participation from secondary buyers. *See meeting slides 11-29.*

Key items from the discussion:

- One participant asked about the anticipated timeline for a secondary market.
 - Erik responded that it would take the better part of a year to formalize a program and identify/secure funding to enable it. This is based on the premise of finding a significant amount of funding, ideally \$100 million, and everything else falling into place neatly. After that, engaging primary buyers like corporates and leasing companies would take three to five years, making it a 3- to 6-year development process before having a robust program up and running.
- Another participant asked if there was any evidence as to how long a primary buyer would own those zero-emission trucks compared to a diesel truck. Specifically, is there evidence that the amount of time they hold on to them might be different because it's a zero-emission truck?

- Erik replied that it's too early to tell, but the general sense is that zero-emission trucks might be held onto a bit longer due to financial implications and the absence of a secondary market. Positive news on battery life is encouraging, but we lack sufficient evidence on maintenance costs and longevity. Electric trucks might break less frequently, but repairs could be more expensive, affecting the overall cost of ownership.
- Paul Rosa (Penske) shared that Penske typically holds onto vehicles for 5-7 years. Paul highlighted that if a secondary market was put together, it would further incentivize Penske to buy more electric vehicles if they know there's a secondary option to move that vehicle to somebody else and they can benefit from it.
- One participant asked if there should be any weight given to trucks that are intended to go back into a secondary market, and whether there will be any incentives for that?
 - Erik noted that incentivizing trucks to enter the secondary market could motivate primary buyers, especially if tied to conditions of funding. This needs more exploration, but it's an interesting idea worth considering.
- One participant asked whether there would be any requirements or conditions for getting grants to purchase new vehicles and then provide them to the secondary market, specifically whether there would be a requirement that used vehicles would need to be sold after a certain number of years or go to the drayage market.
 - Erik shared that at this point, GNA hasn't delved into the details of grant conditions. It's conceptual, focusing on motivating primary users with the assurance of a secondary market. There could be conditions, like placing the truck into service for the drayage pool concept or aligning primary specs with a generic model for secondary market viability.
 - Paul noted that the nature of the heavy truck market allows for high customization, and each company has unique specifications. While it might be a consideration, it's essential to balance customization needs with the viability of the truck in the secondary market.

Business Models for Zero-Emission Trucks: Panel

Moderated panel discussion and Q&A

Five panelists, Matt LeDucq (Forum Mobility), Nick Raspanti (ZEEM), Todd Berger (PacLease), Steve Moelk (IKEA), and Paul Rosa (Penske) shared their insight on various business models for zero-emission trucks, including trucking-as-a-service, leasing, and sponsorship models. Patrick Couch (GNA) 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:

Background of alternative business models:

- **Forum Mobility** specializes in building depots for charging 50 to 100 trucks simultaneously, with a primary focus on drayage. Forum Mobility's key offering is delivering fully charged trucks to fleets at a fixed monthly price. Forum Mobility's trucks have been operational in the Port of Long Beach, accumulating over 100,000 miles of fully battery electric trucks. The company has partnerships with various OEMs and recently announced a facility inside the Port of Long Beach capable of charging hundreds of trucks daily. Forum Mobility sees promising conditions in Washington, including cheap and clean power, a low-carbon fuel standard, and affordable real estate.

- **ZEEM** is focused on building and operating charging depots near major transportation assets, such as airports, seaports, warehousing, and distribution centers. This allows ZEEM to deploy infrastructure that can support fleets of various sizes and vehicle classes, including drayage trucks. ZEEM's goal is to be a facilitator for fleet operators to transition to electric mobility by providing charging depots with services such as overnight charging opportunities, contract-based charging, vehicle leasing, service and maintenance, and secure parking. For drayage specifically, ZEEM has been actively working to establish charging depots near major seaports, including the ports of Los Angeles and Long Beach
- **PacLease**, a division of PACCAR is focused on the development of zero-emission vehicles, particularly for markets in California, Texas, and New York. PacLease specializes in rental, leasing, and maintenance services, operating through its dealership network. PacLease has collaborated closely with partners on this call to explore innovative solutions such as trucks-as-a-service and charging-as-a-service.
- **IKEA's** zero-emission delivery ambitions focus on last-mile delivery, which faces similar challenges to zero-emission drayage. Both sectors are characterized by the dominance of small, independent contractors or contract carriers operating small fleets. IKEA's business model aims to encourage the use of new electric vehicles, address total cost of ownership, and tackle residual value problems to enable cost-effective leases in the final mile delivery sector. The company has a unique sponsorship model where IKEA partners with Fluid Truck to deploy rental fleets at storefronts. Contractors can rent vehicles on a short-term basis without committing to IKEA's rental fleet. IKEA guarantees utilization back to Fluid, providing a revenue floor for contractors. This model reduces contractor risk and avoids dealing with individual contractor creditworthiness.
- **Penske Truck Leasing** offers full-service leasing and contract maintenance, including commercial rentals, consumer rentals, and logistics, as well as used vehicles. Penske currently operates a fleet of about 440,000 vehicles.

