

Transportation Electrification Planning Workshop 4

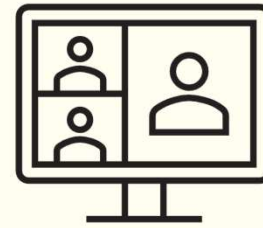


AUGUST 4, 2022

Meeting Logistics

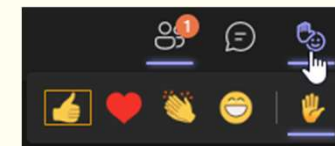
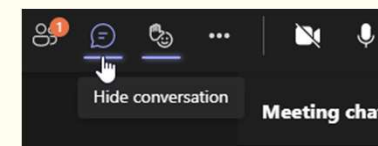
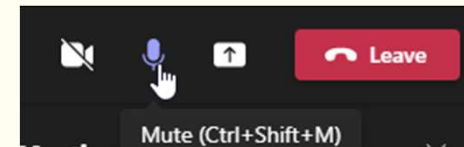
Teams Meeting

- Please click the meeting link sent to your email or [Click here to join the meeting](#)
 - +1 971-277-2317 (dial this number into your phone for best results)
 - Phone Conference ID: 117 716 899#
 - Please use **Microsoft Edge** or **Google Chrome** with Teams as it will give you the best experience



During the presentation:

- All attendees will be muted; to unmute yourself via computer, click on the microphone that appears on the screen when you move your mouse
- To unmute yourself over the phone, **press *6**
- If you call in using your phone in addition to joining via the online link, please make sure to **mute your computer audio**
- Use the chat feature to share your comments and questions.
- Raise your hand icon to let us know you have a question



Operating Agreements

Establishing norms with our communities is foundational to building trust.

To create a **safe space**, we establish **common agreements** such as **respect** and **inclusivity**.

Practice curiosity and **seek to understand different perspectives**.

Stay Engaged

Experience Discomfort

Speak your Truth
(knowing it's only part of the truth)

Expect and Accept Non-closure

Share the Airtime. Step up, Step back.



[The courageous conversations framework](#)
By Glenn Singleton and Curtis Linton



Agenda

1. General remarks - 5 mins
2. TEP update - 30 min
3. Monthly Meter Charge budget - 30 min
4. Break - 5 min
5. Municipal Charging Collaboration Pilot - 30 min
6. General discussion and Q&A - 20 min
7. Closing and Next Steps - 5 mins



