TACOMA POWER

Transportation Electrification Action Report

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Purpose

This document is a companion to the Transportation Electrification Plan. We will update it annually and make it available to assist the Public Utility Board in understanding Tacoma Power's efforts to advance transportation electrification.

This report contains three core sections:

Section 2: A report on existing programs

Section 3: General description of project categories - areas of research and program

Section 4: A list of priority strategies the utility plans to execute over the next year

Utility efforts described in the Transportation of Electrification Action Report will be consistent with the five guiding principles set in the Transportation Electrification Plan: Appendix A - Transportation Electrification Strategic Guidelines and approved by the Public Utility Board.

The five guiding principles are:

1. Seek to understand the technology and the state of the industry.
2. Help inform the public through education and outreach.
3. Be responsible for utility finances and assets.
4. Help customers achieve the benefits of transportation electrification.
5. Maintain good governance and reasonable process to reduce risk and cost.

The Need for a Transportation Electrification Action Plan

When dealing with a transformational technology like transportation electrification, the utility should retain responsibility for program design and delivery. With decision-making authority over programs, the utility can respond quickly and efficiently to changing conditions, such as changes in technology, state or federal policy, the interest and availability of external partners and funding opportunities that may arrive or change without warning. Utility program flexibility can be an important hedge against misallocation of investment funding and customer dissatisfaction.

A Note About Existing Programs

Tacoma Power has been actively engaged in researching, designing, and launching transportation electrification programs since early 2016. Until 2019, when Senate Bill 1512 (SB 1512)[1] passed into law, our ability to engage the public in efforts to promote electric transportation were restricted by legal ambiguity. SB 1512 clarified that the legislature sees a role for power utilities to play in promoting and providing incentives to the public to advance transportation electrification. The reader should consider the legal constraints on utility actions that predated SB 1512 when reviewing this section on existing programs.

[1] RCW 35.92.450

Existing Programs

The Value of Transportation Electrification Study

In 2016, Energy and Environmental Economics Inc. (E3), in collaboration with seven Pacific Northwest utilities, completed a study to quantify the benefits and costs of transportation electrification. Tacoma Power was one of five utility study cases and actively participated in all aspects of the research and analysis. This report was critical because it made several points clear:

- Each utility's experience with transportation electrification would be different based on individual circumstances.
- For Tacoma Power, transportation electrification was a good investment from the perspective of the consumer, the utility customer, and the environment.
- Programs to promote managed charging and load management systems can reduce utility costs as EV adoption increases.

Education and Outreach

- Education and customer engagement are crucial for informing the public about the benefits of electric vehicles (EVs) and this continues to be an ongoing utility effort.
- Tacoma Power contracted with ChooseEV.com for a website content upgrade, and assisted in the development and testing of content.
- Electric Car Demonstration Events for the Public
  - Tacoma Public Utilities and partners such as the City of Tacoma, LeMay – America's Car Museum, Point Defiance Zoo and Aquarium, Forth, Puget Sound Energy, and Cheney Stadium hosted five events since November 2017.
  - More than 1,000 people participated in these events and over 400 took advantage of rides/drives, providing people with their first experience in an electric vehicle.
- Electric Car Discount Program – We assisted the City of Tacoma in launching the first program of its type in the State of Washington. In exchange for inclusion in education and outreach efforts, car dealers provided discounts on new electric vehicle sales and leases for a limited time (90 days).
  - Electric car charging equipment companies and electric bicycle companies also participated.
  - We attributed 24 to 36 electric car sales to the program, during and after the 90 period.
  - Car dealers and the public were impressed with this program.

Electric Vehicle Charging Study

- We conducted a research project to study the charging and driving behavior of over 100 Tacoma Power customers. In exchange for participation in this study and completing all surveys and data collection efforts for two years, customers receive up to $500 in compensation. The results of this research study will assist us in the design of upcoming transportation electrification programs.
- We contracted with a consultant to provide hardware and software.
- We designed and launched a recruitment campaign to sign up 200 customers and has since expanded the scope to add more customers to the study.

