

Climate Change Draft Scoping Plan *a framework for change*

Public Workshop

San Diego
July 21, 2008

California Air Resources Board

Outline

- Overview of the ARB
- AB 32: The Global Warming Solutions Act of 2006
- Scoping Plan
- Cap and Trade

Air Resources Board

- Part of Cal/EPA
- 900+ technical staff
- Eleven appointed Board members
 - Elected officials and technical specialists
 - Chairman – full time
- ARB's Primary legal mandates:
 - Ensure continuous progress toward attaining health-based air quality standards
 - Reduce public exposure to toxic air contaminants
- AB 32 adds a mandate to reduce Greenhouse Gas (GHG) Emissions

ARB & EJ Issues

- **Adopted EJ Policies and Actions**

December 13, 2001

- Commit to make environmental justice considerations a standard practice
- Requires how proposed major programs, policies and regulations treat people of all races, cultures, geographic areas and income levels, especially low-income and minority communities
- Strengthen outreach to local communities
- Work to meet air quality standards and reduce health risks from toxic air contaminants

ARB Control Programs

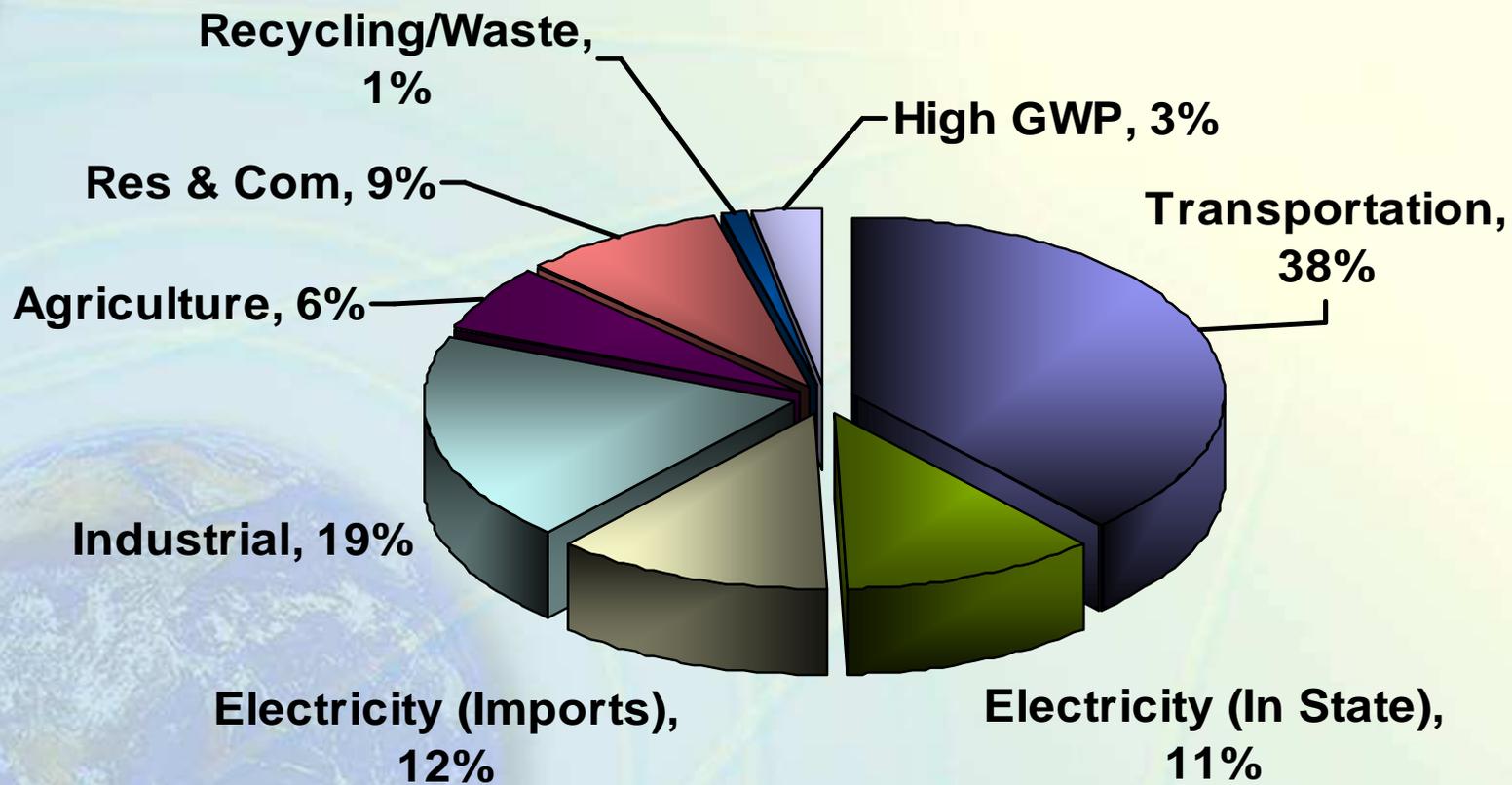
- **Criteria pollutants**
 - Car/light-truck regulations, stationary sources
- **Diesel Risk Reduction Plan**
 - Trash trucks, publicly-owned trucks, construction and industrial equipment, stationary engines/ag engines, diesel trucks (Fall 2008)
- **Goods Movement Emission Reduction Plan**
 - Cargo-handling equipment, drayage trucks, shore-side power for ships, locos, operational efficiency
- **GHG Controls**

