

# Assessing the Multi-unit Dwelling Barrier to Plug-in Electric Vehicle Adoption in the South Bay

## ABSTRACT

Governor Jerry Brown established an executive order calling for 1.5 million zero emission vehicles (ZEV) on California's roads by 2025. To achieve this ambitious goal, significant barriers must be overcome to expand and accelerate plug-in electric vehicle (PEV) adoption including the need to build out the necessary refueling infrastructure. To point, residents of multi-unit dwellings (MUDs) are unlikely to have access to home charging (electric vehicle supply equipment or EVSE) due to the variable and often high cost of installation, as well as the low to non-existent investment motivation of the MUD renter or owner.

The purpose of the following report is to explore the MUD barrier to PEV adoption within the South Bay sub-region in Los Angeles County and identify MUDs within the study area that may exhibit high latent PEV demand and low-cost EVSE installation for the purpose of targeted outreach. Researchers analyzed Los Angeles County Office of the Assessor tax parcel data to understand the MUD portfolio of the South Bay, as well as IHS Automotive new car registration data to identify census tracts in the South Bay that have exhibited high PEV demand to date. Researchers also visited 27 MUD sites within the South Bay and reviewed 19 EVSE installation cost estimates to evaluate how installation costs can vary across MUD sites.

The results confirm the cost of EVSE installation in MUDs is variable from site to site and often high. Level 1 charging and group investments for EVSE installations may provide MUD residents access to home charging at lower costs. Policy tools such as targeted outreach to promote the PEV, as well as rebates or PEV-ready new construction codes are likely required to ease the MUD barrier to PEV adoption.

**Keywords:** Plug-in electric vehicle, PEV, multi-unit dwelling, MUD, PEV charging, EVSE, South Bay, California Energy Commission, demand, installation costs

## **Zero Emission Vehicle (MUD) Research Project**

- **2-year research project funded by the CEC**
- **Lead Agency: South Bay Cities Council of Government**
- **Research Partner: Luskin Institute at University of California at Los Angeles**

### **Project Overview**

There is no cost to participate. The focus of the research project is to survey the inventory of South Bay Multi-Unit Dwellings and assess the issues, opportunities, costs and potential to support the growing marketing of plug-in electric vehicles. The research project will consist of a literature review, property siting/sampling study and analysis to define and categorize the existing inventory of MUD properties for:

- type of property (size, age, valuation)
- type of parking facility

Fieldwork will be done understand the costs, issues and opportunities for installation of various types of Electric Vehicle Charging Stations (EVCS) across the MUD inventory typology. Additional information about MUD Owners' attitudes will be gathered as well as information concerning South Bay Cities' permitting, planning and inspection regulations. A Final Report, Tool Kit and Public Workshop will be final products of this research project.

### **Project Components**

1. Siting and inventory of MUDs in South Bay
2. Electric Vehicle Charging Station (EVCS) Cost Analysis
3. MUD/HOA Owners' Survey/Focus Groups – Attitudes, Issues, Barriers, Opportunities
4. Municipal Readiness to Support EVCS – Permitting, Barriers, Best Practices, Costs
5. Presentation of Findings (Workshop + Tool Kit)