NW Seaport Alliance Puget Sound Zero-Emission Truck Collaborative

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Meeting Summary | October 17, 2024

Attendees

- **Collaborative Members:** Mia Ayala-Marshall (Duwamish River Community Coalition), Sheri Call (Washington Trucking Associations), Mary Cho (Puget Sound Clean Air Agency), Logan Danzek (Communities for a Healthy Bay), Peter Gishuru (African Chamber of Commerce of the Pacific Northwest), Josh Grandbouche (Department of Ecology; *Alternate: Dustin Watson*), David Logsdon (Seattle City Light), Dan Marshall (Tacoma Public Utilities), Betz Mayer (PNWER), Leah Missik (Climate Solutions), Steve Nicholas (Northwest Seaport Alliance), Philip Saunders (WSU Green Transportation Program), Meghan Weinman (SSA Marine), Tracey Whitten (City of Seattle)
- **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), Meghan Reckmeyer (Northwest Seaport Alliance), Patrick Couch (GNA)

Meeting Overview

This tenth Collaborative meeting was held virtually on October 17th, 9:00am – 12:00pm Pacific. The objectives of this meeting were to:

- Hear updates on state and federal funding for the transition to heavy-duty zero-emission vehicles (ZEVs)
- Discuss path forward on key themes from Collaborative members' review of the initial Roadmap draft
- Discuss priorities for near-term actions to be highlighted in the Roadmap
- Outline next steps for Roadmap review and finalization

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.

Funding and Related Updates

West Coast Truck Charging and Fueling Corridor Project and Update on Washington Vehicle Incentive Program

Josh Grandbouche (Department of Ecology) shared updates on the Charging and Fueling Infrastructure (CFI) Grant Program, highlighting recent funding developments for the West Coast Truck Charging and Fueling Corridor Project. Last year, a joint application by California, Oregon, and Washington was initially unsuccessful, but a resubmitted application recently secured $102 million in funding. This grant will support medium- and heavy-duty vehicle charging and hydrogen fueling stations along the I-5 corridor, stretching from Mexico to

Canada. While specifics on the number and location of stations are pending, an RFI will be issued for site selection. The project aims to complete the West Coast's contribution to Phases 1 and 2 of the National Zero-Emission Freight Corridor Strategy by 2027, with minimum site specifications of 3 megawatts in Oregon and Washington, and 5 megawatts in California. A joint California/Oregon/Washington application for a second round of CFI funding is underway, aiming to add seven more medium- and heavy-duty charging stations to bridge gaps along the I-5 corridor. In response to a question about whether similar charging deployments are planned for I-90, Josh clarified that current CFI efforts are solely focused on the I-5 corridor.

At the state level, Josh shared that WSDOT has received $110 million from the Climate Commitment Act to incentivize ZEV truck adoption and infrastructure. An RFP has been issued to secure a third-party administrator to manage these incentives, with contracts anticipated by December and funds distributed in early 2025. A participant asked whether the program would consider alternative technologies such as battery swapping. Josh confirmed that while the program currently focuses on charging and hydrogen, Ecology is open to exploring other technologies.

Washington Trucking Associations Intermodal Summit

Sheri Call (Washington Trucking Associations) recapped WTA's recent one-day Intermodal Summit, which was designed to provide industry members with updates on zero-emission trends, regulatory developments, and new technologies. Speakers included representatives from the Northwest Seaport Alliance and Harbor Trucking Association, who provided various perspectives on industry advancements. The event also included a panel focused on emerging green technologies, with participants from the Breaking Barriers Collaborative, Gauge Zero, Forum Mobility, HTEC, and ZEEM Solutions. Sheri highlighted that the summit was well-received. She mentioned that the WTA's Annual Leadership Conference next June will continue to explore these themes. In response to a question of whether the summit had utility participation, Sheri noted that no utility companies attended the summit, but she expressed interest in finding ways to better engage utilities in future events.

