

AB 32: The California Global Warming Solutions Act of 2006

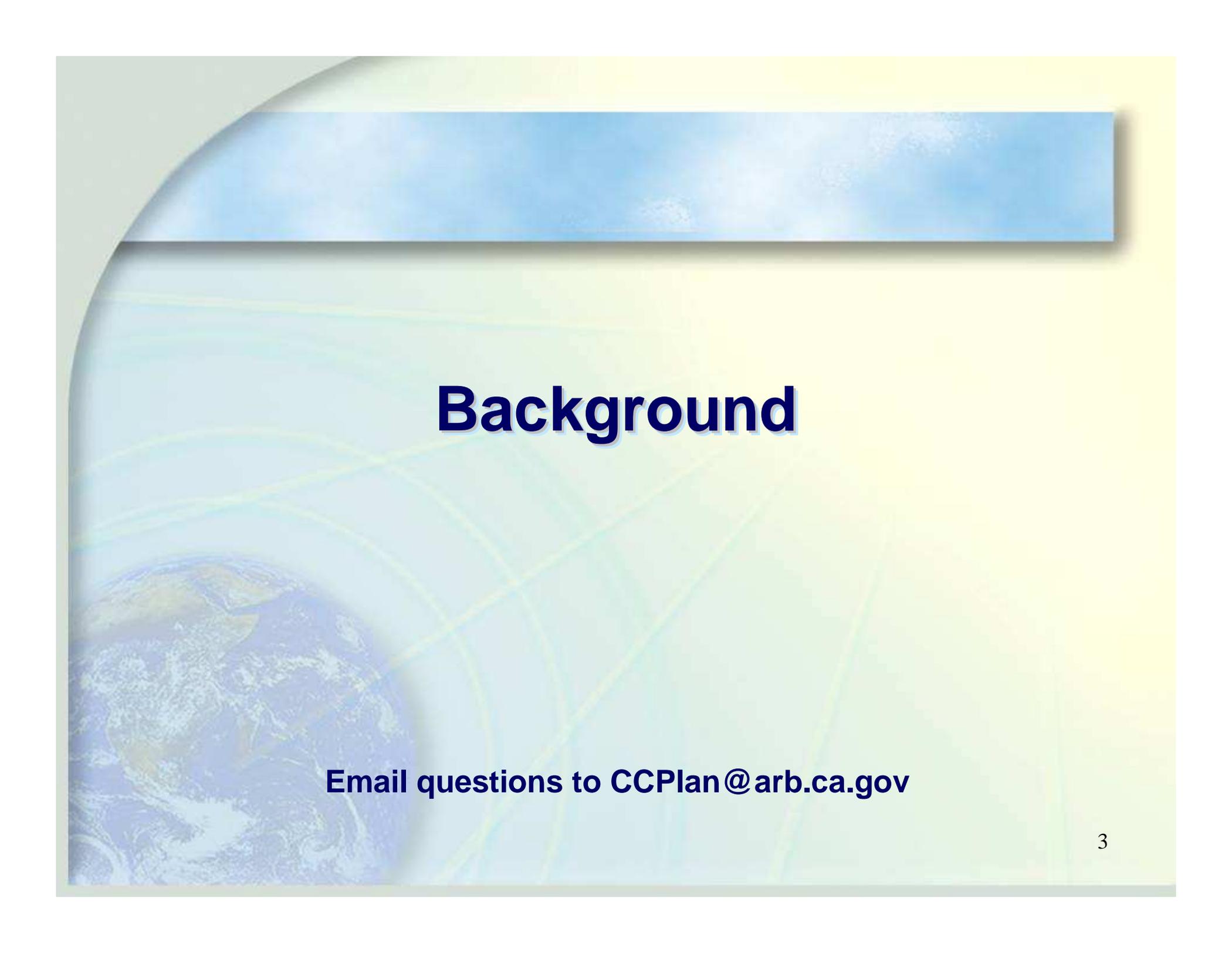
Scoping Plan Kick-Off Workshop

Scoping Plan Workshop Series
November 30, 2007

California Air Resources Board

Workshop Overview

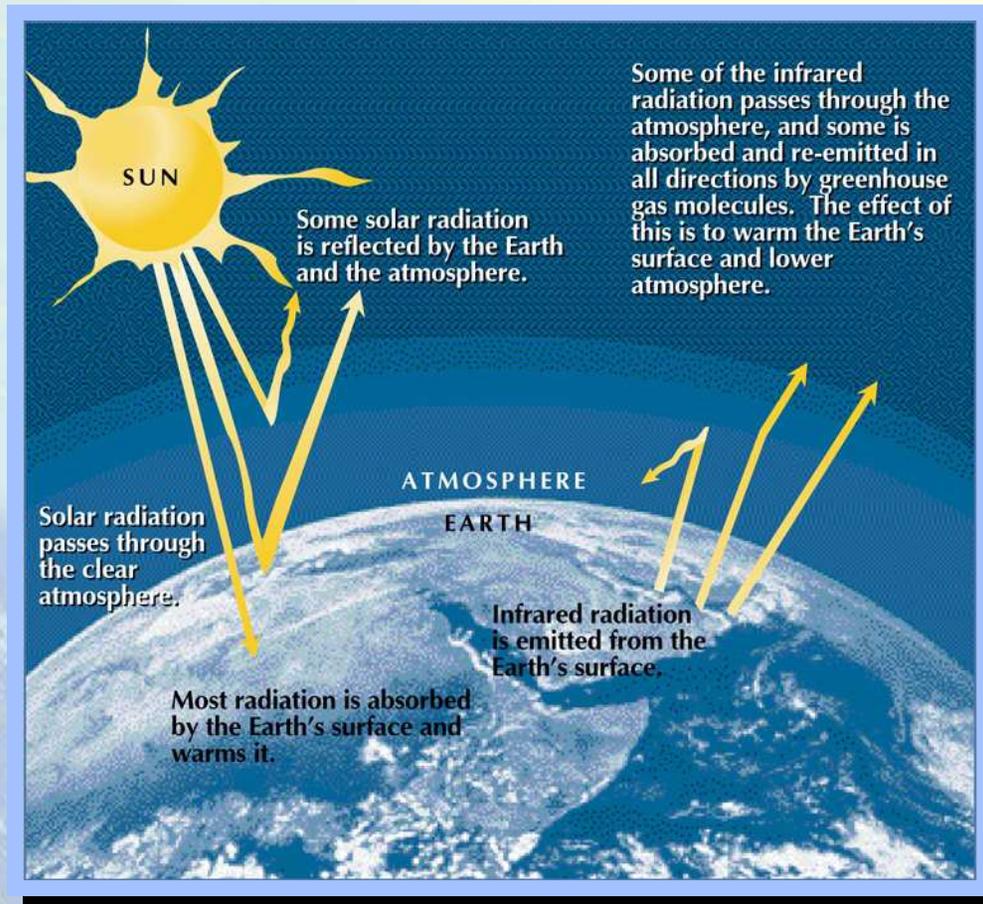
- Introduction and Opening Remarks
- Background
- Scoping Plan Development
- Elements of the Scoping Plan
- Questions and Comments

