

## **The California Global Warming Solutions Act of 2006**

### **Public Workshop to Discuss ARB Implementation Plan and Schedule**

January 22<sup>nd</sup> , 2007  
Sacramento

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## **Workshop Agenda**

- 9:30 AM • Welcome/Housekeeping
- 9:40 AM • Overview
- 10:15 AM • Discussion of individual tasks
- 11:00 AM • Comments and questions
- 11:55 AM • Closing remarks/adjournment

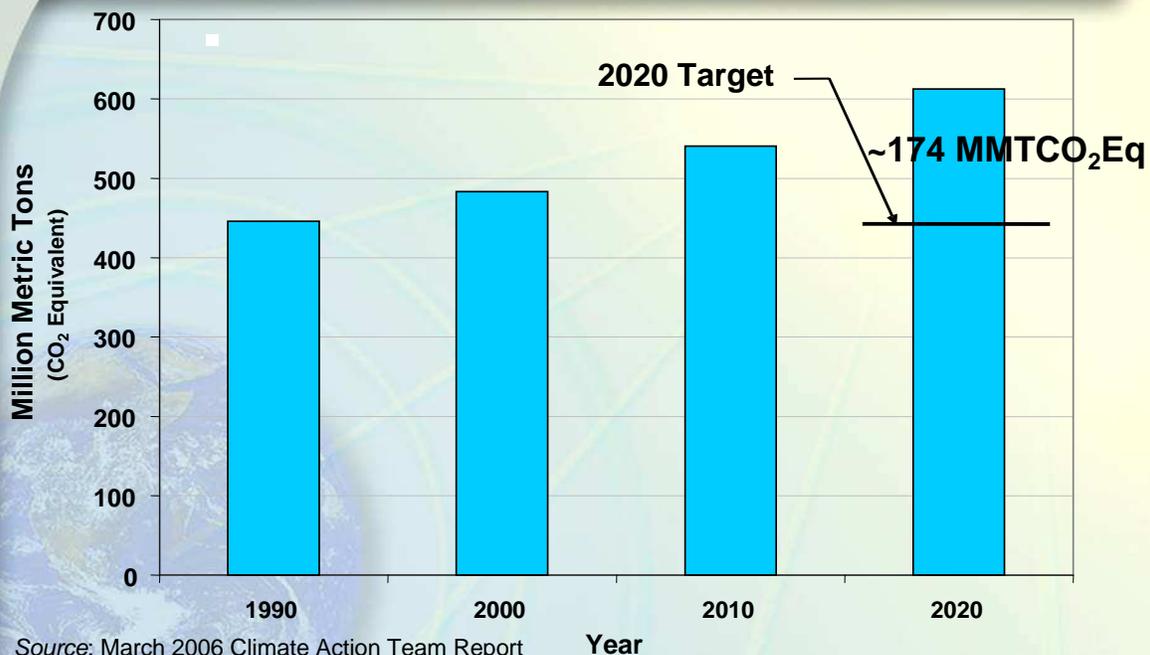
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## Overview

- General background
- Overall plan and schedule
- Coordination with other initiatives
  - Climate Action Team
  - Market Advisory Committee
  - Local government activities
  - Electricity sector
  - California Climate Action Registry

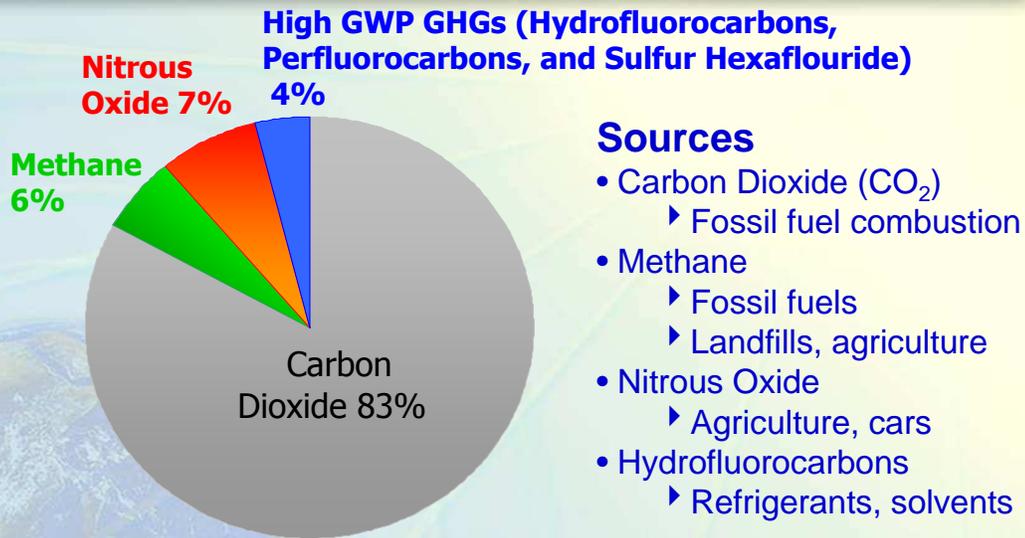
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## The Magnitude of the Challenge *California's GHG Emission Inventory*



