

Climate Change

AB 32 and California's Climate Change Scoping Plan

California Air Resources Board

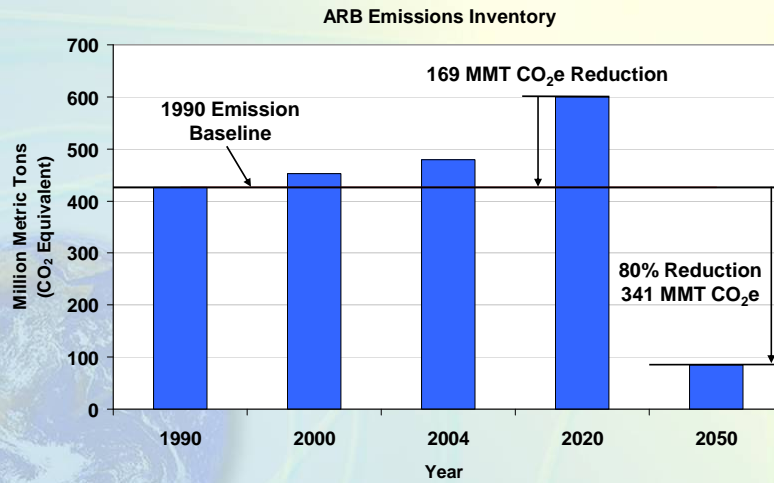
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What is AB 32 and the Scoping Plan?

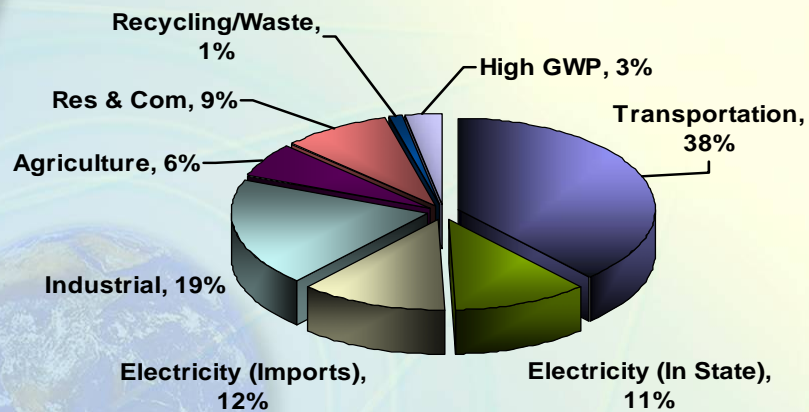
- AB 32 signed by Governor Sept. 27, 2006
- Directed ARB to develop Scoping Plan
- Board adopted Plan Dec. 11, 2008
- Scoping Plan goals:
 - By 2020 reduce GHGs back to 1990 levels
 - On track to reduce 80% from 1990 level by 2050

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Magnitude of the Challenge



2002-2004 GHG Emissions (469 MMTCO₂E)



What the Scoping Plan Includes

- Mix of strategies that combine market mechanisms, other regulations, voluntary measures, and fees
 - Cap on 85 percent of emissions
 - Complementary measures:
 - Energy efficiency programs
 - Renewable energy
 - Targets for transportation-related emissions
 - Existing laws and policies (e.g. Pavley, LCFS)
 - Targeted fees

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Overview of AB 32 California Global Warming Solutions Act



California Air Resources Board
California Environmental Protection Agency

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Mandatory Reporting & Verification Regulation

- Electricity: Generating, Retailing, Marketing & Cogeneration Facilities
- Oil Refineries, Hydrogen Plants, Cement Plants
- Glass Manufacturing, Food Processing
- Industrial Sources of 25,000+ Metric Tons of CO₂ Per Year from Stationary Combustion
 - Begin tracking in 2008, Begin reporting in 2009
 - Expect About 1000 Facilities
- Hospitals and primary/secondary schools not included

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Actions Adopted To Date

- Pavley AB 1493 automobile rule: Sept. 04
- Ship electrification in ports: Dec. 07
- Port and rail yard cargo trucks: Dec. 07
- High GWP in consumer products: June, 08
- Heavy duty truck efficiency: Dec. 08
- Motor vehicle DIY refrigerant cans: Jan. 09
- SB 375 Regional Targets Advisory Committee: Jan. 09
- SF₆ limits in non-utility and non-semiconductor apps: Feb. 09
- Perfluorocarbons in semiconductor manufacturing: Feb. 09
- Tire pressure program: March 09
- Low carbon fuel standard: April 09
- Landfill methane control: June 09
- Cool car standards and test procedures: June 09
- AB 32 Cost of Implementation Fee Regulation: Sept. 09

