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

<table>
<thead>
<tr>
<th>Policy Objectives</th>
<th>Policy Origin</th>
<th>Goals and Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhouse Gas Reduction</td>
<td>AB 32, Executive Order S-3-05 and Executive Order B-30-15</td>
<td>Reduce greenhouse gas emissions to 1990 levels by 2020, 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050 in California</td>
</tr>
<tr>
<td>Petroleum Reduction</td>
<td>Governor’s Executive Order B-32-15</td>
<td>Governor’s new target of 50% reduction for cars and trucks by 2030 and creation of Sustainable Freight Action Plan by July 2016</td>
</tr>
<tr>
<td>Low Carbon Fuel Standard</td>
<td>AB 32, California Global Warming Solutions Act</td>
<td>10% reduction in carbon intensity of transportation fuels in California by 2020</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Clean Air Act</td>
<td>80% reduction in NOx from current levels by 2023</td>
</tr>
<tr>
<td>Renewables Portfolio Standard</td>
<td>Executive Order S-21-09 and SB X1-2, and SB 350</td>
<td>Goal of 33% renewable electricity generation by 2020 and 50% by 2030</td>
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<tr>
<td>ZEV Mandate</td>
<td>California Executive Order B-16-2012</td>
<td>Accommodate 1 million ZEVs by 2020 and 1.5 million by 2025 in California</td>
</tr>
</tbody>
</table>
### Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) Electric Vehicle Support

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

**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


- Energy Commission grant funding opportunities for transportation: [http://www.energy.ca.gov/contracts/transportation.html#GFO-15-603](http://www.energy.ca.gov/contracts/transportation.html#GFO-15-603)


- DRIVE website for the Alternative and Renewable Fuel and Vehicle Technology Program: [http://www.energy.ca.gov/drive/index.html](http://www.energy.ca.gov/drive/index.html)