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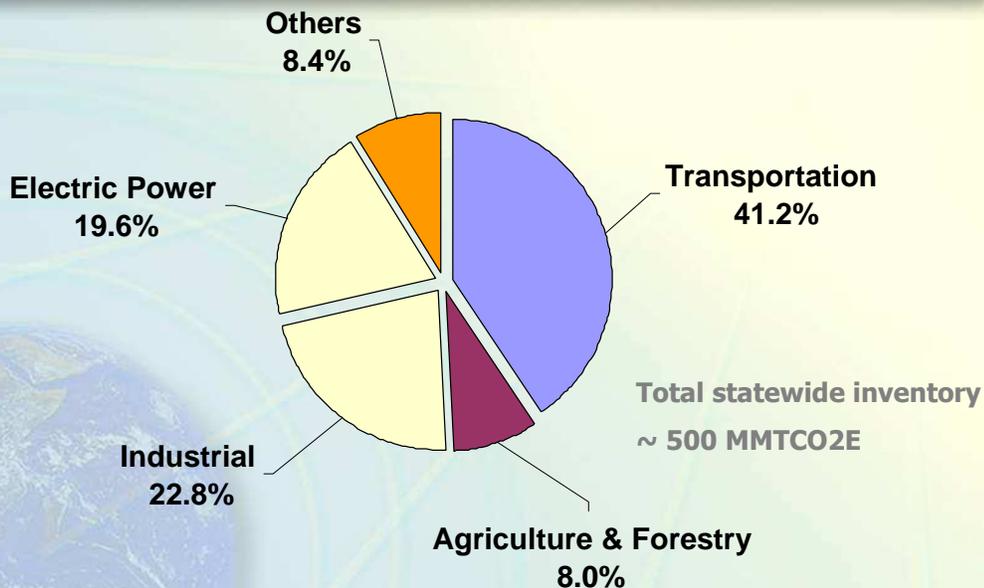
## California's Anthropogenic GHG Emissions 2002 (CO<sub>2</sub>-equivalent)



Source: California Energy Commission, June 2005 (CO<sub>2</sub>-equivalents)

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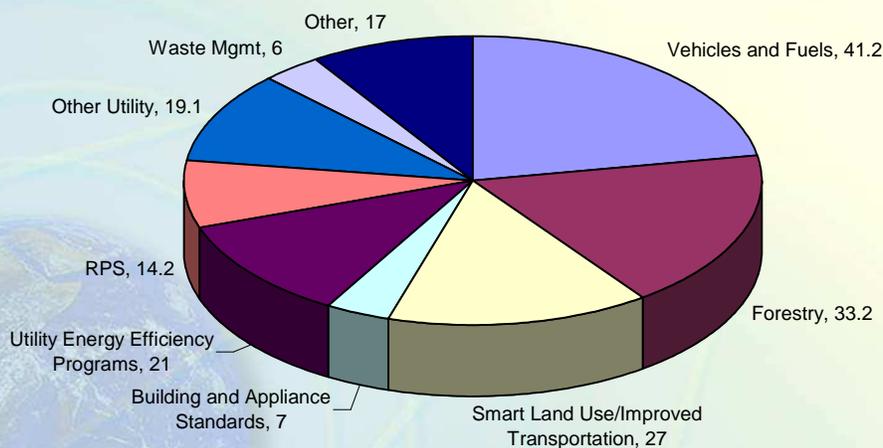
## California's Anthropogenic GHG Emissions 2002 (CO<sub>2</sub>-equivalent)



Source: March 2006 CAT Report, adapted from CEC, 2005

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## Sources of Potential Reductions (Million Metric Tons CO2 Equivalent)



Source: March 2006 Climate Action Team Report

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## Implications

- Reductions needed across many sources and sectors
- Will be multi-agency effort
  - Climate Action Plan
- Will be mix of near-term and long-term approaches
  - 2020 is not final endpoint

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## **Climate Action Plan**

- March 2006 report by Climate Action Team
- 40+ recommended strategies to achieve reductions
- Laid foundation for subsequent work

