
PacifiCorp

*Washington Transportation Electrification
Pilot Program*

*Final Report
December 22nd, 2021*

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Background

In compliance with RCW 80.28.050, WAC Chapter 480-80, and the Washington Utilities and Transportation Commission's (Commission) Rules and Regulations, PacifiCorp dba Pacific Power & Light Company (PacifiCorp) submitted an advice filing (Advice 18-03, Docket UE-180757) and proposed tariff Schedule 45 on September 6th, 2018. In that filing, PacifiCorp requested approval for a pilot program that looked to overcome barriers to transportation electrification. The pilot program consisted of the first transportation electrification programs offered in its WA service area and tested PacifiCorp's ability to improve customer awareness of transportation electrification (TE) benefits and stimulate additional electric vehicle supply equipment (EVSE) development through three different components.

- 1) **Grant Funding.** PacifiCorp piloted a competitive grant funding process for non-residential customers to enable customer-driven transportation electrification projects in its Washington service area. Grant recipients were asked to share project cost information and EVSE utilization data to help PacifiCorp better understand transportation electrification projects in different market segments and potential impacts to the electrical system.
- 2) **Education and Outreach.** PacifiCorp engaged in a three-year outreach and education program to increase awareness and understanding of electric transportation and its benefits within its customer base in Washington.
- 3) **Public Available Charging Rate.** PacifiCorp implemented a new optional transitional rate for publicly available electric vehicle direct current (DC) fast charger stations. Customer-owned charging sites were eligible for this rate if they met the criteria outlined in the proposed tariff Schedule 45. Under the new proposed rate, customers received a discount from demand charges and pay an on-peak energy charge. Both the discount to demand charges and on-peak energy charge were designed to decrease as participating customers transition back to standard tariff rates over a 13 year period.

On October 11th, 2018, the Commission approved Advice 18-03 in Docket UE-180757. At the end of the pilot period, PacifiCorp stated that a final report would be submitted summarizing all projects funded, sharing program evaluation results and recommendations on if the program should be extended. This document serves as the final report and is accompanied by the program evaluation results completed by Guidehouse in Appendix A.

On February 29, 2020, Washington Governor Jay Inslee declared a state of emergency in response to the COVID-19 virus outbreak. Since that time, the COVID-19 virus has not only become a global health crisis, but a social and economic one as well, with people practicing social distancing and businesses closed to stop the spread of infection. The pilot programs experienced challenges associated with COVID-19, from lack of in-person events to supply chain issues resulting in delays at the construction of infrastructure sites. This information is discussed in detail in the attached Appendix A.

1. Key Findings and Results

In early 2019, PacifiCorp initiated a number of pilots to reduce transportation electrification barriers by addressing the high upfront costs. This consisted of launching three specific pilot programs to the market that were identified as key pathways to encouraging adoption of electric vehicle supply equipment (EVSE). The pilot programs added necessary infrastructure in the service area where low adoption of electric vehicles exists with limited access to charging. The pilot programs uncovered key findings that highlighted the importance of TE programs in PacifiCorp service area. This final report provides a summary of those key findings by pilot program and recommendations on the next phase of TE programs for customers.

Key findings in the evaluation include:

- **Demonstration and Development Pilot:** PacifiCorp provided grant funding toward nonresidential customer EV charging infrastructure projects. This included awarding 20 grants with a total of 10 projects completed to date. One project, as of November 2021, decided to not proceed. This resulted in a total of 19 projects funded. A number of projects were delayed due to COVID and those projects are expected to be completed throughout 2021 and 2022. Supply chain issues continue to constrain the market and labor force shortages continue to delay schedules such as availability of electricians to support installation of EVSE. Overall, the pilot expanded access to EVSE in PacifiCorp's service area, and appears to have enabled earlier deployment of EVSE than would have otherwise occurred without the grant funding opportunities. Furthermore, this pilot program continues to see an increase in usage of electric vehicle charging stations since its inception showing the growth and need related to charging. All EVSE equipment receiving grant funds are available for public use. Appendix A details further program results from the Demonstration and Development Pilot.
- **Outreach and Education Pilot:** PacifiCorp promoted various electric vehicle (EV) marketing campaigns designed to bring awareness of EV technology, infrastructure and to promote PacifiCorp's efforts in transportation electrification. The primary objective for this pilot program was to test its ability to increase awareness and understanding of TE through different outreach and education tactics. The pilot consisted of four components: customer communications, self-service resources, community events, and technical assistance. Over the course of the pilot, outreach actions were taken resulting in customer taking action to read outreach materials, attend ride & drive events and increased understanding of electric transportation. However, with the onset of the pandemic and limited ability to conduct in-person events, most of the outreach and education was done virtually. While the outreach and education seemed reach a general population with deeper dives from customers into content, results of how this increased understanding and awareness of transportation electrification remains to be seen.
- **Publicly Available Charging Rate Pilot:** PacifiCorp implemented a new optional transitional rate for publicly available electric vehicle direct current (DC) fast charger stations. Customer-owned charging sites were eligible for this rate if they met the criteria proposed in tariff Schedule 45. Under the new proposed rate, customers receive a discount from demand charges and pay an on-peak energy charge. Both the discount to demand charges and on-peak energy charge decrease as participating customers transition back to standard tariff rates over a 13-year period. By mitigating demand

charges, Schedule 45 has helped reduce the cost to operate eligible DC fast chargers in PacifiCorp’s Washington service area. However, even though PacifiCorp has promoted Schedule 45 as a valuable alternative rate schedule, participation has remained low – only three sites, with a combined usage of five megawatt-hours, utilized it in October 2021.

