Energy Management System and Incentives Power Fully EV-Capable 95-Space Condo Parking Lot with Zero OpEx

Columbia Shore Condominium
Vancouver, Washington

Property Details

- Vancouver, Washington
- Year built: 1996
- Type: Condominium
- Income-restricted: No
- Existing build: Retrofit
- Rise: Mid-rise 4 floors
- Number of Units: 135
- Parking:
  - Subterranean (underground)
  - Deeded
  - Number of parking spaces: 95
  - Number of visitor parking spaces: 12
  - Number of ADA parking spaces: 6

Background

Columbia Shores Condominium is in south Vancouver, WA, and is part of a larger master developed master parcel with many townhomes surrounding the condominium building in its Southwest corner. Residents were interested in a future-proofed EV-charging solution as more residents were driving EVs and using service outlets to charge, which had resulted in multiple circuit breaker trips. Residents also desired a method to ensure access to low-cost electricity at their deeded parking spaces. Prairie Electric designed a fully capable electrical panel setup to enable lower-cost installation for unit owners when they want to install the final section of the circuit to their parking space. The setup enables all circuits to be submetered by RVE's panels and billed through condo association platforms at cost with no third-party markups.

Learn more here: RVE's Charge at Home case study.

***Charge at Home is a program of Forth**. Forth's mission is to electrify transportation by bringing people together to create solutions that reduce pollution and barriers to access.*



EV Charging Project Details

Technology Solutions:

Five RVE SMP+ smart sub-panels installed with circuit monitoring and submetering:

- Vehicles rotate in priority based on battery charge levels to ensure all cars plugged in across the garage receive a charge.
- All cars charge simultaneously when enough power is available.
- Energy dispensed to each circuit for charging is tracked and billed to the appropriate owner, enabling the HOA to track and allocate all electricity costs.
- Energy consumption monitoring is available online.

SMP+ Smart Panels are capable of connecting to 21 chargers for up to 105 ports across the five panels when fully built out. The system is designed to shed load when power demand exceeds panel or building limits. Power is then rotated to all chargers, depending on current charging session length, energy dispensed already, and balancing the load across panel phases.

240-volt circuitry wired to junction boxes is capable of quick installation to a disconnect and then any non-networked Level 2 charger whenever an owner wants to connect a new charger.





Above and side photo: RVE's SMP+ Panels and 240-volt circuitry wired to junction boxes

Project Financials

- Funded by the Washington Clean Fuel Standard program, Clark Public Utilities' make-ready rebate incentives covered roughly $200,000 of the $400,000 total project cost.
- To support the necessary site preparation, each resident contributed $700 toward electric panel upgrades.
- Residents who had Level 2 chargers installed paid $2,800 for infrastructure costs in addition to the cost of their charger.

Installation Process

Prairie Electric's electricians and engineers designed the panel configurations and installed the conduit, disconnects, and chargers for residents who paid the $2,800 installation fee. The team future-proofed the electrical panels and parking lot circuitry, laying the groundwork for all residents to install charging at their parking spaces in the future.

Current Use and Resident Feedback

A resident was quoted in The Columbian, "It's unbelievable. It really is. For five years, I've been sneaking under the door in the storage unit and plugging into a 120 [volt outlet] and waiting a day and a half before it's fully charged. Now it's just a few hours. It was worth it."

Matt Babbitts, Clean Energy Program Manager at Clark Public Utilities: "*Historically, the multifamily sector of the market has been somewhat underserved for electric vehicles and transportation electrification. That is primarily due to the higher costs that come with installing EV charging infrastructure at apartment or condo complexes, as well as some of the additional complexities that come with those projects.*"

"*[The SMP+] had so many smart features. What really was appealing was that it could track [energy] consumption so we could bill the people that are using electricity,*" - Eric Winkler, President of the Columbia Shores HOA.

Takeaways

- Energy management systems like the SMP+ can provide condos with a system capable of serving all future demand, without having to use communal charging approaches, rely on public charging, or upgrade the utility transformer and the main service panel.
- Incentives, when crafted carefully, can provide significant opportunities to reduce higher upfront costs to enable zero third-party ongoing expenses.