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Plan's Major Sectors

- Transportation
- Electricity & Natural Gas
- Industry
- Water, Forests, Agriculture
- Green Buildings, Waste & Recycling
- High GWP Gases
- State Government, Local Gov't. & Land Use

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Transportation is #1 Contributor

Cars, Trucks, Goods Movement and Fuel

- Light-duty vehicle greenhouse gas reductions (Pavley I and Pavley II)
- Low carbon fuel standard
- Efficiency measures for cars
- Aerodynamic improvements for big-rig trucks
- Hybridization for urban and short-haul trucks
- Implement adopted goods movement strategies and improve efficiency
- SB 375 Sustainable Communities Strategy

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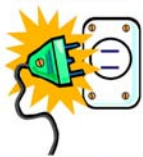
Energy is #2 Contributor

Electricity and Natural Gas

- Plan includes aggressive energy efficiency goals and increases renewable energy
- Meeting the goals in the Scoping Plan will require
 - Expanded utility-based energy efficiency programs
 - More stringent building and appliance standards
 - Green buildings and waste reduction
 - Innovative strategies that go beyond traditional approaches
- Executive Order S-21-09 directs ARB to adopt a regulation consistent with the 33 percent renewable energy target

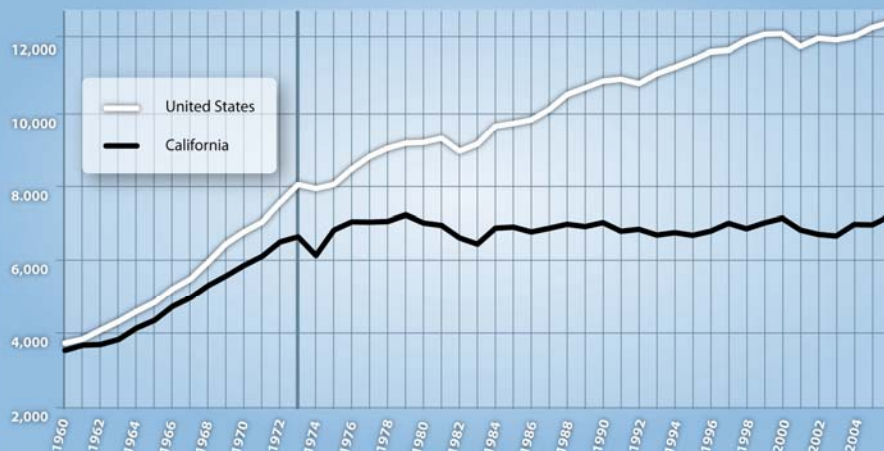
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ELECTRICITY



Per Capita Electricity Use in California and the US

(Per Capita Electricity Sales in Kilowatt Hours)



CEC 2007 IEPR

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New Energy Efficiency Measures (1)

Agricultural, Commercial, Industrial, Residential, and Schools:

- “Zero Net Energy” buildings (produces the energy it uses)
- More stringent building codes and appliance efficiency standards
- Standards for new types of appliances and for water efficiency
- Better compliance with existing standards
- Voluntary targets for new buildings beyond mandatory codes
- Voluntary and mandatory retrofits for existing buildings

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New Energy Efficiency Measures (2)

- Financing for energy efficiency and on-site generation
- More aggressive utility programs
- Water system efficiency
- Local government programs
- Industrial and agricultural efficiency efforts
- Providing real time energy information to help consumers conserve (new meters)

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State Agency Coordination

- Climate Action Team re-structured
 - Scoping Plan implementation
 - Adaptation activities
- Agencies to reduce “carbon footprint” by 30% from expected 2020 levels
- Continue working with State agencies on cross-agency issues

Local Government Action Climate Leadership

- Establishing Local GHG Targets
- Leading by Example with Municipal Operations
- Developing Climate Protection Plans
- Passing Ordinances, Standards, and Codes
- Implementing Programs for Local Citizens
- ARB is Building a “Local Government Toolkit”
 - Assist Local Governments with GHG Emission Reductions



