



Transportation Electrification Plan



Table of Contents

| | |
|--|-----|
| Executive Summary | 2 |
| WA State Policy *RCW 54.16.430 | 2 |
| Background, Historical Efforts and the Current Market | 3-5 |
| Transportation Electrification Load Growth | 6 |
| Transportation Electrification Plan Objectives & Strategies | 7 |
| Electric Vehicle Programs | 11 |
| Transportation Electrification Plan Adoption and Forward Process | 12 |

Executive Summary

Clark Public Utilities has a long and successful history of providing safe, reliable and affordable electricity to our customers. The introduction, and increased adoption, of electric vehicles (EVs) in Clark County provides an opportunity for the utility to evolve our service to meet the new demands of customers. The Transportation Electrification Plan (TE Plan) has been developed to ensure the utility can continue to provide the safe, reliable and affordable service that customers are accustomed to.

The continued adoption of EVs will increase the demand for electricity and has the potential to do so in a disruptive manner if not properly managed. The Clark Public Utilities TE Plan has been designed to ensure the smooth transition to a local transportation market that is powered more and more by electricity. This trend is being driven by falling EV prices, increased consumer demand, more brand and model offerings and government subsidies. The TE Plan examines all classes of transportation, from personal use vehicles to agency and corporate fleet vehicles, and focuses on the collection of consumption data to ensure the Clark Public Utilities electric system is well equipped to meet this increasing demand for electricity. The TE Plan also includes considerations around customer satisfaction, community engagement, reducing barriers to EV adoption for our customers and providing opportunities for the vulnerable and limited income demographics in Clark County.

Washington State Policy

During the 2019 legislative session the WA State Legislature passed SHB 1512 that was signed into law by Governor Inslee. That bill became RCW 54.16.430 and allows both investor and consumer owned utilities to voluntarily develop Transportation Electrification Plans and electric vehicle related incentive programs, as long as the costs of the TE Plan and programs do not increase costs to rate payers in excess of one quarter of one percent.

Clark Public Utilities has developed a TE Plan that meets all requirements of the regulating statute and aims to do so while ensuring safe, reliable and affordable electricity for our customers. As the Washington policy regarding EV adoption progresses staff will ensure the utilities' TE Plan evolves to meet any changing mandates or regulations.

Clark Public Utilities staff have developed a Resolution, attached to the TE Plan, for adoption consideration by the Clark Public Utilities Board of Commissioners.

Background, Historical Efforts and Current Market

Nearly ten years ago Clark Public Utilities installed the first publicly accessible EV charger in Clark County. Since then, we have played a limited but effective role in encouraging the adoption of EVs in Clark County. The TE Plan will serve the purpose of formalizing the utilities' commitment to supporting the adoption of EV's into the future. Additionally, the TE Plan outlines the objectives and strategies the utility plans to employ in an effort to ensure a smooth transition to an electric transportation sector.

Clark Public Utilities currently offers a variety of publicly accessible charging infrastructure at both our operations facility and downtown Vancouver office. The public level II EV chargers operated by Clark Public Utilities boast one of the lowest retail rates for EV charging in Clark County and customers also have access to a level III fast-charger at the downtown Vancouver office location. Historical utilization rates at the public chargers have been low but also rising over time. Increasing local EV charging infrastructure ahead of the growing customer demand will allow for a successful transition to increasingly electrically fueled transportation sector.



LOCAL EFFORTS

Clark Public Utilities has developed this TE Plan based on several lessons learned from previous work and partnerships related to transportation electrification. Clark Public Utilities has been a member of Forth, an EV trade organization, for several years, and has partnered with the Portland, Oregon utilities to promote EV's at the annual Portland Auto Show. Further, the utility has hosted local EV ride-and-drive events as well as proactively worked with local automotive dealerships to offer and promote available EV incentives and rebates. The utility partnered with Electrify America, the entity tasked with expending the Volkswagen emissions settlements funds, allowing participation in the Phase-1 Portland-metro area funding that provided access to over \$30 million of settlement funds. We were successful in leveraging that opportunity to secure and facilitate the installation of a six unit EV charging cluster site that substantially increased the EV charging infrastructure in Clark County.

Clark Public Utilities has also found success in leveraging Washington State grant opportunities related to EV infrastructure installations. Many of the past state grant opportunities, and likely future opportunities, have been available to both the utility and our customers. By continuing to take advantage of these opportunities the utility can increase local EV infrastructure and stretch the impact of the utility TE Plan funding.