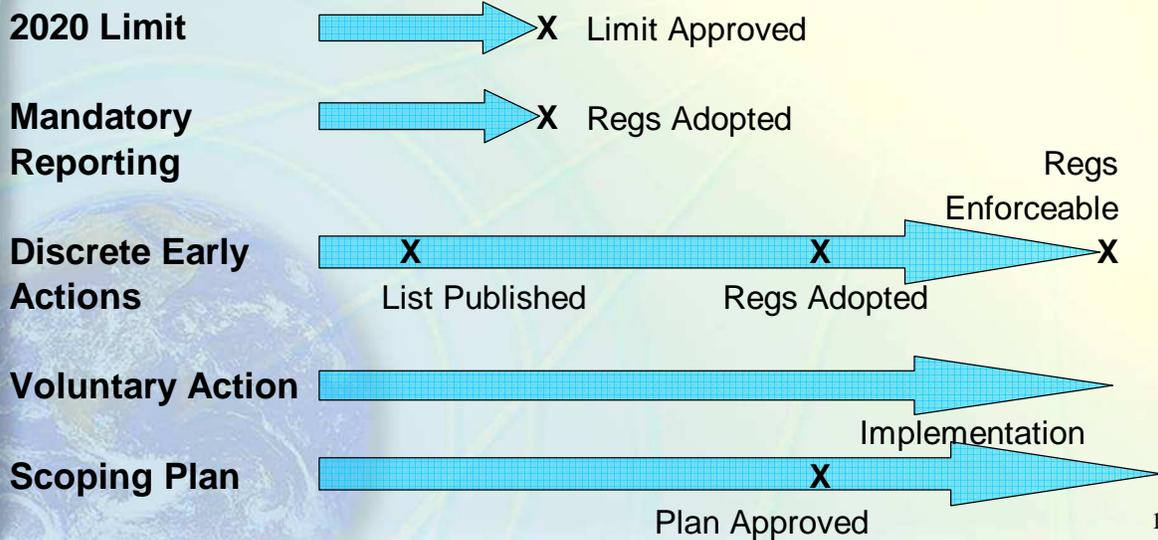
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## **Overall Plan and Schedule**

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## Implementation Timeline (Through Scoping Plan Approval)

2007				2008				2009			
1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q



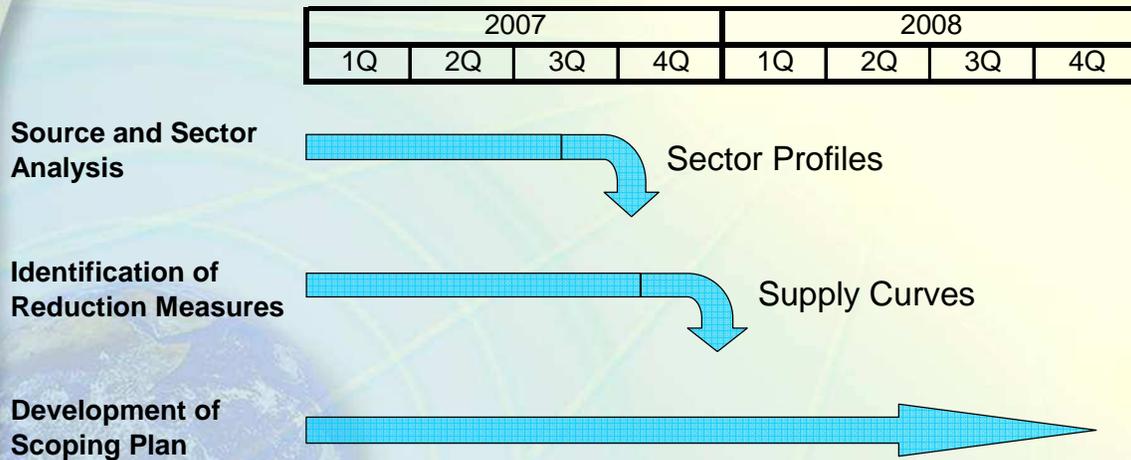
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## Implementation Timeline (Rulemaking)

- Discrete early action list
  - Early 2009
- Other near term actions that do not meet early action timing
  - 2009, 2010
- Regulations to implement scoping plan
  - 2010

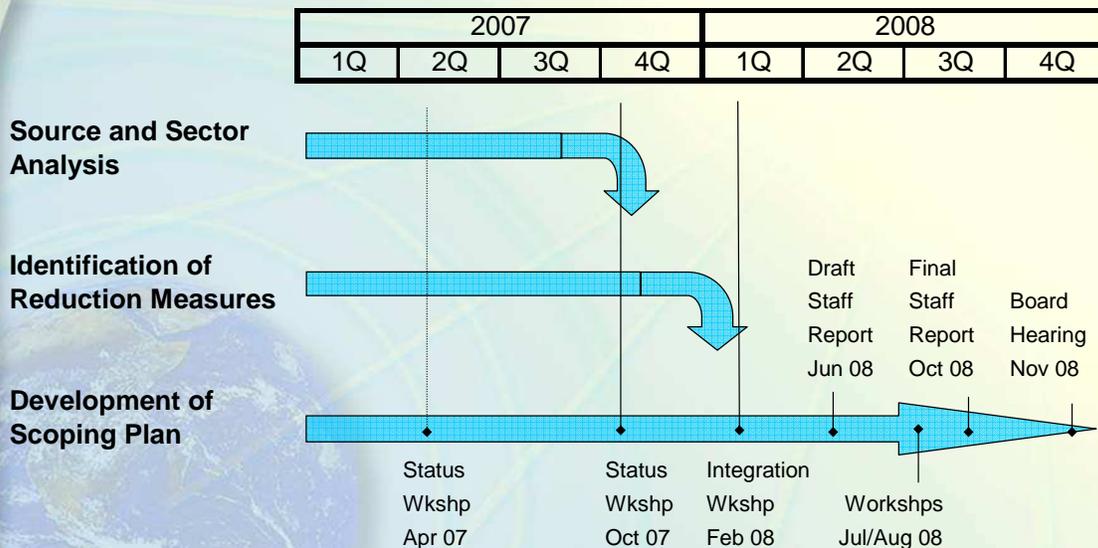
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# Workflow—Scoping Plan Development



