

# Fleet Partner Study

## CITY OF SALEM

### Executive Summary

Through the Fleet Partner program, PGE provides technical planning services, turnkey design and construction of charging infrastructure, custom cost incentives, and a trusted partner throughout the process. The program consists of two phases: Plan and Build.

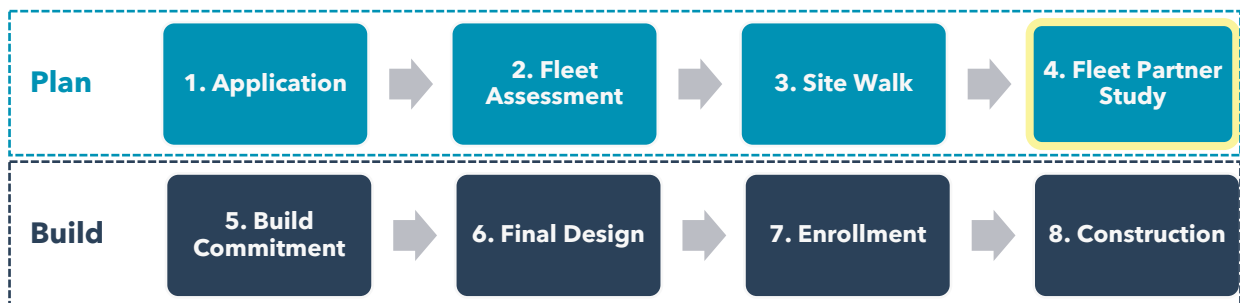


Figure 1

This study concludes the Plan phase and provides the site-specific information needed to understand the scope and costs associated with the Build phase. That information is summarized in Table 1 below.

Table 1

Fleet Partner Project Summary					
Site	Make-Ready Ports	Energy Commitment	Infrastructure Cost	Fleet Partner Incentive	Net Infrastructure Cost
N. Warehouse	20 Level 2	344,744 kWh	\$206,772	-\$96,528	\$110,243

This study details the preliminary results of the fleet assessment and site walk, based on information provided in the application and discussions with the project team. This includes an electric vehicle feasibility, charging analysis, total cost of ownership analysis, summary of incentives, and a site-specific charging infrastructure design and cost estimate.

## Electric Vehicle Feasibility

City of Salem plans to replace approximately 20 cars, SUVs, and pickups with electric vehicles over the next 5 years. The vehicles typically travel 20-30 miles per day, so range should not be an issue when selecting the right EVs. There are growing number of EV options for fleets including the Chevy Bolt, Ford F-150 Lightning, and the upcoming Chevy Equinox EV. These vehicles all have ranges of over 200 miles and provide the capability and versatility you'd expect from the Ford and Chevy brands.

**Table 2**

Energy Use Analysis					
Vehicle Type	Qty.	Avg. daily mileage	Operating days/week	Est. EV kWh/mile	Annual Energy Usage (kWh/yr)*
Car	6	30	5	0.28	14,414
SUV	7	30	5	0.35	21,021
Pickup	7	20	5	0.55	22,022
Total (Annual)					57,457 kWh/yr
Est. Energy Use Commitment (10-year)					344,744 kWh

*\*Includes an estimated 10% in electrical losses during charging*

## Charging Analysis

PGE considered the proposed electric vehicle's battery size, charging capabilities, daily mileage, and available charging time when determining the appropriate charging speed. PGE determined that 32-amp Level 2 charging is sufficient for these vehicles. City of Salem stated a preference for dedicated charging ports for each vehicle but have not yet decided on a charging vendor.

**Table 3**

Charging Solution	
Model	TBD
Configuration	Pedestal-mounted Level 2 chargers
Nameplate Power	6.7 kW (32A at 208V)
Avg. Recharge Time*	1-2 hours

*\*Not a full charge. Estimated time to recover energy consumed by average daily mileage. DC fast charging times vary by state of charge, temperature, and other factors.*

# Total Cost of Ownership Analysis

PGE’s [Fleet Total Cost of Ownership Tool](#) was used to estimate potential costs and benefits of switching to an electric fleet. The tool uses customer-specific inputs (vehicle type, daily mileage, etc) and assumptions (see [Frequently Asked Questions](#)) to compare the total cost of ownership of the fossil-fuel versions and the electric versions of the vehicles. The analysis includes the upfront cost difference of electric vehicles and chargers, as well as fuel and maintenance cost savings, clean fuel credit revenue, incentives, and avoided CO2 emissions.