NWSA Zero Emission Drayage Funding Update

Steve Nicholas (Northwest Seaport Alliance) provided updates on the NWSA's zero-emission drayage incentive program, noting that NWSA has secured approximately $55 million through various state and federal grants to support the program. The Alliance is close to launching the program, with the first tranche of $6 million from the Climate Commitment Act expected to be available by late-October. Additional funding rounds will follow in early 2025, including $16 million from a Federal Highway Administration grant to support zero-emission drayage infrastructure. NWSA is also part of the Pacific Northwest Hydrogen Hub and is anticipating $12 million by 2027-2028 to facilitate hydrogen use in drayage trucks and cargo-handling equipment. NSWA recently received a $3 million planning grant through EPA's Clean Ports Program to develop a zero-emission terminal plan for East Blair One Terminal at the Port of Tacoma, while an additional $500 million request for drayage support through the EPA program is expected to be announced soon.

A participant voiced concerns that expanding charging infrastructure might strain existing truck parking, which is already limited. Steve explained that NWSA would seek proposals for charging sites, which could include both existing facilities and new developments. He acknowledged the need to carefully consider site selection to avoid

exacerbating parking challenges and expressed a desire to engage with Collaborative members on refining the selection process.

Lastly, related to the discussion of expanding efforts to I-90, a participant shared an update on the Pacific Northwest Hydrogen Hub, noting recent developments in St. Regis, Montana, which is among the easternmost locations in the hub. They highlighted the importance of expanding hydrogen infrastructure beyond the I-5 corridor to create connectivity along I-90 and I-94, which would support ZEV adoption across a wider geographic area and facilitate long-distance shipping needs.

Overview and Discussion of Draft Roadmap Feedback

Tom Beierle reviewed feedback on the draft Roadmap, which was gathered from small groups discussions on equity, vehicles, and infrastructure, as well as written comments from Collaborative members on the draft. Feedback primarily called for refinements rather than major directional changes. Cross-cutting feedback emphasized the need for stronger recommendations and clarity on who should be responsible for specific actions. There were also suggestions to consolidate related recommendations for a more concise Roadmap.

The Collaborative discussed specific areas of feedback as outlined below.

Forecast of infrastructure needs

Patrick Couch (GNA) presented a range of infrastructure scenarios required to support the Northwest Seaport drayage fleet's transition to ZEVs, focusing on both battery electric and hydrogen fuel cell options. For battery electric vehicles, he outlined three scenarios varying by charging power and type, which would require between 60 and 100 acres of space and total power capacities ranging from 180 to 310 megawatts. For hydrogen, he estimated the fleet would need 74,000 to 224,000 kg/day with a total space requirement of about 10 to 15 acres. Patrick emphasized that mixed infrastructure solutions will be necessary to meet the fleet's needs (see meeting slides 12-15).

Key items from the discussion:

- One participant asked if there's data available on approximately how many trucks local gas stations service daily.
    - Patrick responded that it varies significantly. Large truck stops like Pilot Flying J may serve tens of thousands of gallons of fuel daily, while in-city truck stops are smaller and serve less. He noted that large hydrogen stations might still be smaller than typical truck stops in terms of daily fuel volume.
- Another participant asked if an analysis has been done of available private space within NWSA's territory, and if they have considered the I-90 corridor for trucks traveling outside the area, such as those in the agriculture sector.
    - Patrick shared that this analysis specifically addresses the drayage fleet, but infrastructure will be needed on corridors like I-90 as well.
    - Steve added that the NWSA has some insight into port-owned properties and is beginning to look more systematically at land availability.
- A participant noted the importance of including some of the data that Patrick presented in the Roadmap, adding that cost-benefit analyses would also be valuable to include.

- Another participant stated that the color of hydrogen (green vs. blue) will impact future infrastructure needs, with Alberta potentially supplying blue hydrogen. They noted that this will affect cross-border collaboration and market adoption.
- A participant asked if the examples Patrick shared are considering compressed hydrogen, and how hydrogen carriers like formic acid would impact infrastructure needs.
    - Patrick responded that high-volume sites would likely use liquid hydrogen, either cryogenic or with carrier molecules such as methanol or ammonia. He added that compressed hydrogen is generally impractical for larger sites, as it would require frequent refueling trips.
- A participant asked what level of zoning will be required for medium- and heavy-duty charging sites.
    - Patrick shared that it varies by jurisdiction, and zoning for truck charging typically aligns with logistics or industrial uses rather than traditional fueling stations.
- A participant highlighted that predicting infrastructure needs is challenging due to the potential for innovations like vehicle-to-grid and on-site energy storage, noting the landscape is likely to change as these technologies evolve.
- Another participant added that regional hydrogen supply is complex, as Washington may not meet its own hydrogen needs. They noted that cross-border strategies with British Columbia could play a role in supply solutions.
- Another participant added that accurate forecasts for hydrogen versus electric vehicle adoption will be critical to optimizing utility infrastructure investments.