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# Workflow—Scoping Plan Development

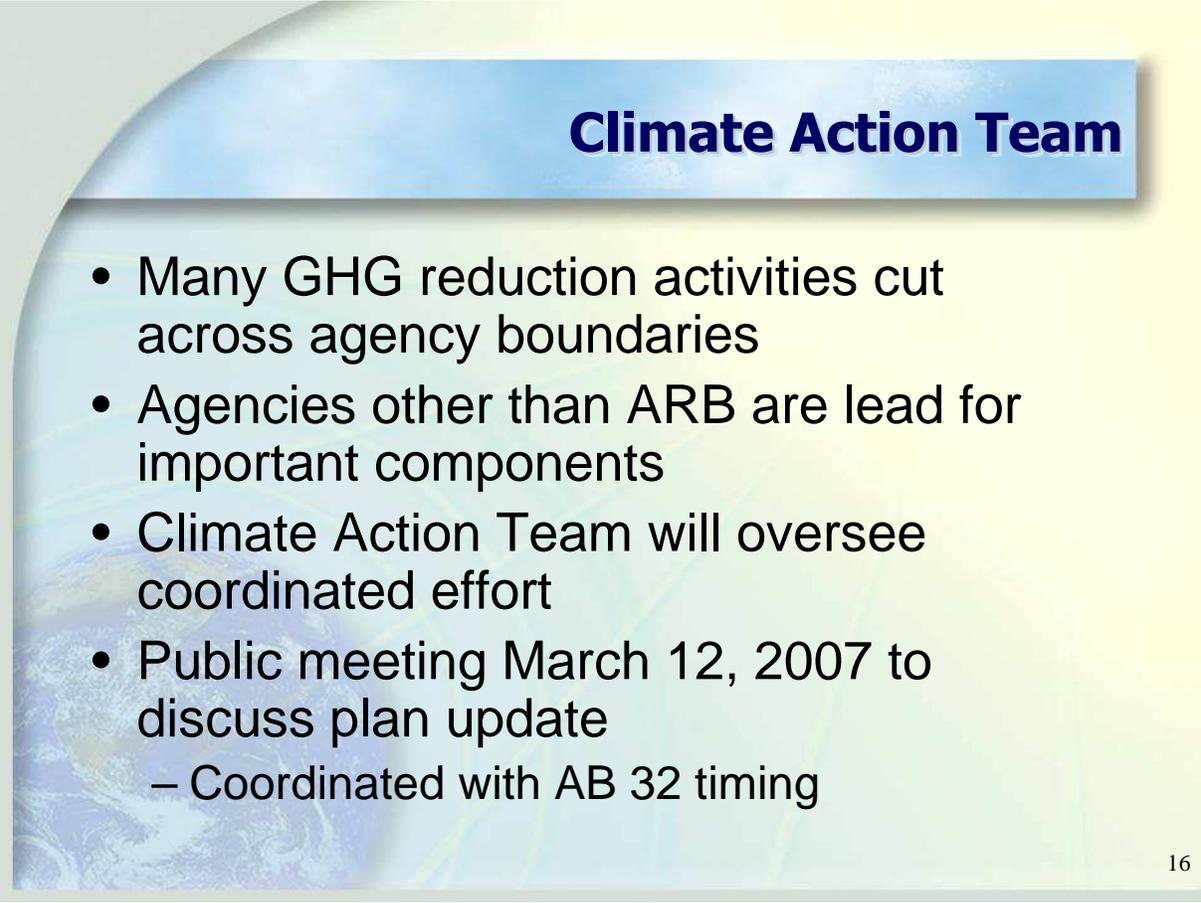


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## Coordination with Other Initiatives

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## Climate Action Team

- Many GHG reduction activities cut across agency boundaries
- Agencies other than ARB are lead for important components
- Climate Action Team will oversee coordinated effort
- Public meeting March 12, 2007 to discuss plan update
  - Coordinated with AB 32 timing

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## **Joint Development of Electricity Sector Recommendations**

- CPUC and CEC will jointly develop recommendations for AB 32 implementation for entire electricity sector (IOU, muni, other)
- CPUC Phase 2 Carbon Cap proceeding, conducted jointly with CEC, used as forum
- Recommendations will be integrated into broader economy-wide approach
- Timing consistent with ARB process

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## **Other Possible Climate Action Team Subgroups**

- Forestry
- Transportation/smart land use
- Landfills
- Agriculture
- Others

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## **Market Advisory Committee**

- Committee appointed
- First public meeting February 27
- Will provide recommendations to ARB by June 30
- ARB will review Committee input and consider as part of public process
- ARB responsible for program adoption

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## **Local Government Activities**

- Local governments showing climate leadership
- ARB liaison working to build relationships
- ARB working with Climate Action Team to better define state/local interaction
  - Support for local activities
  - Guidance on possible reduction strategies
  - Quantification/accounting of reductions