Based on City of Salem’s inputs, **PGE estimates a potential net savings of \$480,332 over the next 10 years.**

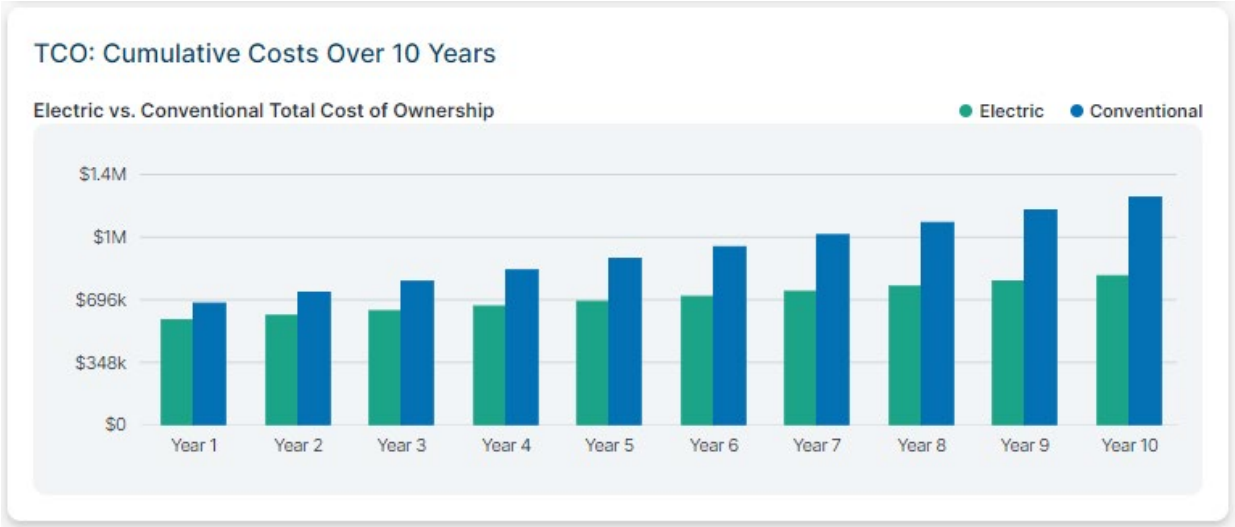


Figure 2

Electricity costs were estimated based on the charging solution described in the Charging Analysis section and assumes all EVs have been acquired and 100% of charging happens on-site. The analysis also assumes that charge management software is used to spread out the charging load over the entire length of the charging window. This helps to reduce demand charges, and therefore, electricity costs.

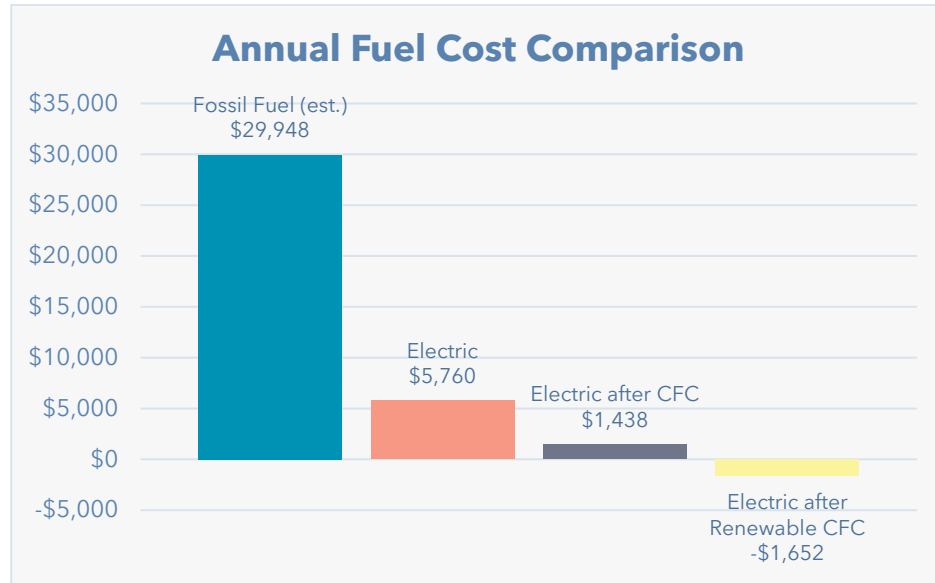
Additionally, PGE estimated the expected revenue through the [Oregon Clean Fuels Program](#). This program allows fleets to generate Clean Fuels Credits (CFC) from charging their electric vehicles and sell those credits on the market to earn revenue every year. This is typically done through a broker registered with Oregon DEQ. If the electricity used for charging is offset by onsite renewables or renewable energy credits, additional credits (and therefore revenue) can be generated.

