

Climate Change Draft Scoping Plan:

A Framework for Change

June 26, 2008

California Air Resources Board

The Time for Action Is Now

- Climate change is one of the most serious environmental issues facing the world
- Governor and Legislature have set bold goals for California
- Draft Scoping Plan provides a comprehensive recommendation addressing all significant sources of greenhouse gas emissions

Today's Presentation

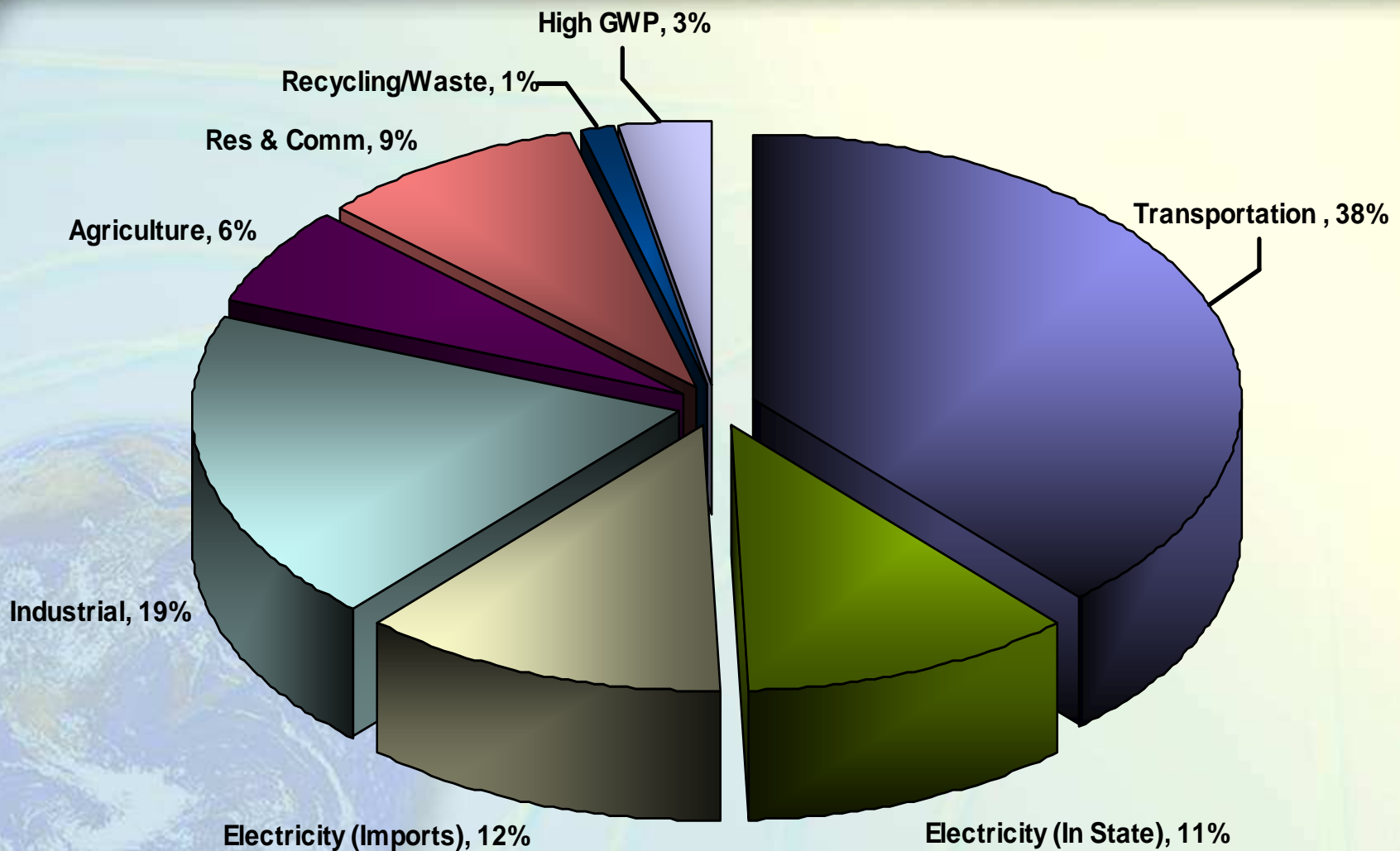
- Draft Scoping Plan Overview
- Preliminary Recommendations
- Additional Measures Under Consideration
- Scoping Plan Evaluations
- A Vision for the Future
- Next Steps