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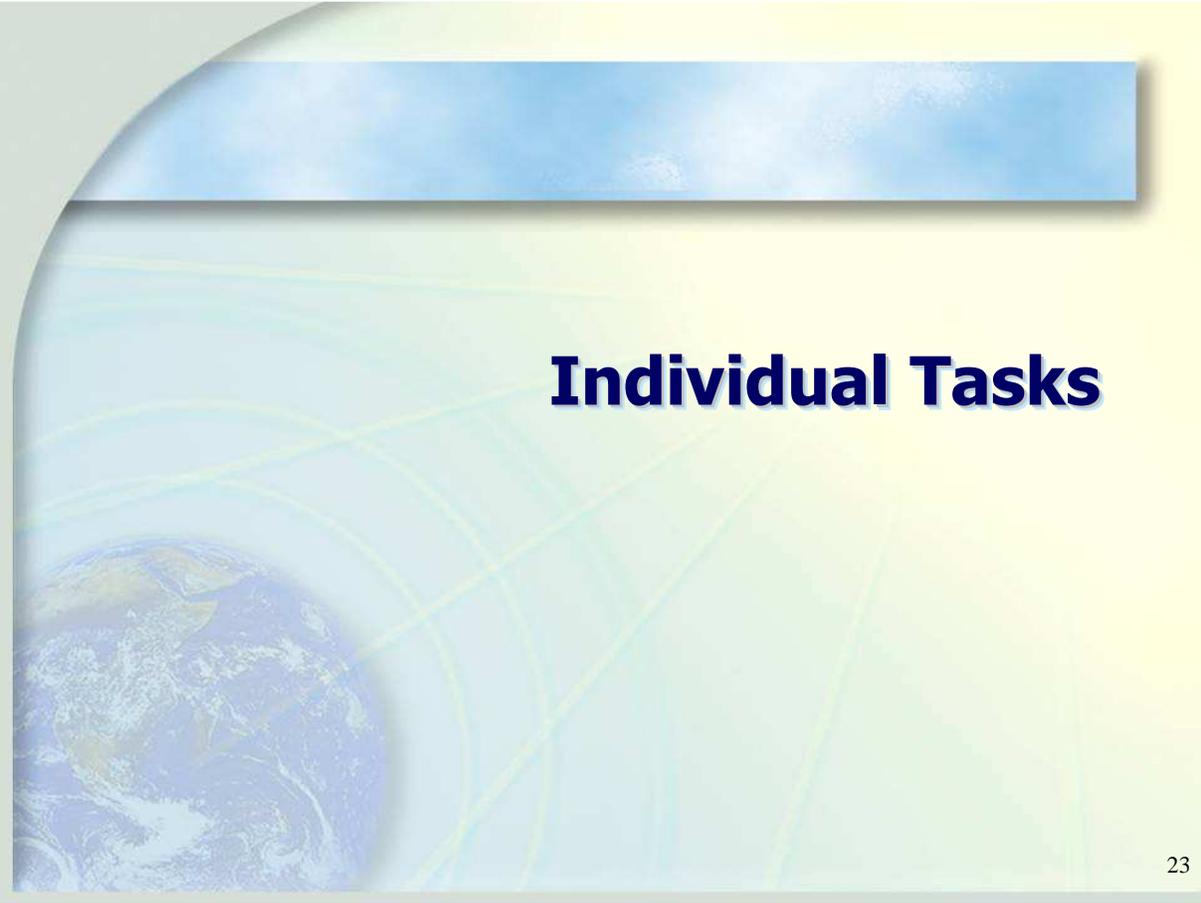
## California Climate Action Registry

- ARB working closely with CCAR
  - Review of existing protocols
  - Development of new protocols
  - Consultation on reporting issues
- Multi-state registry
  - Multi-state effort underway
  - Active CCAR and ARB participation

