



CALIFORNIA ENERGY COMMISSION

California Energy Commission

STEPS Workshop: Critical Barriers and Opportunities for PEV Commercialization in California:

Infrastructure for Light-Duty Vehicles, Freight, and People Movement-Session I
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California's Key ZEV-Related Policies and Regulations

Policy Objectives	Policy Origin	Goals and Milestones
Greenhouse Gas Reduction	AB 32, Executive Order S-3-05 and Executive Order B-30-15	Reduce greenhouse gas emissions to 1990 levels by 2020, 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050 in California
Petroleum Reduction	Governor's Executive Order B-32-15	Governor's new target of 50% reduction for cars and trucks by 2030 and creation of Sustainable Freight Action Plan by July 2016
Low Carbon Fuel Standard	AB 32, California Global Warming Solutions Act	10% reduction in carbon intensity of transportation fuels in California by 2020
Air Quality	Clean Air Act	80% reduction in NOx from current levels by 2023
Renewables Portfolio Standard	Executive Order S-21-09 and SB X1-2, and SB 350	Goal of 33% renewable electricity generation by 2020 and 50% by 2030
ZEV Mandate	California Executive Order B-16-2012	Accommodate 1 million ZEVs by 2020 and 1.5 million by 2025 in California
Integrated Energy Policy Report	SB 1389 (2002)	2014 IEPR: Chapter 3 recommendations for EV infrastructure deployment



Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) Electric Vehicle Support

Charging Connectors	Residential	Multi-unit Dwelling	Commercial	Workplace	Fleet	DC Fast Chargers	Total
Installed	3,937	178	2,039	189	100	43	6,486
Planned	-	167	1,415	236	36	199	2,053
Other				209			209
Total	3,937	345	3,454	634	136	242	8,748