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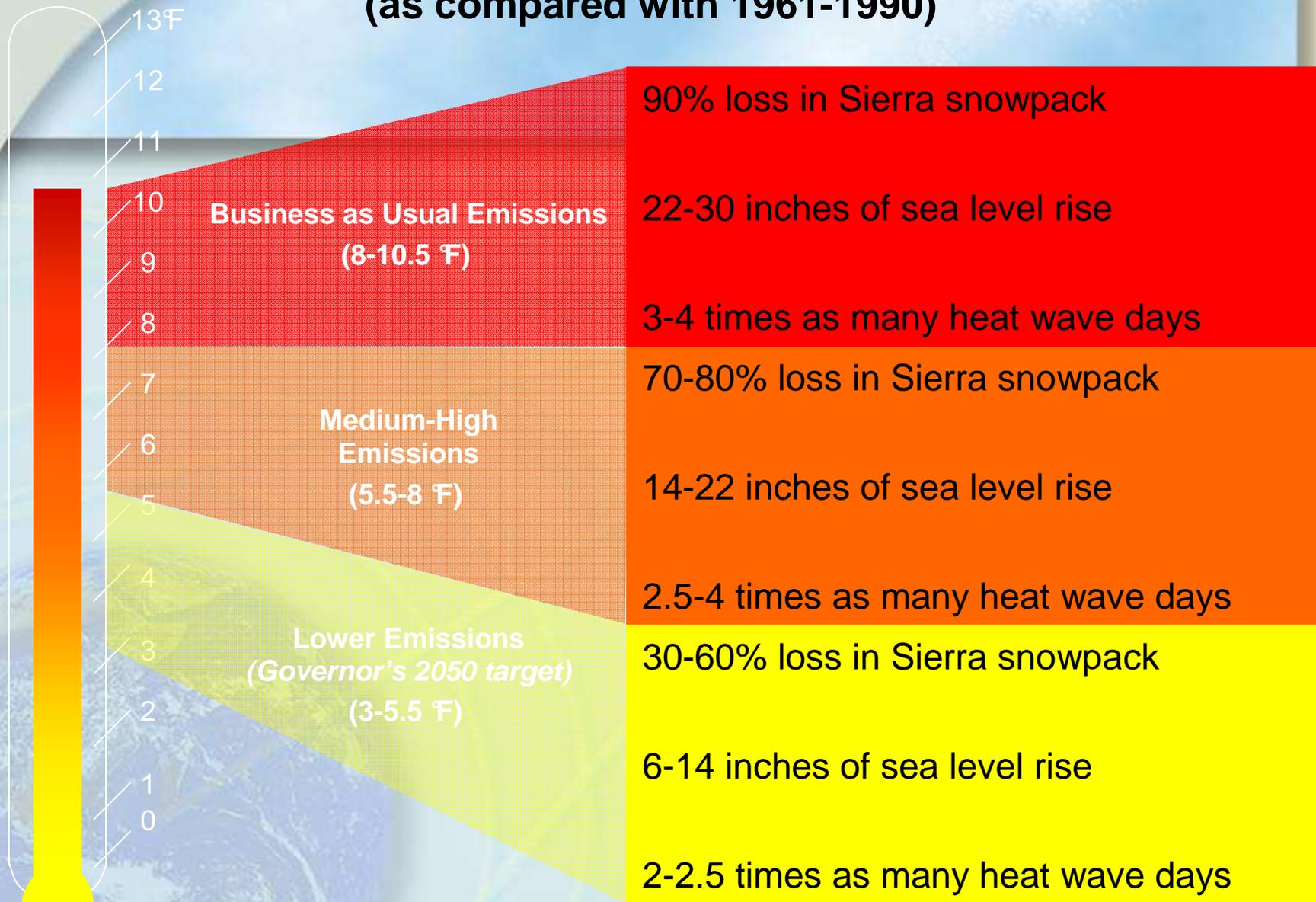
Background

Email questions to CCPlan@arb.ca.gov

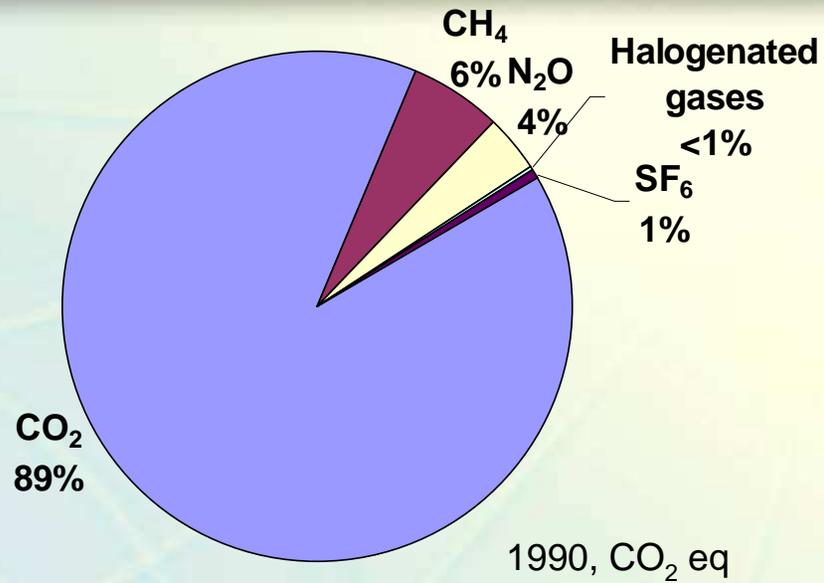
Background: What Is Global Warming?



