

Chelan PUD Transportation Electrification Roadmap



June 1, 2020

Why we're here

Objectives:

1. Review the current state of transportation electrification (TE) in Chelan County.
2. Present findings of a Transportation Electrification Strategic Planning process.

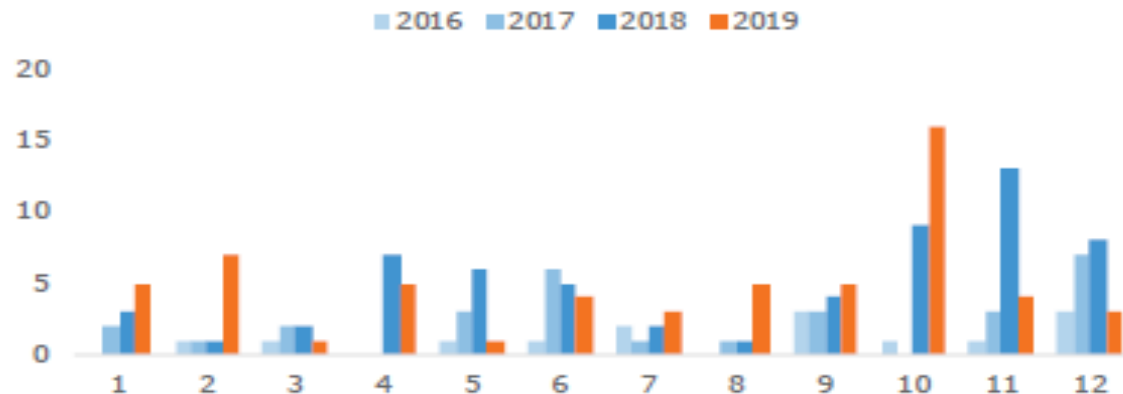
Note: *No actions requested from the Board today, seeking feedback*

EV Market and Trends

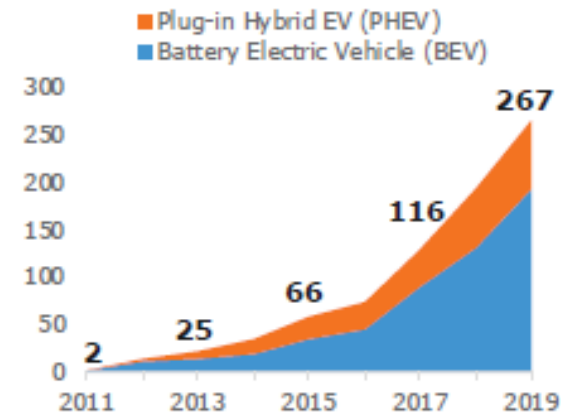
EVs made up 4% of new vehicle registrations in the county in 2019, double the rate in 2017.

- EVs make up just 0.5% of the total 56,000 light-duty passenger vehicles in the County today.