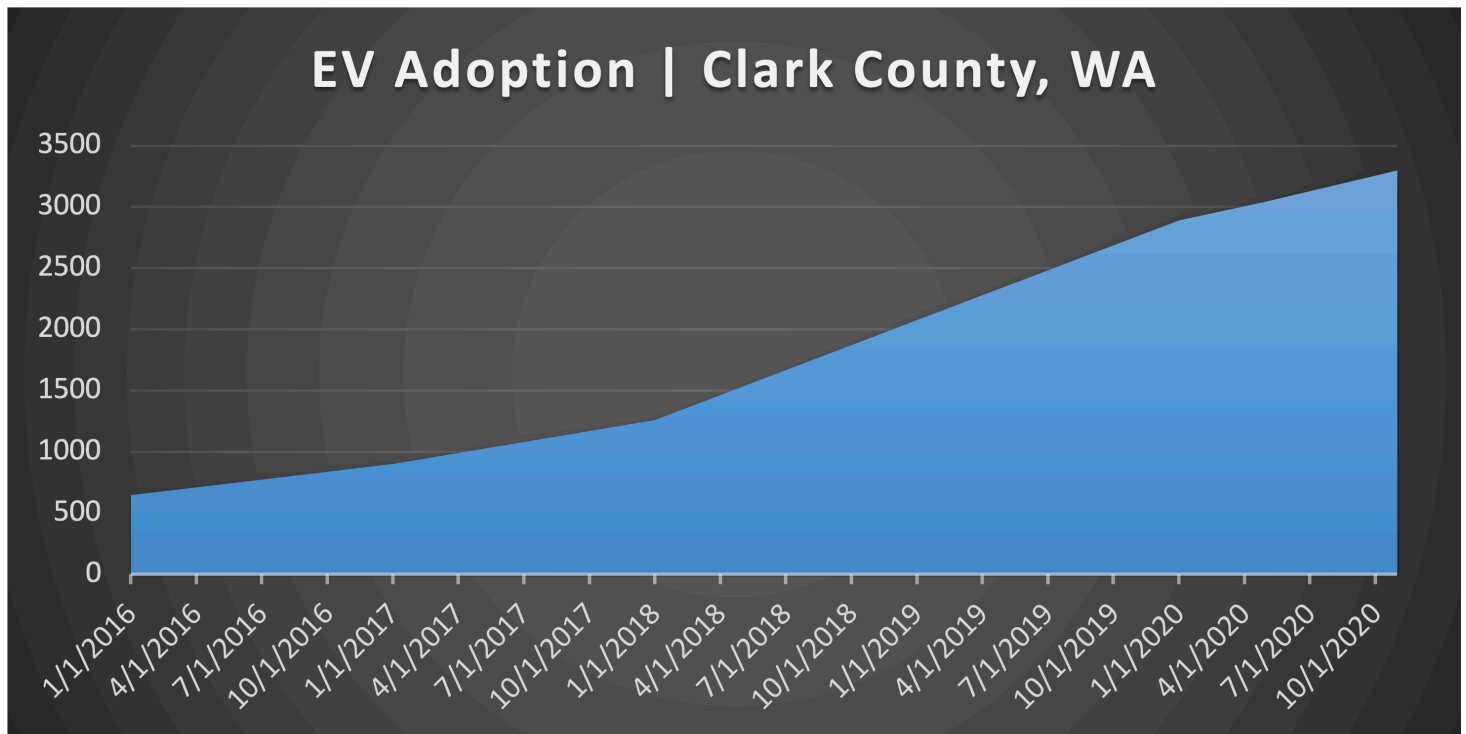
CURRENT MARKETS

Clark County has enjoyed a rapid and increasing adoption of EVs in recent years, with a year over year growth trend averaging nearly fifty percent. Both residential and commercial customers contact the utility on a regular basis inquiring about utility EV programs and seeking advice on charging best practices. The demand for EV programs from our customers is substantial and growing.