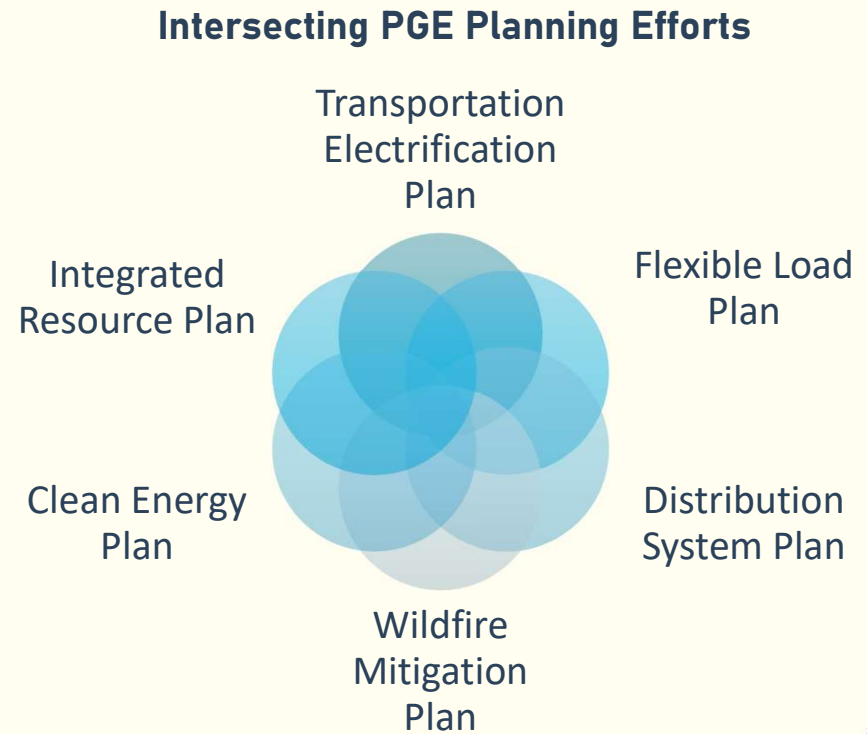


TE Plan Update



Intersections informing TE Plan development and pace

- ❑ TE cost, benefits and scale up speed
- ❑ More holistic view of scope and cost including TE
- ❑ Division 87 process
- ❑ Ongoing discussion of program design and planning intersection



Update on PGE's TE Plan since June Workshop

Portfolio Scale

Portfolio cost estimate reduced
\$160M-\$190M range estimate for
2023-2025

Due to regulatory and other priorities the range estimate above may be further reduced.

Portfolio Scope and Timing

Program starting points are staged
and scale up is moderated
Same portfolio of new and existing
programs and activities

Use of TE Charge and Clean Fuels Funding

Existing CFP grants and education
programs continue
Clean Fuels Program and HB 2165
Monthly Meter Charge funding to
used support operational and
program costs



Update on PGE's TE Plan since June Workshop (Details)

Issue	June Presentation	Updated Concept (August)
Portfolio Cost Estimate	<ul style="list-style-type: none"> \$374M estimate for 2023-2025 Included new and existing programs and activities Included Clean Fuels and Monthly Meter Charge funds 	<ul style="list-style-type: none"> \$160M-\$190M range estimate* for 2023-2025 (49-57% reduction) Same portfolio of new and existing programs and activities Reduced scale for new programs Includes Clean Fuels and Monthly Meter Charge funds
Program Scope and Phases	<ul style="list-style-type: none"> Multiple new programs kick off in 2023 and scale rapidly 	<ul style="list-style-type: none"> Program starts are staged and scale up is moderated
Port Count Totals	L2: 14,550 (residential, public, workplace, multifamily, fleet) DCFC: 595 (public, fleet)	L2: Approx. 10,250 (residential, public, workplace, multifamily, fleet) DCFC: Approx. 275 (public, fleet)
Cost Sharing	PGE owned = PGE paid	PGE is introducing cost-sharing for make-ready in the Business Make-Ready program, and is considering cost-sharing for DCFC in the Municipal Charging Collaboration program
Use of Clean Fuels Funding	Programs are designed to be independent from ratepayer support	Clean Fuels Program and HB 2165 Monthly Meter Charge funding supports operational and administrative costs for programs, in alignment with the limitations on these funding sources

Due to regulatory and other priorities the range estimate above may be further reduced.

Key feedback themes so far (Recent feedback)

Key themes from stakeholders	PGE response
Consider scale of portfolio and rate impact	<ul style="list-style-type: none"> PGE has adjusted program scale and added cost sharing to some programs, reducing rate impacts
Include demand side management and load control in plan to minimize customer costs, optimize grid resources and investments	<ul style="list-style-type: none"> Residential Smart Charging is a direct load control program Schedule 50 (rate at PGE-owned chargers) has on-peak surcharge Fleet sites are eligible for Sch 26 (Energy Partner) All commercial rates are TOU; will add price signals
Price to charge should provide parity between residential rate and public charging owned/funded by utility; support and concern about Schedule 50 rate	<ul style="list-style-type: none"> Existing Schedule 50 provides parity through subscription for PGE operated chargers Considering updates to Schedule 50 in coming year to learn from models around U.S.
Provide equitable payment options , including EMV Chip / Follow NEVI proposed guidance requiring only contactless card reader	<ul style="list-style-type: none"> PGE is continuing to evaluate payment option requirements for utility-owned and customer-owned EVSE
Establish charger reliability requirements for PGE owned and PGE supported chargers	<ul style="list-style-type: none"> PGE requires EVSE owners to keep EVSE operational, and will report on charger uptime for customer-owned EVSE PGE assesses reliability in the procurement process, and tracks and reports on key metrics for reliability of utility-owned chargers
Share PGE's expectations for EV adoption and EV-related load growth	<ul style="list-style-type: none"> PGE will share these forecasts in our Distribution System Plan Part 2, which will be filed in mid-August

