Investing for Tomorrow, Today

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California Energy Commission

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# California’s Policy Goals and Objectives

<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, SB 350</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>California State Alternative Fuels Plan</td>
<td>Reduce petroleum fuel use to 15 percent below 2003 levels by 2020 in California</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>ZEV Mandate</td>
<td>Executive Order B-16-2012</td>
<td>Infrastructure to accommodate 1 million ZEVs by 2020 and 1.5 million ZEVs on California roadways by 2025</td>
</tr>
</tbody>
</table>
Alternative and Renewable Fuel and Vehicle Technology Program

“…to develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state’s climate change policies.”

Complementary state goals

- Improve air quality
- Increase alternative fuel use
- Reduce petroleum dependence
- Promote economic development

Health and Safety Code 44272(a)
Electric Vehicle Infrastructure Support is Growing

### Charging Stations Funded by ARFVTP (as of March 2017)

<table>
<thead>
<tr>
<th></th>
<th>Private Installations</th>
<th>Publicly Accessible Installations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single Family Residential</td>
<td>Private Fleet</td>
<td>Multiunit Dwelling</td>
</tr>
<tr>
<td>Total</td>
<td>3,936</td>
<td>107</td>
<td>345</td>
</tr>
<tr>
<td>Subtotal</td>
<td>4,043</td>
<td></td>
<td>4,635</td>
</tr>
</tbody>
</table>

- $80.1 M for Charging Infrastructure
  - Includes a $15.2 M agreement with Center for Sustainable Energy to provide EV charging incentives throughout California.
- $9.75 M for 43 Regional Readiness Planning Grants

Other Initiatives

- NEDO: New Energy and Industrial Technology Development Organization
- electrify america
- nrg
- EVgo

C A L I F O R N I A E N E R G Y C O M M I S S I O N
## EV Charging Infrastructure Pilots

### Investor Owned Utilities

<table>
<thead>
<tr>
<th>Investor Owned Utility</th>
<th>Markets</th>
<th>Proposed # of EV Charging Stations</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern California Edison</td>
<td>MUD, Workplace, Public</td>
<td>1,500</td>
<td>$22 Million</td>
</tr>
<tr>
<td>San Diego Gas &amp; Electric</td>
<td>MUD, Workplace</td>
<td>3,500</td>
<td>$45 Million</td>
</tr>
<tr>
<td>Pacific Gas &amp; Electric</td>
<td>MUD, Workplace</td>
<td>7,500</td>
<td>$130 Million</td>
</tr>
</tbody>
</table>
Building a Foundation for Hydrogen Fueling Stations

Station Funding to Date = $126.5 million

Public Station Funding
- 60 Funded Stations = $106.1 million
- 3 Station Upgrades = $6.7 million
- 45 O&M Support Grants = $12.8 million
- 1 mobile refueler = $0.9 million

Other Funding Activities
- 5 Hydrogen Regional Readiness Plans
- AC Transit Fuel Cell Bus Station
- CDFA Div. of Weights and Measures
- UC Irvine STREET Model
An Emerging Network

Mary’s Valley Rally
*April 2016*

Bay Area H2 Tour
*April 2017*
Better Data, Better Decisions
Data Collection with NREL

- Monitor station utilization
- Determine how station deployment supports Zero Emission Vehicle (electric and hydrogen fuel cell) adoption
- Strategically plan for additional stations and funding opportunities that will support the goal of 1.5 million vehicles on California roadways by 2025
- Track impact of electric vehicle charging and hydrogen refueling station investments
Thank you

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