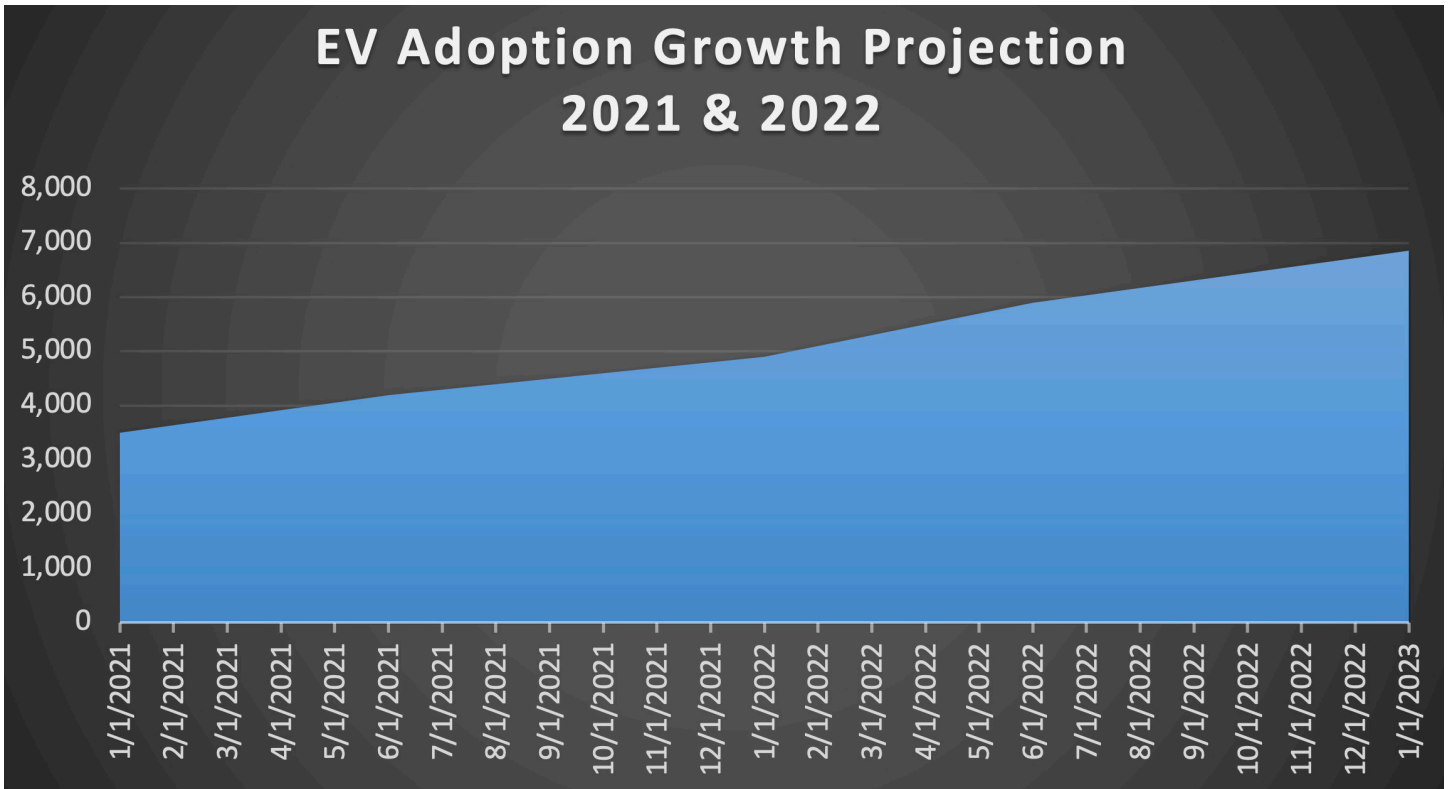
Automobile manufacturers have aggressively entered the EV space and we see new EV models entering the market each year. In recent years we've seen full size electric trucks come to market, electric school buses, industrial vehicles and of course a wide variety of standard passenger vehicles. These changes and evolutions indicate the future for EVs is strong and growing.

Several recent studies performed on behalf of electric utilities across the nation have shown there is substantial value for electric utilities serving customers with electricity to fuel their EVs. Managing this increasing demand is an important factor in ensuring the value materializes. The TE Plan recognizes that challenge and aims to safeguard the value proposition for Clark Public Utilities.