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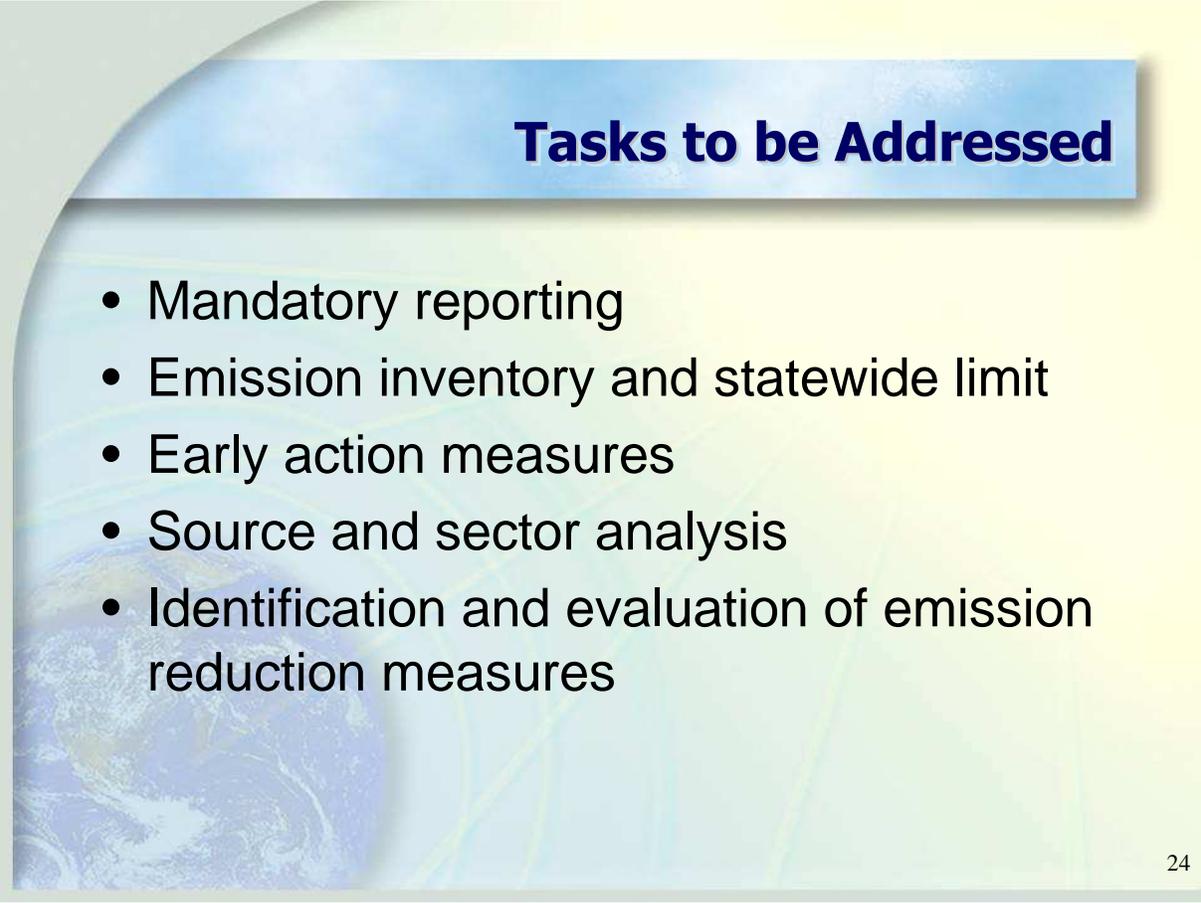
## Comments and Questions

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## Individual Tasks

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## Tasks to be Addressed

- Mandatory reporting
- Emission inventory and statewide limit
- Early action measures
- Source and sector analysis
- Identification and evaluation of emission reduction measures

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## Tasks to be Addressed

- Economic analysis and modeling
- Recognition of early action
- Scoping plan
- Advisory Committees
  - Environmental Justice
  - Economic and Technology Advancement

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## Task Descriptions

- Statutory directives
- Administrative status
- Staff lead
- Milestones

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## **Mandatory Reporting— Statutory Directives**

- Monitoring, annual reporting and verification beginning with sources that contribute the most to statewide emissions
- Account for all electricity consumed in CA, including imports
- Where appropriate and to maximum extent feasible use CA Climate Action Registry standards and protocols

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## **Mandatory Reporting— Statutory Directives**

- Participants in Registry prior to December 31, 2006 with developed reporting programs not required to significantly alter reporting except as necessary to ensure reporting is complete and verifiable
- ARB to review existing and proposed international, federal and state programs; promote consistency

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## **Mandatory Reporting— Administrative Status**

- Adoption of reporting regulations
  - Regulatory

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## **Mandatory Reporting— Staff Lead**

- Doug Thompson, Manager, Climate Change Reporting Section
  - Patrick Gaffney (regulation, certification)
  - Rajinder Sahota (general reporting, certification)
  - Pamela Burmich (power and utilities)
  - Dana Papke (cement)
  - Jeanne Panek (forestry)
  - Byard Mosher (oil and gas)

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## Mandatory Reporting— Milestones

- Early 2007
  - Identify significant sources, who will be required to report and when
  - Review existing protocols
  - Workshops and workgroups to develop regulation and supporting tools
- Spring/summer 2007
  - Review and prepare protocols
  - Ongoing workgroups, workshops

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## Mandatory Reporting— Milestones

- October 22, 2007
  - Release staff report
- December 6, 2007
  - Board hearing
- Reporting begins
  - TBD

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## Statewide GHG Limit— Statutory Directives

- Determine 1990 GHG emissions level and approve an equivalent limit for 2020
- Evaluate best scientific, technological and economic information
- Limit remains in effect unless amended or repealed

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## Statewide GHG Limit— Administrative Status

- Adoption of statewide emissions limit
  - Non-regulatory
  - Equivalent to 1990 level
  - Base on aggregate, statewide emissions
  - Not sector or facility-based

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## Statewide GHG Limit— Staff Lead

- Planning and Technical Support Division:
  - Emission Inventory Analysis Section
    - Webster Tasat, Manager
    - Larry Hunsaker (Oil/Gas, Electric Utilities, Landfills)
    - Ying-Kuang Hsu (Transportation)
    - LinYing Li (Industrial Sources)
    - Neva Sotolongo (Agriculture)
    - Klaus Scott (Land Use and Forestry)

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## Statewide GHG Limit— Milestones

- Early 2007
  - Review of CEC GHG emissions inventory
  - Identify potential areas for improvement
  - Workshops and workgroup meetings to discuss inventory improvements

