Transportation and Climate Policy

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California Environmental Protection Agency

California Climate Impacts over the past 100 years

Over the past i



1.3°F (0.7 C) higher temperatures 7 inch sea level rise 12% decrease in fraction of runoff between April and July snowmelt and spring blooms advanced 2 days/decade since 1955 4-fold increase in wildfire frequency (over 34 years)

Cal/EPA-OEHHA, "Environmental Protection Indicators for California" (2002), www.oehha.ca.gov/multimedia/epic/Epicreport.html

Westerling et al., "Warming and Earlier Spring Increase Western U.S. Forest Wildfire Activity", Science (2006)

Lyell Glacier Yosemite National Park



1903



2003

California Global Warming Solutions Act of 2006 (AB 32)

- Creates a state program for controlling climate change emissions
- Reduce GHG emissions to 1990 levels by 2020
- ARB charged with monitoring/regulating sources of greenhouse gases in order to reduce emissions



AB 32 Timeline



Early Actions

- Early reductions prior to Scoping Plan
- Regulations enforceable January 1, 2010
 - Auto Refrigerants (DIY cans)
 - Landfill gas control
 - Low Carbon Fuels
- Approved by Board in June 2007
- Board to revisit in October

1990 Emission Levels and Mandatory Reporting

- Establish 1990 emission level
- 1990 emission level becomes 2020 target
- Refine 2020 projections in scoping plan
- Difference becomes 2020 emission reduction target
- Mandatory Reporting Regulation to collect GHG emissions to track progress

Scoping Plan

- Identify measures needed to reduce GHG emissions to 1990 levels by 2020
- To develop the plan, ARB staff will:
 - Compile possible measures and tools
 - Build and analyze reduction scenarios
 - Develop recommended staff proposal
- Board must approve Scoping Plan by January 1, 2009

Implementation Schedule

Oct 2007	Board Hearing - Early Action Measures
Nov/Dec 2007	Sector-based workshops on measures and tools
Dec 2007	Board Hearing - 1990 emission level Board Hearing - Mandatory Reporting
Mar 2008	Workshop on Scoping Plan scenarios
June 2008	Draft Scoping Plan released
June/July 2008	Scoping Plan Workshops
Oct 2008	Final Proposal released
Nov 2008	Board Hearing - Scoping Plan

Sources of GHG Emissions in 1990



Transportation in California

- California has 25+ million gasoline-powered vehicles
- VMT and fuel use projected to increase between 1990 to 2020
- Significant reductions in transportation emissions essential for achieving 2020 target



Strategies for Reducing Transportation GHGs

- Greenhouse Gas Vehicle Emissions Standards
- Low Carbon Fuel Standard
- Land Use and Smart Growth

AB 1493 Greenhouse Gas Vehicle Standards

- ARB adopted regulations in 2002
- Set limits on the amount of greenhouse gases from new passenger vehicles sold in California
- Estimated 18% fleet wide reduction by 2020 and 27% reduction by 2030
- AB 1493 regulations are currently being challenged

Reduce Carbon Intensity of Transportation Fuel

- Statewide goal to reduce the *carbon intensity* of California's transportation fuels by at least 10 percent by 2020
- Goal will be accomplished by establishing a Low Carbon Fuel Standard (LCFS) for transportation fuels sold in California

The Low Carbon Fuel Standard

- Fuel providers to decrease greenhouse gas emissions on a life-cycle basis – the carbonintensity- of average fuel sold
- Governs intensity, not amount sold
- Performance based: sets carbon reduction standards and methods to calculate compliance
- Market-based: allows averaging, banking and trading to lower cost and provide flexibility
- Fuel-neutral: fuel providers can choose which fuels to sell and in what volumes

Potential Lower or Very Low Carbon Fuels

- Lower carbon ethanol (more efficient production process) or very low carbon ethanol ("cellulosic")
- Increase use of ethanol at 10% or at 85% for flex fuel vehicles
- Electricity and Hydrogen
- CNG, LNG, LPG
- Biogas, Biodiesel, Renewable Diesel, Biobutanol

Benefits of LCFS

- Less Gasoline Consumption
 Displace 20% of gasoline consumption
- Larger renewable fuels market
 Expand California's alternative fuels markets by 3 to 5 times, while reducing emissions
- More alternative fuel and hybrid vehicles: Several million advanced technology vehicles, more than 10 times the current level

Current Status

- Low Carbon Fuel Standard has already been approved as an AB 32 Discrete Early Action
- ARB to initiate regulatory proceedings to establish and implement LCFS
- Anticipated adoption late 2008

Smart Growth – Regional Planning

- Urban Planning to reduce automobile dependence
- Strategies to slow growth in household VMT
- Regional land use decisions have significant GHG impacts

Achieving the GHG Reduction Targets Will Require Multiple Strategies

- One strategy can not provide all of the reductions
- Success will require cooperation between state and local agencies
- Can only succeed with combination of emission and VMT reductions

Implications for Board

- Whole new arena with new responsibilities
- Protection of human health still top priority
- Significant expansion into leadership role on climate change issues
- National and international collaboration
- Local, state, national and international stakeholder participation