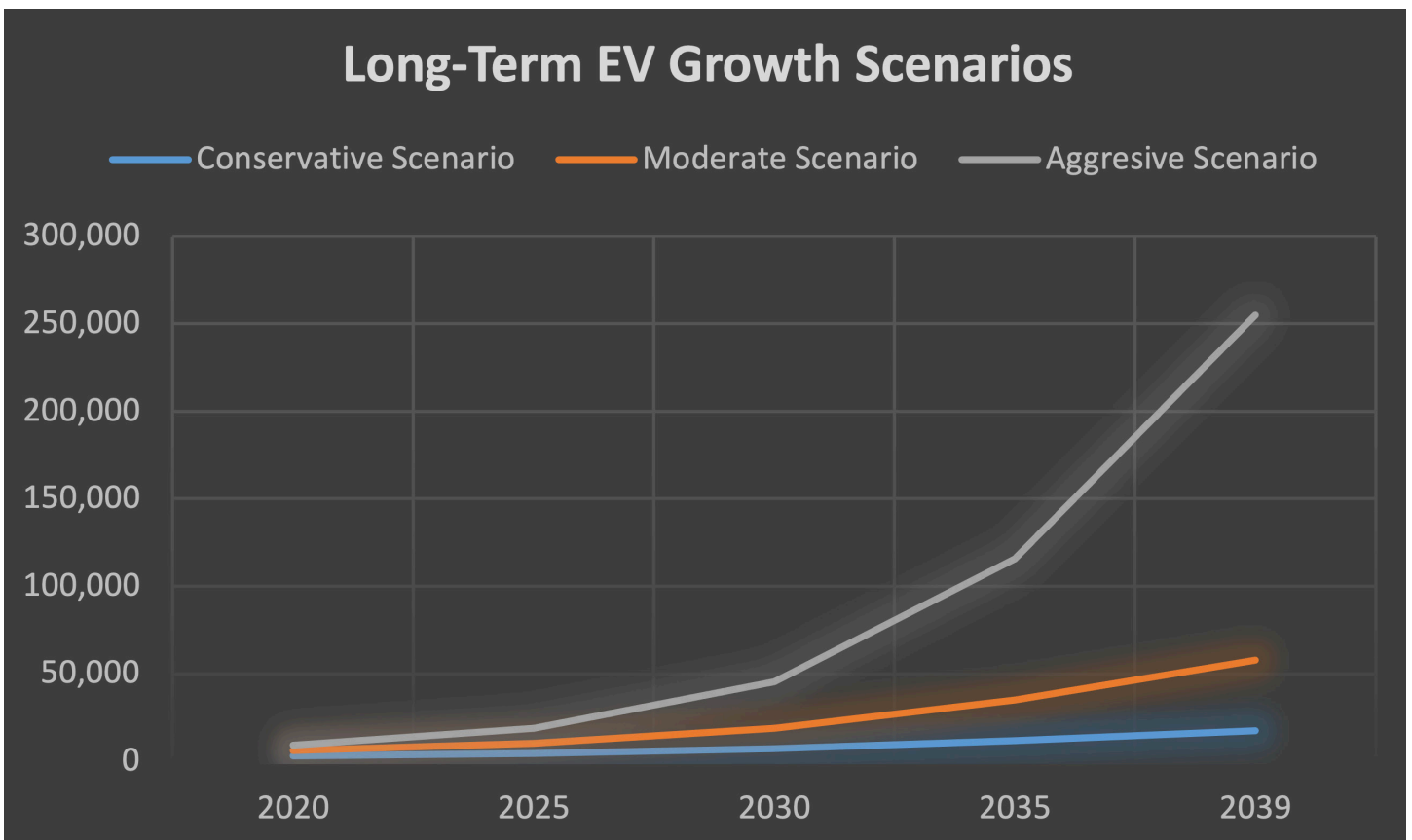
CLARK COUNTY EV ADOPTION



SHORT-TERM EV GROWTH PROJECTION

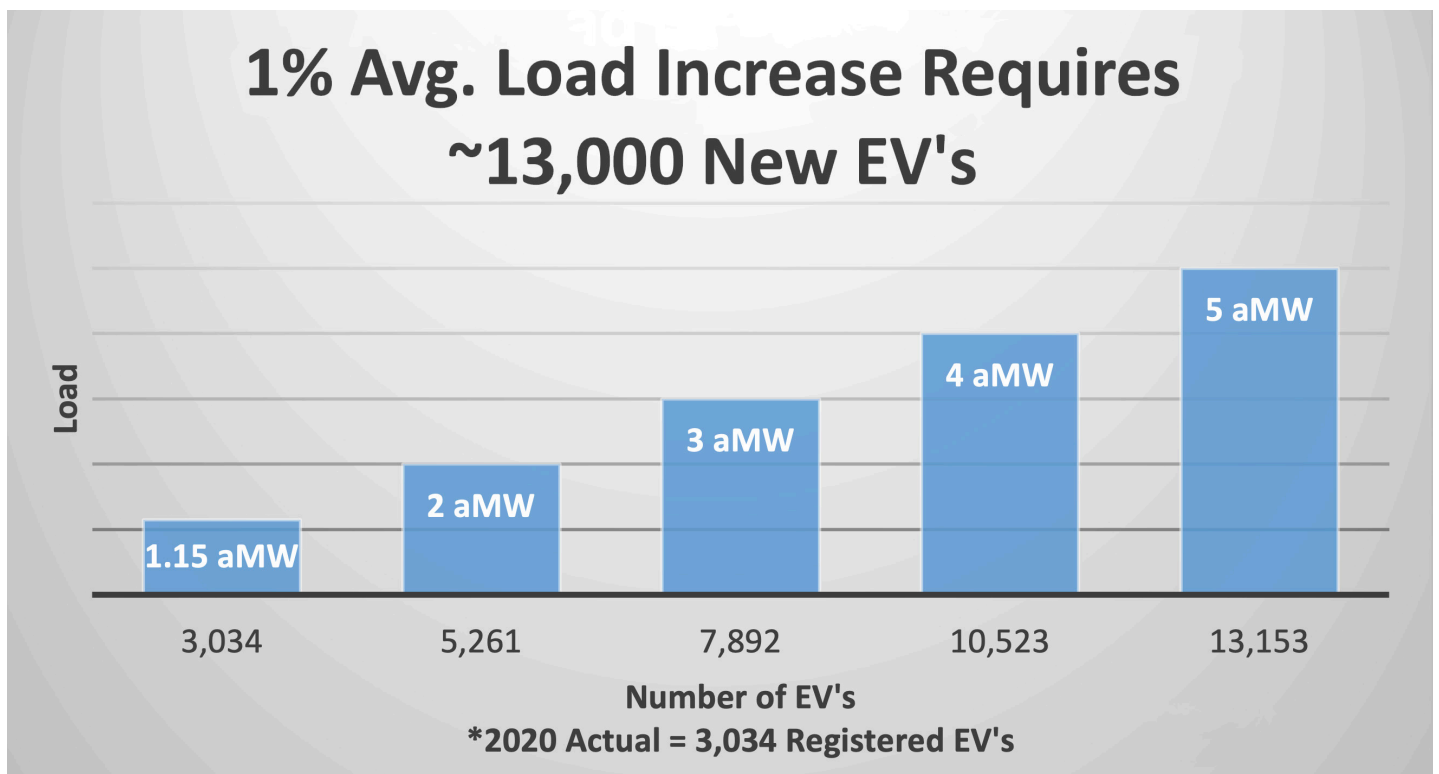


LONG-TERM EV GROWTH SCENARIOS



Transportation Electrification Load Growth

The Clark Public Utilities TE Plan has been informed by the most recent Clark Public Utilities Integrated Resource Plan (IRP) and has been designed to complement the strategies within the IRP. Analysis shows that each new EV equates to roughly 3.33 megawatt hours of electricity consumed on an annual basis. In 2020 the Washington Department of Transportation reported that Clark County had 3,034 registered electric vehicles; those vehicles require more than 10,000 megawatt hours of electricity or 1.15 average megawatt hours each year as fuel. Staff analysis shows that our current average electricity demand would increase by one percent with the introduction of 10,000 additional electric vehicles. That is to say, for every additional 13,000 EV's Clark Public Utilities can anticipate a one percent increase in average demand for electricity.



The most recent Clark Public Utilities IRP shows that the utility will be long energy and short capacity over the next decade. The TE Plan will play a pivotal role in capturing value and avoiding costs by focusing on incentivizing the timing of EV charging. If properly structured, electric vehicle programs can provide load during times of excess energy, capture seasonal renewable oversupply and reduce demand during peak hours. The TE Plan presents an opportunity for the future introduction and piloting of a time-of-use rate structure to test the level of price signal needed to materially change charging behaviors. As the battery technology of EV's advances the TE Plan can be used as a platform to design and test demand response programs that will not only benefit the utility but also assist in achieving the state's policy mandates within the Clean Energy Transformation Act (CETA).



CUSTOMER INPUT

Clark Public Utilities values customer input and has had a successful history of collecting customer comments related to policy objectives and utility resource planning. Transportation electrification is an additional topic where customers have and will continue to have avenues to provide input and raise considerations. Staff will work to expand and improve the existing EV webpage on our public website and also build a new “customer input” submission mechanism within the web page. The new EV web page will serve as the primary forum for collecting customer input and suggestions related to the TE Plan and EV programs.