Key feedback themes so far (Recent feedback)

Key themes from stakeholders	PGE response
Minimum power level for DCFC	<ul style="list-style-type: none"> • PGE is not considering a minimum power level for customer-owned DCFC • PGE continues to prefer a minimum power level of 150 kW for utility-owned DCFC installed in 2023 and beyond
Ensure plan serves medium and heavy duty fleet and public charging needs	<ul style="list-style-type: none"> • TE Plan provides for additional investment in Fleet Partner program • TE Plan includes additional heavy duty public charging site(s)
Consider the role of the utility in the competitive EVSE market	<ul style="list-style-type: none"> • PGE is providing customers a choice of EVSE where a choice of suitable chargers or networks is available to PGE to offer • PGE’s qualified products list remains open for vendors to submit materials and become qualified
Location, equipment standardization, and user experience need to be well coordinated across utilities, governments, and private actors.	<ul style="list-style-type: none"> • PGE continues to work with key partners in this space to accomplish this



Ongoing Stakeholder Process for TE Plan Development

PGE Workshops



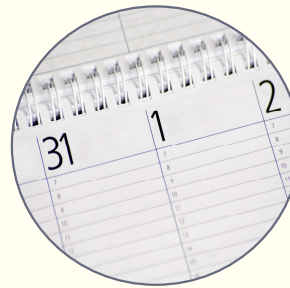
**4 workshops to date,
More planned prior to
filing draft TE Plan**

Monthly Meter Charge



**Filed 2022 Monthly Meter
Charge Budget and
Municipal Charging
Collaboration Pilot**

UM 2033 Process



**Additional review
within regulatory
docket**

Underserved Communities



**Near-term needs
assessment**

**Mapping effort
underway**

**Long-term deeper
engagement strategy**

Feedback? Someone we should reach out to? Resource we should look to?

Email us at TEP@PGN.com





HB 2165 Monthly Meter Charge



Background

As required by HB 2165, on January 1, 2022, PGE began collecting a 0.25% meter charge on customers' bills. In 2022, this revenue will sum to approximately \$5.2M. The funds are to be spent on activities that "support and integrate transportation electrification."

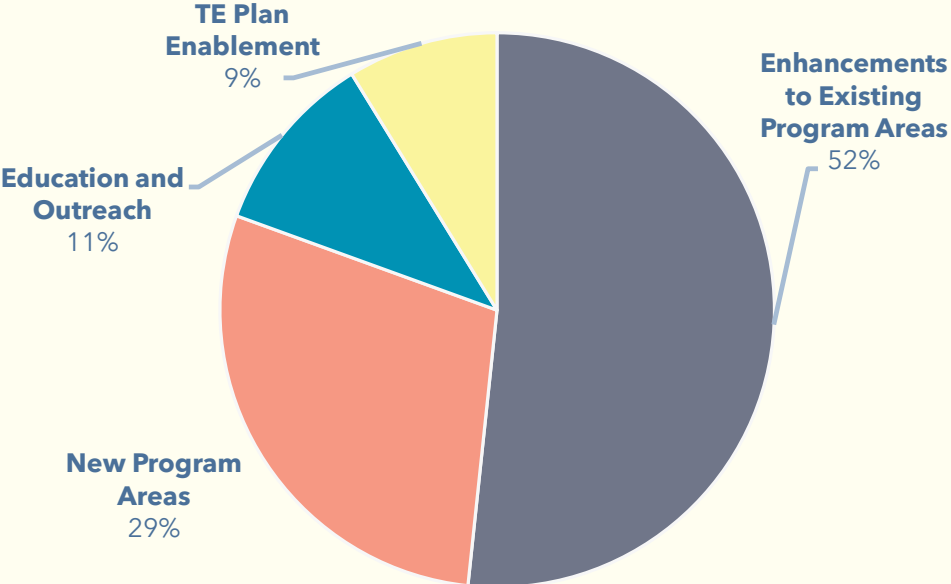
Funds expenditures must be consistent with:

- A budget approved by the OPUC
- Elements contained within a utility's accepted TE Plan
- 50%+ of funding must support the needs of underserved communities, defined as:
 - Residents of rental or multifamily housing
 - Communities of color
 - Communities experiencing lower incomes
 - Tribal communities
 - Rural communities
 - Frontier communities
 - Coastal communities
 - Other communities adversely harmed by environmental and health hazards

PGE's [2022 Monthly Meter Charge Budget](#) was filed on July 29 in [UM 2033](#) (PGE's TE Plan docket)



2022 Monthly Meter Charge Allocation



Total Budget	Incentives	Program Costs (deploy)	O&M on Investments	Evaluation	Marketing	Admin (prepare)	% to Underserved Communities
\$5,200,000	\$2,983,500	\$1,264,000	\$ 213,000	\$162,000	\$270,000	\$ 425,000	\$ 2,904,500
100%	57%	24%	4%	3%	5%	8%	56%



2022 Monthly Meter Charge Budget

Activity	Total Budget	Incentives	Program Costs (deploy)	O&M on Investments	Evaluation	Marketing	Admin (prepare)	% to Underserved Communities
Enhancements to Existing Program Areas	52%							34%
Business EV Charging Rebates	\$ 1,950,000	\$1,500,000	\$ 200,000		\$ 150,000	\$ 100,000		30%
Residential Panel Upgrade Rebates	\$ 607,500	\$ 583,500	\$ 4,000			\$ 20,000		50%
Trade Ally Network	\$ 130,000		\$ 130,000					25%
New Program Areas	29%							93%
Affordable Housing EV-Ready Funding	\$ 1,000,000	\$ 900,000	\$ 100,000					100%
Municipal Charging Collaborations Pilot	\$ 500,000		\$ 150,000	\$ 213,000	\$ 12,000	\$125,000		75%
Education and Outreach	11%							80%
Ride and Drives	\$ 50,000		\$ 50,000					Not specified
Web Education	\$ 60,000		\$ 35,000			\$ 25,000		Not specified
Statewide Education Campaign	\$ 445,000		\$ 445,000					100%
TE Plan Enablement	9%							36%
Community Engagement	\$ 150,000		\$ 150,000					100%
Product Development	\$ 132,500						\$ 132,500	10%
Project Management	\$ 175,000						\$ 175,000	Not specified
Total	\$5,200,000	\$2,983,500	\$1,264,000	\$ 213,000	\$162,000	\$270,000	\$ 425,000	\$ 2,904,500
Percentage of Total	100%	57%	24%	4%	3%	5%	8%	56%

Highlighted activities will be addressed in more detail in subsequent slides



Budget: \$1,950,000

Business EV Charging Rebates

Business EV Charging Rebate Pilot (Sch 52)

- Rebates for installing qualified L2 EVSE
- Standard rebate of \$1,000 and income-qualified multifamily rebate of \$2,300 (per port)
- Budget for 588 ports (forecasted)
- Launched Dec 2020; 58 rebates issued to date

Challenges with Current Approach

- Rebate amount is insufficient to incentivize installation of EVSE, especially networked EVSE
- Income qualification requirement for multifamily is logistically challenging
- Lack of DCFC rebates

Changes to Current Pilot

- Remove the income qualification requirement for multifamily rebates
- Offer the higher rebate to all multifamily sites
- Within existing budget

New Complementary Business Rebate Program

- Infrastructure rebates
 - 80% of make-ready and EVSE installation costs
 - Up to a max of \$6,000 per L2 port and \$36,000 per site
 - Not compatible with Fleet Partner or other future utility-owned make-ready offers
- DCFC rebates
 - \$350 per kW, up to a maximum of \$25,000 per port

