

Greenhouse Gases and Mandatory Reporting

December 11, 2008

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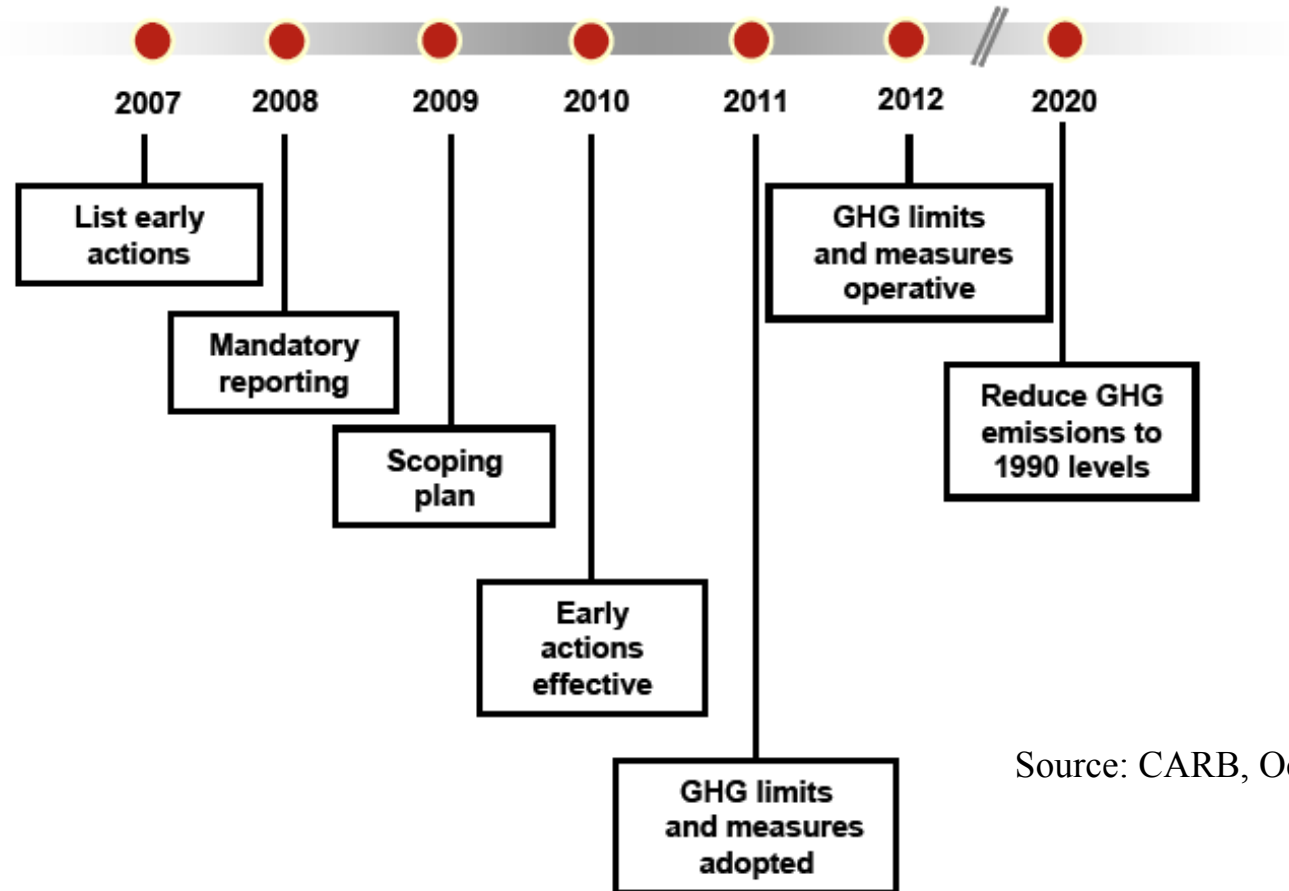
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AB32 Requires the CA Air Resources Board (CARB) to:

- Establish a statewide GHG Emissions Cap for 2020, based on 1990 emissions by January 1, 2008
- Adopt mandatory Reporting Rules for significant sources of greenhouse gases by January 1, 2008