Transportation Electrification Plan Objectives and Strategies

The Clark Public Utilities TE Plan embodies six primary objectives:

1. Encourage EV adoption in the Clark Public Utilities service territory and maintain safe, reliable and affordable electricity service.
2. Collect EV consumption data to better understand the impacts of transportation electrification.
3. Ensure the Clark Public Utilities distribution grid is adequately prepared for accelerated and robust customer EV adoption.
4. Informed by and tracks to the Integrated Resource Plan, and seeks to align customer EV charging with renewable energy generation.
5. Develop programs that include metrics that can be forecasted, are trackable and reportable to achieve state energy policy mandates (e.g., CETA).
6. Reduce local greenhouse gas emissions in Clark Public Utilities' service territory.

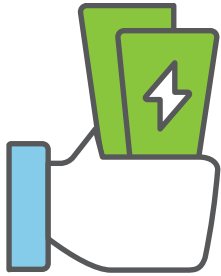
Clark Public Utilities understands that effective strategies must be developed to meet the primary objectives of the TE Plan. The EV market remains relatively new and continues to evolve and change quickly, therefore, strategies will require the utility to be nimble and flexible as we implement customer facing programs. Tracking success, identifying obstacles and implementing quick but smart adjustments will be required to successfully meet the TE Plan objectives.



COMMUNITY, OUTREACH AND EDUCATION

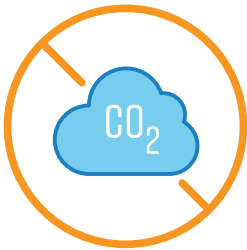
A primary barrier to EV adoption across the country is the lack of consumer knowledge regarding how EV's work, the benefits to adopting an EV and the challenges inherent with EV's. Clark Public Utilities strives to be the knowledge center for all topics related to EV's in Clark County and has developed programs to achieve this goal. Developed in partnership with the American Public Power Association, the below informational graphics will be employed throughout the Clark Public Utilities EV program's marketing and outreach efforts.

EV Fast Facts



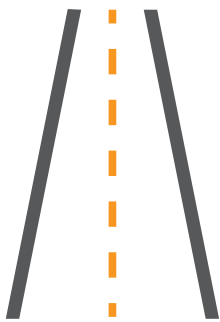
EVs SAVE MONEY

All-electric vehicles are reliable. With a fraction of the moving parts of gasoline vehicles, you have far fewer trips to the mechanic. EVs don't need oil changes, catalytic converters, or spark plugs. The only regular services needed are system checkups, tire rotations, and wiper blades. Usually, charging an EV costs a fraction of the cost of gasoline. You will save money over the life of your vehicle when you drive an EV.



EVs = CLEAN AIR

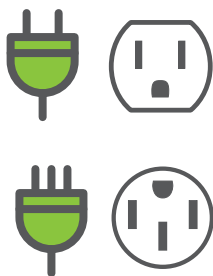
All-electric vehicles produce zero tailpipe emissions, which reduces the amount of smog and polluted air in urban areas and in the atmosphere. Plug-in hybrids have gasoline engines as well as an electric motor, but they are still more efficient than standard internal combustion engines and produce fewer emissions even when relying on gasoline.



EVs CAN GO THE DISTANCE

All-electric vehicles produce zero tailpipe emissions, EVs are evolving to deliver even longer ranges per charge. In 2021, there are many EVs on the market with a battery range of 200+ miles.

According to the U.S. Census Bureau, the average commute time is 26.1 minutes. Any EV can accommodate the typical commute or local outing.



EVs ARE EASY TO CHARGE

Charging an EV is as simple as plugging it in. Most EV-owners have chargers at home, so they can charge their vehicles overnight and wake up to a full battery. Public charging stations are becoming prevalent at businesses, multifamily properties, schools, workplaces, and in places that have high traffic areas.