What Is AB 32?

- Legislation requiring reductions in greenhouse gas (GHG) emissions
- Sets 2020 GHG limit at 1990 level
- Acknowledges that 2020 is not the endpoint
- ARB to monitor/regulate GHG sources
- Creates Environmental Justice Advisory Committee

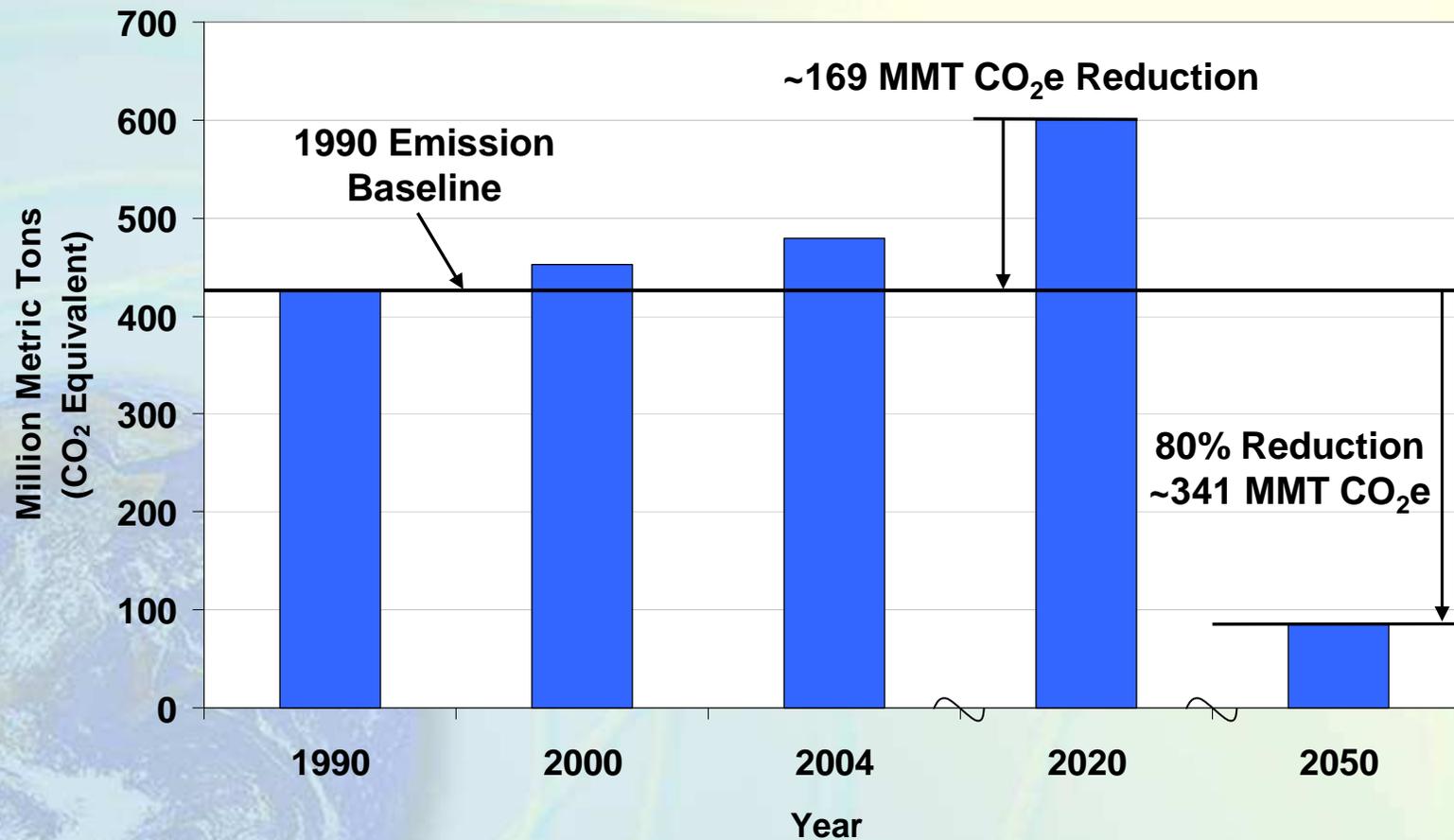
Large new effort complements
ARB's health-based programs