Discussion highlights:

- **Infrastructure challenges:**
 - Panelists highlighted challenges around building out charging infrastructure to support zero-emission trucks, including power availability and accessibility. They discussed the need for a comprehensive assessment of power capacity at potential depot locations and the need for quick turnarounds to ensure timely infrastructure development.
 - Panelists noted the importance of streamlining utility processes, especially those related to permitting and approvals, to accelerate the deployment of charging stations.
 - Panelists discussed the value of interactive mapping tools to assist in identifying optimal locations for charging infrastructure, considering factors like power grid capacity, proximity to transportation routes, and regional demand.
- **Incentives and policies:**
 - Panelists discussed incentives and policies, with a specific focus on the value of programs like the low carbon fuel standard (LCFS) and the potential for expanding incentives such as the Fleet Contribution Incentive (FCI) in California to provide downside protection for investments in charging infrastructure.
 - Panelists highlighted the value of supportive policies like the Advanced Clean Trucks and Advanced Clean Fleets.

- **Depot charging:**
 - Panelists highlighted the importance of creating depot facilities that can cater to a diverse range of vehicles. They discussed the strategic placement of these mixed asset class depots, considering factors such as proximity to ports and high-traffic areas.
 - Panelists discussed the potential benefits of a hub-and-spoke model for regional goods movement networks, emphasizing the need to ensure charging depots effectively serve the needs of drayage operations and contribute to the overall efficiency of transportation networks.
- **Secondary market:**
 - Panelists discussed how their businesses could adapt their models to incorporate second-hand vehicles.
 - Panelists expressed optimism about the potential for a robust secondary market, driven by cost savings and optimized charging infrastructure.
 - Participants recognized the need for thoughtful policy considerations to support the secondary market's success.

Breakout Sessions

In this session, Collaborative members were divided into two breakout groups to discuss the following questions:

- How do you see these business models (including secondary markets) contributing to the transition to ZEV drayage at NW ports?
- What will be needed to make these models most successful?
- What are concerns or unintended consequences?

Key items from the breakout sessions, synthesized across the two groups, are listed below.

- **What's needed to make a secondary market successful:**
 - Appropriately structured financial incentives could spur a secondary market by reducing costs to new purchasers who guarantee resale to the drayage market and reducing costs for drayage drivers to purchase these used vehicles.
 - Factors that will spur a secondary market include QA/QC of used vehicle quality, a guaranteed pool of drayage purchasers, available infrastructure.
 - Purchasing and providing used vehicles at lower cost is an attractive option for trucking-as-a-service companies, helping guarantee a secondary market.
- **Potential concerns and unintended consequences of secondary markets:**
 - Without adequate policy/program design, used vehicles may not end up in the drayage sector
 - Without adequate incentive program design, used vehicles may not end up with lower income independent owner-operators. Alternatively, if most used vehicles end up with IOO's they bear the risks of new technologies/markets.
 - Long-term maintenance and repair costs are uncertain (may increase or diminish value of used vehicles).
 - Rapid technology innovation could accelerate the obsolescence and diminish value of used ZEV trucks.
 - Uncertain interactions between secondary markets and other models (e.g., driver co-ops).