Projected Global Warming Impact on California, 2070-2099 (as compared with 1961-1990)



California GHG Emissions



CO₂, N₂O



CO₂, CH₄, N₂O



CO₂



CO₂

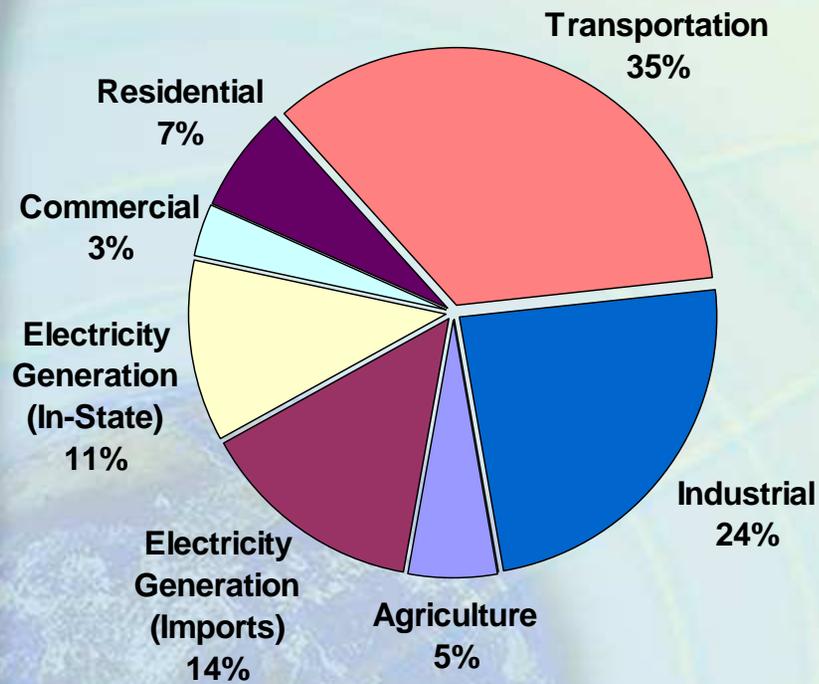


HFCs

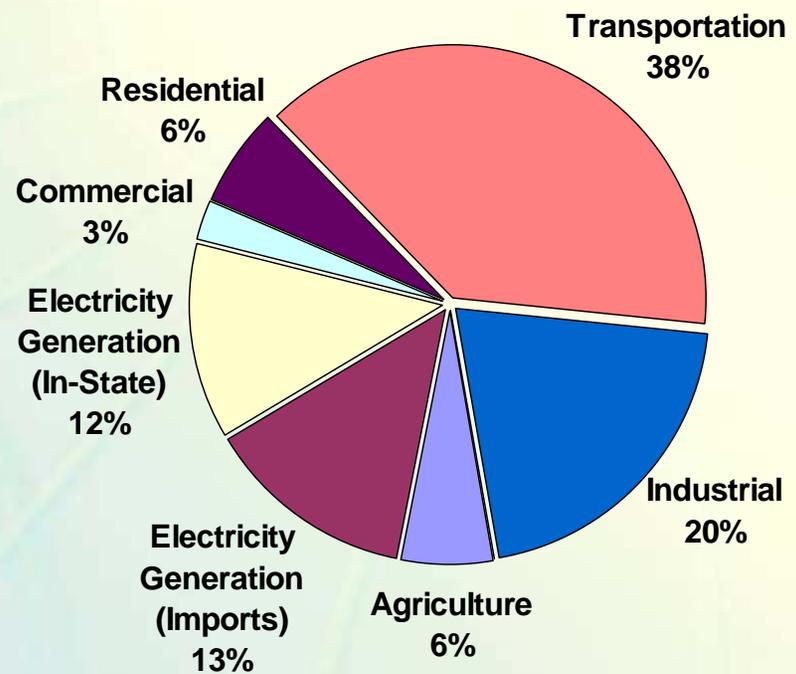
ARB, "California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit"
(2007), www.arb.ca.gov/cc/ccei/inventory/1990_level.htm

California GHG Emissions

GHG EMISSIONS BY SOURCE



1990 [~427 MMT CO₂ eq]



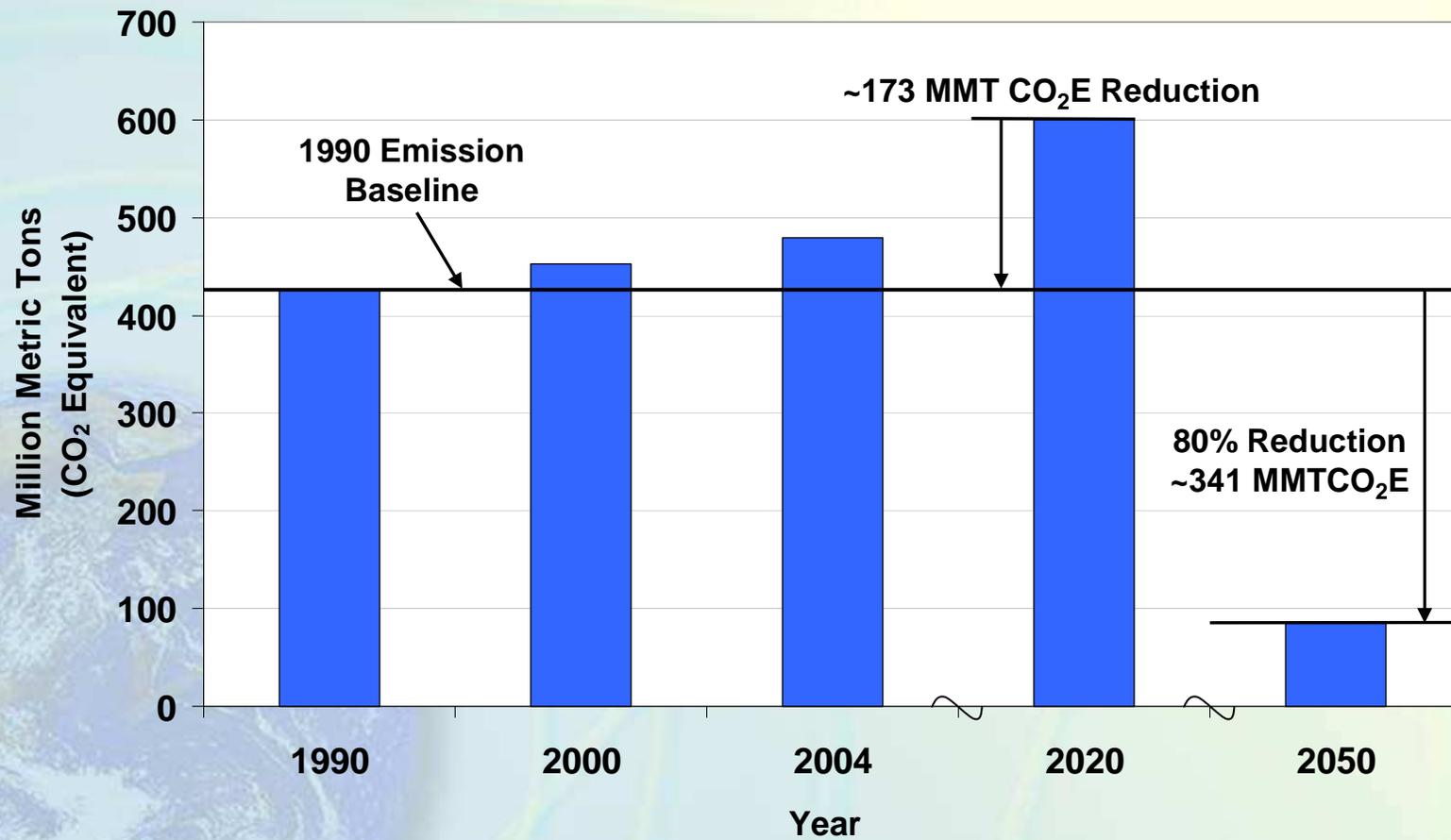
2004 [~480 MMT CO₂ eq]

What Is AB 32?