2002-2004 GHG Emissions (469 MMTCO₂E)



Magnitude of the Challenge

ARB Emissions Inventory



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Draft Scoping Plan

Scoping Plan Public Participation

Extensive public input prior to release of Draft Scoping Plan

- Four major workshops between November 2007 and May 2008
- Environmental Justice Advisory Committee meetings
- Environmental Technology Advisory Committee meetings
- Interagency coordination through the Climate Action Team
- Many other meetings and workshops on specific sectors, program design, and evaluation work

Public workshops during review of the Draft Plan

- Three major workshops already held; another planned
- Additional Environmental Justice community meetings being held
- Other meetings and outreach being conducted to receive input

Public process will continue after the Board adopted the Scoping Plan through the regulatory development process

Draft Scoping Plan

- By 2020, reduce greenhouse gas (GHG) emissions statewide to 1990 levels
- California's GHG strategies will:
 - Protect and improve public health
 - Promote the development of clean energy
 - Foster opportunities for economic growth
 - Provide a model for regional, federal, and international programs
 - Put State on a path to 2050 goal

Draft Scoping Plan Recommendations

Mix of strategies in Scoping Plan

- Market mechanisms
- Direct regulations
- Voluntary measures
- Fees
- Other programs

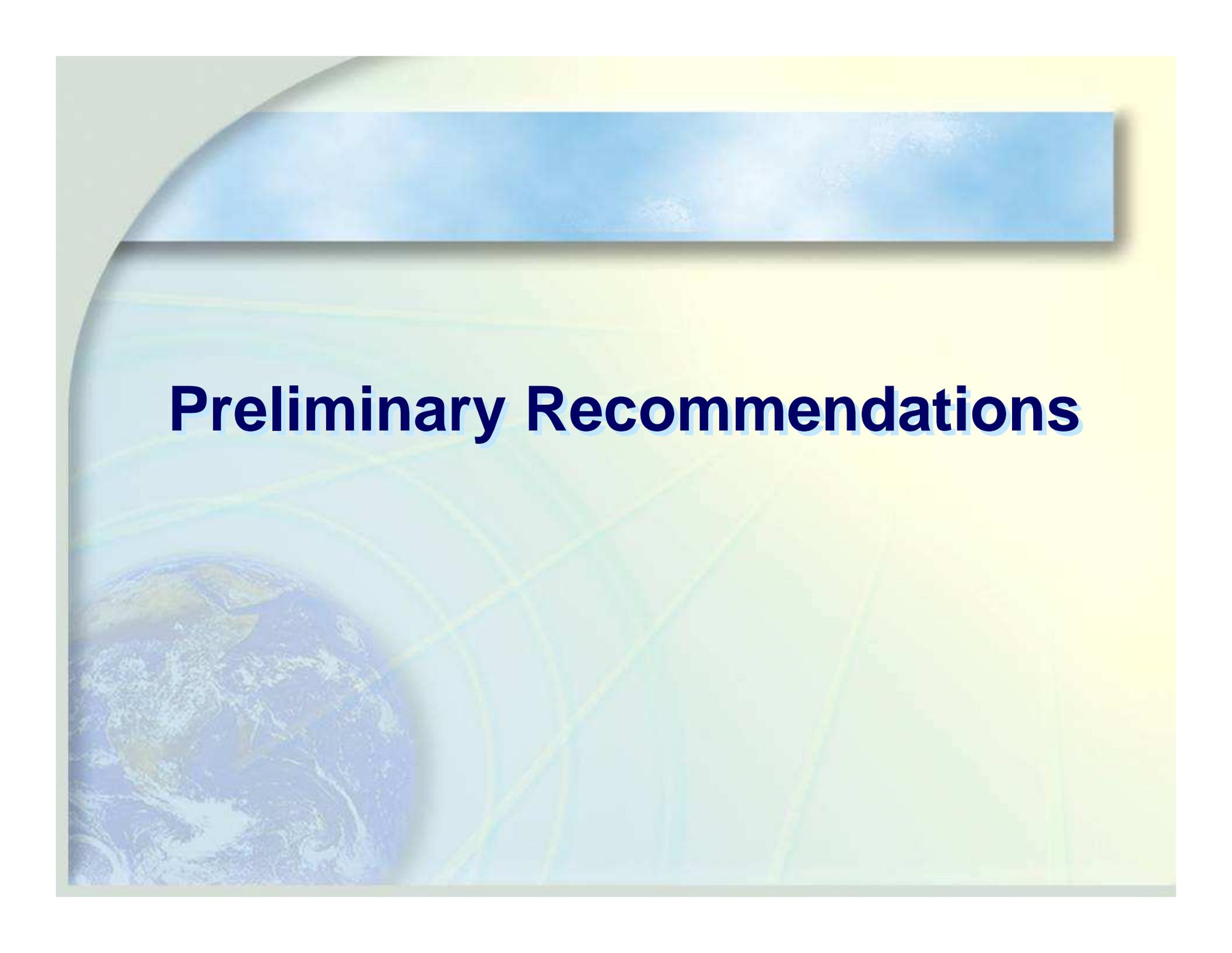
Draft Scoping Plan Recommendations

- Key elements
 - Energy efficiency programs
 - 33 percent Renewables Portfolio Standard
 - California cap-and-trade program linked to Western Climate Initiative
 - Existing laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard
 - Targeted fees to fund implementation

Draft Scoping Plan

Sectors Covered

- Industry
- Oil and Gas/Refining
- Light Duty/
Heavy Duty Vehicles
- Goods Movement
- Water
- Forests
- Land Use/
Local Government
- Recycling/ Waste
- Agriculture
- Energy
- High Global
Warming
Potential (GWP)
Gases
- Manufacturing
- Transportation