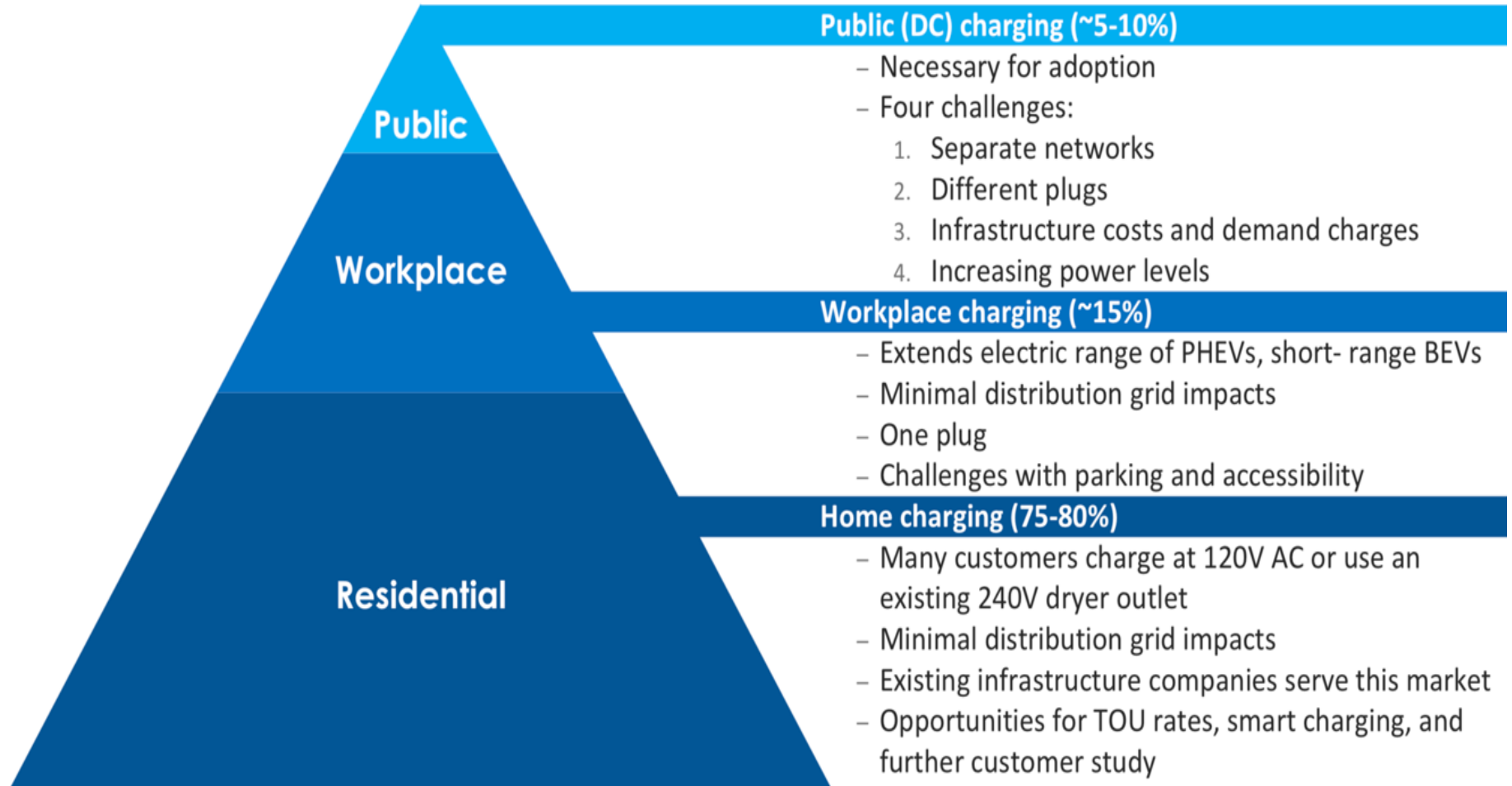
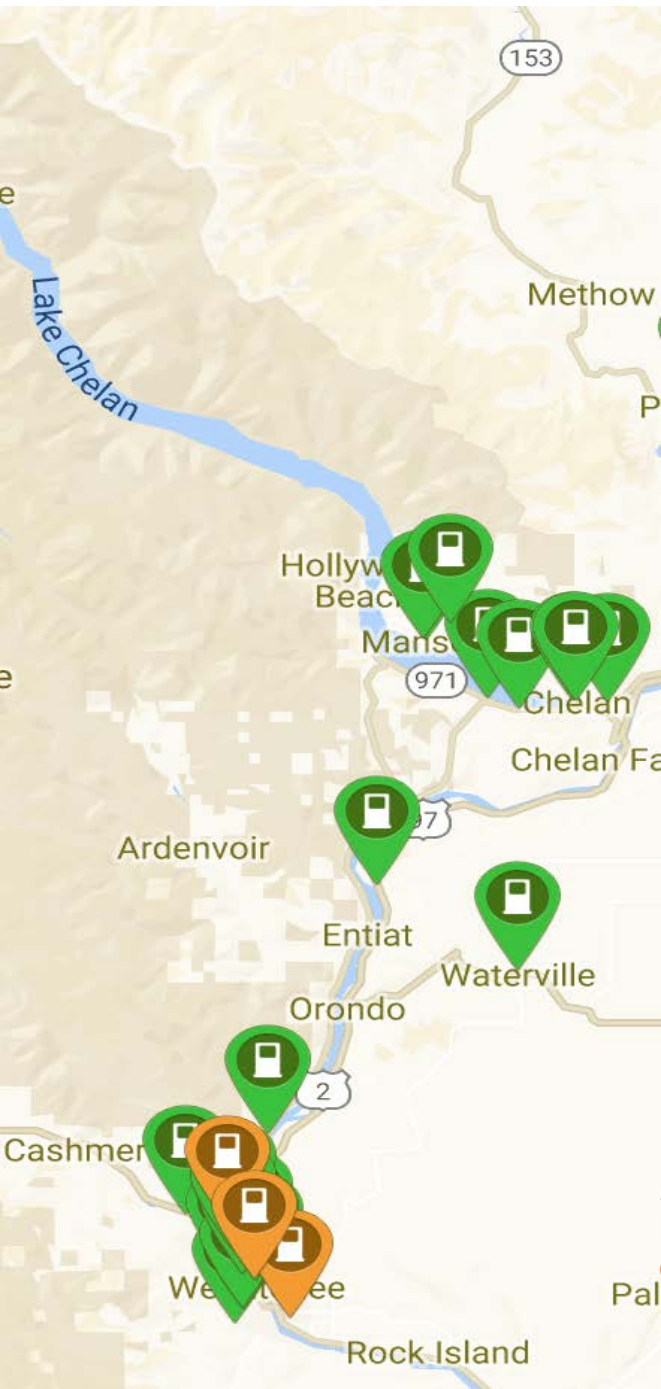
New EV Registrations in Chelan County by Month