Charging Infrastructure

Grants: \$49.5 M

Plus 34 ZEV Regional Readiness

Planning Grants: \$7.6 M

CPCFA Loan-Loss

Reserve Program: \$2 M

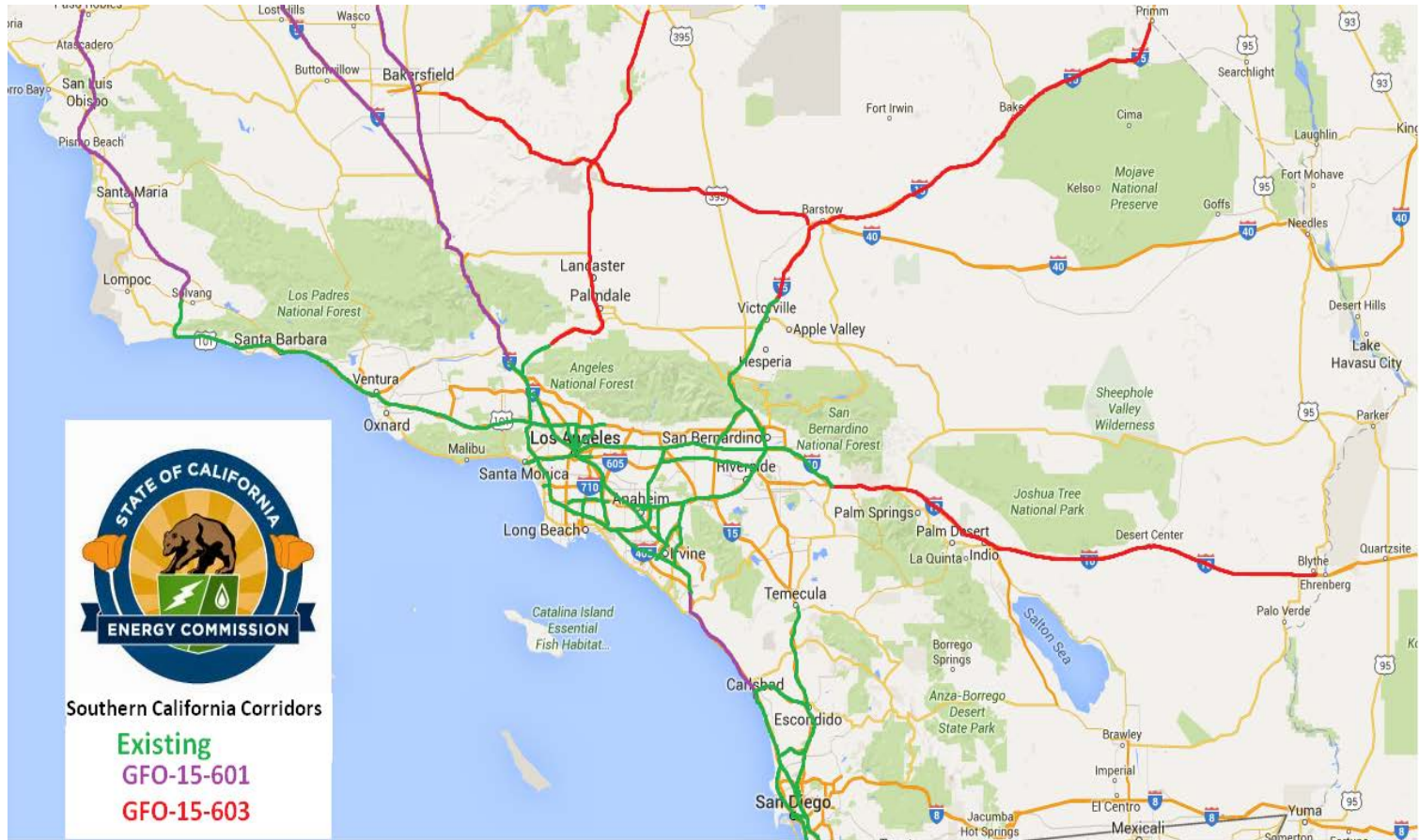


Central and Northern California DC Fast Charge Corridors: Grant Funding Opportunity 15-601 and 15-603





Southern California DC Fast Charger Corridors : Grant Funding Opportunity 15-601 and 15-603





Energy Commission's Plug-in Electric Vehicle (PEV) Infrastructure Planning Overview

NREL Statewide EV Infrastructure Model and Web Portal

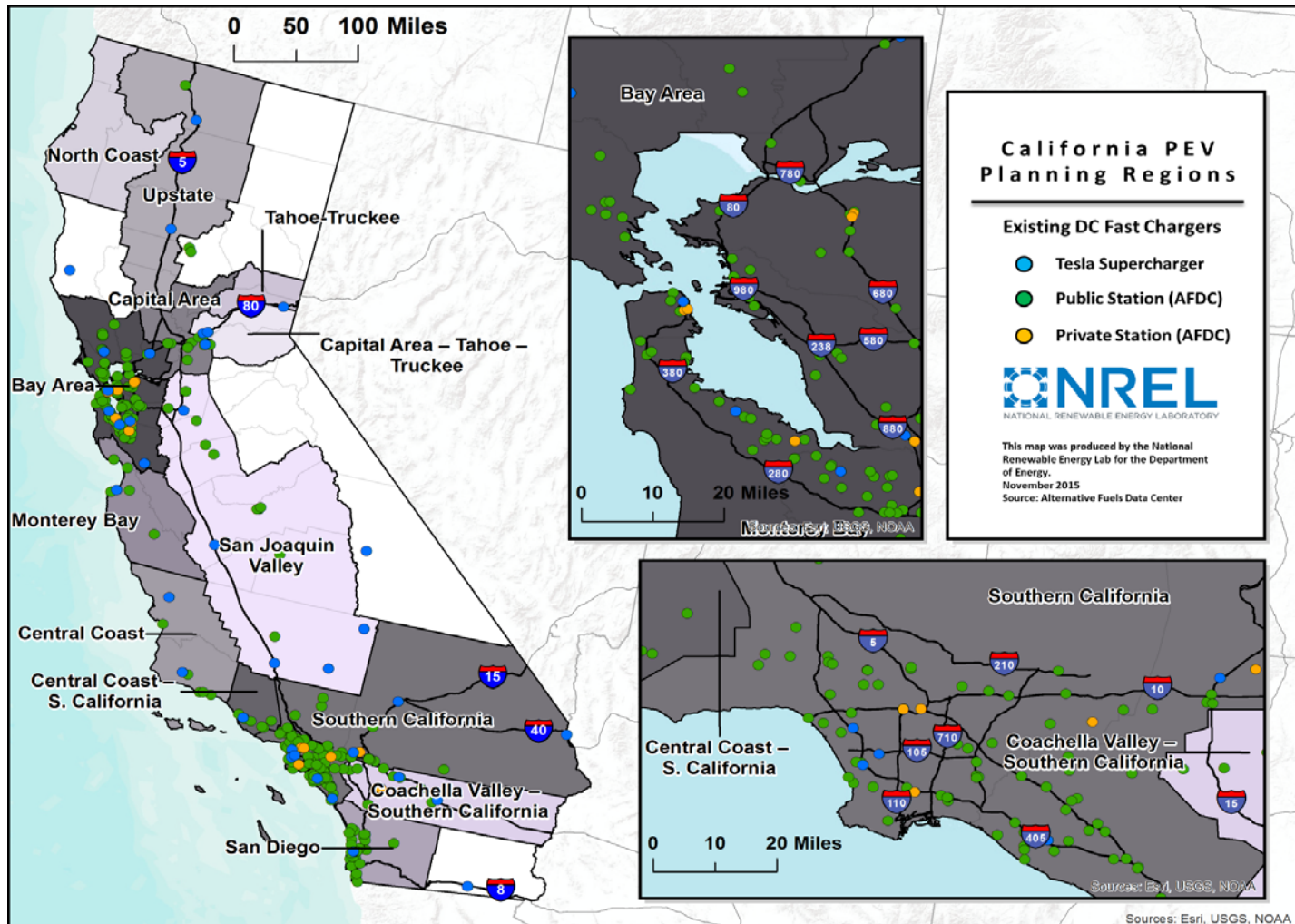
12 PEV Regional Plans that include Charging Infrastructure Siting Plans