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## Statewide GHG Limit— Milestones

- Spring/Fall 2007
  - Implement identified inventory improvements
  - Ongoing workshops & workgroup meetings
- November 2007
  - Release staff report
- December 6, 2007
  - Board hearing

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## Early Action Measures— Statutory Directives

- Board to publish list of discrete early action measures by June 30, 2007
- Board must adopt implementing regulations, to be enforceable by January 1, 2010

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## **Early Action Measures— Administrative Status**

- Publish list of early action measures
  - Non-regulatory
- Adopt implementing regulations
  - Regulatory

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## **Early Action Measures— Staff Lead**

- Publish list of early action measures
  - Research Division and Stationary Source Control Division
- Adopt implementing regulations
  - Various Divisions as appropriate

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## Early Action Measures— Milestones

- January 22, 2007
  - Workshop on criteria and proposed measures
- March 5-7, 2007
  - International Symposium on Near-Term Solutions
- March 2007
  - Release staff report

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## Early Action Measures— Milestones

- April 2007
  - Board meeting to consider Early Action Plan
- Spring 2007
  - Begin work on implementing regulations
- Late 2008/early 2009
  - Board meetings to adopt regulations
- January 2010
  - Regulations enforceable

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## **Source and Sector Analysis— Statutory Directives**

- Not specifically referenced in statute

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## **Source and Sector Analysis— Administrative Status**

- Develop sector profiles
  - Non-regulatory

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## **Source and Sector Analysis— Staff Lead**

- Various Divisions, coordinated by Executive Office

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## **Source and Sector Analysis-- Milestones**

- Early 2007
  - Identify priority sectors
  - Work with PUC and CEC on electricity sector
- April 2007
  - Status workshop
- Spring/summer 2007-2008
  - First cut sector profiles

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## Source and Sector Analysis-- Milestones

- October 2007
  - Status workshop--summary of findings to date
- February 2008
  - Workshop for integration of findings into scoping plan

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## Emission Reduction Measures

- Direct reduction measures
- Market-based measures
- Incentives to reduce emissions
- Voluntary programs

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## **Emission Reduction Measures— Statutory Directives**

- Achieve maximum technologically feasible and cost-effective reductions
- Consider information from programs in other states and nations
- Equitable, minimize costs and maximize benefits

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## **Emission Reduction Measures— Statutory Directives**

- Do not disproportionately impact low income communities
- Do not interfere with efforts to achieve and maintain ambient air quality standards
- Consider cost-effectiveness, overall societal benefits
- Minimize administrative burden, leakage

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## **Emission Reduction Measures— Statutory Directives**

- Consider significance of sources and source categories
- Rely upon best available scientific and technical information
- Consult with PUC regarding electricity and natural gas providers
- Develop de minimis threshold below which reduction requirements do not apply

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## **Emission Reduction Measures— Statutory Directives**

- For market-based measures—
  - Ensure reductions are in addition to any reductions required by law or regulation
  - Consider potential for direct, indirect, cumulative and localized emission impacts
  - Prevent any increase in criteria or toxic pollutants
  - Maximize additional environmental and economic benefits

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## **Emission Reduction Measures— Administrative Status**

- Identification and evaluation of emission reduction measures
  - Non-regulatory
- Adoption of implementing regulations (after scoping plan)
  - Regulatory

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## **Emission Reduction Measures— Staff Lead**

- Direct reduction measures
  - Various Divisions
- Market-based measures
  - Executive Office, with support from Research Division

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## **Emission Reduction Measures —Milestones**

- January 2007
  - CalEPA Market Advisory Committee
  - Environmental Justice Advisory Committee
  - Economic and Technology Advancement Advisory Committee
- March 5-7, 2007
  - International symposium on near-term technology solutions

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## **Emission Reduction Measures —Milestones**

- Spring/summer 2007
  - Initial staff work
  - First identification of potential reduction measures based on information from source and sector analysis
- June 2007
  - CalEPA Market Advisory Committee recommendations

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## **Emission Reduction Measures —Milestones**

- July 2007
  - EJ and ETAAC Committees review Market Advisory Committee recommendations
  - ARB staff receives recommendations and begins staff review
- Summer/fall 2007
  - Further development of emission reduction measures and supply curves

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## **Emission Reduction Measures —Milestones**

- October 2007
  - Status workshop on staff findings to date
- Winter/spring 2007/2008
  - Further development of emission reduction supply curves
  - PUC/CEC provide initial recommendations on carbon cap for electricity sector

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## **Emission Reduction Measures —Milestones**

- December 2007
  - ETAAC reports on incentive programs to CalEPA Secretary
- February 2008
  - Workshop integrating individual tasks into scoping plan
- June 2008
  - CalEPA releases report on incentives

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## **Economic Analysis and Modeling— Statutory Directives**

- Minimize costs and maximize benefits for California's economy
- Evaluate total potential costs and benefits of scoping plan, using best available economic models
- Take into account potential for adverse effects on small businesses

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## **Economic Analysis and Modeling— Administrative Status**

- Economic analysis and modeling—
  - Non-regulatory

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## **Economic Analysis and Modeling— Staff Lead**