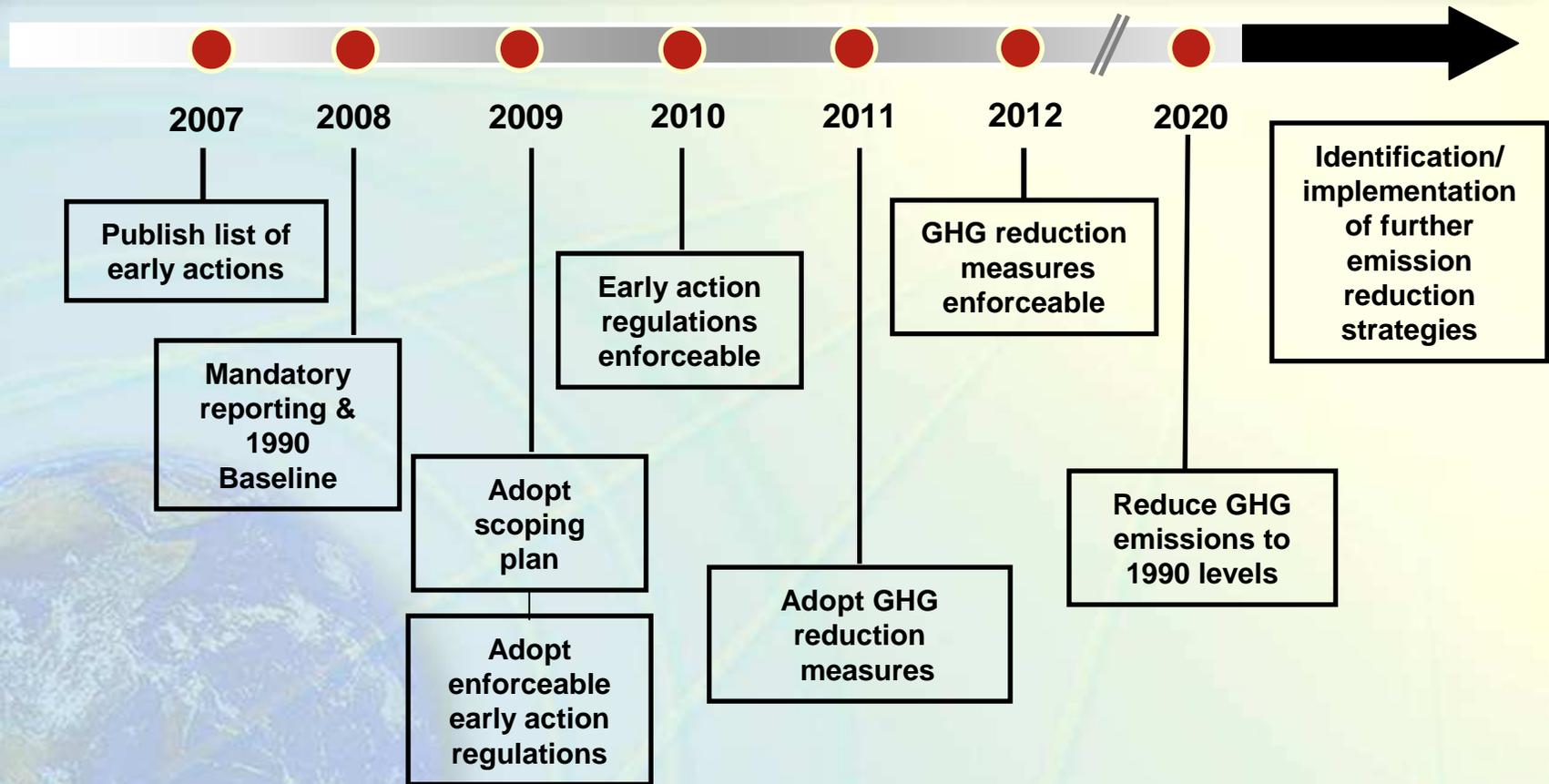
- Sets in statute 2020 target
- ARB to monitor/regulate GHG sources
- Air Resources Board lead, but
 - Cal/EPA and Climate Action Team continue coordinating statewide climate policy
 - Other agency authorities preserved
 - Role of Public Utilities Commission and Energy Commission explicitly recognized