Section 2 provides greater detail of each pilot program, results from the pilots and recommendations on next steps.

2. Pilot Program Summary

Section 2 provides a summary and details of the operations and results from each pilot offered to PacifiCorp customers from 2018 until 2021.

2.1 *Demonstration & Development Pilot*

The Demonstration and Development Pilot provides grant funding to non-residential customers to help offset the upfront costs of installing electric vehicle charging infrastructure. To make the program more easily understood by customers, PacifiCorp branded the Demonstration and Development Pilot program as the Electric Vehicle Charging Grant Program. PacifiCorp utilized the services of a third-party to provide scoring and recommendations for funding as the third-party independent evaluator. The next sections share key evaluation findings, provides a grant overview and discusses recommendations.

2.1.1 *Key Evaluation Findings*

In addition, in late 2018, PacifiCorp selected Guidehouse (formerly known as Navigant) to evaluate the success of the pilot program in achieving the stated objectives as it relates to the demonstration and development pilot. The detailed evaluation results are presented in Appendix A investigating charging behaviors, patterns and usage of the installed EVSE equipment that was enabled by the grant program.

This pilot program saw both successes and opportunities for improvement. Table 1, below, highlights in more detail the key findings and results found after completion of the pilot program. Guidehouse utilized a number of evaluation research techniques to evaluate the pilot including surveying grant funding recipients electronically and analyzing participant EVSE data.

Table 1: Transportation Electrification Pilot Key Evaluation Findings

Key Evaluation Findings
The program expanded access to EVSE in PacifiCorp’s Washington service area. A majority of program-funded EVSE is available for public charging, with hotel guests/public seen as the second-leading use case. Workplace/public charging was only seen for one use case out of 19 grants awarded.
Total monthly usage across all projects combined has trended upward since the program’s inception. This is in part due to additional projects coming online throughout the duration of the program, as well as increased usage at individual stations.
Most charging occurred during daytime hours, peaking around noon and 5pm, and with an average charging duration of three hours.

Not enough survey responses were received to draw meaningful conclusions on the program’s impact on the customers and their decisions and behaviors around EVSE.

Source: Guidehouse PacifiCorp Transportation Electrification Pilot Programs Evaluation Report for Washington

2.1.2 Grant Project Overview

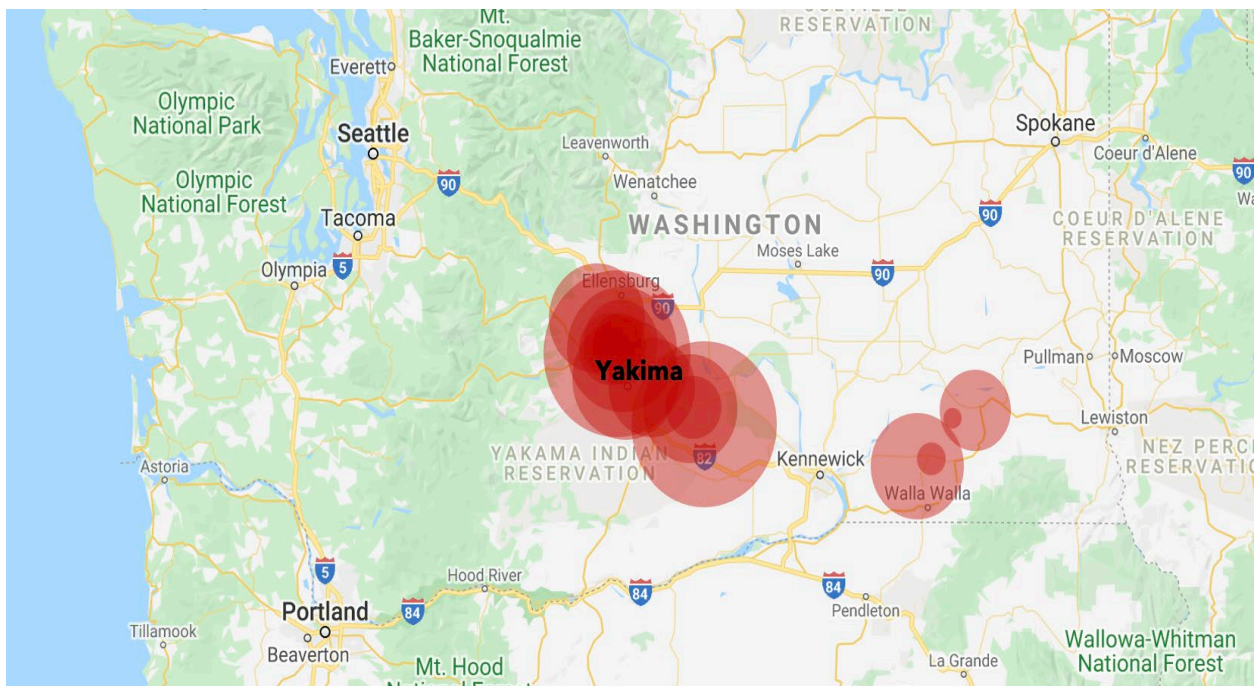
Overall, the program did expand access to EVSE and saw steady increase in usage of EVSE equipment. As stated earlier, 20 projects were awarded, while 19 projects have moved forward into different stages of development. A total of 32 applications were received throughout 2019 and Q1 of 2021, resulting in a total of 24 ports to be installed as part of the program. All the charging infrastructure will be available for public charging and mostly consists of Level 2 chargers with one project that was a direct current fast charger (DCFC) charger.

