



Woody Biomass & Cap and Trade in California

Annual Meeting of the California Biomass Collaborative
University of California, Davis
April 5, 2011

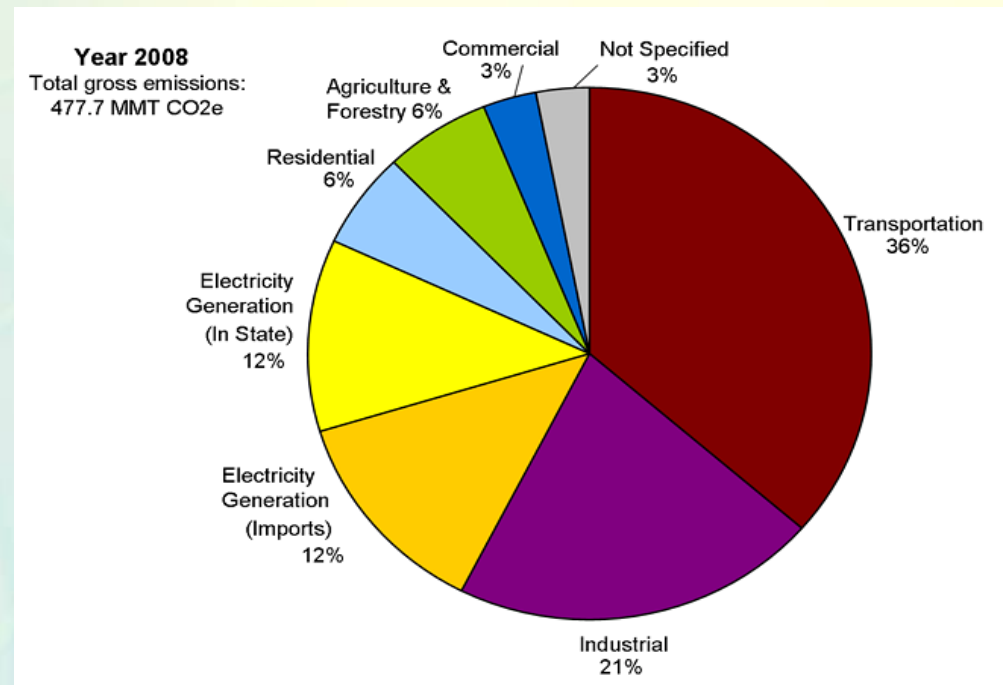
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California Policy Context

- AB 32
- Low Carbon Fuel Standard
- Renewable Electricity/Portfolio Standard
- Western Climate Initiative
- Distributed Generation Targets
- Bioenergy Action Plan
- And others...

- Reduce GHGs to 1990 levels in 2020
- Economy-wide
- First such program in U.S.
- Long-term goal: 80% reduction by 2050



Source: ARB 2000-2008 emission inventory

Scoping Plan

- Strategy for reaching 2020 target
 - Market mechanisms
 - Direct regulation
 - Incentives
 - Voluntary programs
- Aims to spur innovation and growth

Progress

- 15 regulations adopted
- Updated GHG inventory
 - Reflect economic downturn
- Evaluate need for additional measures
 - Reflect changing science & information
 - Reflect technology and market conditions
 - Coordinate with WCI, EIA, others

Specific GHG Measures

- Pavley Clean Car
- LCFS
- Ship electrification
- Port trucks
- Consumer products
- Landfill methane control
- Industrial audits
- Efficient trucks
- **Cap and trade**
- RES/RPS
- Regional transportation targets
- Car air conditioners
- Sulfur hexafluoride
- Semiconductor manufacturing
- Tire inflation