Magnitude of the Challenge

ARB Emissions Inventory

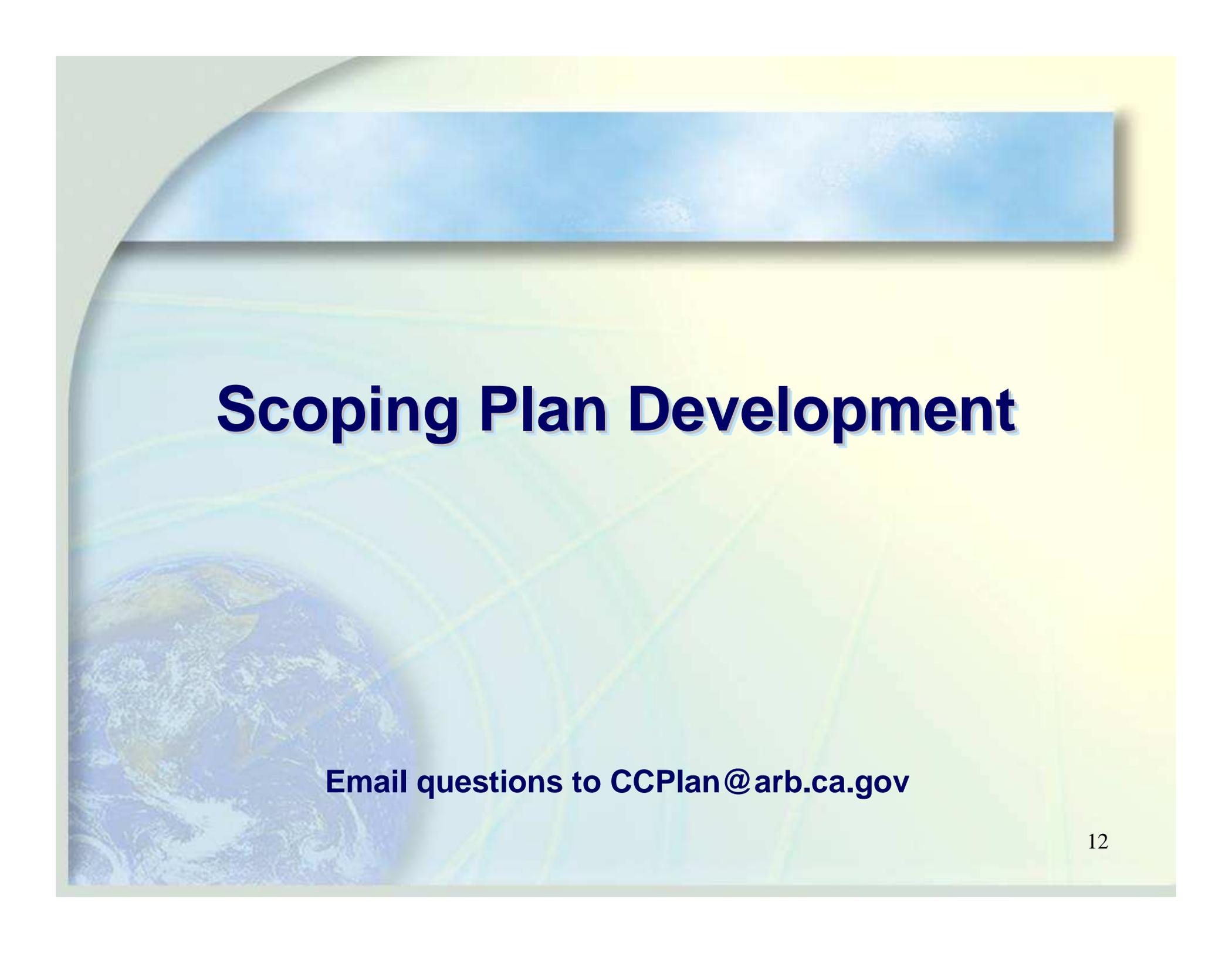


AB 32 Timeline



December Board Hearing

- ARB Board will consider:
 - ETAAC Member Replacement
 - Action at the Local Level Update
 - 1990 Statewide GHG Emissions Level & 2020 Emissions Limit
 - Mandatory GHG Reporting Requirements

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Scoping Plan Development

Email questions to CCPlan@arb.ca.gov

Scoping Plan

- 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
- 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

Nov 30, 2007	Scoping Plan Kick-Off Workshop
Dec 6 & 7, 2007	Board Hearing - 1990 Baseline, Mandatory Reporting
Dec 14, 2007	Sector Summary Workshop (Sac)
Jan 16, 2008	Mechanisms Workshop (Oakland)
Mar 24, 2008	Scoping Plan Scenarios Workshop (Sac)
June 2008	Draft Scoping Plan released
July 2008	Workshops on draft plan (Statewide)
Oct 2008	Final Staff Proposal released
Nov 20-21, 2008	Board Hearing - Scoping Plan

Who Is Developing the Scoping Plan?

- ARB staff responsible for the Scoping Plan
- ARB working closely with Cal/EPA and Climate Action Team Subgroups
- Technical evaluations performed by multi-agency teams, as necessary
- Stakeholder outreach will be a joint effort with other state agencies
- Advisory groups (EJAC, ETAAC & MAC) providing recommendations

Who's Doing what at ARB?

- Office of Climate Change
 - Policy oversight of AB 32 implementation
 - Responsible for Scoping Plan development and evaluation of emission reduction mechanisms
- Technical Divisions
 - Provide technical expertise to support the Scoping Plan
 - Responsible for regulatory development and implementation of measures identified in the Scoping Plan

Climate Action Team Subgroups

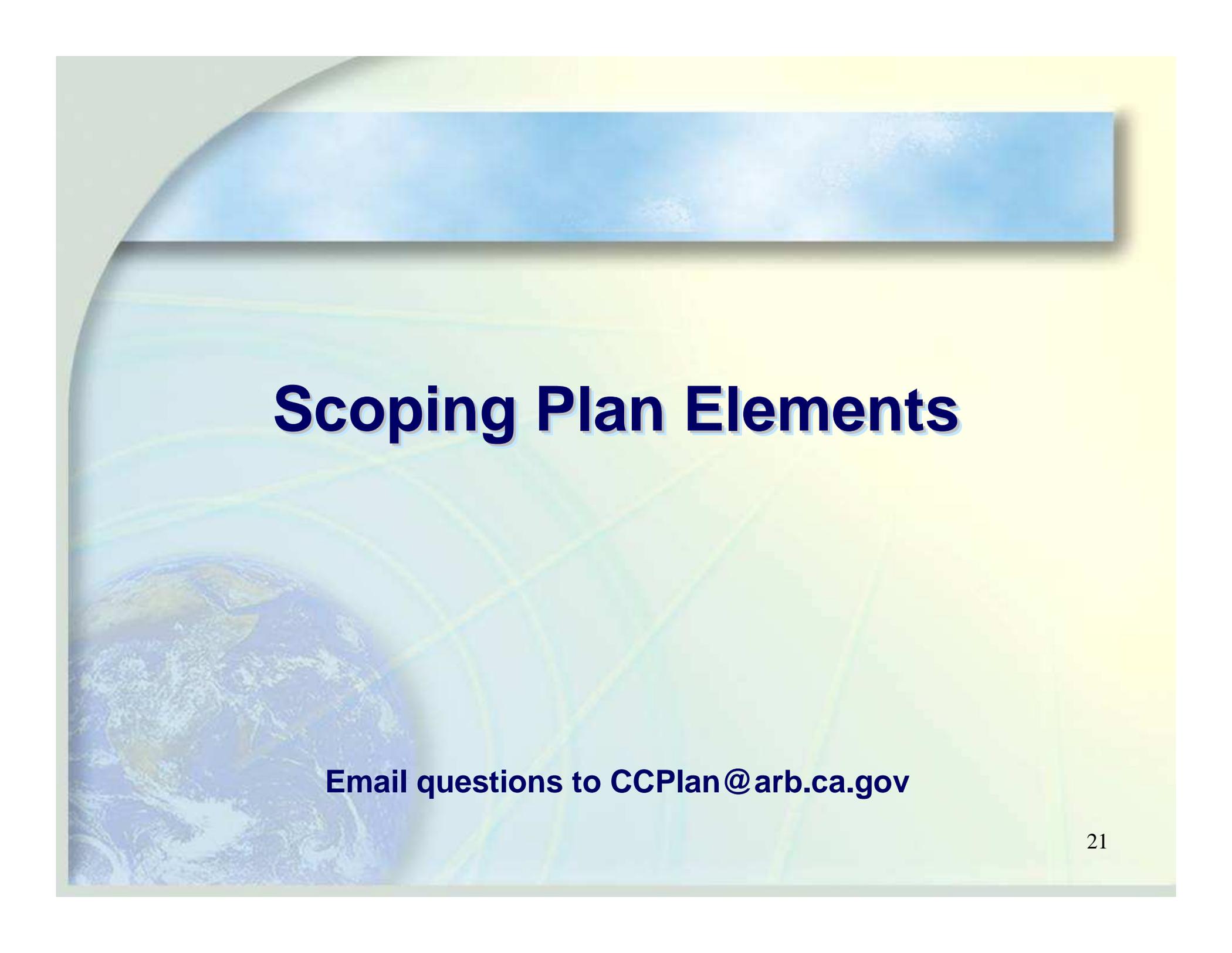
- Agriculture
- Energy
- Forests
- Waste Management
- Water/Energy
- Green Buildings
- State Fleet
- Land Use and Local Government
- Cement
- Economics
- Scenario