Existing Programs

Commercial Charging Infrastructure Support

- To remove economic obstacles to charging station investment in the our service territory, we designed and introduced a new rate tariff: Schedule FC. This tariff temporarily reduces the demand charge from the general rate through an increased energy charge. This tariff will encourage commercial electric vehicle charging companies to invest in Tacoma. While not a long-term solution, this pilot promotes the investment of additional DC fast charging infrastructure and will help raise the confidence of potential electric vehicle drivers that there are sufficient charging facilities for their needs.
- We worked with customers and charging infrastructure providers, including Electrify America, Washington State Department of Transportation, EVgo, Tesla, and SemaConnect.
  Tacoma Power was able to help bring two DC fast-charging stations and five Level 2 workplace charging stations to Tacoma without spending ratepayer funds.

Electric Vanpool

- Tacoma Public Utilities worked with Pierce Transit to exchange eight gasoline commuter vans to plug-in hybrid electric models.
- We analyzed route selection, installed charging infrastructure, providing driver training and charging account registration.

Campus Charging Infrastructure

- We are expanding on-campus electric vehicle charging to accommodate additional plug-in commuter vans, employees, and customer charging needs by accessing a grant opportunity.

Electric School Bus

- We are currently working to assist multiple school districts in obtaining electric school buses!
  By helping school districts apply for Department of Ecology grant funding, Tacoma Power will make it possible for schools to purchase electric school buses and necessary charging equipment.
- We assisted Franklin Pierce School District with preparations to put the first electric school bus in operation in Washington State. Preparation included assistance with the design and selection of charging infrastructure and an operational assessment for electric bus route selection.
- Tacoma Public Utilities worked with the Washington State Department of Ecology, TransAlta Coal Transition Board and Franklin Pierce School District to host a ribbon-cutting event to celebrate the first electric school bus in Washington State. Governor Jay Inslee attended the event.

Transit Electrification

- We engaged with Pierce Transit to understand their electrification goals and to understand their integration issues for the first three battery-electric buses into their fleet.
- We have been investigating the need for on-route induction charging infrastructure along Pierce Transit “Bus Rapid Transit” lines and is an active partner in the design and deployment of this important equipment.

Existing Programs

Shorepower at Port of Tacoma

- Tacoma Power and the Port of Tacoma have been exploring the expansion of electric facilities to accommodate shore-to-ship power connections (i.e., shore power) for ocean vessels at berth. This infrastructure will replace the need for on-board generation systems fueled by heavy fuel oil.
- We successfully assisted the Port of Tacoma in seeking grant-funding opportunities from the EPA (DERA) and Trans-Alta Coal Transition Fund to reduce the cost of the infrastructure to terminal operators, the Port of Tacoma and Tacoma Power ratepayers.
- We estimated carbon emission reductions from this project are 3,800 tonnes per year.
- We designed and presented a power tariff for consideration by the Public Utility Board in 2019. The Public Utility Board's favorable acceptance of the proposed tariff demonstrates cooperation between the Port of Tacoma and Tacoma Power to granting organizations. The rate design allows terminal operators to allocate charging costs to docking ships easily, providing benefits to all parties involved.

Low-Income EV Car Share

- We are working collaboratively with the Tacoma Housing Authority, Puget Sound Clean Air Agency, and neighborhood groups to investigate the possibility of a low-income EV car share program. Residents of low-income housing projects would have the option to rent an on-site electric vehicle at an inexpensive rate. Our partnership would increase clean mobility options for people with few transportation alternatives.

Zero Carbon Fuels Research Group

- While battery-electric vehicles have been gaining popularity, the technology may not be sufficient for heavy-duty applications like long haul trucking, railroads, or marine transport.
- We joined the Renewable Hydrogen Alliance and is working closely with several companies on prospective plans to develop a local source of renewable hydrogen made electrochemically and not using fossil fuels.