Cap-and-Trade Regulation

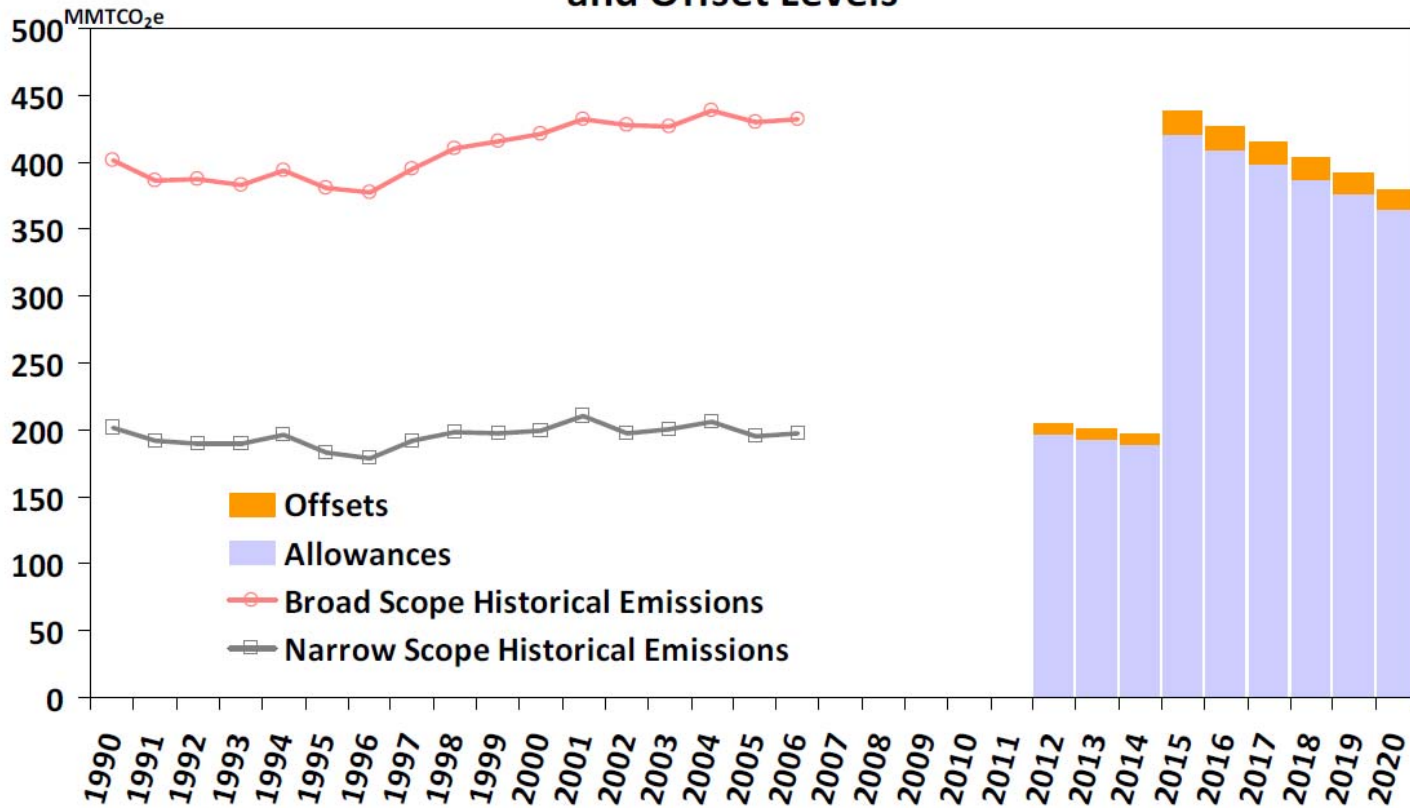
- Firm, declining limit on GHG emissions
 - To meet 2020 goal
 - CO₂, CH₄, N₂O, HFCs, PFCs, SF₆ and NF₃
- Establishes a price signal
 - Drives investment and innovation
 - Trading maximizes cost effectiveness
 - Reduces overall cost of compliance
- Sets us on a path to meet 2050 goal

The “Cap”

- Cap begins in 2012
 - Large industrial sources, electricity sector
- Cap expands in 2015
 - Transportation fuel, natural gas, and propane suppliers
- Gradually declines over time
- Covers 85% of California’s emissions

Illustration of the Cap

Historical Emission Trends Relative to Example Allowance and Offset Levels



The “Trade”

- Allowance → emission permit
 - Both freely distributed and auctioned
 - “Soft start” provides transition into program
- Offset → reduction not covered by cap
 - Limited number (~40 MMT through 2014)
 - Includes forestry
- Potential linkage with other programs
- Cost-containment mechanisms

Offsets

- Criteria
 - Real
 - Additional
 - Quantifiable
 - Permanent
 - Verifiable
 - Enforceable
- Approved protocols
 - Forest
 - Urban forests
 - Livestock manure digesters
 - Ozone depleting substances
- Additional protocols to be considered

Next Steps

- **Flesh out additional program details**
 - Allocation benchmarks
 - Market tracking system
 - Market testing
- **Develop additional offset protocols**
- **Prepare for program launch Jan 1, 2012**

Woody Biomass & The Cap

- Combustion of biomass-derived fuels
 - Emissions must be reported
 - Zero compliance obligation under the cap
- Rationale
 - Consistent with U.S. EPA framework
 - Voluntary participation in offset market reduces scope and increases accountability

Woody Biomass & The Trade

- U.S. Forest Projects Protocol
 - Increasing sequestered carbon or avoiding GHG emissions
 - Reforestation
 - Improved forest management
 - Avoided conversion within the U.S.
 - Forest Buffer Account covers unintentional reversals
 - Potentially 10 MMT through 2014

Woody Biomass Issues

- Optimal use of limited resource
- Common power plant siting issues
 - Air quality permits, grid interconnection
- Coordination among agencies & policies
 - Refine definitions
- Developing robust, inclusive GHG policy

More Information and Assistance

ARB's Climate Change Website
www.arb.ca.gov/climatechange

CA's Climate Change Website
www.climatechange.ca.gov/

ARB's Clean Energy Website
www.arb.ca.gov/cc/cleanenergy/cleanenergy.htm

ARB's Cap-and-Trade Rulemaking Website
www.arb.ca.gov/cc/capandtrade/capandtrade.htm

Western Climate Initiative
<http://www.westernclimateinitiative.org/>

Resources for Gov't, Small Business, Residents, Schools
www.coolcalifornia.org