Table 4

Annual Fuel Cost Analysis						
Site	Total Load (kW)	Rate Schedule	Electricity Use (kWh/yr)	Electricity Cost	Standard CFC Revenue	Renewable CFC Revenue
N.Warehouse	134	83	57,457	\$5,760	\$4,322	\$7,412



The chart below shows a comparison of estimated annual fuel costs for the existing fleet (fossil fuel), an electric fleet, an electric fleet with standard CFC revenue, and an electric fleet with CFC revenue using renewables. This represents a savings of \$31,600 per year in fuel costs, which can help justify the additional cost of EVs and charging infrastructure.



**Figure 3**

Transitioning the fleet to electric has environmental benefits in addition to financial benefits. Electric Vehicles have zero tailpipe emissions which helps to improve local air quality and reduce the greenhouse gas (GHG) emissions that cause climate change. Even when accounting for the carbon intensity of electricity generation in Oregon, there is still a considerable reduction in emissions.

**Table 5**

Emissions Reduction				
Site	GHG Emissions Reduction (Standard electricity)		GHG Emissions Reduction (100% renewable)	
	Metric Tons CO <sub>2</sub> e/yr	%	Metric Tons CO <sub>2</sub> e/yr	%
N. Warehouse	36.0	54%	66.6	100%

## Site Assessment

PGE conducted a virtual site assessment of the facility on June 7, 2022. Using information from the site assessment and the charging analysis, PGE developed a preliminary site design and cost estimate.

The design was based on 20 Level 2 charging ports in the parking lot adjacent to the City's new public works building. PGE will install 5 charger make-ready boxes in the space between the rows of the parking, serving 10 spaces on each side. Per the City's request, bollards surrounding the chargers were included in the design and cost estimate but may

not be needed if the chargers are far enough behind the curbs. Eliminating the bollards would save approximately \$40,000 based on preliminary cost estimates.

A new 480V service would be placed along the east property line, next to the planned generator. The service would be fed from the same transformer as the new public works building. PGE recommends that the City install the conduit between the transformer and the new service while construction is underway for the public works building. The cost of installing this conduit is not included in the preliminary cost estimate, assuming the City follows this recommendation.

Based on the preliminary designs, PGE estimated infrastructure costs including the line extension and make-ready infrastructure costs. In addition, the cost of chargers was estimated based on indicative pricing from vendors (contact the vendor for final pricing).

**Table 6**

Preliminary Cost Estimate			
Site	Make-Ready Ports	Infrastructure	Chargers
N. Warehouse	20 Level 2	\$206,772	\$92,000

The preliminary site design and cost estimate are provided on the following pages.

## Incentives

### Fleet Partner

PGE's Fleet Partner program may be able to provide an incentive towards the make-ready infrastructure cost. In the Build phase, PGE would design, install, own, maintain, and help pay for the make-ready infrastructure. Participants must agree to the program terms, including committing to installing the chargers and using a minimum amount of energy over the 10-year term. A summary of the incentive and requirements are shown below.