General Description of Projects and Programs

Customer Education and Engagement

Many people are unaware of or have had limited exposure to the latest electrified transportation technologies[2]. They have questions about technology performance, the costs of installing and operation, the impact of new electrified loads on their utility expenses, equipment and operational safety, permitting requirements, and other areas.

We seek to be a trusted energy advisor to our customers and have a responsibility to assist them with seeing transportation electrification as an option worthy of consideration. We should prepare to inform customers of the benefits and costs, be able to respond to basic questions about the technology, and be ready to provide outside references to address customer concerns.

Now, with clarified legislative authority to promote transportation electrification, we can engage customers to educate them about these benefits better and more directly.

To this goal, we must provide accurate and useful information about transportation electrification. We need to make investments to ensure our website is up to date, that it contains helpful information, and includes interactive features for customers. Our social media and customer communications will consist of regular messages about transportation electrification - encouraging customers to realize how fun, economical, and environmentally -friendly these vehicles are.

We will consider how to help with the development of a local electric vehicle driver group. A similar group exists in Seattle, and their members have been very helpful as key stakeholders and advocates in our current EV program efforts. We thank the Seattle Electric Vehicle Association for their assistance and hope to support the development of a similar group consisting of local EV drivers.

When our staff interact directly with customers, they are the face of Tacoma Power. It is essential to provide them with adequate training and materials to deal with customer questions about transportation electrification. Training should include a general understanding of model availability, charging technology, our programs and incentives, government tax credits, and the impact on rates and the environment.

We will continue to lead by example by investing in campus and fleet electric vehicle charging and adding electric vehicles to its fleet where operationally possible. We joined the City of Tacoma in the West Coast Electric Fleet Pledge that commits the utility to spend at least 3% of new vehicle acquisition on zero-emission vehicles.

To ensure that our programs and messaging are research-based and efficient, we will engage in frequent customer studies and market research efforts. By understanding the evolving electric vehicle market and the preferences of our customers, we can avoid costly mistakes in program design and delivery.

[2] TheDrive.com/news/29693/forty-two-percent-of-americans-think-electric-cars-still-need-gasoline-study-says

Privately-Owned Charger Program Opportunities

We will consider encouraging customers to make smart transportation electrification investments by providing a rebate to customers for an approved EV smart charger (and perhaps installation) with proof of purchase. The rebate will help customers with the significant upfront cost of switching to an EV and will provide electric charging capabilities for many years.

We will investigate how tariff design can provide an economic incentive to encourage customers to avoid EV charging during peak demand periods. We would also like to explore technologies that encourage customers to make private chargers available to others in the community with a peer-to-peer EV charging pilot. Through a third-party mobile phone application, EV drivers can search for and access private EV chargers for a modest incremental fee. By offering their chargers for public use, owners can recoup some of their upfront installation investment when they aren't needed. This business model may encourage customers to invest in charging and make it accessible to the wider EV community.

Residential, commercial, and industrial customers are encouraged to make use of these proposed programs.

Car Dealership Engagement

The reason car dealerships hire salespeople is because they are effective at influencing buyers. Making sure salespeople are motivated to sell EVs and are knowledgeable about the latest EV models, charging options, available incentives, and potential electricity cost impacts could significantly influence EV adoption.

We will investigate a variety of dealer engagement programs, which may help salespeople stay current on the benefits of and incentives available for electric transportation. By providing ongoing dealer education and materials that summarize utility offered incentives and government tax credits, we can help dealerships sell EVs. With the most recent information in hand, salespeople can provide the considerable assistance to customers curious about switching to an electric vehicle.