Path forward for Roadmap: Tom reiterated the plan to include Patrick's infrastructure analysis in the revised Roadmap to provide a clearer picture of the potential bookend scenarios. Participants also agreed with strengthening the Roadmap's recommendation for a more detailed scenario-based analysis in the future.

Inclusion of renewable diesel

Tom introduced the topic of include renewable diesel in the Roadmap. Discussion and comments reflected both the benefits and drawbacks of this fuel as an interim step toward zero emissions. While renewable diesel could offer immediate emissions reductions and work with existing diesel technology as a drop-in fuel, some comments raised concerns that incorporating it might detract from the Roadmap's zero-emission focus (see meeting slide 17).

Key items from the discussion:

- One participant expressed their organization's concern over promoting renewable diesel. They supported framing renewable diesel as part of an interim solution but preferred not to emphasize it strongly in the recommendations.
- Another participant agreed with the idea of keeping the Roadmap focused on zero-emission goals, suggesting that renewable diesel, while potentially useful, may be outside the primary scope of the Roadmap.
- Another participant emphasized the need for interim solutions like renewable diesel to bridge the gap while ZEV infrastructure is developed. They also highlighted specific challenges on the I-90 corridor, which heavily relies on freight and may not be able to support ZEVs immediately.
- Another participant shared mixed feelings, acknowledging renewable diesel's potential role but cautioning that its promotion could create uncertainty about the timeline for fully transitioning to zero emissions.

- Another participant supported the inclusion of renewable diesel as a transitional option, noting its immediate availability and alignment with the state's Clean Fuel Standard. They proposed mentioning renewable diesel in the Roadmap without necessarily making it a major recommendation.
- Another participant agreed that the Roadmap should acknowledge renewable diesel as part of the transition while maintaining its zero-emission focus. They also noted that renewable diesel aligns with existing initiatives, such as the Northwest Ports Clean Air Strategy.
- Another participant suggested that renewable diesel could facilitate buy-in from drivers due to its similarity to traditional fuels.

Path forward for Roadmap: Tom recapped that the proposed path forward would be to include renewable diesel as part of the Roadmap's contextual discussion about near-term greenhouse gas emissions reduction opportunities but not to have specific recommendations on renewable diesel. The Roadmap could reference renewable diesel as a recommended strategy in other strategies, like the Northwest Ports Clean Air Strategy. Participants indicated general support for this approach.

Weight limits

Tom introduced the topic of weight limits and highlighted the current recommendation in the Roadmap, which is to adjust regulatory weight limits for ZEVs to reach parity with diesel trucks. The small group discussions raised several key points, including the inadequacy of current weight allowances for ZEVs to reach parity with diesel vehicles and whether the focus should be on state or federal weight regulations (see meeting slide 18).

Key items from the discussion:

- One participant noted that weight and payload capacity loss with electric vehicles is a major concern for the trucking industry. They emphasized that the federal freeze on size and weight, which has been in place since 1991, makes it a federal issue. The 2,000-pound weight exemption initially granted for liquified natural gas (LNG) trucks was extended to all alternative fuel trucks in Washington a year ago. They pointed out that many in the industry are hesitant to adopt first-generation electric trucks due to weight and capacity limitations but have expressed optimism about future improvements in battery technology that may reduce weight. They also noted that drivers have expressed interest in hydrogen fuel cell technology because of its similar weight and capacity to traditional diesel trucks. They also mentioned that a company called Edison is developing electric logging trucks.
- Tom asked if other states or organizations were actively working on weight limit advocacy, as the Roadmap might include a recommendation to align with other national efforts.
    - A participant responded that they weren't aware of any major efforts underway to change federal weight regulations for ZEVs, and advocacy would likely need to come from national organizations like the American Trucking Association (ATA).
- Another participant explained that the additional weight of EV batteries significantly impacts the agricultural industry, particularly for dense crops like potatoes and apples. These products already fill trucks to weight capacity before fully utilizing space, and the extra weight of EV batteries makes the problem worse. They also noted that hydrogen fuel cells have similar weight issues to batteries, meaning this concern is not exclusive to battery electric vehicles.
- Another participant asked if the federal 2-ton ZEV exemption applied to all roads or if there were restrictions.

