



Session 3

**Overview of
Compliance Mechanisms
for Emissions Reductions**

Email questions to CCPlan@arb.ca.gov

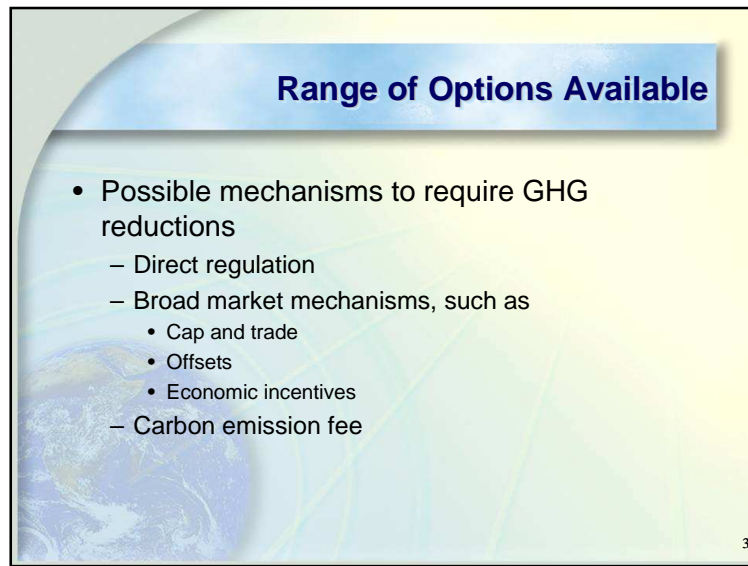
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Overview

- Complementary approaches will be studied
 - Direct regulations on sources or regulated entities
 - Broader sector- or economy-wide regulatory approaches which use market mechanisms
- Direct regulations may incorporate compliance flexibility with market components
- Market mechanisms are defined by clear regulations to operate efficiently and to ensure real reductions

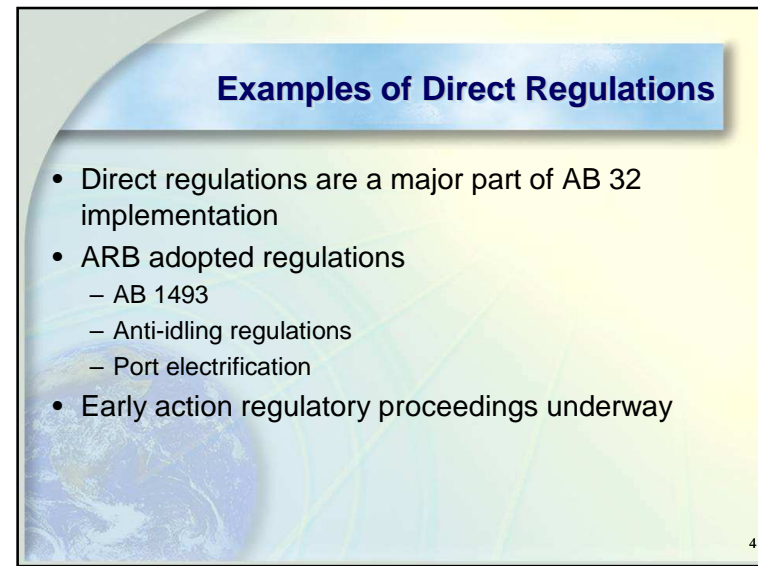
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Range of Options Available

- Possible mechanisms to require GHG reductions
 - Direct regulation
 - Broad market mechanisms, such as
 - Cap and trade
 - Offsets
 - Economic incentives
 - Carbon emission fee

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Examples of Direct Regulations

- Direct regulations are a major part of AB 32 implementation
- ARB adopted regulations
 - AB 1493
 - Anti-idling regulations
 - Port electrification
- Early action regulatory proceedings underway

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Additional Regulations

- California energy related programs contribute to GHG emission reductions
 - Renewable Portfolio Standards
 - Building standards, utility energy efficiency programs
 - Other State agency regulations
- Climate Action Team (CAT) Subgroups and associated sector teams are evaluating possible measures that might be basis for source or sector regulations

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Market Mechanisms

- Market mechanisms may include:
 - A trading system with declining annual caps
 - Offsets used within a trading system or as an alternative compliance mechanism
 - Flexibility within direct regulatory approaches
- Well designed market mechanisms can:
 - Reduce overall compliance cost for a given level of emission reductions
 - Achieve emission reductions to promote the environmental objectives
- Degree of flexibility in how GHG emissions can be reduced is a key question in designing a market system

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AB 32 and Market Mechanisms

- Prior to inclusion of market mechanisms, ARB must:
 - Consider the potential for adverse emission impacts, including localized impacts
 - 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

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Experience with Emission Trading Systems

- **Acid Rain Trading Program**
 - 1990 Clean Air Act Amendments: Reduce sulfur dioxide emissions from power plants
 - Benefits outweighed costs; costs much lower than projected for command-and-control approach
 - No hotspot creation
- **NO_x Budget Program**
 - Ozone Transport Commission to reduce NO_x emissions from power plants and industrial boilers in the Northeast and Mid-Atlantic
 - Three phases of an increasingly stringent cap-and-trade program

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Experience with Emission Trading Systems

- **Regional Clean Air Incentives Market (RECLAIM)**
 - Administered by the South Coast Air Quality Management District
 - Covers NO_x and SO₂ at over 350 sources
 - Lessons learned on inter-temporal trading, allocation, offsets
- **European Union Emissions Trading Scheme (EU ETS)**
 - Limits CO₂ emissions from approximately 12,000 facilities in the 25+ EU member states, half the EU's CO₂ emissions
 - Launched in 2005; covers power plants and five major industrial sectors (including oil, iron and steel, cement, glass, and pulp and paper)
 - Lessons learned on need for good emissions data for setting the cap and on allocation methodology

Experience with Emission Trading Systems

- **Regional Greenhouse Gas Initiative (RGGI)**
 - Regional collaboration between Northeast and Mid-Atlantic states
 - Covers CO₂ emissions from the electricity sector
 - Planned start date: 2009
 - Member states have announced intentions to auction large percentages of allowances

Lessons Learned

- Previous trading systems have had mixed results in terms of economic efficiency and emission reductions
- California can build on this experience in designing a possible trading system to adopt elements that have worked and avoid elements that have not worked

Complementary Mechanisms

- If California adopts a cap and trade system, it will augment existing tools that are achieving GHG reduction results:
 - Energy efficiency programs have achieved significant results in California since the 1970's, and will be intensified to achieve further GHG reductions
 - Technology-based programs on mobile sources and fuels, including the AB 1493 regulations on auto GHG emissions and the Low Carbon Fuel Standard
 - Many other existing approaches to emission reductions will continue