Draft Scoping Plan

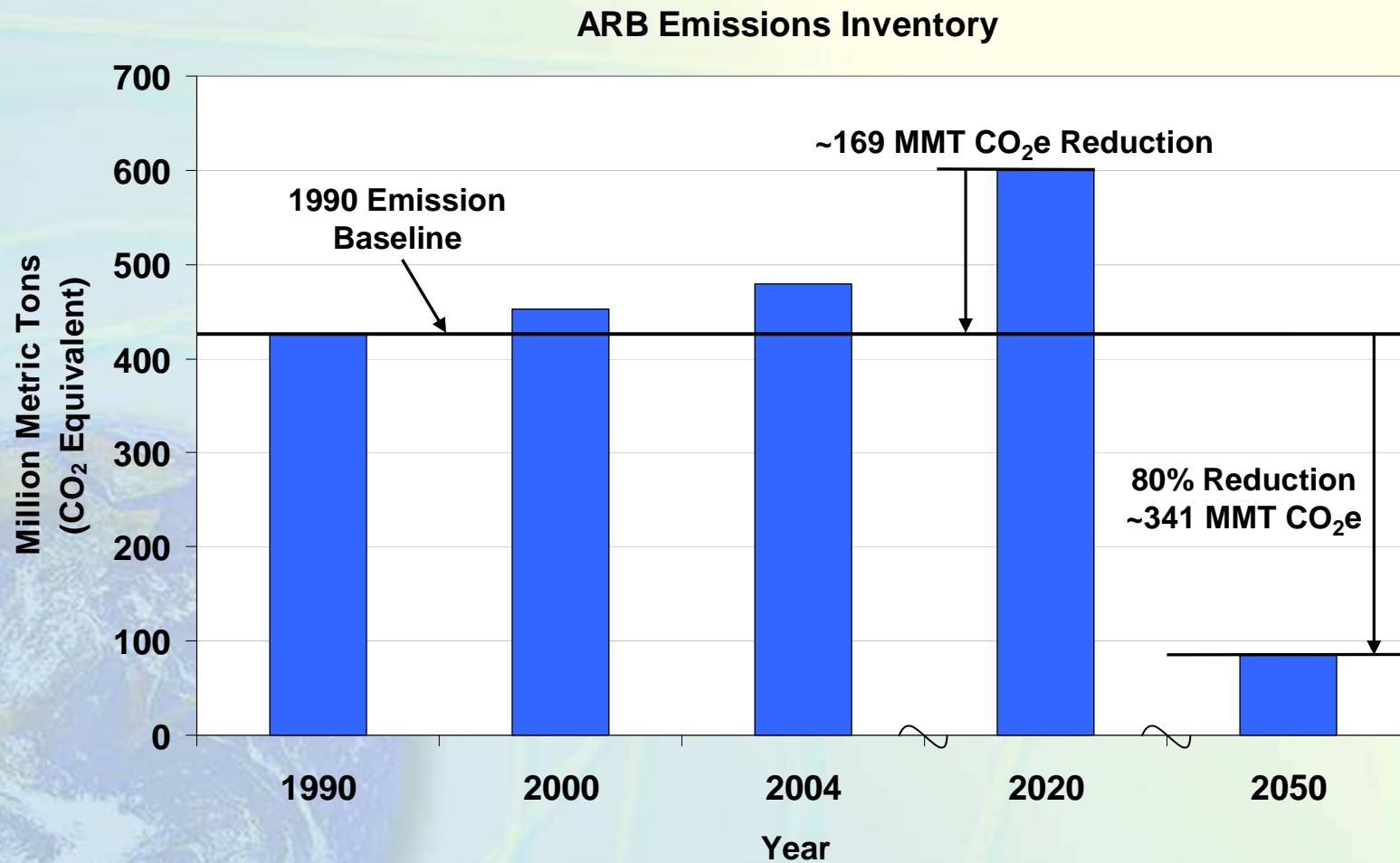
- By 2020, reduce greenhouse gas emissions statewide to 1990 levels
- California's GHG strategies will also:
 - Protect and improve public health
 - Promote the development of clean energy
 - Foster opportunities for economic growth
 - Provide a model for regional, federal, and international programs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