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Preliminary Recommendations

Government Actions and Regional GHG Targets

State Government

- 30% reduction from stricter building standards, vehicle fleet, procurement, commute alternatives
- Climate change impact of government policies/decisions

Local Government

- Develop regional targets in collaborative process
- Incorporate performance indicators
- Provide state resources
- Encourage local climate action plans and local targets

Transportation

Cars, Trucks, Goods Movement, High Speed Rail

- Cars, High Speed Rail
 - Light-duty vehicles, reduced air conditioner use, high speed rail
- Trucks
 - Design improvements, Hybridization, Improved efficiency
- Fuel
 - Clean Cars (Low carbon fuel standard)
- Goods Movement
 - Port electrification, Drayage trucks, Vessel speed reductions, Limit on use of transport refrigeration units

Early Action Measures

- Smartway Truck Efficiency
 - Required existing trucks and trailers to be retrofitted
- Green Ports
 - Allow docked ships to shut off engines by plugging into electrical outlets onshore

Energy

Electricity and Commercial/Residential

- **State Renewables Portfolio Standard**
 - Achieve 33% RPS by 2020 for all utilities
- **Energy Efficiency**
 - Expand existing utility energy efficiency programs
 - Require more stringent building and appliance standards
 - Residential solar water heaters
 - Combined heat and power
- **Million Solar Roofs**
 - Install 3,000 MW of new solar-electric systems – to obtain incentives must also meet efficiency requirements

Industrial Sources

- Require efficiency and co-benefit audit of largest industrial sources
 - Audits will evaluate company's potential to reduce GHG, criteria pollutants, and air toxics
- Result
 - Reductions in pollutants and toxics for nearby residents

Recycling, Forests, Water, Agriculture, and High GWP Gases

Recycling and Waste

- Reduce landfill methane, manufacturer responsibility requirements, waste diversion

Sustainable Forests

- Forest sequestration for existing forests, avoid/ mitigate land use changes, voluntary protocol adopted by ARB