Table 2: Grants Awarded

Total Number of Applications	Awarded Applications	Projects Completed	Projects Withdrawn	Total Ports To Be Installed
32	20	10	1	24

Grants were awarded throughout the service area, with most of the projects installed in and around Yakima. Project locations also included Walla Walla, Naches, Dayton and more.

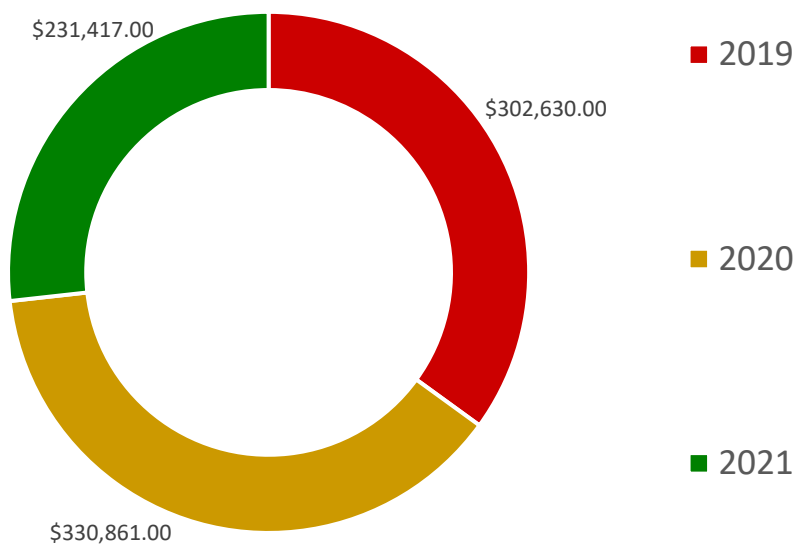
Figure 1: Awarded Grants By Location



The program opened and closed on a quarterly basis starting Q2 of 2019 and finishing Q1 of 2021.

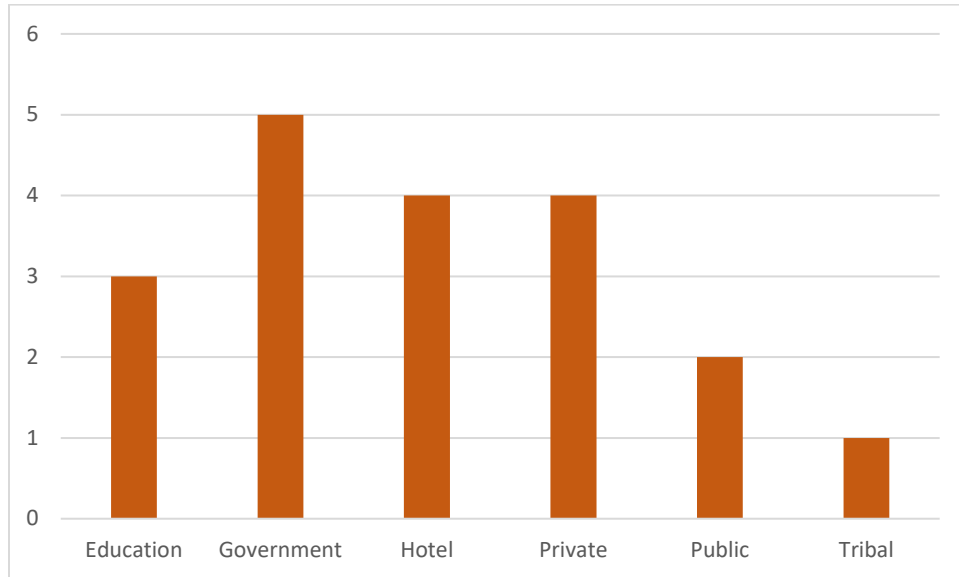
In 2019, PacifiCorp received 9 applications to the grant, awarding 8 out of the 9 grant proposals for a total of \$302,630. In 2020, 10 applications were received by PacifiCorp, which resulted in 8 projects awarded. The total awarded funds for 2020 equaled \$330,861. The grant application was refined each cycle based on applicant feedback. The grant program hosted one more open cycle Q1 of 2021 in which 11 applications were received and four projects officially awarded. Unfortunately, in November of 2021, one project withdrew its application due to change in leadership at the site. Therefore, in Q1 of 2021 a total of three projects were awarded for a total of \$231,417.