Another vital effort linking interested EV buyers with local car dealerships has been the five Electric Vehicle Ride and Drive Events that we have hosted since 2017. Dealerships, customers, and venue owners have all overwhelmingly appreciated these events where over 400 customers have experienced test rides/drives. We helped customers discover electric bikes, EV charging equipment vendors, and introduced them to other community programs. Continuing to support local car dealerships with EV focused customer events continues to be a win-win for everyone involved.

In 2018, Tacoma Power and the City of Tacoma partnered to promote Washington State's first "Electric Vehicle Discount Program." Car dealerships volunteered a significant discount on new electric vehicles in exchange for promotional considerations by the City of Tacoma and Tacoma Public Utilities. Available for only a limited time, the promotion was successful at raising the public's awareness of electric vehicles and encouraging car dealerships that had not sold many EVs to increase their efforts. The program was successful in placing over three dozen vehicles in the limited time offer period and taught us valuable lessons about how to improve the program.

With newly clarified legislative authority, we will investigate opportunities to launch a second "Electric Vehicle Discount Program" and possibly combine it with other customer programs to deliver combined benefits.

Heavy-Duty Transportation

Many truck manufacturing companies, including Daimler, E-Lion, Tesla Motors, Nikola Motors, Adomani, and others, now offer vehicles that range from forklifts, daily delivery (Class 4-6) vehicles, off-road cargo handling equipment, and long haul trucking (Class 7-8). With more companies bringing first generation products to market over the next few years, vehicle manufacturers are selectively bringing their trucks to territories where local power utilities can be relied on to be good, supportive partners for customers seeking to transition to electric fleets.

Tacoma's sizeable commercial and industrial customer base provides us with a unique opportunity to lead electrification efforts for heavy-duty applications. With a service area containing the Port of Tacoma, a significant railway yard, Joint Base Lewis McChord, and bisected by Interstate 5, we can help improve local air quality for the communities we serve by helping commercial and industrial customers transition to electric heavy duty vehicles.

The communities we serve, combined with our low-cost clean power and recent transportation electrification efforts, may also make Tacoma a desirable location for start-up companies to test and launch their products.

The Washington State legislature has committed to expanding renewable power generation and curbing carbon emissions. Currently, grant opportunities through state agencies, the Volkswagen Settlement Fund, and the TransAlta Coal Transition fund make these projects possible. Piloting new electric trucks is a great way to address air quality issues in the south sound region, particularly for underserved populations that surround transportation corridors.

Accepting this role, we will seek opportunities to work with commercial and industrial customers through public-private partnerships and use its talents and role in the community to help bring prototype projects to Tacoma without putting ratepayers at risk.

We can help locate and work with customers interested in transforming their fleets to electric or non-carbon fuels by learning the customer's goals and committing to help achieve them. We can advise customers in the development of their business case to ensure that they include all utility program benefits and available government incentives, and they carefully consider all benefits and costs. We can also introduce customers to economic development professionals and related businesses to help customers find helpful partners.

Distribution system impacts from heavy-duty vehicles can be much more significant than for private light-duty vehicles. We can provide advice to customers as they are designing charging infrastructure and should propose alternative designs for consideration that can improve the reliability of service and reduce costs to customers.

We should prepare to assist customers with the financial obstacles of electric transformation. We can help them seek grant opportunities, designing rates that remove barriers to electric vehicle adoption while recovering all costs, and sharing the costs of upgrading necessary distribution system infrastructure.

To continue as a helpful advisor to customers considering electric fleets, we must continue to research and develop projects and programs in areas of vehicle-to-grid applications, special time-of-use rates, pilot rates for demand charge reduction, and on-bill financing options.

Support Research Into Zero-Carbon Fuels

Recent developments in lithium-ion battery systems have led to significant cost reductions and performance increases that are appropriate for light-duty vehicles. While the improvements in this technology have been impressive, it may not be sufficient for most heavy-duty applications. The availability of materials to construct so many large batteries and the weight of the batteries needed to meet heavy duty vehicle requirements make it difficult to see battery technologies working for heavy duty applications. Other technologies may be needed to electrify trains, ships, transit buses, and other large vehicles that travel long distances or operate for long periods without stopping to refuel.