Impact

Reduce number of L2 EVSE rebates from 588 to 500

Budget for 250 L2 make-readies and 20 DCFC ports

Budget: \$607,500

Residential Panel Upgrade Rebates

Residential Smart Charging Pilot (Sch 8)

- Rebates for enrolling in smart charging (flex load) program
- Rebates of:
 - \$500 for new charger (\$1,000 for income-qualified)
 - \$50 for existing charger
 - \$50 for enrolling via vehicle telematics
- Budget for 5,000 participants (forecasted)
- Launched Oct 2020; 1,300 enrollees to date

Challenges with Current Approach

- Income qualification level is not consistent with OPUC Staff guidance on HB 2165 (80% of AMI vs 120% of SMI)
- Some customers need a home electrical panel upgrade (17% of current enrollees, and an unknown number of non-enrollees)

Changes to Current Pilot

- Change the income qualification level to align with HB 2165
- Within existing budget

New Complementary Panel Upgrade Rebate Program

- Panel upgrade rebates
 - Standard rebate of \$1,000
 - Income-qualified rebate of \$5,000
- Only available to customers enrolling in Residential Smart Charging Pilot

Impact

Increase number of income-qualified rebates from 130 to 430

Budget for 301 standard and 56 income-qualified panel upgrade rebates

Budget: \$1,000,000

Affordable Housing EV-Ready Funding

HB 2180

- Requires 20% of parking stalls at new multifamily buildings to be “EV-ready” (electrical capacity and conduit laid)
- Allows local governments to enact codes that go beyond that standard, which some local governments in PGE’s service area intend to do

Challenges with Current Approach

- Affordable housing projects that are mid-stream (pre-construction, but have already secured financing) may have trouble finding the funds to meet this new requirement, putting the projects in jeopardy
- Since these projects do not plan to install EVSE today, no other utility rebates or programs are available

New PGE Approach

- One-time, first-come first-served funding for affordable housing projects to meet state and local code and become EV-ready
- Funding of \$2,500 per parking stall, up to 50% of parking stalls at the project

Impact

Budget to support EV-readiness for at least 360 parking stalls

Underserved Communities

Budget: \$150,000



	Near-Term Outreach	Long-Term Engagement
What	Needs assessment through a minority-owned and led vendor	Deeper relationship and capacity-building through continuous engagement
Research Question	What do underserved communities want and need regarding TE?	How can we improve program design to better serve the wants and needs of underserved communities?
How	Focus groups; survey	Workshops
When	To be completed by August 2022	To start in early 2023 and go through 2025

- Complements engagement with communities through the DSP Community Partners workshops
- Using the Greenlining Institute’s Mobility Equity Framework for guidance





Municipal Charging Collaboration Pilot



What is the Municipal Charging Collaboration Pilot?

The Municipal Charging Collaboration Pilot is a platform approach to collaborate with public entities to design, build, own, operate and maintain chargers on public property



Municipal Charging Collaboration Pilot



Objectives

- Install 60 L2 utility pole mounted chargers
- Meet charging needs of underserved populations
- Accelerate deployment by streamlining site host agreements
- Leverage existing assets where possible

Overview

- Significant interest from cities
- Budget: \$500K from Monthly Meter Charge, \$710K (existing) capital
- Pricing equity through Sch. 50 and OPUC process
- Additional filing to follow in 2023-2025 TE plan

PGE pole chargers popular

Most highly utilized of all PGE-owned public L2 chargers*

The screenshot shows the PlugShare app interface for the 'PGE 29th AVE. Pilot Charger'. At the top, there's a blue header with the PlugShare logo. Below it, a search bar contains the text 'PGE 29th AVE. Pilot Charger'. The main image shows a silver car plugged into a charging station. Below the image, the charger name 'PGE 29th AVE. Pilot Charger' is displayed with a large green '10' rating in a box. Underneath, it says 'J-1772' and 'ChargePoint'. A green circular button with a white checkmark and the text 'Check In' is on the right.