- A participant explained that the exemption applies to the national highway network and has been adopted by Washington state, meaning it likely applies to all roads within the state.
- Patrick Couch added that the exemption likely applies to most roads but may not be extended to higher-weight corridors, such as routes where the allowable weight limit already exceeds 80,000 pounds. He also mentioned that further increases in weight limits could face resistance due to concerns about road damage and safety. He noted that there aren't major coordinated efforts underway to push for further weight limit increases, and the focus has shifted toward manufacturers reducing curb weights of ZEVs.

Path forward for Roadmap: Tom reviewed the proposed path forward to focus the recommendation on increasing federal weight limits for ZEVs and seeking alignment with advocacy efforts in other states or regions to the extent they exist. The group also agreed that the Roadmap could include mention of hydrogen fuel cell technology and its possible weight advantages over battery electric vehicles.

Proactive utility infrastructure investments

Tom introduced the topic and summarized the small group discussions, noting feedback that the focus of recommendations on utility investment should emphasize advocating for policies that allow utilities to make proactive infrastructure investments. He noted examples that came up in small group discussions like California's Rule 29, which could serve as a model for policy changes in Washington, specifically around rate-basing proactive infrastructure investments (see meeting slide 19).

Key items from the discussion:

- One participant agreed with the general approach but pointed out the complexities of different governance structures for utilities in Washington, such as Seattle City Light reporting to the City Council, while Puget Sound Energy is regulated by the Utilities and Transportation Commission (UTC). They suggested that while the Roadmap captures the input well, these governance differences could influence the pace and approach to future investments.
- Another participant confirmed that both regulated and non-regulated utilities face similar barriers when it comes to proactive infrastructure investments. They agreed with adding recommendations related to allowing utilities to make proactive investments but emphasized that this is a challenging issue for utilities to tackle on their own without broader support. They noted that additional letters of support or broader advocacy might be necessary.
- One participant shared that there are opportunities being explored nationally for fleets to obtain revenue from vehicle-to-grid pilots, which has the potential to benefit grid resilience and provide revenue opportunities.
    - A utility representative responded that while vehicle-to-grid technology for heavy-duty ZEV trucks is still in the early stages, some pilots have already been conducted using school buses. They suggested that it would be worth considering these pilots as part of the broader infrastructure planning for ZEVs.
    - Another utility representative suggested involving representatives from the UTC or similar agencies in future Collaborative discussions, as they play a key role in utility regulation and rate-related decisions.

Path forward for Roadmap: Tom summarized the proposed path forward, reiterating that the recommendation should advocate for policy changes that allow proactive infrastructure investments, including rate-basing.

Preferential electricity rates

Tom introduced the discussion on preferential electricity rates for electric vehicle (EV) charging, noting that the Roadmap currently includes a general recommendation for providing preferential electricity rates to maintain low average charging costs. However, feedback on the draft Roadmap raised concerns about potential equity impacts of preferential rates and potential cost shifting between different customer segments (see meeting slide 20).

Key items from the discussion:

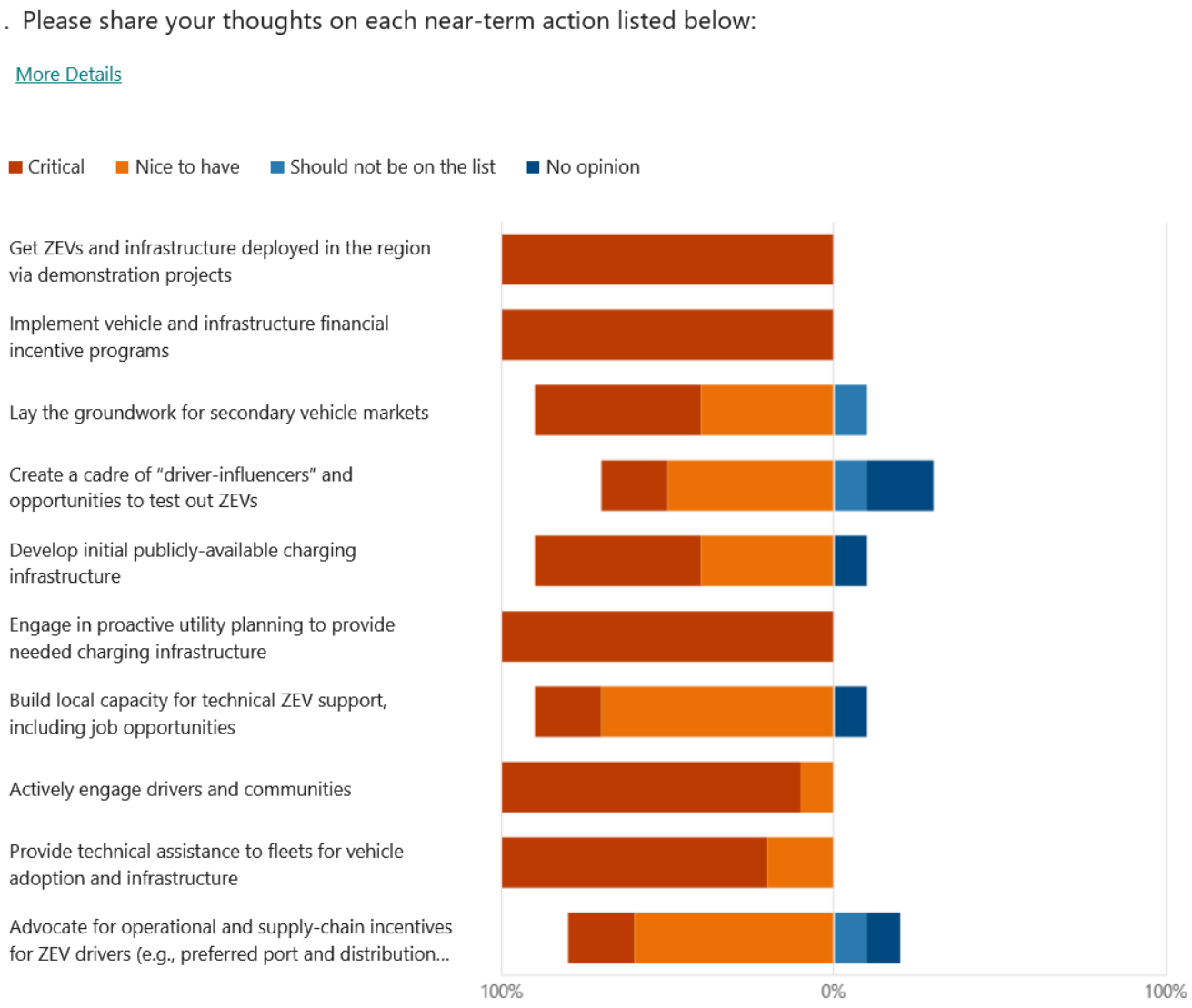
- One participant suggested that time-of-use (TOU) rates could be a more equitable solution than preferential rates. They mentioned previous work with Seattle City Light on off-peak rates for cruise ships as a similar example. Many utilities around the country already implement TOU rates for light-duty EV charging, and there is potential for this model to extend to trucking.
- Another participant agreed with the need to avoid the term "preferential" as it implies a subsidy or incentive that may not be feasible for utilities. They noted that rates should be structured as options rather than preferential, and TOU rates would be a good alternative since many fleets may already charge during off-peak periods. They also mentioned that Seattle City Light is rolling out TOU rates across all customer classes by 2025, which could benefit medium- and heavy-duty vehicle charging.
- Another participant echoed concerns about using the term "preferential," suggesting the wording could be shifted to reflect optimal charging times or to ensure rates do not disincentivize EV charging.
- Another participant highlighted a potential challenge with the assumption that most vehicle charging will happen at night, pointing out that many commercial fleets may need to charge during the day. They raised concerns about demand charges and how they could be a barrier for commercial fleets that do not follow typical residential charging patterns. They suggested that there could be a path forward with special rate structures for EV charging to help lower costs and incentivize their use.
- Another participant explained that equity concerns arise if rates are structured in a way that discounts one customer segment at the expense of another. If preferential rates are offered to a group (like trucking companies), the cost of maintaining the infrastructure could shift to other customer groups, which is the equity concern. TOU rates, on the other hand, would avoid this issue by aligning electricity costs with grid demand without redistributing costs.
- Another participant suggested that the Roadmap could include a section highlighting what utilities are already doing to support the transition to electric trucks, such as proactive planning and collaboration. They also proposed a recommendation for increased coordination between the regional utilities (Seattle City Light, Tacoma Power, and Puget Sound Energy) to better plan for truck charging infrastructure development.
    - Two utility participants supported the idea of including a summary of current utility activities in the Roadmap and agreed with the recommendation for increased coordination.