To this end, we will support public and private-sector research and development of zero-carbon fuels generated from renewable, carbon-free electricity. Hydrogen, formic acid, ammonia, and other alternative zero-carbon fuels are in the early prototype phases but may emerge as superior alternatives to battery-electric systems for heavy-duty vehicles within a decade.

Including All Communities

The benefits of electrified transportation are economically and environmentally significant for the driver and communities adjacent to transportation corridors. Tacoma Power will make efforts to realize these benefits for all customers through specific actions and programs.

Tacoma Power and partner community organizations are working to investigate opportunities to make electric car-share vehicles available at selected housing projects. Residents could enjoy a more convenient and affordable transportation alternative that aligns with their environmental and financial goals. Electric vehicles as a shared resource make sense financially due to lower fuel costs and less maintenance than gasoline-powered cars. Not to mention that when your car sits unused over 95% of the time, sharing it with your neighbor makes a lot of sense.

In 2019, Pierce Transit took possession of the first three battery-electric transit buses in their fleet of over 100 buses, and they will have three more within a year. Their long-range plan includes a path toward transitioning to one-third of their buses being electric within five years. Having good utility partners to help them to site infrastructure, design charging and electrical support equipment, access grant funding, and develop solutions to avoid significant rate pressures is essential.

The central bus barn for Pierce Transit isn't in our service area, but we can still assist this vital community service provider with opportunity charging on selected routes. It might be valuable for us to help introduce Pierce Transit to renewable hydrogen fuel cell buses as an alternative to battery-electric buses that might serve their long-term future needs with higher reliability and with less cost.

There may be other forms of transit - from shuttle buses for tribal communities and nursing homes, to e-scooters and e-bikes - that can benefit from our input and support. We will continue to seek opportunities to work with community partners to bring solutions to our shared customers.

We are interested in assisting school districts' transition away from diesel school buses to ones that operate exclusively on electricity. Franklin Pierce School District, a Tacoma Power customer, is the owner of the State's first electric school bus. We plan to convene a workgroup of all school districts in our territory to learn from this early deployment and help prepare for the day when they receive their first electric school buses.

We have been a helpful partner in designing the charging infrastructure and hopes to expand the number of electric school buses in the district. Electric school buses provide an exciting opportunity to explore vehicle-to-grid (V2G) technology, where the sizeable onboard battery systems can be deployed by the utility (with the school district's permission) to assist in peak shaving or grid balancing services. By connecting several buses with V2G-capable chargers, load management software, solar panels, and building electrical systems, a micro-grid can be formed that adds resiliency to school operations, provides additional funding to the district, and helps the utility maintain system reliability.

Port Electrification

The Port of Tacoma is an essential economic engine for Tacoma and the South Sound region. Tacoma Power can help by making it possible to continue operations with cleaner technology. Tacoma Power and the Port of Tacoma secured funding to electrify Husky terminal and provide docked ships with a clean, renewable alternative to onboard diesel generators. Together, the Port of Tacoma and Tacoma Power seek additional funding to extend capital infrastructure expansion at other terminals in the Port of Tacoma to reach other ships at berth.

This project will increase our revenues and be largely grant-funded so that our customers bear no additional cost. We proposed a tariff that provides a power rate removing economic obstacles for terminal operators and shipping lines. We will continue to make efforts to finalize this project and to look for other opportunities for shore power expansion and other forms of transportation electrification. These efforts could include electrification of cargo handling equipment, pool cars, and drayage. We will continue to conduct research and work with groups interested in using zero-carbon fuels in marine and rail transport.

Priority Strategies

Our list of 10 priority strategies for 2020-2021 will help increase transportation electrification. We may adjust this priority list based on changes in the expected outcome, resources available, the existence of partnerships, and the state of the market.