Charging Data Acquisition and Analysis with NREL

Coordination with other Agencies and Entities



Regional PEV Readiness Plans





Challenges to EV Charging Station Deployment

Energy Commission's lengthy solicitation process

Applications are costly

Site selection is often difficult and sites change

Lack of flexibility and nimbleness to respond to quickly changing market

Ongoing reliability issues and maintenance of chargers



Energy Commission to partner with NREL on charging station data

- NREL tracks all networked public station data in California
- Energy Commission is working with NREL to gather data that will help inform EV charger deployment
- Energy Commission goal is to be able to collect data directly from CEC projects





NREL's Statewide PEV Infrastructure Assessment Revision (05/2016-12/2016)

- Infrastructure Systems Analysis Group at NREL will revise their PEV Infrastructure Assessment Model by using updated PEV market data and real-world travel behavior characteristics of Light-Duty Vehicle drivers in California.
- The revised model will allow the state and local governments flexibility in evaluating outcomes of different PEV market scenarios between 2017 and 2025.



Energy Commission's Focus

- Gather data to inform charging infrastructure deployment and update NREL Infrastructure Assessment
- Rapidly deploy charging infrastructure to meet California's goals
- Choose strategic locations and sites that will spur EV adoption
- Include reliability and uptime of charging stations in funding opportunities in order to maintain California's network of chargers



Energy Commission ARFVTP Funding Opportunities

- 2016 Charging Infrastructure Funding: \$6.8 million
- DC Fast Charging for California's Interregional Corridors
GFO-15-603: \$9.97 million (Applications due June 24, 2016)
- Zero-Emission Vehicle Regional Planning: \$1.9 million
- 2016-2017 ARFVTP Investment Plan:
 - \$17 million
 - \$2 million for regional readiness



Energy Commission Resources

- The Alternative and Renewable Fuel and Vehicle Technology Program Investment Plan:
<http://www.energy.ca.gov/2015publications/CEC-600-2015-014/CEC-600-2015-014-SD-REV.pdf>
- Energy Commission grant funding opportunities for transportation:
<http://www.energy.ca.gov/contracts/transportation.html#GFO-15-603>
- Energy Commission ZEV Action Plan Implementation Activities:
<http://www.energy.ca.gov/2013-ALT-01/index.html>
- DRIVE website for the Alternative and Renewable Fuel and Vehicle Technology Program: <http://www.energy.ca.gov/drive/index.html>