Figure 2: Grant Funds Disbursement



Grants were awarded to diverse types of organizations across PacifiCorp's service area (Figure 3 below) including governmental agencies, hotels, educational institutions, private, public and tribal entities.

Figure 3: Grant by Organizational Type



2.1.3 Recommendations

A total of 24 ports were supported by the projects with primary use case being public access charging. Nearly 700 sessions had been completed by the end of Q3 2021 (of the data received by PacifiCorp), with use of charging increasing over time. Most charging occurring during mid-day and early evening for around 3.2 hours on average. The demonstration and development pilot saw significant uptake in charging sessions used as more stations came online.

PacifiCorp believes that this pilot program should be continued as a grant program targeted to key customers and community members throughout the service area considering the charging usage and interest in the overall program. In addition, PacifiCorp’s service area still lacks adequate charging infrastructure and this type of program can be focused on undeserved communities while enabling needed charging infrastructure.

2.2 Outreach and Education Pilot

The Outreach and Education Pilot primarily consisted of four components: customer communications, self-service resources, community events, and technical assistance. Final results on each component are provided below.

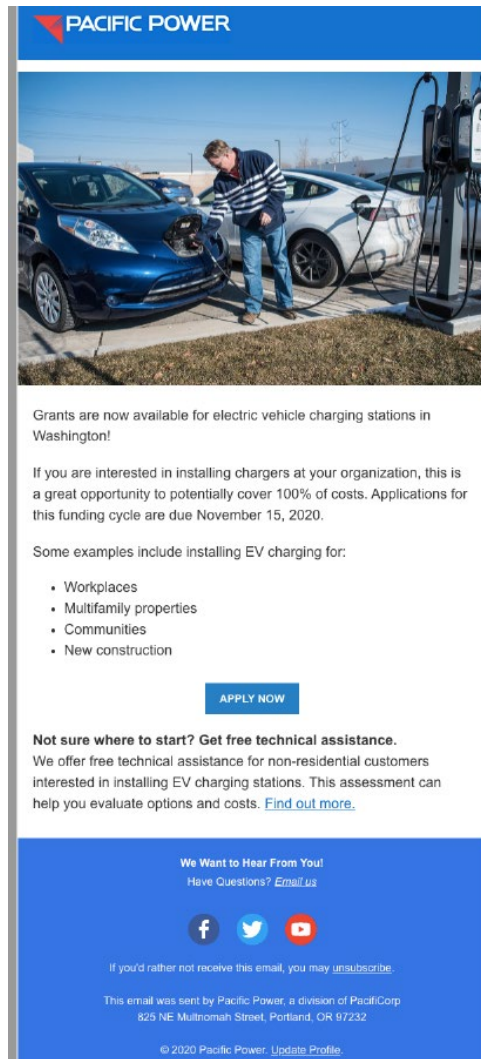
2.2.1 Customer Communications

Customer communications ran through 2019 and 2020 for the outreach and education pilot. This consisted of a number of avenues to reach customers including social media advertising, radio traffic sponsorships, email marketing, newsletters, bill communications and website/mobile app.

- Email Marketing – Emails were sent in April and October 2019 to Washington business customers and PacifiCorp’s EV stakeholder list to communicate grants for electric vehicle

charging stations. In 2019, over 4,700 emails were sent resulting in 89 clicks. In 2020, PacifiCorp opted for sending the e-mails just to the EV stakeholder list, which resulted in 250 emails sent and 30 clicks.

Figure 4: Targeted E-Mail To Business Customers




- Social Media Ads – Ads to promote electric transportation ran on social media as part of National Drive Electric Week (usually September every year). The social media campaigns on Facebook resulted in 300,000 impressions and 840 clicks in 2019. In 2020, the campaign expanded to include Spotify, iHeart Radio and Twitter. Facebook impressions increased to 490,000 and resulted in 2,800 clicks. Spotify and iHeart Radio received just under 10,000 impressions and Twitter resulted in 11,000 impressions and nearly 100 clicks.

Figure 5: Social Media Ads Targeted to Businesses

Pacific Power
Sponsored · 🌐

Make it easier to recharge. Pacific Power offers businesses free assistance and grants for installing EV charging stations.




PACIFICPOWER.NET/EV
Installing EV charging stations at work? [Learn More](#)

More drivers are making the switch to plug-in electric cars...