Water/ Energy

- Water use, recycling, reuse; public goods charge

Agriculture

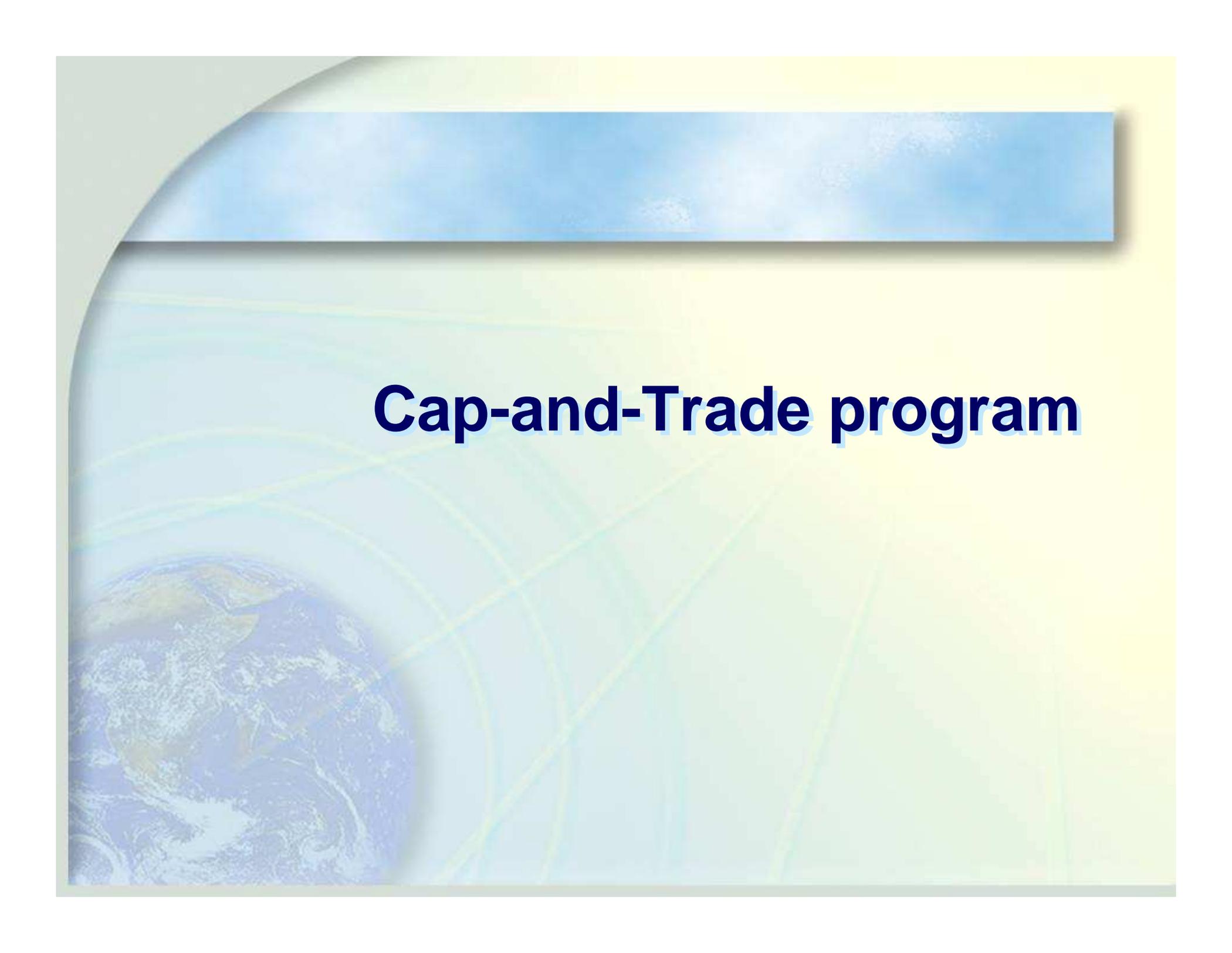
- Manure digesters, energy efficiency

High GWP Gases

- Air conditioners, refrigerators, fire suppression, insulating foam
- Fees to discourage leakage/disposal, standards, proper disposal

Other Sector-Based Measures Under Evaluation

- **Transportation**
 - Market-based strategies
- **Electricity/Energy**
 - More aggressive efficiency programs
 - Reduce coal-fired electricity
- **Industry**
 - Refineries
 - Cement production
 - Glass manufacturing
 - Boilers and stationary engines

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Cap-and-Trade program

California Cap-and-Trade Linked to Regional Market

- Draft Scoping Plan recommendations include a California program that will link with other Western Climate Initiative partner programs to create regional market
- Must meet all applicable AB 32 requirements

What is a Cap?

- Limit on total emissions from all capped sectors in the state
- Begins in 2012 and declines over time

California Cap-and-Trade Linked to Regional Market

- Capped sectors:
 - Industrial facilities
 - Electricity (includes imported)
 - Commercial & residential natural gas at the local distribution center (by 2020)
 - Transportation fuels at the terminal rack or when it enters the economy (by 2020)
- Participation requires capped facilities to hold “allowances” equivalent to their yearly emissions
- Rigorous monitoring and enforcement necessary for program to work

California Cap-and-Trade Allowances

What is an Allowance?

- Permit to emit one metric ton of CO₂ equivalent
- Facilities could receive freely distributed allowances or purchase them at auction from the State
- Facilities could also purchase allowances from other facilities. This is the “trade” in cap-and-trade

California Cap-and-Trade

What is Traded

- Trading happens when both facilities have something to gain
- Trading helps to achieve the required reductions at a lower cost
- Facilities who have made excess reductions can sell their allowances to facilities with excess emissions
- A facility that buys another's allowance must be in compliance with all other air regulations

California Cap-and-Trade

What is an Offset

- An offset provides additional reductions from uncapped sources beyond what is required by direct regulation
- Offsets require:
 - Rigorous criteria to maintain environmental integrity
 - Methodologies and enforcement
 - Verification
 - “Additional” emission reductions
 - Safeguards for regional and local co-pollutants
 - Limited use per facility

California Cap-and-Trade

What is an Offset

Can an offset be local?