Cap-and-Trade

- Scoping Plan Directive:
 - Implement a broad-based California cap-and-trade program to provide a fixed limit on emissions
 - Link to other Western Climate Initiative Partner programs
- Capped Sectors Include:
 - Electricity generation, including imports (2012)
 - Large industrial sources (2012)
 - Commercial/residential natural gas use (2015)
 - Transportation fuels (2015)

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California Cap and Trade System

- Enforceable cap beginning in 2012
- Cap declines over time to meet 2020 targets; can be adjusted for 2050 target
- State distributes “allowances” equal to total emissions in the cap
- Allowances can be traded
- Strong enforcement and monitoring
- Must include safeguards for regional and local co-pollutants

Potential Use of Revenues

- Potential California Carbon Trust
 - Use revenues for public good
- Potential uses:
 - Support AB 32 reduction goal
 - Achieve environmental co-benefits
 - Local government incentives
 - Climate change adaptation
 - Community benefits
 - Consumer rebates
 - RD&D funding
 - Worker transition assistance

Multiple Potential Benefits of AB 32 Implementation

- Many measures increase energy efficiency
- Efficiency measures likely to mitigate moderate increases in energy prices
- Pavley regulation saves car buyers \$\$\$\$
- Major health benefits
 - Reduced premature deaths, illness, sick days
- Boom in green technology business

Other ARB Activities

- Tracking progress
- Interagency coordination
- Advisory groups & committees
- Public health
- Enforcement
- Green tech/economic development
- Small business

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Local Air District Coordination

- Local districts are partners in air pollution programs
- Joint climate change work plan - Spring 2009
- State climate program will be consistent with and use district permitting and compliance, where practicable and appropriate
- Funding for district implementation and enforcement programs

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Public Health

- Currently using available information to analyze regulations under development
- Establishing public health working group
- Initiating public process to:
 - Assess potential local and cumulative impacts of regulations, including cap & trade program
 - Discuss methods to identify communities most impacted by air pollution

Small Business

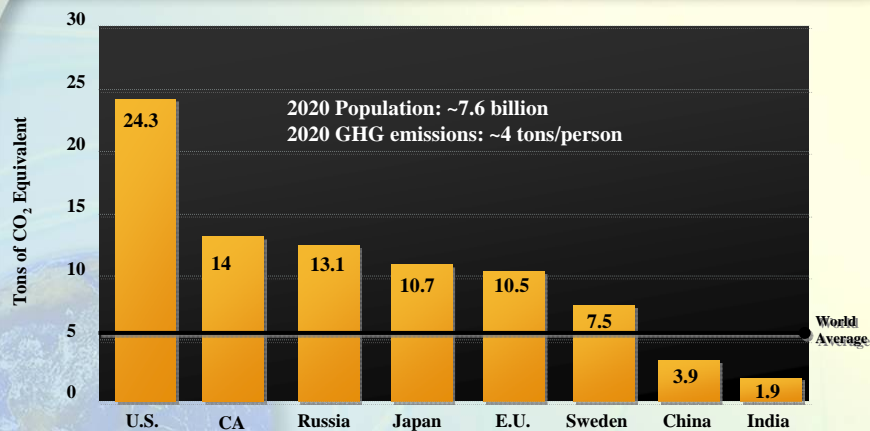
- Climate change program presents opportunities and challenges for small business
- Primary impacts on small businesses:
 - Changes in the costs of goods and services
 - Changes in energy expenditures
- ARB participating with Chambers, economic development organizations, businesses to understand how to help small businesses transition to a low carbon future
- Small Business Toolkit – April 2009

Moving Toward 2050

A Clean Energy Future

- Governor's Executive Order (S-03-05)
 - 80% reduction of GHG by 2050
- Scoping Plan beyond 2020:
 - Clean and secure energy sources
 - Sustainable, safe, and clean communities

GHG Emissions Per Person



Reduce CA to 10 Tons Per Person by 2020

For Additional Information

- ARB Climate Change Web Site:
www.arb.ca.gov/cc/cc.htm

(To stay informed, sign up for list serve)

- California Climate Change Portal:
www.climatechange.ca.gov