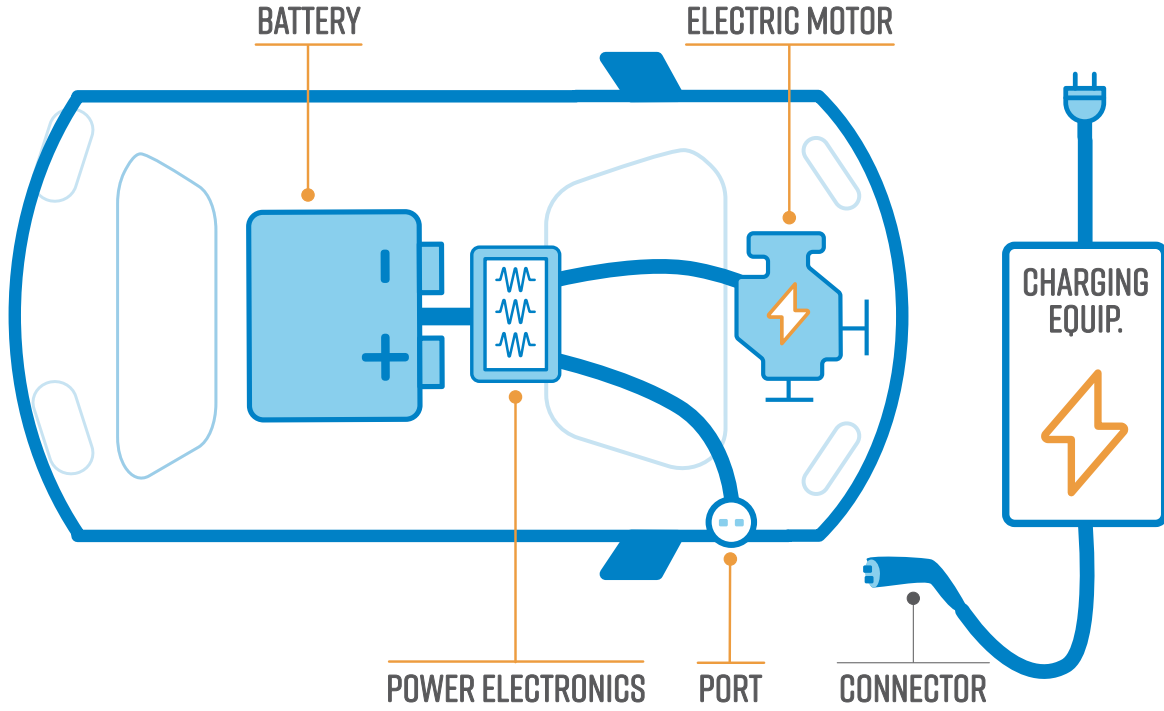
Level 2 Charging takes about 4 hours to charge a battery to 80 miles of range, and DC Fast Charging provides 90 miles or more of range in approximately 30 minutes.

EV Charging Infrastructure

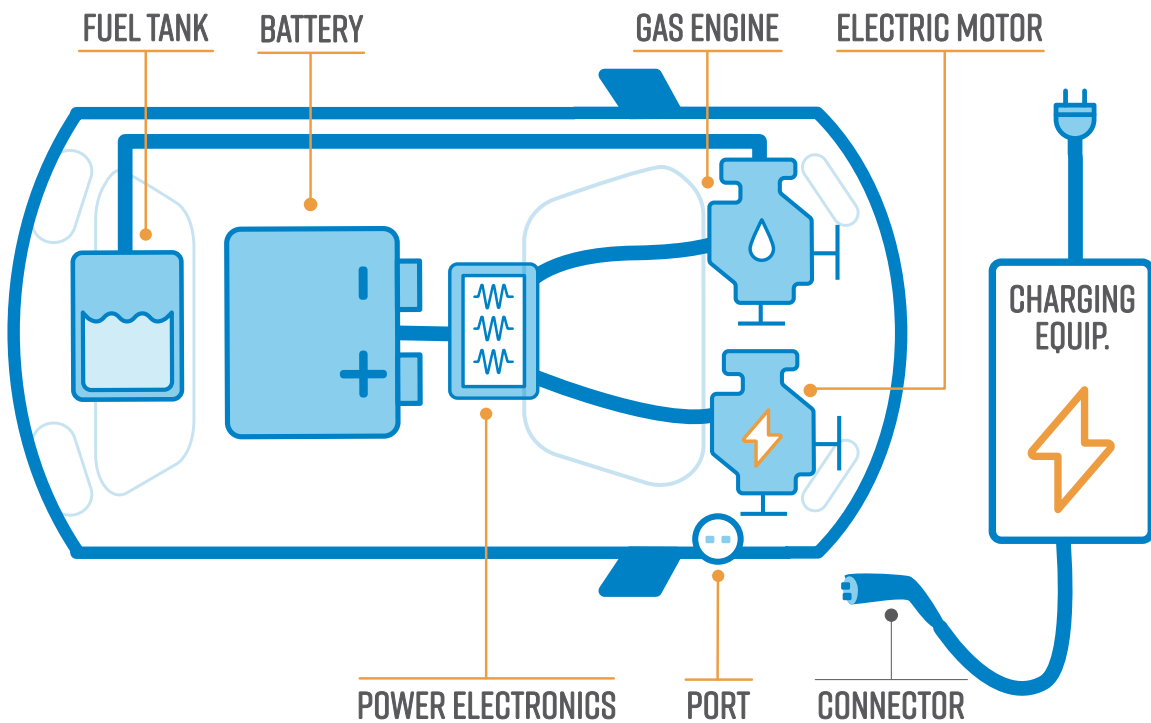
| | LEVEL 1 | LEVEL 2 | DC FAST CHARGING |
|--------------|----------------|---------------------------|---|
| | ⚡ 120-VOLT | ⚡ 240-VOLT | ⚡ 480-VOLT |
| | 8 HRS, 40 MI | 4 HRS, 80 MI | 30 MIN, 80% CHARGE |
| | HOME | HOME OR OFFICE/RETAIL | PUBLIC BUILDING |
| ALL EVs? | | | DEPENDENT ON VEHICLE <small>LOOK FOR CHAdeMO, TESLA, AND SAE CCS EQUIPPED ONLY</small> |