- Development of modeling tools for sector and macroeconomic analysis
  - Research Division
- Analysis of economic impact
  - Research Division

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## **Economic Analysis and Modeling— Milestones**

- April 2007
  - Status workshop
- October 2007
  - Workshop on modeling methodology for evaluation of scoping plan
- February 2008
  - Workshop to integrate findings into scoping plan

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## **Scoping Plan— Statutory Directives**

- Board to approve plan by January 1, 2009
- Consult with state agencies with jurisdiction over GHG sources, including PUC and CEC
- Identify and make recommendations on:
  - Direct emission reduction measures
  - Alternative compliance mechanisms
  - Market-based compliance mechanisms
  - Potential monetary and nonmonetary incentives

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## Scoping Plan— Statutory Directives

- Consider GHG reduction information from other states and nations
- Evaluate total costs and benefits
- Take into account relative source contribution and potential effect on small businesses; recommend de minimis threshold
- Conduct series of public workshops, including workshops in areas with minority populations, low-income populations, or both

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## Scoping Plan— Administrative Status

- Approval of scoping plan
  - Non-regulatory

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## Scoping Plan— Staff Lead

- Development of scoping plan
  - Executive Office, with support from Divisions

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## Scoping Plan— Milestones

- Spring 2007
  - Begin drafting plan elements
- April 2007
  - Status workshop
- Summer/fall 2007
  - Evaluate reduction measures
  - Initial analysis of costs and benefits
- October 2007
  - Status workshop on staff findings to date

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## Scoping Plan— Milestones

- Fall/winter 2007-2008
  - Incorporate other task findings into scoping plan
  - Review and incorporate CEC/PUC preliminary recommendations for electricity sector
  - Further evaluation of costs and benefits
- February 2008
  - Workshop to integrate individual task findings into scoping plan

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## Scoping Plan— Milestones

- Spring 2008
  - Preliminary scoping plan draft
  - Detailed evaluation of costs and benefits
- June 2008
  - Release draft plan for review and comment
- July-August 2008
  - Public workshops, including workshops in areas with minority and low-income residents and in areas with significant air pollution exposure

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## **Recognition of Voluntary Action— Statutory Directives**

- Identify opportunities for emission reductions from all verifiable and enforceable voluntary actions, including carbon sequestration projects and best management practices
- Ensure that entities that have voluntarily reduced emissions receive appropriate credit

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## **Recognition of Voluntary Action— Statutory Directives**

- Adopt methodologies for quantification of voluntary emission reductions
- Adopt regulations to verify and enforce any voluntary emission reductions to comply with GHG emission limits

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## **Recognition of Voluntary Action— Administrative Status**

- Adopt methodologies for quantification of voluntary emission reductions
  - Non-regulatory
- Adopt regulations to verify and enforce voluntary emission reductions
  - Regulatory
- Identify potential specific projects for voluntary reductions
  - Non-regulatory

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## **Recognition of Voluntary Action— Staff Lead**

- Planning and Technical Support Division, with support from other Divisions
  - Dale Shimp, Manager, ARB
  - Shelby Livingston, Staff, ARB

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## **Recognition of Voluntary Action— Milestones**

- April 2007
  - Initial workshop to begin discussions on framework for voluntary activities that will incorporate near- and longer-term actions to encourage voluntary emission reductions
- Summer-Fall 2007
  - Agreement on framework, begin work on near-term actions
  - Ongoing workshops and workgroup meetings
- February 2008
  - Workshop to integrate applicable longer-term actions into scoping plan

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## **Environmental Justice Advisory Committee**

- Members nominated by environmental justice and community groups
- Convene by July 1, 2007
- To advise ARB on scoping plan and other pertinent matters
- On agenda for January 25, 2007 Board meeting
- Staff expects Committee to meet quarterly
- Staff contact—Dale Shimp

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## **Economic and Technology Advancement Advisory Committee**

- Advise ARB on technology research and development opportunities
- Representation from stakeholder groups, academia, technology experts
- On agenda for January 25, 2007 Board meeting
- Staff expects Committee to meet quarterly
- Staff contact—Michael FitzGibbon

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## **Planning For Workgroups**

- ARB will be forming workgroups
  - Inventory, reporting, sector profiles and more
  - Channel information to ARB and other agencies
- Workgroup topics TBD
  - We are open to suggestions
- Signup information will be posted on ARB's climate webpage
  - Sign up thru e-mail link on the page

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## Contacts and More Information

- ARB Climate Change Web Site
  - <http://www.arb.ca.gov/cc/cc.htm>
  - Stay informed - sign up for the list serve
- California Climate Change Portal
  - <http://climatechange.ca.gov/>
- Chuck Shulock (916) 322-6964  
[cshulock@arb.ca.gov](mailto:cshulock@arb.ca.gov)
- Richard Varenchik (626) 575-6730  
[rvarench@arb.ca.gov](mailto:rvarench@arb.ca.gov)
- James Goldstene (916) 445-8449  
[jgoldste@arb.ca.gov](mailto:jgoldste@arb.ca.gov)

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## Comments and Questions

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