STATUS REPORT ON THE ADVANCED CLEAN CARS PROGRAM

Sacramento, California
October 24, 2013
Overview

• Background
• Next Steps
• ZEV Implementation
• Status of ZEV Infrastructure
Meeting Criteria Pollutant Goals

- Continued progress towards ozone attainment
- Reduce localized exposure
  - PM, toxics
Meeting Greenhouse Gas Goals

• Goal: 80% below 1990 levels by 2050
Transportation’s Contribution to California Emissions

### Greenhouse Gas Emissions
- Transportation: 38%
- Electric Power: 24%
- Commercial and Residential: 9%
- Industrial: 19%
- Agriculture: 6%
- Recycling and Waste: 2%
- High GWP: 3%
- Agriculture: 6%

### NOx Emissions
- Off-Road Veh.: 35%
- HD Vehicles: 34%
- LD Vehicles: 21%
- Stationary: 7%
- Area: 3%
- Natural: 0%
Advanced Clean Cars (ACC)

Multi-pronged approach to meeting mid- and long-term emission reductions from light duty vehicles
ACC Criteria Pollutant Standards

150,000-mile New Vehicle Fleet Average Emissions

NMOG+NOx (g/mi)

Model Year


PC, LDT1
LDT2, MDPV

75% Lower
ACC Particulate Matter Standards

PM Emissions (mg/mi)

<table>
<thead>
<tr>
<th>Year</th>
<th>Current Standard</th>
<th>2017</th>
<th>2025</th>
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<td>10</td>
<td>3</td>
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ACC GHG Standards

- Standard: 166 gCO$_2$e/mile in 2025
  - GHG reduction of 4.6%/year for 2017-2025 model years
  - GHG reduction of 34% from 2016 to 2025
Meeting 2050 GHG Goals

- ZEVs represent 87% of in-use fleet by 2050
Example Implementation of ZEV Requirements

~15% of Annual Sales in 2025

Projected: ZEVs

Projected: Plug-in Hybrids

Previous Regulation -ZEVs

Previous Regulation -PHEVs

Annual ZEVs

ACC Timeline

• Summer 2011: Vehicle OEMs agree to proposed national GHG standards
  – 3-agency (ARB, EPA, NHTSA) midterm review required


• Oct. 2012: EPA/NHTSA adopt national standards

• Nov. 2012: Board approves update to ACC with provision for nationwide compliance
Next Steps
ACC Midterm Review

1. National GHG program
   – Joint review with EPA, NHTSA, and ARB
   – Re-assess appropriateness of 2022-2025 GHG standards

2. California PM standards
   – Confirm measurement capability at low levels
   – Re-assess appropriateness of 2025-2028 standards
     – Including technical feasibility and implementation year

3. California ZEV regulation
   – Evaluate market response/consumer acceptance
   – Re-assess ZEV requirements
Midterm Review Timeline

Elements of Review

- ZEV Infrastructure Assessment
- PM Measurement Capability Update
- Update to the Board on MTR

Completion of review

- No later than 11/15/2017, Joint Technical Assessment Report
- No later than 4/1/2018, Final Decision on existing standards
ZEV Review Timeline

• Why not push ahead the ZEV Review?
  – New market and consumer data needed to conduct meaningful review
  – New advanced BEVs and FCVs coming in 2015
  – ZEVs are integrated part of criteria pollutant and GHG goals
  – Planned Annual Updates to the Board
ZEV Implementation
California ZEV Action Plan

• Executive Order Signed March 2012
  – 1.5 Million ZEVs in California by 2025
  – Infrastructure to support 1 Million ZEVs by 2020
  – 10 percent of state fleet vehicles shall be ZEVs by 2015 and 25 percent by 2020
• Action Plan finalized in February 2013
  – Multi agency plan for supporting the goals of the Executive Order
  – Focus on:
    • Public awareness and demand
    • Infrastructure
    • Fleets
    • Building ZEV industry
ZEVs Currently Offered

Plug-In Hybrids

Fuel Cell Vehicles

Battery Electric Vehicles
California ZEV Incentives

- CVRP Rebates
  - $2500 for Pure ZEV (Battery/Fuel Cell Electric)
  - $1500 for PHEV (Plug-In Hybrids)
- HOV Lane Access
- Rebates for at Home Charging
Alternative and Renewable Fuel and Vehicle Technology Program Investments in ZEV Infrastructure

California Air Resources Board Meeting

October 24, 2013

Jim McKinney, Program Manager

Alternative and Renewable Fuel and Vehicle Technology Program
Public Charging Infrastructure

**Existing Public Infrastructure**
- Close to 1,000 Level 2 stations with over 2,800 connectors and 67 quick chargers

**Development Activities**
- CEC recent awards – $2.5M for 39 quick chargers in So Cal
- NRG settlement: $100 million
  - 200 combo fast charge/Level 2 station ("Freedom Stations")
  - Infrastructure for 10,000 level 2 EVSEs for multi-family housing, workplace, schools and hospitals.

Map courtesy of plugshare.com
EV Charger Support

EVSE Funding to Date = $24.9 million
Total Funded = 7,613 level 2 & 3 charge points
   Commercial = 3,096
   Residential = 3,882
   Workplace = 558
   Plus 10 Regional Readiness
   Planning Grants = $1.9 M

Level 1 & 2

Level 1 & 2 chargers:
- Residential: Planned 4500, Installed 4000
- Commercial: Planned 3500, Installed 3000

77 DC Fast Chargers

- DC Fast Chargers: Planned 90, Installed 87
Current EVSE Funding: $33.6 M

2012-13 IP Funding = $6 million
- Destination, Commercial & MUDs

2013-14 IP Funding = $7 million
- Support ZEV Action Plan, State Garages

2014-15 IP Proposed Funding = $15 million
- Destination, Workplace, MUDs, Fast Charging

• Statewide Infrastructure Plan: ZEV Action Plan Item
  - NREL Draft Report in Development with Energy Commission and ARB
• ARB EV Infrastructure Needs Assessment
Hydrogen Station Funding

Total Funding to Date = $41.4 million

17 New Stations = $27 million
~ 7 Station Upgrades = $6.7 million
  – $30 million in next solicitation will fund about 16 additional stations
AC Transit Fuel Cell Bus Station = $3 million

CDFA Div of Weights and Measures = $4 million
  – Retail Dispensing Fuel Standards
UC Irvine STREET Model = $750,000
Multi-State ZEV MOU

• Governors from eight “Section 177” ZEV States signing multi-state Memorandum of Understanding (MOU) to support ZEVs
  – Vermont, New York, Massachusetts, Rhode Island, Connecticut, Oregon, Maryland, California

• Outlines specific commitments to support ZEV commercialization through coordination of various state agencies