**Table 7**

Fleet Partner Incentive Summary				
Site	Energy Commitment	Infrastructure Cost	Fleet Partner Incentive	Net Infrastructure Cost
N. Warehouse	344,744 kWh	\$206,772	-\$96,528	\$110,243

Program requirements (not an exhaustive list):

- Participant pays any make-ready infrastructure costs not covered by the incentive
- Participant purchases and installs PGE-approved networked chargers
- Participant keeps chargers operational and shares charging data with PGE for 10 years

- Charging must be on a new meter and a cost-of-service (non-Direct Access) rate for 10 years
- Site property owner must sign an easement covering PGE-owned infrastructure
- Participants commits to forecasted energy use of the chargers (shown in table above)
- Participants pays an upfront refundable down payment if final design costs are estimated to be over \$15,000.

## PGE Business Charging Rebate

In addition to the Make-Ready Incentive, City of Salem may be eligible for [PGE's Business Charging Rebate](#) program. This program provides a \$1,000 per port rebate to businesses installing qualified Level 2 EV chargers.

## Electric Vehicle Incentives

[Federal EV Tax Credit](#) - Up to \$7,500 tax credit for purchase of most light-duty electric vehicles (GM and Tesla vehicles excluded). Governmental entities are not directly eligible, but can use third-parties to capture the incentive (learn more [here](#)).

[Oregon Clean Vehicle Rebate](#) - Up to \$2,500 rebate on light-duty electric vehicles with a base MSRP below \$50,000. Businesses can receive up to 10 rebates per calendar year.

[Oregon Clean Fuels Program: Advance Crediting](#) - Provides up to 6 years' worth of clean fuels credits upfront to transit agencies, school districts, public fleets, and fleets that are contracted with those entities. Credits can be sold upfront to help cover the cost of EVs.

[Oregon Diesel Emissions Mitigation Grant Program](#) - A competitive grant program for replacing older diesel vehicles (2009 or older) with new cleaner vehicles, like EVs.

[PGE Drive Change Fund](#) - A competitive grant program for transportation electrification projects that benefit the community. Funds can cover the cost of electric vehicles, but preference is given to public or non-profit organizations.

## Next Steps

1. **Select chargers.** Research various charging hardware and software options and make a selection. Get a quote from the vendor for your selected chargers.
2. **Commit to Fleet Partner.** Let PGE handle the dirty work of getting the infrastructure fully designed, permitted, and built, with the Make-Ready Incentive covering a portion of the cost. Sign and return the Build Commitment form along with the quote for your chargers.
3. **Research vehicle incentives.** Research and apply for incentives, rebates, and grants to help with the costs of the electric vehicles.
4. **Order electric vehicles.** Place the order so that the electric vehicles are expected to arrive after the charging site construction is complete. It can take 4-9 months to design, permit, and construct a charging site.

5. **Prepare.** Evaluate any operational impacts of electric vehicles and work collaboratively within your organization to prepare for an electric transition.
6. **Testing, training, and optimization.** Test the new electric vehicles with the chargers and train drivers on charging and driving an EV. Track charging data and optimize charging times to charge off-peak and reduce demand if possible.

