June 1, 2015

San Francisco EV-Ready Buildings Policy

EV Readiness Requirements for New Construction

Overview

In order to reach its climate and air quality goals, San Francisco must facilitate the widespread use of electric vehicles (EVs) for vehicle trips taken in the City. Because EVs must plug in to obtain power, this goal will only be achievable by making EV charging infrastructure available to the broadest range of EV drivers. An EV-Ready Buildings Policy for San Francisco will support this goal by providing comprehensive charging access in new construction projects.

The 2013 California Building Standards Code already requires electrical capacity and raceways to allow for EV charging at 3% of spaces in larger buildings, as well as capacity and pre-wiring for 1- and 2-unit residential buildings. Even with these provisions in place, many of the 67% of San Franciscans who live in multifamily buildings will continue to face significant obstacles to charging EVs.

Recommended Policy

Staff recommend that San Francisco instead require that all residential and commercial new construction and major alterations projects with associated parking provide the option to charge onsite for all motor vehicle parking spaces. The policy would incorporate the following components:

- Residential or commercial with 1 to 2 parking spaces: Provide electrical capacity for a 40-amp circuit and a raceway with a dedicated 208/240-volt branch circuit for each unit or parking space
- Residential or commercial with 3 to 9 parking spaces: Provide enough electrical capacity for a minimum of 2 vehicles to charge simultaneously at 40 amps each and the ability for vehicles in all spaces to charge simultaneously using a load management system
- Residential or commercial with 10 or more parking spaces: Provide sufficient capacity for vehicles at 20% of parking spaces to charge simultaneously at 40 amps each and the ability for vehicles in all spaces to charge simultaneously using a load management system
- EV charging will be provided on a separate service and will be separately metered from other building electrical loads
- Loadcenters (panels) connected to the EV service will be installed in each parking level/area
- Any building may substitute DC quick chargers for level 2 chargers if they are capable of charging an equivalent number of vehicles per day

Significance and Comparison to Other Bay Area Jurisdictions

These code updates will set one of the highest standards for EV charging access in the state, exceeded only by the City of Palo Alto, which requires that all new residential buildings provide 40 amps of electrical capacity, conduit, and pre-wiring to 100% of dwelling unit parking spaces. Staff decided against such an approach due to the onerous upfront costs and potential grid impacts.

By taking an innovative approach that combines distributed panels and load management, staff's proposal will provide flexible charging access to vehicles in 100% of parking spaces while minimizing development costs. By utilizing a separate electrical service for EVs, this proposal also supports future zero net energy building goals by isolating load transportation load from loads related to building operations.

Projected Timeline