- **What's needed to make alternative business models successful:**
 - Incentives/policies that make markets attractive for trucking-as-a-service/leasing providers are those that help advance the market generally: point of sale vouchers, make-ready infrastructure, charging station rebates, grants, regulations (e.g., ACT/ACF).
 - Infrastructure requirements (charging and utility service) and challenges for trucking-as-a-service facilities are similar to those for large depot or public charging sites (e.g., real estate availability, distribution infrastructure, traffic, etc.).
- **Potential concerns and unintended consequences of alternative business models:**
 - Dependence of drivers/companies on one or a few trucking-as-a service companies may reduce competition, locking drivers/companies into financial arrangements.
 - Independent owner-operators often value vehicle ownership and may be resistant to non-ownership models; however, trucking-as-a-service can be an entry point for new drivers.
 - Drivers/companies with low credit may not be eligible (although trucking-as-a-service/leasing/sponsorship may have underwriting flexibility to tailor for lower credit customers).

Quick Updates

Transportation Electrification Strategy

Steven Hershkowitz (WA Department of Commerce) shared updates on the state [Transportation Electrification Strategy](#), noting that Commerce has accepted and incorporated the majority of 280 comments it received. Commerce has streamlined priorities for 2024, reducing around 80 policy recommendations to 14. The strategy includes a recommendation to the legislature to signal release of \$100 million for medium and heavy-duty zero-emission vehicle incentives. Commerce is actively collaborating with WSDOT and Ecology to explore ways to work together to allocate funds for medium- and heavy-duty vehicles. Commerce recently concluded the first funding round for charging projects with \$64 million available, aiming to announce awards by mid-January. The focus is on data analysis, with the intention to allocate funds for medium and heavy-duty vehicle charging, particularly in the fleet depot space.

Joint Transportation Study (JTC)

Betz Mayer (PNWER) shared updates on the timeline for the initial draft of the JTC study. The draft will be sent to the staff work group on December 15, followed by a presentation to the JTC on January 4, which will be available in Olympia and on TV. Feedback from legislators during the January 4 session will be incorporated into the final report, due by the end of January. The team is excited about the upcoming recommendations, with a focus on infrastructure as a top priority, recognizing that it cannot be solely addressed by the incentive program. Betz highlighted the preference for a point-of-sale voucher system over a grant system and noted considerations for addressing the insurance issue in the short term. Ensuring equity and successful deployment of acquired vehicles is a key concern, leading to a recommendation for fleet advisory programs. Other important aspects include exploring stackability between state, local, and federal incentives, brainstorming ways to lower costs (including for drayage drivers in the secondary market), creating a competitive edge through secondary market incentives, and establishing robust data collection and sharing for vehicle performance evaluation over time.

Clean and Prosperous Washington

Michael Mann (Clean and Prosperous Washington) provided insights into the upcoming legislative session, set to begin on January 8. Anticipating potential tweaks to the medium and heavy-duty incentive program, Michael acknowledged the need to address questions surrounding additional investments in the Climate Commitment Act (CCA). Governor Inslee released an initial proposal to allocate \$900 million in additional CCA funding, with results expected from carbon credit auctions. The governor's budget didn't allocate much for the medium- and heavy-duty transition. Michael highlighted a critical factor—the submission of 413,000 signatures to repeal the Climate Commitment Act (CCA), potentially impacting the \$100 million earmarked for various programs. If the initiative progresses, it could be passed in the legislative session or put on the 2024 ballot.

City of Seattle's Electric Trucks Incentive Pilot

Tracey Whitten (City of Seattle) gave updates on the City of Seattle's [Electric Trucks Incentive Pilot](#) program. Tracey shared that the program is progressing smoothly, with the application period officially closing on November 8. A total of 60 applications were received for the pilot funding, and after the review process, 11 applicants successfully completed all requirements. The team is currently in the process of notifying the selected participants, and in 2024, there will be an opportunity for a more detailed discussion. As part of the application process, individuals were required to submit a proof-of-capacity statement outlining their plans for owning and operating the vehicles, including charging plans. In the upcoming discussions, the focus will be on the 11 selected participants, and the program is set to move forward in the next phase.

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 Access, Affordability, and Support Subgroup will meet on December 19th to process information coming out of today's Collaborative meeting.

The next full group meeting is planned for Tuesday, January 30th.