Like Comment Share

Pacific Power
Sponsored · 🌐

It's National Drive Electric Week! Get free assistance for adding convenient EV charging at your business.




PACIFICPOWER.NET
Give your business a boost. [LEARN MORE](#)

Like Comment Share

Figure 6: Social Media Ads For General Audiences

Pacific Power
Sponsored · 🌐

You can fuel an electric car for the equivalent of about \$1 per gallon of gas. Use our calculator to see your savings.



PACIFICPOWER.NET/EV
Plug into savings with an electric car. [Learn More](#)


More drivers are making the switch to plug-in electric cars...

👍👍👍 Mark Ives, Sandy Eakins and 37 others 15 Comments 1 Share

Like Comment Share

Pacific Power
Sponsored · 🌐

From tax credits and incentives to cheaper fuel costs, we can help you find out if an electric vehicle is right for you.



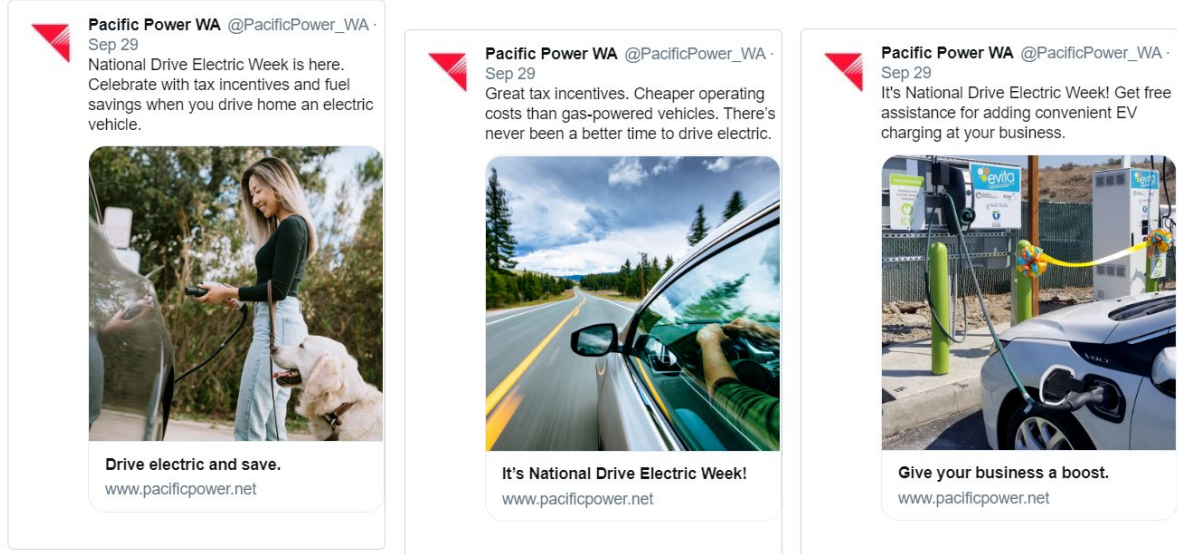
PACIFICPOWER.NET/EV
Considering a plug-in electric vehicle? [Learn More](#)

More drivers are making the switch to plug-in electric cars...

👍👍 Leonardo Diaz and 11 others 3 Comments

Like Comment Share

PacifiCorp Transportation Electrification Final Pilot Program Report



- Radio – Radio ads also promoted electric transportation during National Drive Electric Week as part of local traffic sponsorships.

RADIO SCRIPT TARGETED TO RESIDENTIAL CUSTOMERS

It's a great time to consider a plug-in electric vehicle. You can fuel an electric car for the equivalent of about \$1 per gallon of gas. Pacific Power can help you discover your savings at pacificpower.net/ev.

Plug into savings with an electric car. From tax credits and incentives to cheaper fuel costs, Pacific Power can help you find out if an electric vehicle is right for you. Calculate your savings at pacificpower.net/ev.

RADIO SCRIPT TARGETED TO BUSINESS CUSTOMERS

More and more drivers are switching to plug-in electric vehicles. To make recharging easier, Pacific Power offers free assistance and grants for businesses installing charging stations. Learn more at pacificpower.net/ev.

- Customer Newsletters – Pacific Power's *Connect* newsletters are delivered to residential customers in bills and available online. In 2019 and 2020, four of the seven newsletter editions promoted electric transportation.

Figure 7: Customer Newsletters Highlighting Transportation Electrification

connect APRIL 2019 PACIFIC POWER WASHINGTON

You can rely on us

Nothing is more important to us than delivering the affordable, reliable power you and your family need. In fact, we work day and night, in good weather and bad, to power everything you do. Our reliability track record is 99.98% and we're going even further with new and better ways to deliver your power.