Customer ratings: **10** with 89 reviews

The screenshot shows the PlugShare app interface for 'SE 35th Pl Parking/Charging'. It features a blue header with the PlugShare logo and a search bar with the text 'SE 35th Pl Parking/Charging'. The main image shows a dark car at a charging station. Below the image, the charger name 'SE 35th Pl Parking/Charging' is shown with a large green '9.3' rating in a box. Below that, it lists 'J-1772', 'ChargePoint', and '6.6 kW'. A green circular button with a white checkmark and the text 'Check In' is on the right.

Customer ratings: **9.3** with 68 reviews

Schedule 50 pricing:
Flat fee (all hours): \$3 for 4 hours

Additional peak-time fee
\$0.19 per kWh on
weekdays 3pm and 8pm



*PGE Public L2 Usage Data (Q4, 2021 & Q1 2022)

Questions & Discussion



Next steps

- Incorporate feedback from today's workshop
- Written comments requested by August 19th and welcome anytime at TEP@pgn.com
- Planning additional stakeholder discussion to inform TE plan filing later this year

Thank you!



Contact information

- Regulatory - Steven Corson steven.corson@pgn.com
- Questions, comments, logistics - Jeremy Litow jeremy.litow@pgn.com
- Please join our mailing list and follow our TE Planning website at www.portlandgeneral.com/tep



**Let's
meet the
future
together.**





Appendix



Glossary of terms and acronyms (A-H)

Term	Definition
AC Level 2 Charger	AC Level 2 (L2) chargers can be found in both commercial and residential locations. They provide power at 220V-240V and various amperages resulting in power output ranging from 3.3kW to 19.2kW.
Charger	A layperson's term for the on-board or off-board device that interconnects the EV battery with the electricity grid and manages the flow of electrons to recharge the battery. Also known as electric vehicle supply equipment (EVSE).
Charging	Charging is the process of recharging the onboard battery of an electric vehicle.
Charging Level	The terms "AC Level 1", "AC Level 2" and "DC fast" describe how energy is transferred from the electrical supply to the car's battery. Level 1 is the slowest charging speed. DC fast is the fastest. Charging rate varies within each charging level, depending on a variety of factors including the electrical supply and the car's capability.
Charging Station	The physical site where the electric vehicle supply equipment (EVSE) (also known as the charger) or inductive charging equipment is located. A charging station typically includes parking, one or more chargers, and any necessary "make-ready equip-ment" (i.e., conduit, wiring to the electrical panel, etc.) to connect the chargers to the electricity grid, and can include ancillary equipment such as a payment kiosk, battery storage or onsite generation.
Demand Response (DR, V1G, direct load management, controlled charging, intelligent charging, adaptive charging or smart charging)	Central or customer control of EV charging to provide vehicle grid integration (VGI) offerings, including wholesale market services. Includes ramping up and ramping down of charging for individual EVs or multiple EVs, whether the control is done at the EVSE, the EV, the EV-management system, the parking lot EV energy-management system or the building-management system, or elsewhere.
Demand Side Management	See Demand Response
Direct Current Fast Charger (DCFC)	Direct current fast charging equipment is designed to rapidly deliver direct current to a vehicle's onboard battery. DCFCs commonly have power ratings of 50kW or higher.
DRMS	Demand response management system
Electric Vehicle Supply Equipment (EVSE)	Electric vehicle supply equipment, also often called an EV charger, is stand-alone equipment used to deliver power to the input port connection on an EV. This device includes the ungrounded, grounded and equipment-grounding conductors and the electric vehicle connectors, attachment plugs and all other fittings, devices, power outlets or apparatus associated with the device, but does not include premises wiring.
EV	"Electric vehicle" is the commonly used name for vehicles with the capability to propel the vehicle fully or partially with onboard battery power and contains a mechanism to recharge the battery from an external power source. EVs can include full battery-electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).
Fleet EVSE	EVSE for use by business owned vehicles.
HDV	Heavy-duty vehicles have a gross vehicle weight above 26,000 pounds.