Action 1:

Educate customers on the benefits of transportation electrification.

Desired outcome: The utility, in its role as a trusted energy provider, will inform customers about the benefits and costs of transportation electrification to improve their next transportation investment decision.

Methods:

- Invest in current and accurate website information.
- Train customer-facing staff to provide accurate information in an easily understood way.
- Conduct market research and customer analysis to understand customers' needs and the barriers that exist to filling them.
- Continue to host electric vehicle events and information sessions for customers.
- In conjunction with dealerships, offer a second electric car discount program.

Action 2:

Support DC fast charging infrastructure investments.

Desired outcome: DC fast charging infrastructure is an expensive and somewhat risky investment that the utility would have difficulty funding under the "gift of public funds" prohibitions. We will provide the best customer service to public and private investors seeking to locate infrastructure for our customers. It may assist in providing some electrical infrastructure upgrades to help attract private investment.

Methods:

- Work with local landowners to seek and apply for grant opportunities.
- Provide concierge-level service with utility operations and permitting.
- We already provided a pilot rate that supports the economics of EVSE investments to promote third party investments.
- In certain situations, if the economics of the site and funding restrictions allow, we may offer "make ready" investments at our expense.

Action 3:

Expand campus charging and encourage an ongoing fleet transition.

Desired outcome: We will "walk the talk" by demonstrating to customers that the benefits to electric transportation are achievable here and now.

Methods:

- Seek opportunities to prototype and expand the Tacoma Power fleet to include models that are hybrid electric, battery-electric, fuel-cell electric, or run on other low-carbon and zero-carbon fuels.
- Uphold our West Coast Green Fleet Pledge to spend at least 3% of new fleet acquisition spending on zero-emission vehicles, be they battery-electric or zero-carbon fuels.
- Seek grant funding to expand campus employee and customer charging.
- Review current retail charging fees at campus charging stations and explore the cost recovery options of different fee designs.
- Explore options to expand charging infrastructure to locations outside of Tacoma, including the hydro projects and Tacoma Power parks.

Action 4:

Launch an electric vehicle charger pilot.

Desired outcome: Provide low-cost or free Level 2 charging equipment for customers to install at their homes and businesses. The provision would allow us to specify smart EV charging options. The options would enable us to offer a managed charging program to incent off-peak charging behavior.

Methods:

- Utilize the customer, usage, and charging behavior data collected in the 2019 EV Charging Study, compare it to system load data, and investigate the potential benefits of a time-of-use rate tariff to incentivize customers to set their charging to off-peak periods.
- Invite customers to participate in future EV pilots and programs.
- Seek opportunities to assist customers who are interested in sourcing and installing charging equipment for public or fleet applications.

Action 5:

Solve the "split incentive" problem.

Desired outcome: A "split incentive" problem often exists where a property owner is not the user of EV charging infrastructure, but a tenant is. The problem can result in a lack of EV charging infrastructure investment that discourages some customers from purchasing electric vehicles. We will seek opportunities to work with private and public industry partners to solve this problem and expand EV charging through private investment.

Methods:

- Identify situations where property owners and EV charging infrastructure users are not the same, and this is a cause for lack of charger investment.
- Work with private application developers to use peer-to-peer sharing technology as a way to bridge this economic gap.
- Research methods of funding electric vehicle charging equipment allow for retail customers to use chargers provided by property owners that compensate both the utility for power services and the property owner for their capital investment at a rate that is economical to the consumer.
- Design a program to extend this service to homeowners, multi-family building owners, retail businesses, and employers.
- Assist landowners curious about the program in the design and implementation of charging infrastructure.

Action 6:

Expand transportation electrification at the Port of Tacoma.

Desired outcome: Assist businesses in the Port of Tacoma in attaining their environmental sustainability goals by finding opportunities to replace the use of carbon-emitting fuels with clean, renewable hydropower.