Constant innovation
We're learning from each outage and using state-of-the-art technology to pinpoint areas for improvement. From proactive tree pruning to safeguards on power poles that protect birds and wildlife, we're applying innovative solutions to deliver the energy you need. For instance, in 2018, we pruned 354,000 trees on nearly 15,000 miles of power lines to remove hazards and make our system more resilient.

Investments in reliability
We go to great lengths to keep our grid safe and reliable for our customers. In 2019, we will be upgrading power lines and substations throughout our growing communities with roughly 300 planned improvement projects.

Valuable insights
We are piloting the use of smart grid technology, which makes our system more reliable and resilient, allowing us to automatically reroute power in the event of an outage. The result: outages that are less common and less extensive.

Keeping you informed
If there's a service interruption, we will notify you so you can plan your day. You decide how you want to be notified – by text, email or phone. And you can always track and report outages online, through our app or by phone.

We are here for you
To find out more, please visit PoweringGreatness.com/Reliability.

3 things FOR A SAFE SPRING
This season's warmer days are perfect for yard work, planting and playing outside. To stay safe, keep these tips in mind:

1. Keep yourself, ladders and any tools you're handling at least 10 feet away from overhead power lines.
2. Call 811 at least 48 hours before you dig to build a fence, install a sprinkler system or plant a tree.
3. Don't sit on, play on or dig near pad-mounted transformers (green metal boxes in neighborhoods). If you find one unlocked or damaged, call us right away at 1-888-221-7070.

Learn more at pacificpower.net/safety.

GO ELECTRIC and save
More drivers are making the switch to plug-in electric cars to save money on vehicle operating costs and contribute to a healthier environment. You can fuel an electric car for the equivalent of about \$1 per gallon of gasoline, which can make a big difference for your family budget. We're working with communities and businesses to expand charging access to make it easier for you to drive electric. To learn more about the benefits of electric cars, visit pacificpower.net/ev.

CREATE YOUR comfort zone
Did you know every ductless heat pump comes with built-in air conditioning? With warmer weather ahead, now is a great time to go ductless and save up to \$1,000 on installation. Your new ductless heat pump will keep you cool from spring to summer, warm through fall and winter, and it can save you up to 50 percent on heating costs. Find incentives at bewattsmart.com.

Customer service: 1-888-221-7070
Español: 1-888-225-2611
To report an outage: Text OUI to 722797
Call 1-877-508-5088

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POWERING YOUR GREATNESS

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- Bill Envelope – PacifiCorp uses the back of its bill envelope to communicate with customers on various topics, including electric transportation.

Figure 8: Electric Vehicle Bill Envelope

Is an *electric vehicle* right for you?

Many drivers are choosing plug-in electric vehicles as a cleaner, more efficient way to get around, but would an electric vehicle fit your lifestyle? Use our calculator to find out at pacificpower.net/ev.

PACIFIC POWER
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- Website & Mobile App – Pacific Power's web page, pacificpower.net/ev, is a resource for customers interested in electric vehicles and charging. The page averages about 500-900 page views per month. In addition, Pacific Power's mobile app home screen also includes information about electric transportation throughout the year.

Figure 9: Mobile App Homescreen Image

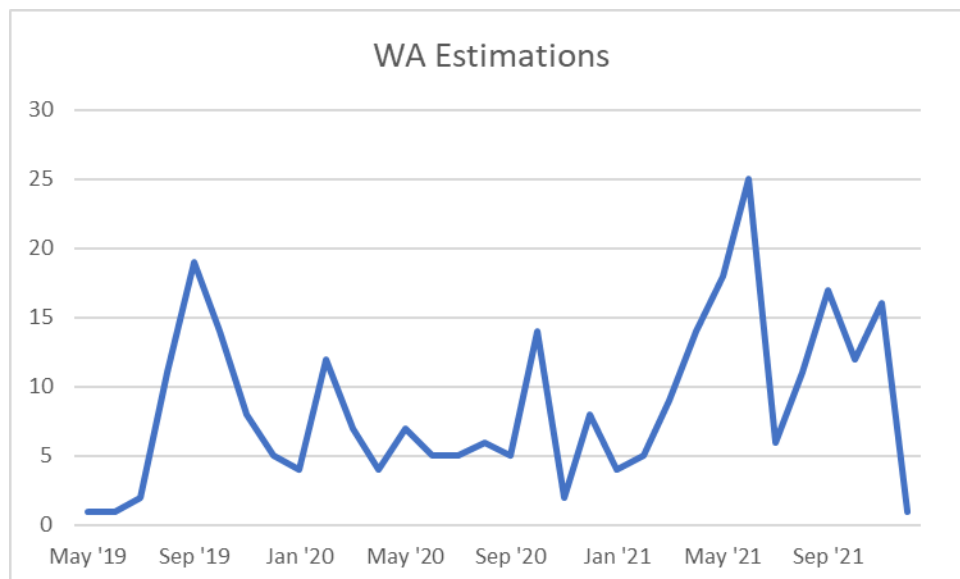


2.2.2 Self Service Resources

Through a competitive request for proposal process, PacifiCorp selected Clean Power Research’s WattPlan tool. WattPlan performs detailed electric vehicle and home load modeling, electric utility bill, vehicle total cost of ownership and environmental impact estimates. This tool assists customers interested in electric vehicles in better understanding total lifecycle costs through comprehensive vehicle options, utility bill impacts, and incentive calculations.