- Yes, but offsets can only come from outside the capped sources

Can a city become an offset site?

- Depends if a 'project' meets the criteria

Examples of possible offsets:

- Forests
- Manure Management
- Waste Management

Need to establish specific rules for quantifying what reductions are real and additional for offsets to count

California Cap-and-Trade

Cap reduces emissions over time

- Cap begins in 2012
- Cap declines over time to 2020 targets
- Continues to decline to 2050 target

Western Climate Initiative

- Western Climate Initiative Goal
 - Collaborate to reduce greenhouse emissions collectively among the WCI members
- Work jointly to
 - Promote clean and renewable energy in the region
 - Increase energy efficiency
 - Advocate for regional and national climate policies

WCI Partners and Observers

- **Partners:**

Arizona

British Columbia

California

Manitoba

Montana

New Mexico

Oregon

Quebec

Utah

Washington

- **Observers:**

Alaska

Baja California

Chihuahua

Coahuila

Colorado

Idaho

Kansas

Nevada

Nuevo Leon

Ontario

Saskatchewan

Sonora

Tamaulipas

Wyoming

Carbon Fee

- Use of carbon pricing to achieve reductions being evaluated in economic modeling
- Level of the fee would be determined through economic models
- Provides less certainty of meeting 2020 goal

Potential Use of Revenues

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

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Draft Scoping Plan Evaluations

Environmental/ Public Health Analysis

- Examine in the context of ARB's traditional public health programs
 - Criteria pollutants (ozone, particulate matter)
 - Toxic Air Contaminants (diesel PM)
- Expect statewide reductions in fossil fuel use and improved combustion efficiency

Public Health Benefits

Preliminary Estimates for 2020

Health Endpoint	Estimated Benefit*
Avoided premature deaths	340
Avoided hospitalizations due to respiratory causes	71
Avoided hospitalizations due to cardiovascular causes	130
Avoided asthma-related & other lower respiratory symptoms	9,400
Avoided acute bronchitis	780
Avoided work loss days	57,000
Avoided minor restricted activity days	330,000
Total Economic valuation: \$1.5 billion to \$2.4 billion	

**Based on preliminary estimates of reduced fuel use from measures*

Additional Environmental/ Public Health Analysis

- Assessment of environmental impact of proposed measures
 - Air, water, land, waste disposal and hazardous waste, biological resources
- Public health impacts based on environmental assessment
- Focused look at specific types of sources
 - Refineries and power plants
- Community-level emission analysis

Economic Analysis

- Overall savings from implementation of Plan expected to exceed costs
- Many measures increase energy efficiency
- Efficiency measures likely to mitigate moderate increases in energy prices
 - e.g., new regulation will save car buyer an average of \$30/month
- Small businesses are being evaluated
- Carbon fees

