Achieving Air Quality and Climate Change Goals through Energy and Transportation Transformation

Analisa Bevan
CARB
May 14, 2014
Sacramento California
Driving Forces Behind CARB Policies

* **Healthy Air Quality for All Californians**
  * Continued progress towards ozone attainment
  * Reduce localized exposure to pollutants and toxics

* **Stable Global Climate**
  * Reduce greenhouse gases (GHG) 80% below 1990 levels by 2050
Over 90% of Californians still breathing unhealthy air

<table>
<thead>
<tr>
<th>State of the Air 2013 Most Polluted U.S. Cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unhealthy Ozone Days</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

- California has 7 of 10 most ozone polluted cities in the United States
- 5 million Californians with asthma
- 1.2 million children
- 9,200 premature deaths annually due to current particulate matter (PM) levels

Source: American Lung Association
Policies and Programs

- Transportation
- Industry
- Fuels
- Energy
AB 32 and Cap & Trade

- AB 32 requires California to return to 1990 levels of greenhouse gas emissions by 2020
- The cap and trade program is a key element in California’s climate plan.
  - It sets a statewide limit on sources responsible for 85 percent of California’s greenhouse gas emissions
  - Establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy.
Transportation

* Reduce light-duty and heavy-duty GHG emissions 5 percent per year to continue progress toward near-zero emissions by 2050
* Enhance and strengthen Low Carbon Fuel Standard (LCFS)
* Develop Sustainable Freight Strategy

Energy

* Develop a comprehensive GHG emission reduction program for energy by 2016
* Increase energy efficiency, distributed generation/CHP, demand response, and integrated low carbon energy supply
Light Duty Vehicle GHG Goals

% of On-Road LDV Fleet

- Advanced Gasoline Vehicles
- Conventional (Non-Plug in) Hybrids
- Plug-in Hybrid Electric Vehicles
- Battery Electric Vehicles
- Hydrogen Fuel Cell Vehicles

Year

2000 2010 2020 2030 2040 2050

87%
California ZEV Action Plan

2013

ZEV Action Plan
A roadmap toward 1.5 million zero-emission vehicles on California roadways by 2025

- 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
* Reduce greenhouse gas emissions
  * ~15 MMT in-state in 2020
* Reduce carbon intensity of transportation fuel pool by 10% by 2020
* Help achieve AB 32 objective of reducing GHG emissions to 1990 levels by 2020
* Transform and diversify fuel pool
* Reduce petroleum dependency
Renewable Portfolio Standard

Source: California Public Utilities Commission, August 2013
Challenges

* Building the market pull for zero emission vehicles
* Building the fueling infrastructure to support zero emission vehicles
* Capture of the many pathways zero emission fuels can be produced for LCFS
* Optimal integration and utilization of renewable energy
Opportunities

* Cross sector connections that benefit multiple policy goals
* Building business case for the market transformation we need to see
Thank you