Draft Scoping Plan

2002-2004 GHG Emissions (469 MMTCO₂E)



Magnitude of the Challenge



Draft Scoping Plan Development

- Contributions from Climate Action Team Subgroups
- Input from EJAC, ETAAC, and MAC
- Formal workshops & stakeholder work group meetings
- Public solicitation
- Extensive outreach at meetings, conferences and other events

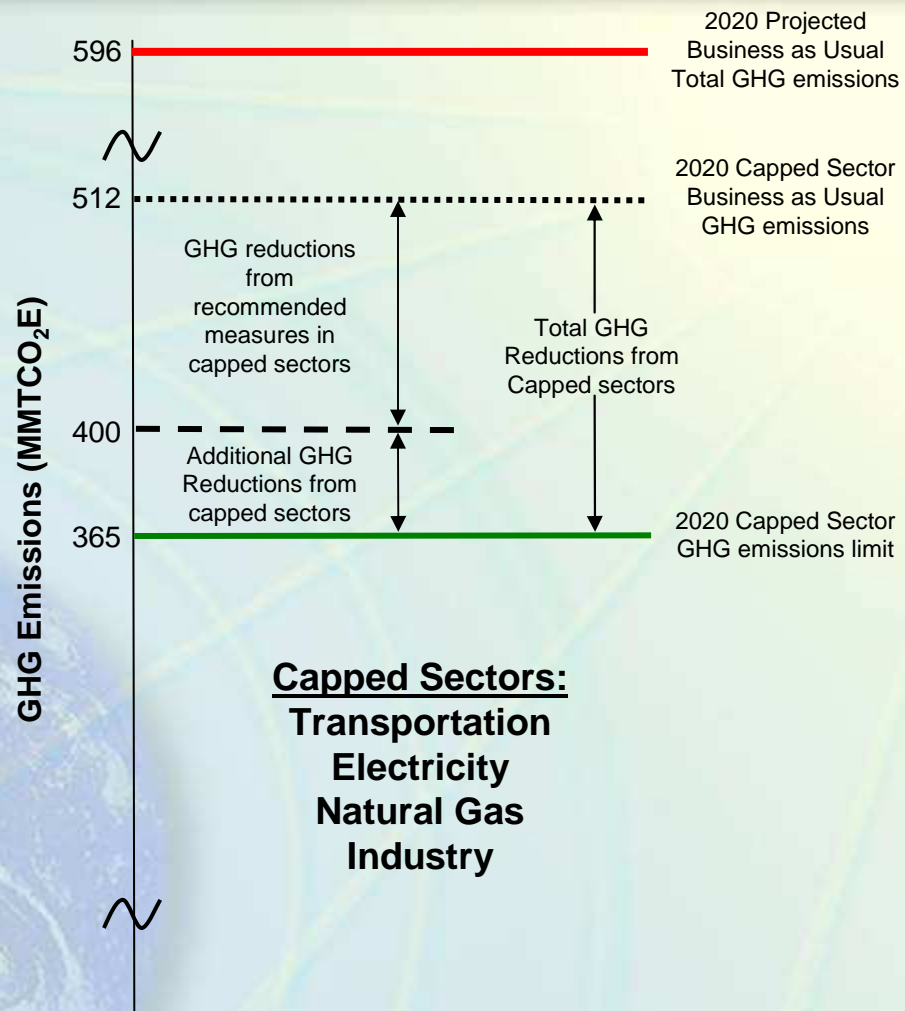
- Document released today is a draft
- Soliciting stakeholder comments to help shape Proposed Scoping Plan
- Request comments by August 1, 2008