Societal Impacts

- Specific evaluation required when regulations are adopted

Energy diversity, mobility,
regressivity and job creation

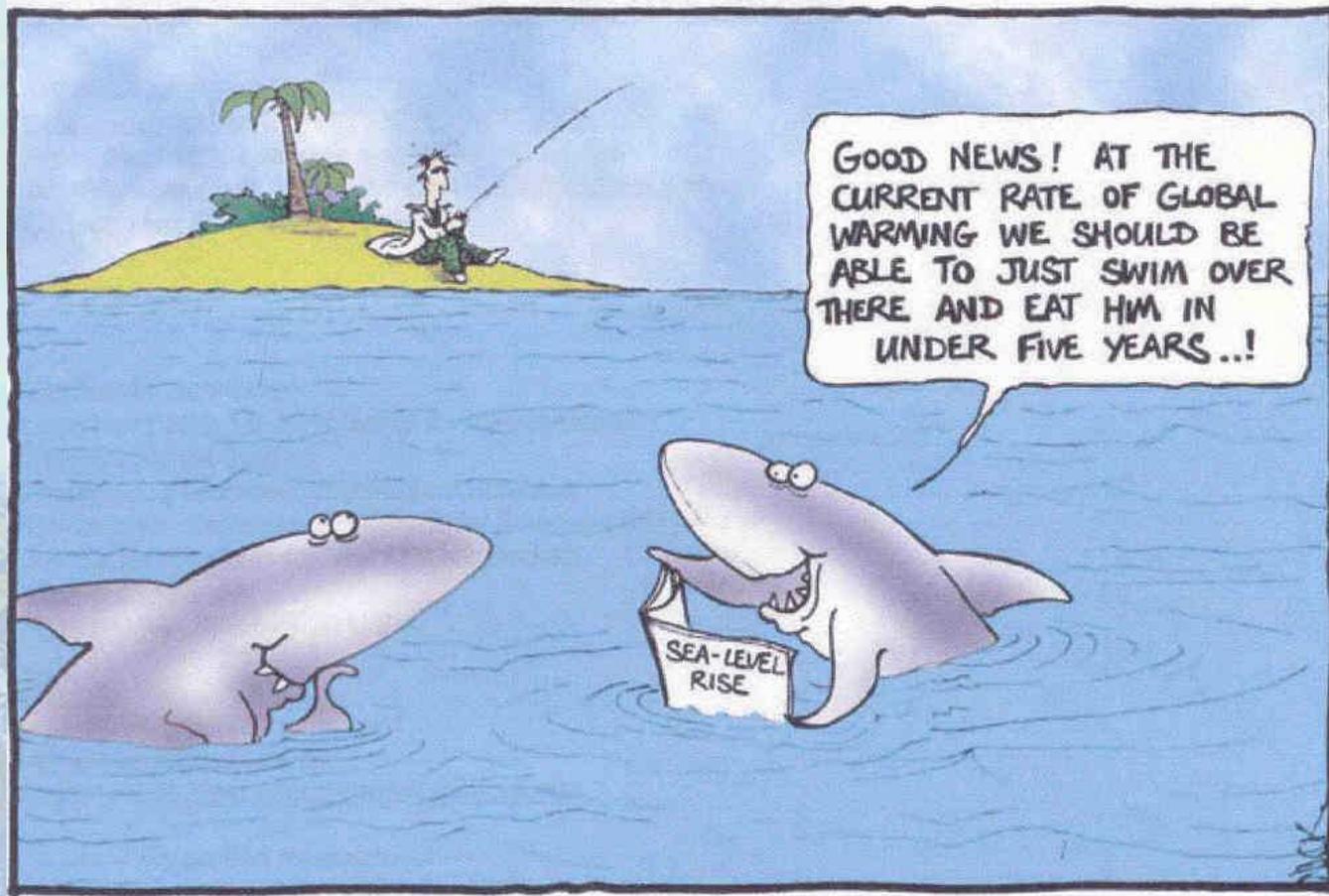
- AB32 requires directing public and private investment toward most disadvantaged communities

Scoping Plan Implementation

- Two years to develop regulations to implement the measures adopted in the Scoping Plan
 - Individual regulatory proceedings will follow
 - Extensive stakeholder outreach and involvement
- Required to re-visit Scoping Plan in 5 years

Long-term target is an 80% reduction of GHG emissions by 2050

Must Not Ignore The Challenge



For Additional Information

- ARB Climate Change Web Site
(To stay informed – sign up for list serve)
www.arb.ca.gov/cc/cc.htm
- California Climate Change Portal
www.climatechange.ca.gov
- Comments on the Draft Scoping Plan
www.arb.ca.gov/cc/scopingplan/spcomment.htm