Who Else Is Involved?

- Local air districts & other local government
- Agriculture
- Business & industry
- Transportation sources
- Environmental groups
- Community groups
- California Climate Action Registry
- Western Climate Initiative
- International organizations

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

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Scoping Plan Elements

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Scoping Plan Elements

- Emission inventory
- Evaluation of methods to achieve reductions
- Staff recommendations for measures
- Evaluations
- Implementation
- Getting to 2050
- Next steps
- Technical support documents

Emission Inventory

- AB 32 sets an emission cap for 2020
- Board will consider the 1990 baseline in December 2007
- Forecast of 2020 “business as usual” emission is under development
 - Will be updated over the next year and finalized in Scoping Plan

Evaluation of Methods to Achieve GHG Reductions

- Which tools are in the mix for evaluation?
- What are the criteria for evaluating available tools?
- AB 32 context for market mechanisms
- Design options

Proposed Criteria for Program Design

- Meet all legal requirements
 - Comply with AB 32 requirements and goals
 - Be consistent with other statutes; the Commerce Clause, the Federal Power Act, etc.
- Achieve maximum feasible and cost-effective reductions that are real, permanent, measurable, verifiable, and enforceable
- Avoid localized and disproportionate impacts on minority and low-income communities
- Avoid interference with air toxic or criteria pollutant program requirements

Proposed Criteria for Program Design

- Maximize total benefits to California (e.g. reduce air pollution, promote energy diversification, advance socio-economic objectives)
- Minimize administrative burdens and transaction costs
- Be simply designed, easily understood, easy to administer, and easy to comply with
- Minimize the potential for leakage
- Include as many sources or categories of sources as practical while encouraging participation beyond included sources

Proposed Criteria for Program Design

- Provide appropriate incentives for early voluntary reductions
- Stimulate investment and reward innovation
- Inspire other government entities to take action through our model and by including mechanisms that facilitate linkage
- Be consistent with established international standards and build upon existing international programs
- Ensure that program costs and benefits are distributed equitably
- Community empowerment

Tools to be Evaluated for AB 32 Implementation

- Many possible approaches
 - Direct Regulations
 - Alternative Compliance Mechanisms
 - Market-Based Mechanisms
 - Cap & trade
 - Offsets
 - Other Alternative Mechanisms
 - Incentives
 - Fee-bates
 - Voluntary actions
 - Carbon tax/fee
- January 16 workshop dedicated to Mechanisms

Direct Regulations

- CAT Subgroups and associated sector teams are evaluating possible measures that might be basis for command and control regulation
- Sector overviews will be presented at December 14 workshop
 - Electricity
 - Transportation
 - Business and Industry
 - Local Initiatives and Land Use
 - Agriculture
 - Forestry

Direct Regulations

- ARB adopted regulations
 - AB 1493
 - Anti-idling regulations
- Discrete Early Actions
 - 9 separate measures, ~16 MMTCO₂E by 2020
 - LCFS, High GWP gases, Landfill Gas Capture
 - Smartway, Tire Inflation, SF₆ and Green Ports
- California standards
 - RPS
 - Building standards
 - Other State Agency regulations

AB 32 and Market Mechanisms

- AB 32 defines “market-based compliance mechanism” as either of the following:
 - A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases.
 - Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the state board, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the state board pursuant to this division.

(H&S Code §38505(k))

AB 32 and Market Mechanisms

- Prior to inclusion of market mechanisms, ARB must:
 - Consider the potential for direct, indirect, and cumulative emission impacts, including localized impacts in communities that are already adversely impacted by air pollution.
 - Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants.
 - Maximize additional environmental and economic benefits for California, as appropriate.

Possible Approaches for a Cap & Trade System

- California only cap & trade system
 - Electricity only
 - Electricity and other large sources (e.g. some or all sources covered under mandatory reporting)
 - Electricity, other large sources, and transportation fuels
 - Upstream
- Regional (WCI) cap & trade system
 - Same sector scope options as above

Options For the Electricity Sector

- Options for the electricity sector include:
 - Load based cap & trade
 - First seller cap & trade
 - Generators included in cap & trade, with imports addressed through load based programs (EE, RPS, etc.)
 - Not in cap & trade until regional/national system is established; rely on load-based programs for emission reductions from sector
- Recommendations being developed by CPUC/CEC

Key Steps in Joint Proceeding

- **February/March:** Public Utilities Commission and Energy Commission will provide interim decision with recommendations to ARB on key policy options for the electricity/natural gas sector
- **August/September:** The two commissions provide final decision with recommendations on electricity/natural gas sector to ARB

Design Issues for Cap & Trade System

- A recommendation to include a cap & trade system would need to address:
 - California/WCI/other
 - Sectors included
 - Level of the cap
 - Point of regulation
 - Allocation/auction
 - Offsets
 - Banking/borrowing
 - Etc.