EV Types in Market

BATTERY ELECTRIC VEHICLES (BEVs)



PLUG - IN HYBRID ELECTRIC VEHICLES (PHEVs)



 MEETING CUSTOMER NEEDS

The Clark Public Utilities TE Plan has been designed in consideration with the needs and wants we hear from our customers via both feedback and industry/proprietary survey data, and is intended to increase overall customer satisfaction by meeting those customer desires. By providing the types of programs and information that customers are seeking we can achieve the desired objectives within the TE Plan and provide a valuable service to our customers.

 MEETING FUTURE POLICIES

The importance of demand side management will continue to grow in Washington state as we move towards a 100% clean electric grid and Clark Public Utilities must be prepared to introduce load shifting programs in the future. The TE Plan and strategies within have been developed with a focus on enabling future EV demand response programs that are aligned with the utility IRP.

Electric Vehicle Programs

Upon adoption of the TE Plan the utility can create and launch EV programs designed to meet the objectives within it. Staff has developed a phased approach to EV program development that takes into consideration the customer demand for the program, COVID-19 impacts and barriers, the cost of the program and potential success of the program.

The Clark Public Utilities Board of Commissioners will be asked to review EV programs as they are developed and proposed for launch. The Phase 1 EV programs were developed to begin in early 2021 and reviewed at the end of the calendar year 2021.

PROGRAM EVALUATION MATRIX

| Emissions Reductions | Equity & Accessibility | Cost Effectiveness |
|--|--|-------------------------------------|
| Greenhouse gas emissions reduction impact? | Accessibility for all customers that wish to participate | Cost effective of rate payer funds? |
| High Medium Low | High Medium Low | High Medium low |

Clark Public Utilities understands the value of community and looks forward to working with our local government agencies, non-profit customers and other stakeholders in an effort to electrify our local transportation system. The TE Plan includes a grant funding opportunity that could be available to local agencies as well as non-governmental organizations (NGOs) to assist in funding the installation of EV charging equipment. Often times, for existing structures, the electric service upgrades and construction costs associated with the installation of EV charging equipment far outweigh the cost of the EV chargers themselves. The Clark Public Utilities Electric Vehicle Grant Opportunity, EV-GO, was designed to provide funding to cover a portion of the total project costs as opposed to just the EV charging equipment. By assisting in removing a burdensome cost barrier, the utility can accelerate the installation of EV charging equipment and broaden the adoption of EV's to customers who would have been unable to participate due to lack of charging equipment. The EV-GO program will have a top level focus on our limited income demographics and the agencies who serve those customers.

Transportation Electrification Plan | Adoption and Process

Each year during the annual budget process staff will update the Board of Commissioners regarding the TE Plan and EV programs with a focus on any changes or additions to the TE Plan's content. During this process, the Clark Public Utilities Board of Commissioners will be asked to approve the TE Plan budget for the year. Any updates or changes made to the plan throughout the year will be highlighted and discussed during this annual budget discussion.



clarkpublicutilities.com

