Workshop Overview

• Introduction
• Background
  – AB 32 and Scoping Plan background
  – Structure of the day
  – California overview
• Sector Presentations
Projected Global Warming Impact on California, 2070-2099
(as compared with 1961-1990)

- **90% loss in Sierra snowpack**
- **22-30 inches of sea level rise**
- **3-4 times as many heat wave days**

**Business as Usual Emissions (8-10.5°F)**

- **70-80% loss in Sierra snowpack**
- **14-22 inches of sea level rise**
- **2-2.5 times as many heat wave days**

**Medium-High Emissions (5.5-8°F)**

- **30-60% loss in Sierra snowpack**
- **6-14 inches of sea level rise**
- **2-2.5 times as many heat wave days**

**Lower Emissions (Governor’s 2050 target) (3-5.5°F)**

- **90% loss in Sierra snowpack**
- **22-30 inches of sea level rise**
- **3-4 times as many heat wave days**

What Is AB 32?

- Sets in statute 2020 GHG emissions limit at 1990 level
  - Acknowledges that 2020 is not the endpoint
- ARB to monitor/regulate GHG sources
- Air Resources Board lead, but extensive collaboration with other agencies
- Mandates that a Scoping Plan be adopted by January 1, 2009
Magnitude of the Challenge

ARB Emissions Inventory

Million Metric Tons (CO₂ Equivalent)

1990 Emission Baseline

~173 MMT CO₂e Reduction

80% Reduction ~341 MMT CO₂e
AB 32 Timeline

2007
- Publish list of early actions
- Mandatory reporting & 1990 Baseline

2008
- Adopt scoping plan
- Adopt enforceable early action regulations

2009
- Early action regulations enforceable

2010
- GHG reduction measures enforceable

2011
- Adopt GHG reduction measures

2012
- Reduce GHG emissions to 1990 levels

2020
- Identification/implementation of further emission reduction strategies

GHG reduction measures

Mandatory reporting & 1990 Baseline

Adopt GHG reduction measures
• Describe how California will reduce GHG emission levels to 1990 levels by 2020
• Provide a vision for a low carbon future - 2020 and 2050
• Establish California’s leadership on addressing climate change, yet consider other GHG programs
• Maximize benefits to California
  – Criteria and toxic air pollutant co-benefits
  – Economic development
  – Community participation
• Prerequisite for regulatory requirements
How Will the Scoping Plan Be Developed?

- Identify maximum technologically feasible and cost-effective measures
- Assess possible mechanisms to achieve reductions
- Evaluate scenarios to achieve the 2020 limit
- Develop recommendations for the draft staff report
# Tentative Scoping Plan Development Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Nov 30, 2007</td>
<td>Scoping Plan Kick-Off Workshop</td>
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<td>Dec 6, 2007</td>
<td>Board Hearing - 1990 Baseline, Mandatory Reporting</td>
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<tr>
<td><strong>Dec 14, 2007</strong></td>
<td><strong>Sector Summary Workshop (Sac)</strong></td>
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<tr>
<td>Jan 16, 2008</td>
<td>Mechanisms Workshop (Oakland)</td>
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<tr>
<td>April 4, 2008</td>
<td>Scoping Plan Scenarios Workshop (Sac)</td>
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<tr>
<td>June 2008</td>
<td>Draft Scoping Plan released</td>
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<tr>
<td>July 2008</td>
<td>Workshops on draft plan (Statewide)</td>
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<tr>
<td>Oct 2008</td>
<td>Final Staff Proposal released</td>
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<tr>
<td>Nov 20-21, 2008</td>
<td>Board Hearing - Scoping Plan</td>
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Opportunities for Participation

- Scoping Plan Workshop Series
- Stakeholder workgroups
- Individual regulatory proceedings
  - Discrete Early Action Measures
  - Subsequent regulatory actions
- ARB Community Outreach Efforts
- Advisory Committees
  - ETAAC
  - EJAC
- Draft Scoping Plan workshops
- Board Hearing
Structure of the Day
Today’s Sector Breakdown

• Energy
  – Generation
  – Efficiency
  – Water/Energy

• Transportation
  – Vehicles
  – Fuel
  – Goods Movement

• Business and Industry
  – Cement
  – Oil and Gas Production
  – Refineries
  – Waste
  – Semiconductor Industry
  – High-GWP
Today’s Sector Breakdown

• Forests
• Agriculture
  – Manure Management
  – Soils
  – Livestock
  – Efficiency
• Land Use and Local Initiatives
  – Vehicle Use
  – Local Communities
  – Buildings – Commercial and Government
  – Residential Use
Presentation Outline

- Sector Emissions
- Sector Profile
- Existing Controls
- Emission Reduction Approaches
- Potential Emission Reduction Measures
- Discussion
  - Q&A period following each presentation (as time permits)
  - Panel of state agency experts
  - Contact list on ARB CC website for further questions
California Overview
California Overview

- Population: 37 million
- Gross State Product: $1.62 trillion
  - 8th largest economy in the world
- GHG emissions*
  - 12th highest compared to countries**
  - 2nd highest U.S. state – gross***
  - 2nd lowest state - per capita (11.7 MT/person)
  - 4th lowest state - GHG intensity (0.3 MT/ thousand $ GSP)

*2003 CO2-only data, excluding imported electricity and forestry sinks. California data from ARB GHG Emissions Inventory (http://www.arb.ca.gov/cc/ccei/emsinv/emsinv.htm), state and country data from World Resources Institute Climate Analysis Indicators Tool (http://cait.wri.org/)
California GHG Emissions

1990 Emissions (427 MMT CO$_2$E)

- Transportation: 35%
- Industrial: 24%
- Residential: 7%
- Agriculture: 5%
- Commercial: 3%
- Electricity Generation (Imports): 14%
- Electricity Generation (In State): 11%

California GHG Emissions

2004 Emissions (480 MMT CO$_2$E)

- Transportation: 38%
- Industrial: 20%
- Residential: 6%
- Agriculture: 6%
- Electricity Generation (Imports): 13%
- Electricity Generation (In State): 12%
- Commercial: 3%

California GHG Emissions

2020 Business as Usual (600 MMT CO$_2$E)

- Transportation: 38%
- Industrial: 17%
- Residential: 5%
- Agriculture: 5%
- Commercial: 2%
- Electricity Generation (In State): 14%
- Electricity Generation (Imports): 9%

Policy Options

• Many possible approaches
  – Direct Regulations
  – Alternative Compliance Mechanisms
  – Market-Based Mechanisms
    • Cap & trade
    • Offsets
  – Other Mechanisms
    • Incentives
    • Fee-bates
    • Voluntary actions
    • Carbon fee

• January 16 workshop dedicated to Mechanisms
Additional Information and Contacts

• ARB Climate Change Web Site
  – http://www.arb.ca.gov/cc/cc.htm
  – Stay informed - sign up for list serve
• California Climate Change Portal
  – http://www.climatechange.ca.gov
• ARB and other agency contact list
  – http://www.arb.ca.gov/cc/contacts/contacts.htm