Total EV Registrations in Chelan County



Charging Infrastructure Use



Source: EPRI, Trends in Electric Transportation, April 23, 2019.

<https://www.epri.com/#/search/Trends%20in%20Electric%20Transportation:%20Electric%20Vehicle%20Discussion/?to=1578629410243&from=678451789756&lang=en-US>

Current State

External Factors

- State/Federal policy and incentives support EV adoption.
- **Expanded vehicle offerings** and improvements in battery range and price will spur broader EV adoption.
- EVs make up **4% of new vehicle sales** in Chelan County.
- Region sees significant EV benefits from low rates and carbon-free energy.

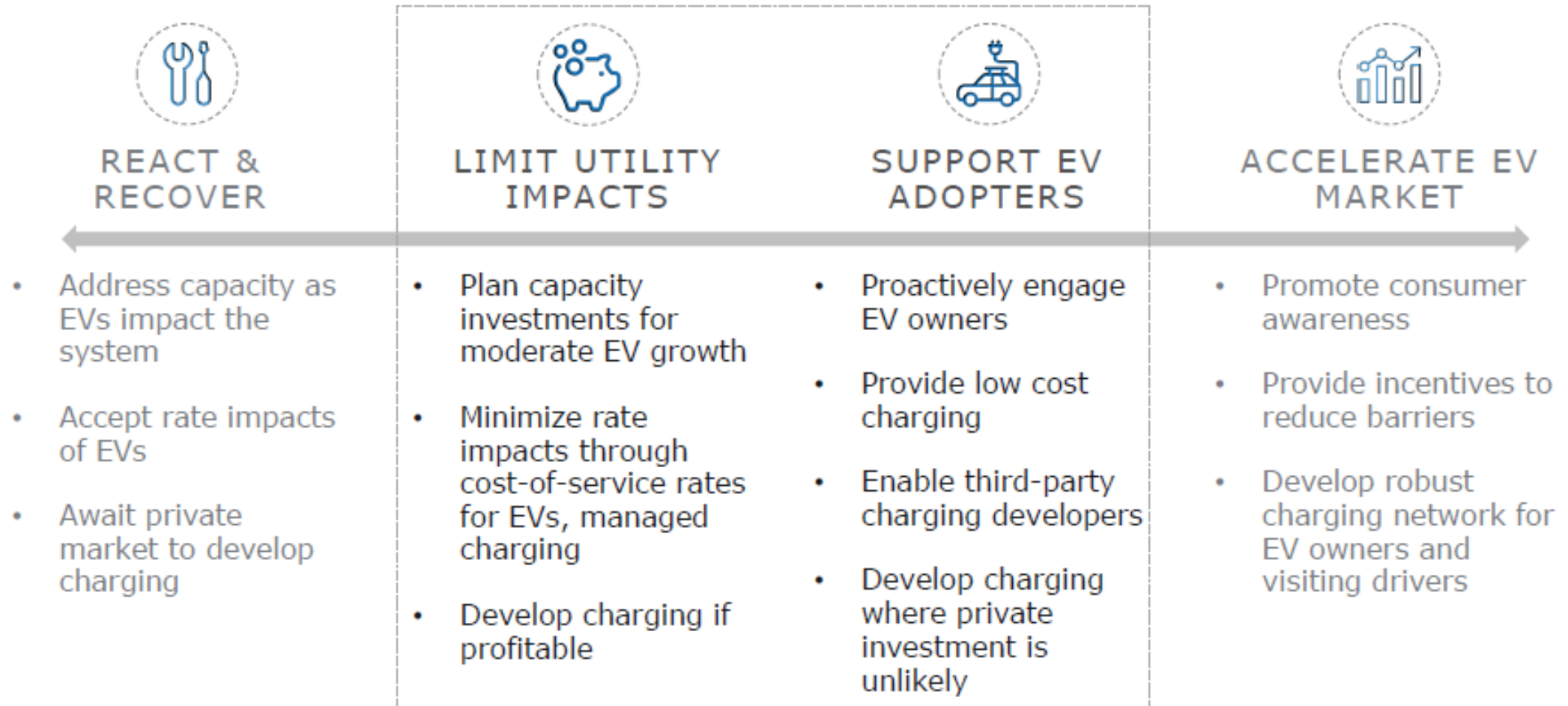
Chelan PUD Factors

- **EV Growth has a negative financial impact on the District**, taking away from market sales.
- Conservation programs have clearly defined benefits to utility and customers.
- Resource planning includes EV forecasting; in general **minimal impacts expected** from residential charging.


Guiding Principles


- **Do the Best for the Most for the Longest** for all customer owners.
- **Stay ahead of customer needs**, offer products and services that delight EV owners
- Continue to plan operations and investments with a **lens toward anticipated growth in TE adoption** and charging infrastructure.
- **Proper cost recover to avoid subsidies** for TE unless a business case can demonstrate benefits to the PUD and community.
- **Limit rate impacts** to non-participating customers from EV load growth, while improving system utilization.
- Collaborate with local stakeholders and **engage thoughtfully in state policy** issues to advance the PUD's interests in TE.


A Range of Actions





Strategies

- 

1. Gather EV data & customer insights to inform TE planning and priorities
- 

2. Mitigate utility costs from EV load growth
- 

3. Align costs and revenues for EV charging while maintaining fuel savings
- 

4. Engage in TE dialogue locally with internal and external stakeholders
- 

5. Educate customers and public on Chelan TE strategies and benefits

Proposed Next Steps

Enabling Actions



Build the team.

- Identify internal resources that can serve as sponsors and workstream leads from relevant lines of business with Chelan PUD.
- Draft a program charter and establish regular program meeting cadence to update on KPIs and progress toward roadmap activities.

Launch data collection and customer research.

- Collect interval load data from public and residential EV sites to establish PUD EV load shapes, particularly for fast charging.
- Conduct formal res., C&I, and fleet customer research through surveys, and interviews to identify customer perception and interests.
- Use research results to inform potential pilots, programs to manage EV charging loads and rate designs.

Priority Strategies



Develop public charging rate based on market pricing.

- Undertake cost analysis of public fast charging to quantify grid impacts, costs, and revenues.
- Consider peak pricing or demand response to minimize grid impacts.

Define strategy for public charging infrastructure cost recovery.

- Track state and federal grant opportunities.

Support public transit through education and PPB.