WattPlan went live on PacifiCorp’s website in May 2019. To date, WattPlan has produced cost comparison estimates for Washington customers 278 times. The tool was marketed to residential customers through newsletters social media channels as part of PacifiCorp’s website relaunch in August 2019, as part of National Drive Electric Week during the month of September, and through paid social media advertisements in February 2020. Figure 10 below shows the usage of WattPlan increased when actively promoted through customer communications.

Figure 10: Washington WattPlan Estimations Completed



2.2.3 Community Events

PacifiCorp partnered with community organizations to host various in-person events to promote EV education and the charging pilot program. Each event was planned around already existing events that would draw the most attendance in each service area. In 2019, PacifiCorp hosted three ride and drive events from June through October. Additional events were planned around grand opening and ribbon cutting celebrations as each charging station was installed and was available to the public. Unfortunately, due to the restrictions related to COVID-19, PacifiCorp halted further in person events in 2020-2021 resulting in fewer community events being hosted during the pilot period.

Table 3. Community Event Summary

Event type	Proposed Actions	Results
Ride-and-Drive events	PacifiCorp planned to coordinate and promote events in its Washington service area through an event management vendor	PacifiCorp hosted three ride and drives: -Yakima Energy Fair June 2019 -Walla Walla Sweet Onion Festival July 2019 -National Drive Electric Week- Yakima event September 2019
Demonstration and Development project dedication events	PacifiCorp participated in dedication events for projects funded through the proposed Demonstration and Development Program where possible.	To celebrate the completion and installation of the charging stations, ribbon cutting events were hosted at each project site.
Ad hoc event sponsorship	PacifiCorp intended to financially sponsor and/or host a booth for community events to further raise awareness and provide information about TE.	Due to COVID-19 restrictions, ad hoc events were halted for the duration of 2020-2021 and no ad hoc events were attended by or support by PacifiCorp.