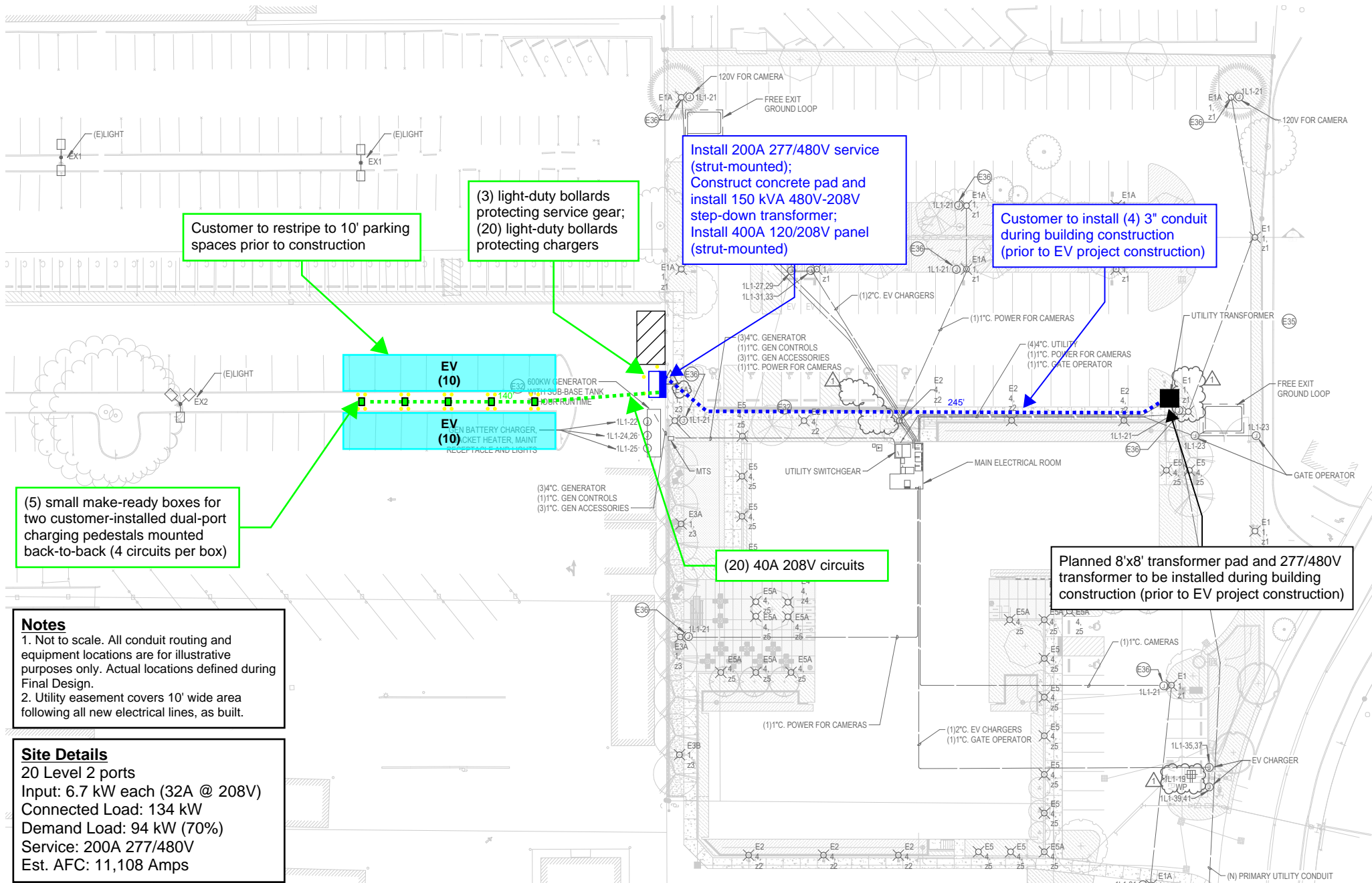
Please contact the PGE Fleet Partner team with any questions:  
[fleetpartner@pgn.com](mailto:fleetpartner@pgn.com)

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# Preliminary Site Design

## City of Salem - N of Warehouse (1410 22nd St SE, Salem)



**PRELIMINARY - NOT FOR CONSTRUCTION**

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# Preliminary Cost Estimate

Project Summary	
<b>Customer:</b>	City of Salem
<b>Location Name:</b>	N of Warehouse
<b>Address:</b>	1410 22nd St SE
<b>City:</b>	Salem
<b>Level 2 Ports:</b>	20
<b>DCFC Ports:</b>	0
<b>Energy Commitment:</b>	344,744 kWh

Infrastructure Cost Summary		
Item No.	Item Description	Total
1	PGE Line Extension Cost	\$6,663
2	Make-Ready Cost	\$200,109
3	<b>Total Infrastructure Cost</b>	<b>\$206,772</b>
4	PGE Line Extension Allowance	-\$6,033
5	Make-Ready Incentive	-\$90,495
6	<b>Total Fleet Partner Incentive</b>	<b>-\$96,528</b>
7	<b>Net Customer Payment</b>	<b>\$110,243</b>

Charger Cost Summary		
8	Estimated Charger + Install Cost (20 Ports)*	\$92,000
9	PGE Level 2 Charger Rebate (\$1,000/port)	-\$20,000
10	<b>Net Charger Cost</b>	<b>\$72,000</b>

\*Cost for all chargers planned over 10-year term. Only 1 charger is required to be purchased upfront.

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