- Continue one-on-one engagement with Link Transit to support for electric bus projects and charging strategies.
- Identify projects to consider for PPB, enable match-funding for future grant opportunities.

Discussion

- **Request input from the Board**
- **Next Steps:**
 - Develop a charter based on work-to-date and Board input
 - Develop tactical plan and insert into District business planning process

Appendix

PRELIMINARY ROADMAP ACTION TIMELINE

NEAR-TERM (1-2 Years, 4-8% EV market share)

- Assign point-of-contact for customer discussions regarding EVs and charging.
- Identify internal leads in relevant lines of business; Establish cadence for team updates.
- Conduct residential customer survey/focus groups.
- Add EV-related questions to business customer research activities.
- Add voluntary EV interest form to PUD website.
- Conduct targeted outreach to fleet operators to identify interest and timelines.
- Gather insights from local dealers and electricians on market potential for EVs and charging.
- Conduct load study of available DCFC sites and evaluate site installation costs.
- Review charging cost impacts against existing rate structures.
- Develop market-based rate for public fast charging.
- Research impact of rate price signals given low rates.
- Determine segmentation approach for EV charging rates and develop metering policies for EV charging.
- Determine value and approach to managed charging (TOU, critical peak pricing, demand response).
- Continue engagement with Link Transit on rates and charging strategies.
- Identify opportunities for PPB project funding with Link Transit.
- Re-assess PUD fleet electrification analysis based on technology developments.
- Track state and federal charging grant/incentive opportunities.
- Pilot reduced-demand charge rate with Link Transit to reduce volatility of load-factor variability.
- Consider bus ad campaign partnership with Link Transit.
- Develop "welcome kit" for EV owners.
- Target traditional conservation programs to EV customers
- Engage interested stakeholders regarding HB 1110 and implementing WA Clean Fuel Standard.
- Determine legislative/policy priorities for 2020/2021 related to TE (e.g. Clean Fuel Standard).

Ongoing

- Align TE activities with equity approach under development for CETA
- Collect and analyze state EV registration data.
- Track/highlight industry news, pilot results.
- Ensure alignment with HB1512 rate impact guidelines
- Re-engage Cal-ETC utility stakeholder group.
- Build consensus and coalition on EV strategy and public engagement through WPUDA

PRELIMINARY ROADMAP ACTION TIMELINE

Mid-term (3-5 Years, 8-15% market share)

- ❑ Pilot smart charging approach(es).
- ❑ Test value-added home charging products/services.
- ❑ Strengthen EV forecasting methodology in capacity planning.
- ❑ Co-market potential future solar programs to offset EV loads
- ❑ Tailor service planning processes/applications for EV; educate EV infrastructure installers on utility requirements for new applications.
- ❑ Educate customers on reducing charging demand.
- ❑ Identify areas of high and low capacity, cost of installing charging on distribution system.
- ❑ Build & evaluate business case/model for PUD operated public charging
- ❑ Identify if/where EV projects can aid in support of compliance for Clean Energy Transformation Act
- ❑ Develop methodology to estimate customer bill savings and environmental benefits from EV charging in Chelan county (e.g. E3 study methodology).
- ❑ Incorporate EV messaging into PUD strategic planning documents
- ❑ Proactively communicate EV policies, talking points to dealers and infrastructure installers as conduit to customers.
- ❑ Facilitate discussions with cities, counties, Link Transit, large private employers, to stay ahead of TE plans and share PUD positions.
- ❑ Monitor value proposition of battery storage for "trickle charging" and vehicle-to-grid applications.
- ❑ Consider future tailored EV conservation programs (e.g. vehicle-miles-traveled reduction)
- ❑ Determine if there is value to incentivize purchase of more efficient EVs

Ongoing

- ❑ Align TE activities with equity approach under development for CETA
- ❑ Collect and analyze state EV registration data.
- ❑ Track/highlight industry news, pilot results.
- ❑ Ensure alignment with HB1512 rate impact guidelines
- ❑ Re-engage Cal-ETC utility stakeholder group.
- ❑ Build consensus and coalition on EV strategy and public engagement through WPUDA