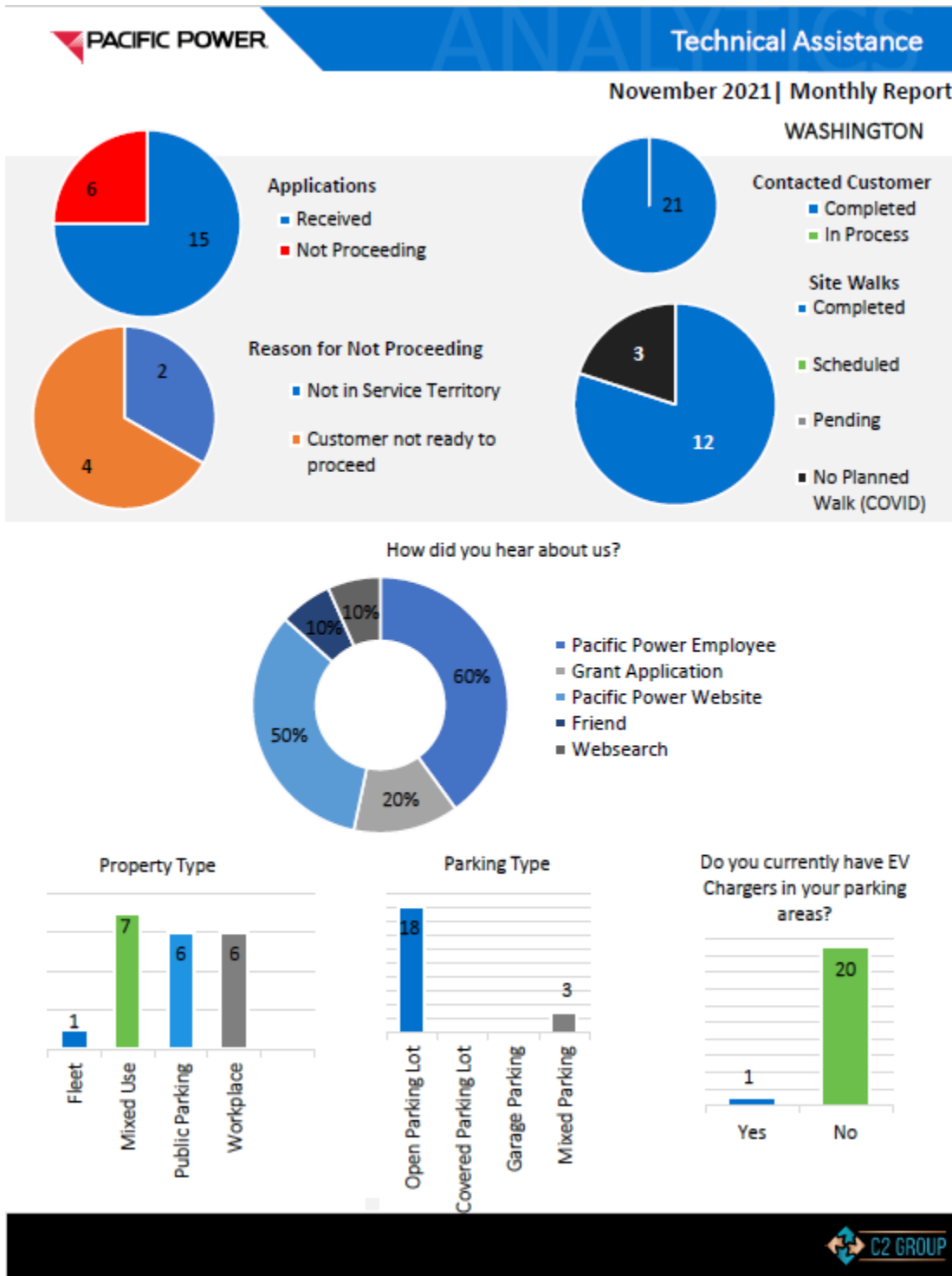
2.2.4 Technical Assistance

PacifiCorp provided on-site technical assistance to non-residential customers interested in installing charging infrastructure. PacifiCorp contracted with a third-party to provide this service at no cost to customers. Customers applied via an online application on PacifiCorp’s website. A desktop review and phone conversation would follow to understand the customer’s EVSE needs, followed by an in-person site walk. Within a few weeks after the site walk, the customer would receive their customized assessment and be given the option of a final 30- minute review session. Technical assistance site visits were temporarily paused due to safety concerns related

to COVID-19. Site visits resumed starting in May of 2021, customers were provided the option of an in-person meeting or remote discussion depending on their preference.

As of October 2021, the pilot program received an application to conduct onsite technical assistance for 21 businesses in Washington. Out of the 21 applications, 15 projects moved forward into site walks and final reports. Overall projects characteristics included a range of project types from fleet, mixed use, public charging and workplace charging. Most projects were evaluated to be located in open parking lots and of the 21 applications, only one application had existing EV infrastructure. Technical assistance was completed for four of the final grant applicants that received awards. Technical assistance is a key avenue for bringing in potential interested grant applicants into the process as well as providing key details required by the grant program.

Figure 11: Technical Assistance Snapshot



2.2.5 Recommendations

While the outreach and education seemed to reach a general population with deeper dives from customers into content, results of how this increased understanding and awareness of transportation electrification remains to be seen due to impacts of COVID. PacifiCorp believes outreach and education is still a key strategy that should be integrated into programs in the future. In order to achieve Washington's decarbonization goals and ensure equitable adoption, outreach and education is specifically important in PacifiCorp's rural service area where adoption is slower. PacifiCorp recommends the creation of an integrated outreach and educational component that would be part of the grant programs moving forward as well as continue to conduct general marketing awareness.

2.3 Public Available Charging Rate

By mitigating demand charges, Schedule 45 has helped reduce the cost to operate eligible DC fast chargers in PacifiCorp's Washington service area. However, despite PacifiCorp's promotion of Schedule 45 as a valuable alternative rate schedule, participation has remained low – only three sites, with a combined usage of five megawatt-hours, utilized it in October 2021.

As part of the most recent general rate case, the Commission approved PacifiCorp's proposal for another alternative time-of-use rate (Schedule 29) that could help reduce costs for DC Fast Chargers. This new alternative became effective in May 2021, and provides a cap on the average cents per kilowatt-hour cost to operate at a low load factor, which could significantly lower costs for DC Fast Chargers with low utilization. PacifiCorp will continue to promote both Schedules 45 and 29, although some customers may prefer Schedule 29, particularly as Schedule 45 transitions customers back to standard rates between November 2021 and October 2030.

3. Conclusions

In conclusion, these pilot programs enabled EV charging infrastructure and use throughout PacifiCorp's service area over the last three years. The public chargers served a diverse set of customers as well EV drivers who were outside of company's service area. Allowing EV drivers to travel longer distances between cities and enabling a number of public charging options for drivers. Deployment of the EVSE charging program provided wider access to public charging. The program was effective in incentivizing customers who had already considered installing charging and potentially accelerated the timeline for installation as well.

Outreach and education efforts were effective in reaching the general population but were limited due to COVID-19 restrictions. Awareness of public charging locations increased between 2019 and 2020 as seen by usage increasing over time. Social media campaigns seemed to have the largest impact on reaching a larger number of customers resulting in further investigation, but it is unclear if these campaigns translated into more grant application and EV awareness generally in the community. Technical assistance continues to be an important link for customers as they investigate high-level feasibility.

While COVID-19 and other challenges appeared, the total number of grant projects funded almost entirely exhausted the proposed grant funding amount and resulted in 24 new electric vehicle charging ports to be enabled throughout Southeast Washington.