Path forward for Roadmap: Tom reviewed next steps, including updating the Roadmap language to remove the term "preferential rates" and focus on TOU rates or other rate structures that encourage optimal charging times. Additionally, the support team will collaborate with the three utility representatives on the Collaborative to draft language on current utility activities, along with a recommendation for increased coordination between regional utilities on truck charging infrastructure development.

Roadmap Priorities for Near-Term Action

Tom introduced the idea of focusing on a set of critical near-term actions to be accomplished within the next one to three years to advance the transition to zero-emission drayage. Participants were shown a draft list of priority near-term actions, including deploying ZEVs and infrastructure via demonstration projects, implementing incentive programs, laying the groundwork for secondary vehicle markets, creating a cadre of "driver-influencers" and opportunities to test out ZEVs, among others (see meeting slide 24).

Participants were asked to complete a survey to categorize the actions as critical, nice-to-have, or unnecessary. Results indicated strong support for actions such as getting ZEVs and infrastructure deployed in the region via demonstration projects, implementing vehicle and infrastructure financial incentive programs, engaging in proactive utility planning to provide needed charging infrastructure, and actively engaging drivers and communities. Lower priority was given to actions like creating a cadre of "driver influencers" or advocating for operational and supply-chain incentives for ZEV drivers. A snapshot of the survey results is included below.



In the survey, participants were also asked for any additional priority near-term actions that they would add to list. Survey results are listed below.

- Engage with shipping and logistics companies with major influence at NWSA ports to get their buy in.
- Advocate for maintained (at a minimum) point-of-sale incentive funding for ZEVs.
- Continue to aggressively pursue state and federal funding for ZEV drayage deployments
- Develop innovative financing mechanisms to facilitate and accelerate ZEV drayage deployments (i.e., truck purchases and charging/fueling infrastructure development).
- Put in place a mechanism for facilitating and tracking implementation of the Roadmap.
- Establish supported "Best Practices" for various fuel options. Based on data and lessons from early actions, the Collaborative should be a leading voice in identifying the most efficient strategies for decarbonization in this sector and remain in alignment with broader climate goals/decarbonization strategies. If certain things are/aren't working, the Collaborative should be empowered to call that out and make recommendations.
- Address any other potential barriers (e.g., permitting, workforce, etc.) to accelerating the build-out of charging infrastructure. Essentially, expanding the idea of proactive utility planning to include other processes.
- Work with manufacturers to see if there are opportunities to pilot alternate technologies such as battery-swapping, which has been successful in other global ports.

Public Comment

One member of the public, representing a west coast utility collaborative, shared their input on the discussion around proactive utility infrastructure and preferential utility rates. They emphasized the importance of "managed charging technologies" in reducing the impact of electrification on the grid. They noted that studies from California and the Joint Office of Energy and Transportation show that these technologies can reduce grid buildout by about 30%. They highlighted the need to promote these strategies, which include programs, technologies, and rate structures aimed at optimizing electricity use before vehicle-to-grid systems come into play. While there is strong macro-level utility coordination, they noted a gap in localized coordination efforts in the Puget Sound area.

Roadmap Next Steps

Tom provided an update on the next steps for Roadmap development and review, noting the support team will be working on a revised draft that incorporates the feedback from recent discussions, small groups, and written comments. The revised draft is expected to be shared with Collaborative members for review by mid-November. The goal is to address any remaining issues at the December meeting, aiming to finalize the Roadmap by the end of 2024 or early 2025. The support team will develop initial ideas about the release and communication strategy for the Roadmap, which the Collaborative will discuss in December. Collaborative members were encouraged to consider ideas for outreach, particularly with their communications teams. Surveys have also been circulated to gauge interest in continuing involvement in future collaborative efforts and to gather feedback on the meetings.

A summary of today's meeting and all materials will be posted on the website. The next full group meeting is planned for Thursday, December 12th.