Glossary of terms and acronyms (L-S)

Term	Definition
Level 1/Level 2 (L1/L2)	Level 1 is part of the charging standard defined by the SAE for charging equipment using standard 120V household electricity. Level 2: Level 2 is part of the charging standard defined by the SAE for charging equipment using 208V or 240V electricity, similar to the power level used for ovens and clothes dryers.
Make-ready	Make-ready describes the installation and supply infrastructure up to, but not including, the charging equipment. The customer procures and pays for the charging equipment, which could be funded by a separate rebate or other incentive by the electric company or other entity.
Managed Charging	Managed charging allows an electric utility or a third party to control the charging of an EV remotely. This entity could enable or disable charging, or could control the power level for charging.
MDV	Medium-duty vehicles have a gross vehicle weight more than 14,000 and less than 26,001 pounds.
MF (MUD)	Multi family, or multi-unit dwelling, are a type of residence in which multiple housing units are located within a single building or building complex (e.g., an apartment complex, duplex, condos, etc). This is synonymous with a multi dwelling unit (MDU). EVSE at MUDs are intended for use by MUD residents. EVSE located on hotel or motel properties are also included within MUD session data in this report.
OCPP	The goal for the Open Charge Point Protocol (OCPP) is to offer a uniform solution for the method of communication between charge point and central system.
Platform	The base hardware and software upon which software applications run.
Port (also Connector)	The plug that connects the electricity supply to charge the car's battery. J-1772 is the standard connector used for Level 1 and Level 2 charging. CCS or "combo" connectors are used for DC Fast charging on most American and European cars. CHAde-MO is the connector used to DC fast charge some Japanese model cars.
Public EVSE	Public EVSE can be found in multiple types of locations including but not limited to business parking lots, public buildings and adjacent to public right-of-way. Public AC Level 2 EVSE have a standard J1772 connector, while DCFC have a CHAdeMO and/or CCS connectors. Tesla vehicles may utilize public EVSE with an adapter; however, other EVs cannot use Tesla EVSE, as no adapters are available.
Residential EVSE	Located within a person's home, most often in a garage, residential EVSE are usually used by one or two EVs intended only for use by the homeowner.
Standard	An agreed-upon method or approach of implementing a technology that is developed in an open and transparent process by a neutral, non-profit party. Standards can apply to many types of equipment (e.g., charging connectors, charging equipment, batteries, communications, signage), data formats, communications protocols, technical or business processes (e.g., measurement, charging access), cybersecurity requirements, and so on. Most standards are voluntary in the sense that they are offered for adoption by people or industry without being mandated in law. Some standards become mandatory when they are adopted by regulators as legal requirements.



Glossary of terms and acronyms (L-T)

TCO	Total cost of ownership is a financial estimate that accounts for both purchase price and continued, variable operating costs of an asset.
TE	Transportation electrification
TEINA (Transportation Electrification Infrastructure Needs Analysis)	The TEINA study highlights gaps in the electric vehicle charging infrastructure and proposes solutions to help accelerate widespread transportation electrification in Oregon. The ODOT Climate Office, in partnership with the Oregon Department of Energy, completed the Transportation Electrification Infrastructure Needs Analysis study to identify the charging needs and gaps across Oregon.
TOU (Time of Use) Rate	"Time of use" often refers to electricity rates that can vary by the time of day. TOU rates can also be structured to vary by season.
Uptime	Defines the amount of time an EVSE is functionally able to provide a charge when requested, as opposed to a faulted state where no charge may occur. Depending on configuration settings, networked EVSE may still be able to provide a charge and maintain uptime status when offline from the network connection.
Workplace EVSE (charging)	Workplace EVSE are located on business property, primarily intended for use by employees. However, often the business owner will allow use by visitors or the public if it is located in an accessible location.
Underserved community	Communities of color, communities experiencing lower incomes, tribal communities, rural communities, frontier communities, coastal communities and other communities adversely harmed by environmental and health hazards
V2G	"Vehicle-to-grid" refers to vehicles capable of receiving power to the onboard battery from the electrical grid and vice-versa.