Offsets

- Offsets could play a role in a cap & trade or as alternative compliance for direct regulations
- Issues to address include:
 - Validity/enforceability of the offsets
 - Which sources can be offsets
 - When can offsets be used
 - Geographic and/or quantitative limits

Other Alternative Mechanism Considerations

- Any alternative compliance mechanisms will need to include:
 - Rigorous monitoring and reporting requirements
 - A strong verification and enforcement program
- Evaluation of options that generate revenue (e.g. allowance auction or a carbon tax) will need to consider how best to distribute proceeds

Modeling

- Economic modeling work
 - ICF doing macroeconomic modeling for ARB
 - E3 doing electricity sector modeling for PUC and the joint proceeding
 - Will model different scenarios of program design (e.g. carbon tax scenario; electricity only cap & trade; upstream cap & trade)
- March 24 Scenario Workshop will present preliminary modeling results

Staff Recommendations for Measures

- ARB staff will recommend a suite of emission reduction measures and methods
 - Presented by sector, implementation method, and implementing organization

Evaluations

- Numerous evaluations required for Scoping Plan and resulting regulations
- ARB staff will address all required evaluations in the Scoping Plan

Required Evaluations

- Criteria pollutant and air toxic emission impacts
- Total economic costs and benefits
- Total non-economic costs and benefits
- CA economy
- CA environment
- Public health
- Small business

Required Evaluations

- Relative contribution/significance of source types
- De minimis threshold
- Environmental justice
- Overall societal benefits
- Administrative burden
- Leakage
- Activities of other states/nations
- Market-based measures

(H&S Code §38570(b))

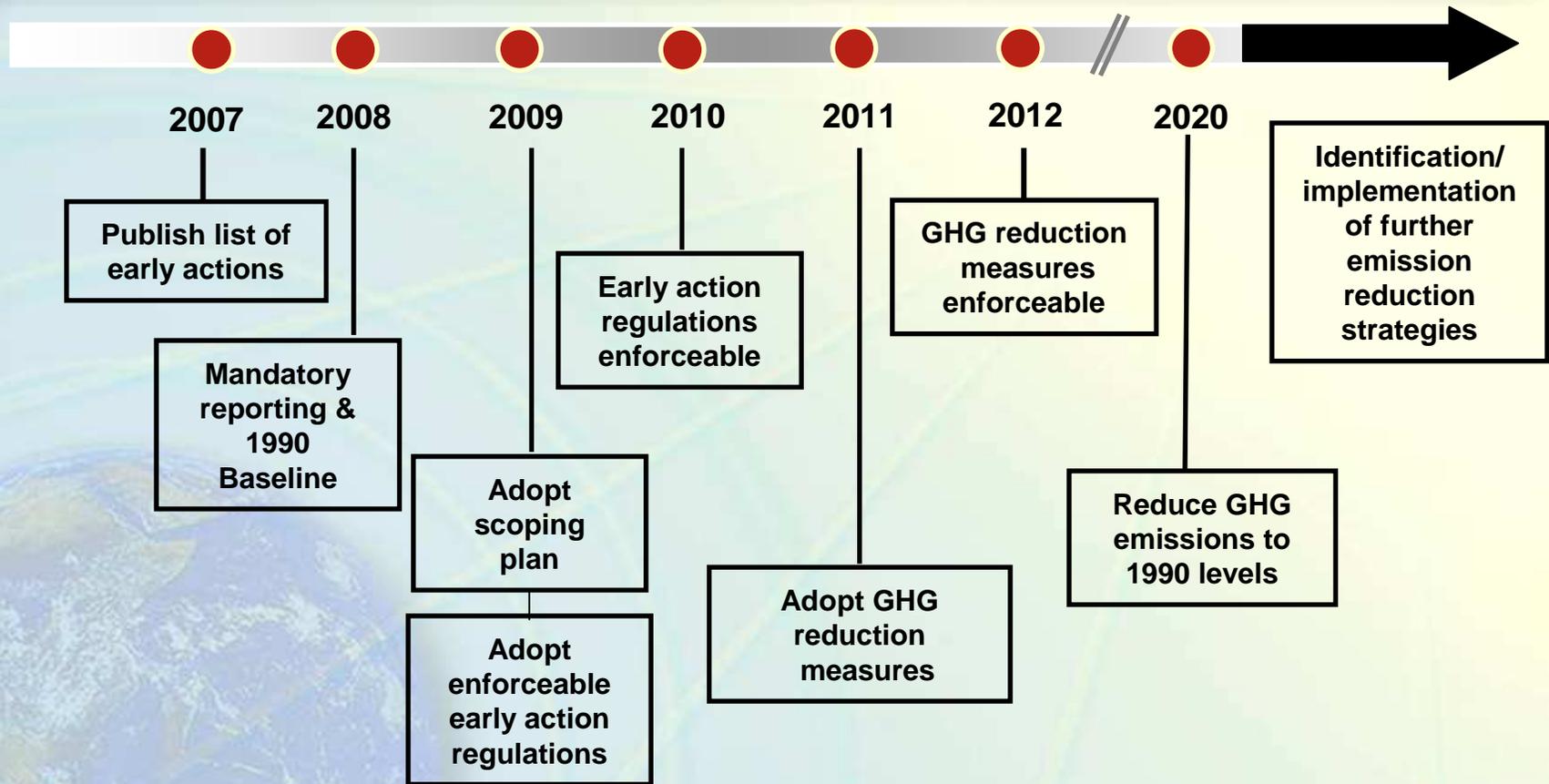
Getting to 2050

- Scoping Plan must meet 2020 requirement
 - Also should address longer-term 2050 goal
- Scoping Plan measures should contribute to 2050 goal
- Some Scoping Plan strategies may have greater impacts after 2020