Preliminary Recommendation

- Mix of strategies that combine market mechanisms, regulations, voluntary measures, and fees
- Key elements:
 - Energy efficiency programs
 - Renewables Portfolio Standard
 - California cap and trade program linked to WCI
 - Existing laws and policies
 - Targeted fees to fund implementation

Preliminary Recommendation

Structure of the Draft Plan



Preliminary Recommendation

Recommended Measures

Table 2: Recommended Greenhouse Gas Reduction Measures

Recommended Reduction Strategies	Sector	2020 Reductions (MMTCO ₂ E)
The Role of State Government	Various	1-2 ¹⁷
California Cap-and-Trade Program Linked to WCI: Emissions cap of 365 MMTCO ₂ E covering electricity, transportation, residential/commercial and industrial sources by 2020. Shaded reductions contribute to achieving the cap.		
California Light-Duty Vehicle GHG Standards	Transportation	31.7
Energy Efficiency	Electricity & Commercial and Residential	26.4
Renewables Portfolio Standard (33% by 2020)	Electricity	21.2
Low Carbon Fuel Standard	Transportation	16.5
High Global Warming Potential Gas Measures	High GWP	16.2
Sustainable Forests	Forests	5
Water Sector Measures	Water	4.8 ¹⁸
Vehicle Efficiency Measures	Transportation	4.8
Goods Movement	Transportation	3.7
Heavy/Medium Duty Vehicles	Transportation	2.5
Million Solar Roofs (Existing Program Target)	Electricity	2.1
Local Government Actions and Regional GHG Targets	Land Use and Local Government	2
High Speed Rail	Transportation	1
Landfill Methane Control	Recycling & Waste	1
Methane Capture at Large Dairies	Agriculture	1 ¹⁹
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	Industrial	TBD
Additional Emissions Reduction from Capped Sectors		35.2
	Total Reductions	169

State Government

- State must set an example
- Reduce “carbon footprint” by 30% from expected 2020 levels
 - State Green Buildings Initiative
 - State motor vehicle fleet clean up
 - Procurement practices
 - Commute alternatives for State employees
- Evaluate “carbon shadow”
 - Climate change impact of government policies and decisions

Preliminary Recommendation

California Cap and Trade Linked to Regional Market

- California cap and trade program that links with other WCI Partner programs to create a regional market system
- Ensure California's program meets all applicable AB 32 requirements
- Capped sectors:
 - Electricity
 - Industrial sources
 - Transportation fuels (by 2020)
 - Commercial and residential NG (by 2020)

Preliminary Recommendation

California Cap and Trade Linked to Regional Market

- Enforceable cap over GHG emissions from sources 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
- Limited use of offsets
- Strong enforcement and monitoring
- Must include safeguards for regional and local co-pollutants

Transportation

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 design improvements for trucks
- Hybridization for urban and short-haul trucks
- Improved efficiency for heavy duty trucks
- Implement adopted goods movement strategies and improve efficiency
- High speed rail

- Increase utility-based energy efficiency programs
- More stringent building and appliance standards
- Million Solar Roofs Program
- Residential solar water heaters
- Encourage combined heat & power
- Achieve 33 percent RPS for all utilities

Preliminary Recommendation

Local Government Actions and Regional GHG Targets

- Develop regional targets in collaborative process
 - Comprehensive process
 - Consider other policy goals
 - Incorporate performance indicators
 - Provide State resources
- Encourage local climate action plans and local targets

Industrial Sources

- Require efficiency and co-benefit audit of largest industrial sources
 - Evaluate potential to reduce GHG, criteria pollutants, and air toxics
- Audit results used to identify cost-effective GHG reductions that also reduce criteria or toxic pollutants
 - Co-benefits to nearby residents