Methods:

- Work cooperatively with the Northwest Seaport Alliance, the Port of Tacoma, terminal operators, shipping lines, businesses and logistics providers that operate in the Port area.
- Seek opportunities for grant funding to reduce the cost and barriers to all partners engaged in further electrification.
- Assess the merits of rate tariffs that support the electrification of ships at berth.

Action 7:

Assist School Districts in electrifying school bus fleets.

Desired outcome: Assist the school districts we serve with a significant step toward school bus fleet electrification and to advise them about infrastructure design.

Methods:

- Assist school districts in identifying and acquiring financing for electric school buses through grant funding applications and other financial incentives.
- Assist in designing infrastructure to support the school bus duty cycle.
- Organize and operate a workgroup of school districts to share information about initial research and ongoing operational data so other non-participant school districts can make informed decisions about their future fleet investment decisions.
- Seek opportunities to learn about vehicle-to-grid charging applications and how they can support school microgrids.

Action 8:

Assist with transit electrification.

Desired outcome: Collaborate with transit agencies serving our customers to reach their electrification goals.

Methods:

- Collaborate on site selection and charging infrastructure design to support opportunity charging on transit routes within the Tacoma Power service area.
- Propose innovative ideas to reduce obstacles to further electric transportation adoption. Ideas may include seeking grant funding, deploying battery storage infrastructure or load management software, and partnering with other electric charging uses.
- Collaborate on research and explore the use of fuel cell transit buses fueled with renewable hydrogen produced with our clean, renewable, carbon-free electricity.

Action 9:

Explore the production of synthetic fuels including hydrogen, formic acid, and other non-carbon compounds as a way to convert heavy-duty vehicles into zero-emission vehicles.

Desired Outcome: Investigate transportation electrification through the use of carbon neutral synthetic fuels.

Methods:

- Identify and understand the benefits, costs, and risks of the production, storage, distribution, and use of zero-carbon fuels to end-users, the utility ratepayer, and the environment.
- Cooperate with transportation end-users, local community leaders, zero-carbon fuel producers, and others to identify obstacles and solutions that are mutually beneficial for achieving benefits, reducing costs, and mitigating risks of zero-carbon fuel production, storage, and use.
- Host a prototype fuel cell project that will test capabilities, and calculate and estimate benefits and costs for a broader scale application of technology.

Action 10:

Assist in commercial and industrial transportation electrification.

Desired Outcome: Expand heavy duty fleet electrification.

Methods:

- Investigate current electric options for trucking, marine, rail, forklifts, and other material handling equipment to find specific applications where electrified transport provides a reduced total cost of ownership over non-electric alternatives.
- Develop programs to incentivize commercial and industrial customers to transition to electric transportation options that do not violate the “gift of public funds” restrictions. Assist customers in locating and applying for grant funding and in designing and siting charging infrastructure.
- Develop customer education and engagement programs to highlight the benefits of transitioning to electrified transportation options. Demonstrate how the total cost of ownership for electric vehicles combined with grant funding can lead to a lower overall cost.

Public Input Process Findings

The following is a list of issues that were raised through the public input process:

1. Stakeholders and members of the public are interested in making the benefits of transportation electrification available to low-income customers. Several stakeholders expressed dissatisfaction that early efforts to electrify transportation in society only provide indirect benefits to disadvantaged communities. While a cleaner environment, reductions in our national dependence on foreign energy, and reduced noise pollution are appreciated, customer advocates were eager for the industry to make the initial cost of electric vehicles more affordable. The consensus of the stakeholder group was that this was not a problem that we could likely influence, but a frustration, nonetheless.
2. Stakeholders and Tacoma Power discussed the prioritization of transportation electrification projects and programs. Addressing climate change through reductions in greenhouse gases (carbon primarily), equity, and cost-effectiveness (as measured by a ratepayer impact measure (RIM test) were raised as possible criteria to help establish priority. We advise that the Public Utility Board, in conjunction with staff, is in the best position for establishing priorities.
3. When cost-effectiveness tests for establishing compliance with the "gift of public funds," prohibitions were described, stakeholders asked about including the benefits of avoiding public health costs from improved air emissions. We explained that cost-effectiveness tests focused solely on those activities related to the explicit authority of customer-owned utilities – that being the sale of power and power services. We hold no legal authority to improve air quality or to promote public health, and therefore cannot include it in an economic cost-effectiveness test. If the state legislated a carbon-free clean fuel standard that provided credits to utilities who sell clean energy for transportation electrification, utilities would have the ability to trade credits for financial benefit and could then include this in a cost-effectiveness test. We have been a strong supporter of statewide clean fuel standards for several years for this reason. Several stakeholders would like to see the legislature expand the benefits we could include in cost-effectiveness tests.
4. Stakeholders recommended that we increase efforts to publicize that the power we provide is inexpensive, clean, and renewable and that transportation electrification contributes to our national security by replacing foreign energy supplies with power produced here in Washington State.
5. Stakeholders were curious if we had any immediate concerns about the distribution system capacity to accommodate transportation electrification. We responded, saying that the only significant concern was related to the success of locating several shore power projects at the Port of Tacoma over the next decade.
6. Stakeholders appropriately reminded us that utility expenditures on programs for the "poor and infirm" are exempt from "gifts of public funds" prohibitions found in the Washington State Constitution.
7. A recommendation was made for us to assist employers in locating electric vehicle charging infrastructure at workplaces for the benefit of employees.

Public Input Process Findings

8. A discussion occurred about the process of utility financing of transportation electrification projects and programs. We discussed the nature of capital financing (bond or debt) and how it intersects with the implied cost cap (0.25% of revenue requirement). Without a legislative rulemaking process, Tacoma Power interprets that if there was a large capital expenditure, the annual debt service cost (principal due plus interest payment) of capital financed program could be counted against the cost cap instead of the total capital expenditure. The on-going accounting of large capital projects would likely become quite burdensome. For simplicity, we may rely on a positive RIM test calculation for the project to demonstrate that the Net Present Value (NPV) of benefits from the program (through increased revenues) exceeds the NPV of costs, thereby not resulting in an increased rate impact to count against the cost cap. Several stakeholders would prefer the utility not be constrained from making large capital investments in support of transportation electrification by a cost cap at all.
9. It was discussed that education and outreach expenses and administrative and general would directly apply directly to the cost cap because there is likely to be no direct, measurable benefit. Still, for practical purposes, the cost cap should be more than sufficient to accommodate these expenses.
10. One stakeholder was dissatisfied with the length and scope of the public input process.
11. Stakeholders advised us to work closely with the City of Tacoma and to align with key City of Tacoma initiatives, including Tacoma 2025, the City of Tacoma Environmental Action Plan, etc.
12. Stakeholders were largely in support of engaging in a diverse portfolio of transportation electrification projects and not to focus too heavily in any one area.
13. Stakeholders asked about our role in owning and operating electric vehicle charging stations and electrolyzer equipment to produce carbon-free electro-fuels (e.g., hydrogen) to electrify heavy-duty equipment further. Staff explained that we would prefer to partner with private entities to deliver these services, but we don't rule out utility ownership entirely.
14. Stakeholders asked that we develop programs to provide direct incentives to car dealerships to sell electric cars and to work with them to help correct a perceived conflict of interest between sales and service of electric cars versus gasoline power vehicles.
15. Stakeholders suggested that we focus more attention on micro-mobility options, including e-bikes and e-scooters. We explained that micro-mobility was a subject better addressed by the City of Tacoma due to their minimal power demand and because City planners can better address issues relating to permitting, siting, and risk associated with their use by the public.
16. Stakeholders were interested in programs to assist "garage orphans" - EV drivers without a dependable off-street location to park and charge. Multi-family property incentive programs are of high interest to some stakeholders.