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Funding Strategies for Electric Vehicle Infrastructure

June 6, 2016

Zero-Emission Vehicle and Infrastructure Office
Fuels and Transportation Division
California Energy Commission

CALGreen Measures at Multifamily Dwelling Units

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Zero Emission Vehicles and Infrastructure Office

Fuels and Transportation Division

California Energy Commission

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Energy Commission Grant Agreement ARV-14-060

City of Oakland's Plug-In Electric Vehicle (PEV) Readiness Plan.

The purpose of this \$170,324 grant is to support PEV regional readiness and implementation activities.



Energy Commission Agreement ARV-14-060 Goals

Support the adoption of the CALGreen Voluntary Measures.

Provide education and training on the measures.

Implement best practices.



City of Oakland PEV Readiness Objective

Streamline process to permit and inspect PEV infrastructure projects.

Provide informational materials to developers.



CALGreen Background

California Code of Regulations, Title 24, Part 11, the California Green Building Standards Code, commonly known as “CALGreen”, was a first-in-the-nation state-adopted green building code.

CALGreen contains mandatory and voluntary codes authorized by the Department of Housing and Community Development (HCD) and approved by the California Building Standards Commission.



CALGreen Section 4.106.4.2: Mandatory Measures for New Multifamily Dwellings

- Applies to buildings with 17 or more multifamily dwelling units (MFDU).
- 3% of parking spaces (EV Space).
- Capacity and designs for PEV charging installation.
- Install any underground conduit that would be needed.
- Electric Vehicle Charging Station (EVCS) is identified in the construction plans.



CALGreen Voluntary Measures by HCD

New MFDU projects with more than 17 units shall provide for EV Spaces in the following prescribed manner:

Increase from 3% to 5% of required number of EV Spaces.



City of Oakland PEV Readiness

The cities of Oakland and Fremont and the City and County of San Francisco will consider beyond voluntary codes.

New MFDU construction: voluntarily double the minimum code for parking spaces to 6% with 10 or more parking spaces.



City of Oakland PEV Readiness

Energy Solutions selected by the City of Oakland.

Ed Pike, Senior Engineer and Jeff Steuben, Project Manager.

Energy Solutions developing a model to demonstrate the cost-effectiveness of local codes in promoting EVCS.



City of Oakland PEV Readiness Energy Solutions Model Inputs

Basic scenario includes:

- Surface vs. enclosed parking structure,
- electrical service, and
- the number of EV spaces.



City of Oakland PEV Readiness Model

Comparison of costs:

- Retrofitting vs. installation of new construction.
- Complete circuit
- Make ready.
- Based on a circuit to support 208/240-volt 40 amp charging.



CALGreen Benefits Going Beyond Voluntary Measures

Increases the number of EV Spaces at MFDU and promote PEV sales by residents.

Significant infrastructure cost savings (~50-80%) during new construction vs. retrofits.

Local jurisdictions can voluntarily upgrade their MFDU codes for consistency.





Thank you for your attention.

Questions?

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