Preliminary Recommendation

Measures from Uncapped Sectors

High GWP Gases

- Used in refrigerators, air conditioners, fire suppression and insulating foam
 - More potent greenhouse gases
- Possible approaches:
 - Fees to discourage leakage or disposal
 - Standards to prevent leakage
 - Recovery and proper destruction of high GWP “banks”

Measures From Uncapped Sectors

- Recycling and Waste
 - Reduce landfill methane; increased diversion, recycling and composting
- Forests
 - Preserve forest sequestration
- Water
 - Continue efficiency programs
- Agriculture
 - Encourage investment in digesters; evaluate mandatory program in 2013

The background features a stylized globe on the left side, partially obscured by a large, semi-transparent blue rectangular bar at the top. The globe shows continents and oceans in shades of blue and green. Overlaid on the globe and the rest of the slide are several thin, curved lines in light blue and green, creating a sense of motion or data flow. The overall color palette is cool, dominated by blues and greens, with a yellowish gradient on the right side.

Other Measures Under Evaluation

Sector-Based Measures

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

Offsets

- Surplus reductions from unregulated or uncapped sources
- Rigorous criteria necessary to maintain environmental integrity
- Voluntary offsets
 - Growing market for offsetting emissions
- Compliance offsets
 - Could be used in cap and trade, regulatory measures or carbon fee approach
- ARB must adopt methodologies and enforcement regulation for use in AB 32

Carbon Fee

- Use carbon pricing to achieve reductions
 - Applied to CO₂ equivalent emissions upstream
- Price 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

The background features a stylized globe on the left side, partially obscured by a large, semi-transparent blue rectangular bar at the top. The globe shows continents and oceans in muted colors. Overlaid on the globe and the rest of the page are several thin, curved lines in shades of blue and green, creating a sense of motion or a network. The overall color palette is light and airy, with a gradient from pale yellow at the top to light blue at the bottom.

Draft Scoping Plan Evaluations

Potential Economic Impacts

Preliminary Evaluation

- Overall savings of Draft Scoping Plan expected to outweigh costs
 - Many measures increase energy efficiency
- Efficiency measures likely to mitigate moderate increases in energy prices
 - Pavley regulation saves car buyer \$30/month
- Additional analyses in progress

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**

Green Technology

- Position California as a leader in the emerging clean tech global marketplace
- State has long history of successful innovation that has been key economic driver
- California green technology businesses grew by over 80% between 1990 & 2006
- Over \$1 billion in cleantech venture capital investment in California in 2006

Efforts Still Underway

- Economic modeling
- Small business impacts
- Environmental analysis
- Localized impact analysis
- Public health evaluation
- Societal impacts

**Evaluation Supplement and Workshop
in Summer 2008**

Moving Toward 2050

A Clean Energy Future

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

Coordination with Other Efforts

- WCI can result in lower cost reductions
 - California high standards can influence other sources and states in the region
- California and regional leadership can pave the way nationally
 - Need to preserve states as laboratories of innovation
- International participation is crucial for global success
 - International Carbon Action Partnership

Draft Scoping Plan: Next Steps

- Summer:
 - Workshops and community meetings
 - Supplemental evaluation
 - Begin development of fee regulation to support AB 32 implementation
- October:
 - Proposed Scoping Plan release with 45-day environmental review
- November:
 - Board consideration of the Proposed Scoping Plan

Scoping Plan Implementation

- Two years to adopt AB 32 measures
 - Regulatory development will follow normal public process
 - Extensive stakeholder outreach and involvement
- Implementation and enforcement critical
- ARB must monitor implementation
- Required to re-visit Scoping Plan in 5 years

A Shared Challenge

- Californians responding to challenge of reducing greenhouse gases
- AB 32 implementation will depend on government, business, and individuals working together
- We must spark the imagination of the next generation to make California a cleaner and healthier place to live