Plan Implementation

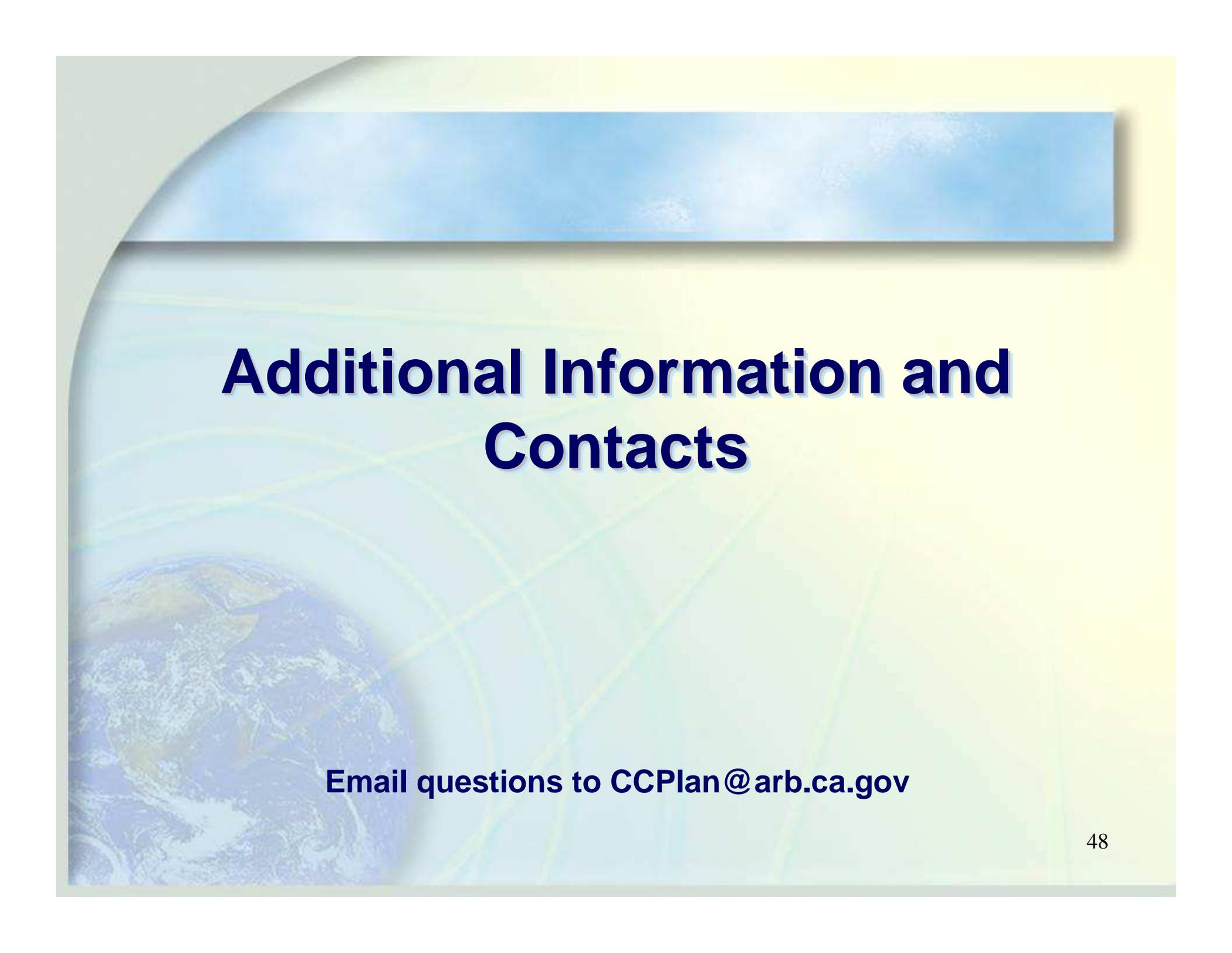
- Adopt and implement GHG reduction measures
- Accountability
 - State agency annual “Report Card” due to Legislature beginning March 2008
- Enforcement of GHG regulations

AB 32 Timeline



After the Scoping Plan - Next Steps

- AB 32 requires ARB to update the Scoping Plan every five years
- CAT Update every two years
- Integration with possible regional and/or federal greenhouse gas programs
- Continue to evaluate new GHG technology

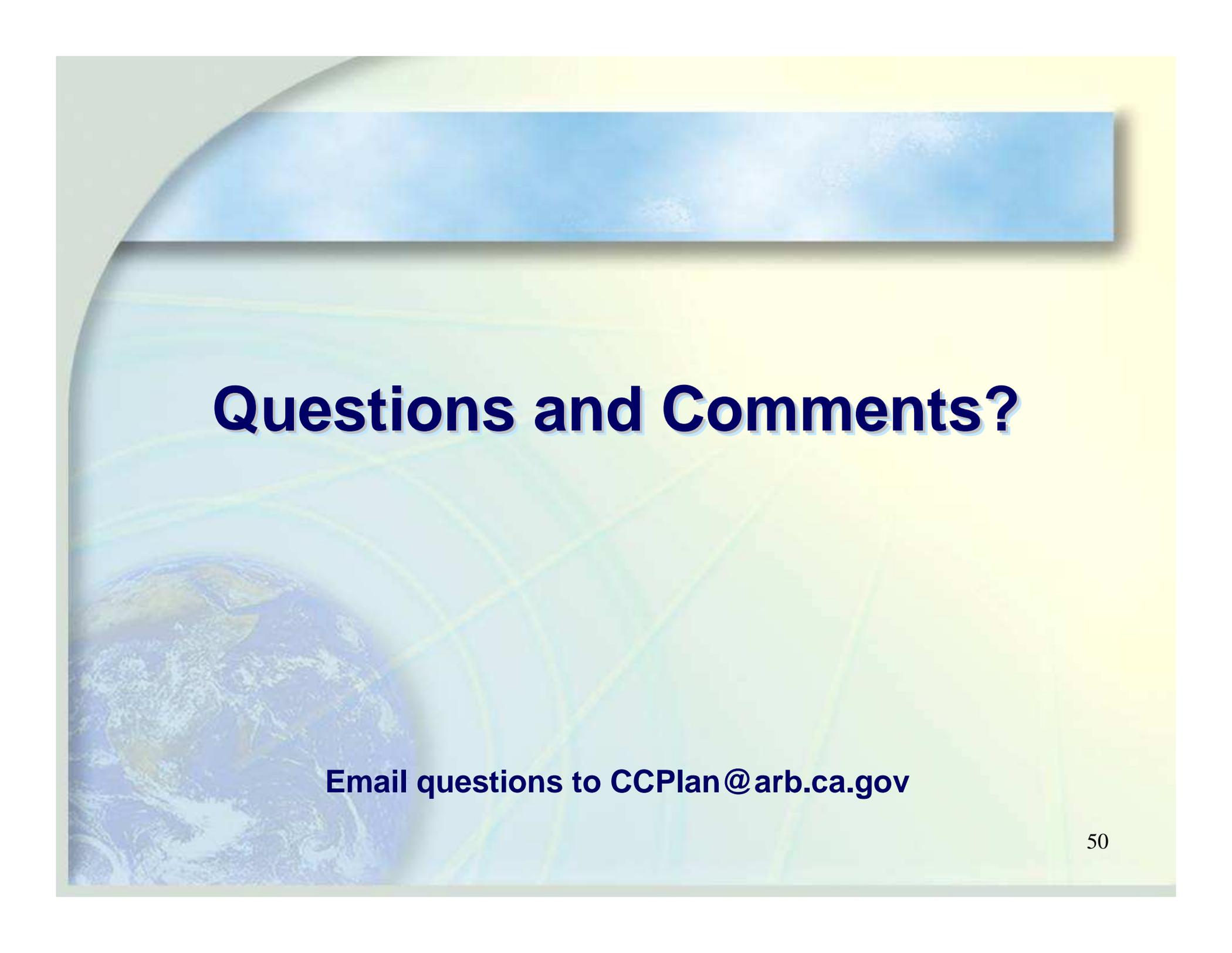
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Additional Information and Contacts

Email questions to CCPlan@arb.ca.gov

Additional Information

- 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 contacts are available at: <http://www.arb.ca.gov/cc/contacts/contacts.htm>

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