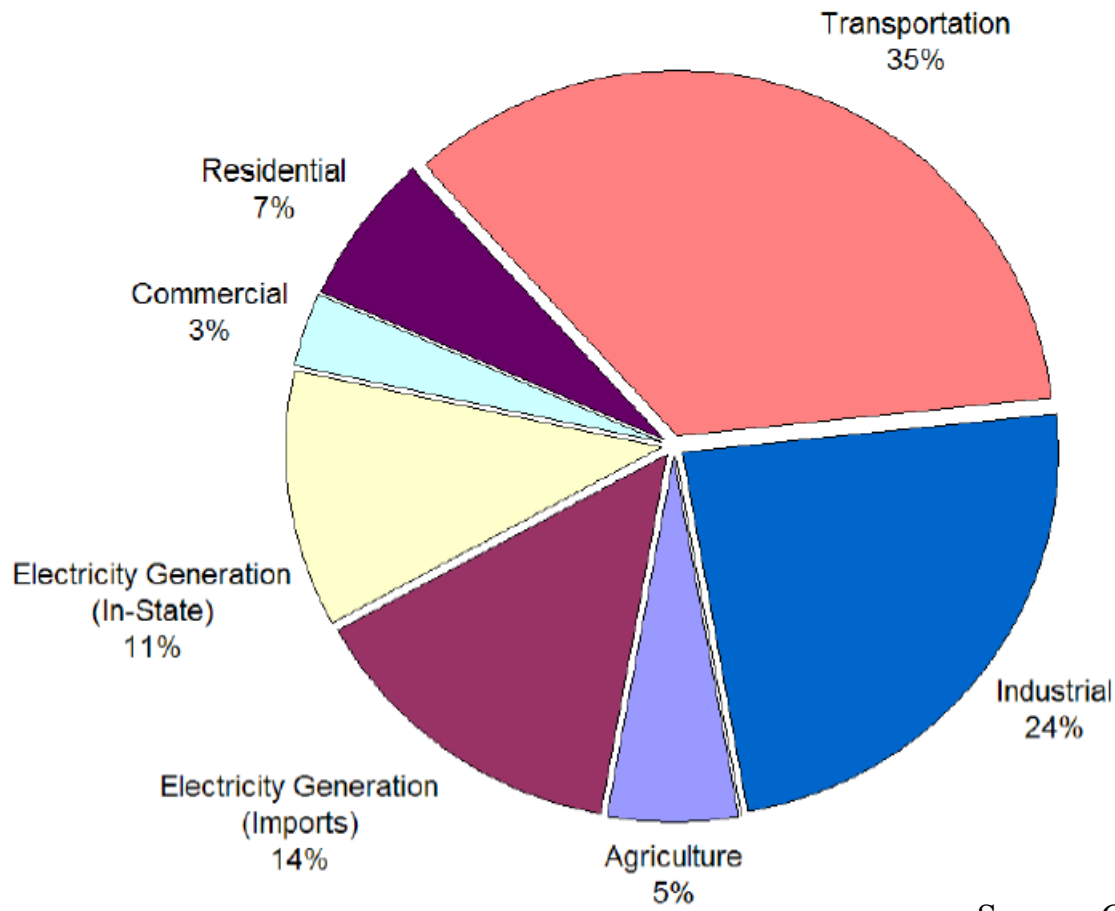
AB 32's Schedule

Figure 1. Comprehensive Multiyear Program Established by AB 32



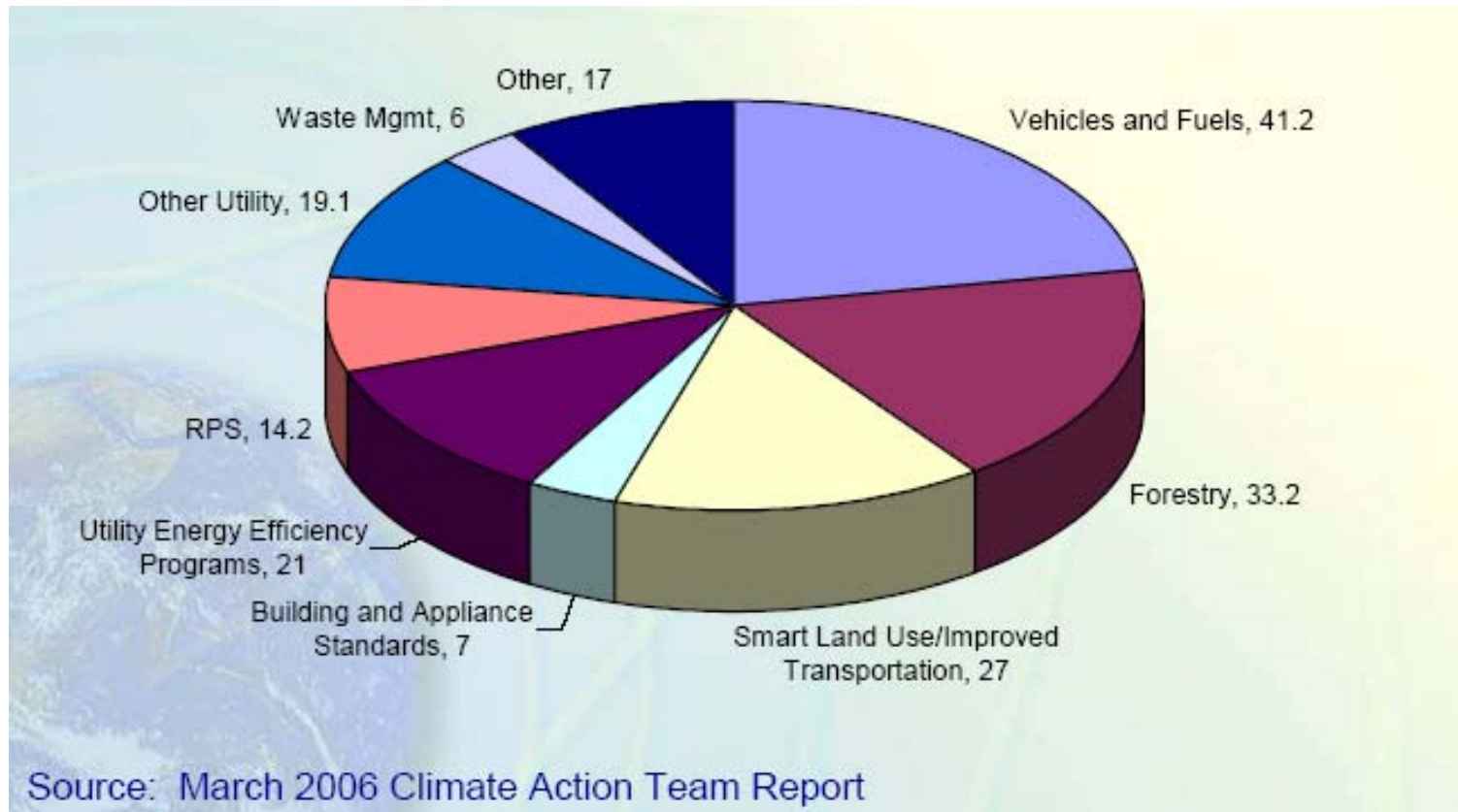
Source: CARB, October 2007

CA's GHG Emissions, 1990 Inventory (427 MMTCO₂e Net Emissions)



Source: CARB 11/16/2007 Staff Report

Sources of Potential Reductions



From: CARB Briefing, 1/07 AB32 Workshop
(RPS = Renewable Portfolio Standard, CPUC)

Mandatory Reporting Principles

- Facility-based reporting:
 - Cement Plants, Power Plants, Cogeneration, Refineries, Hydrogen Plants, Large Combustion
- Broader requirements for Electric Power Sector:
 - Retail Providers, Marketers
- Third Party Verification:
 - Annual or triennial as specified

Mandatory Reporting Principles

- Report specified stationary combustion, process, and fugitive emissions
- Report fuel use and indirect energy use:
 - Electricity,
 - Steam, etc.
- Electricity transactions in power sector
- Six Kyoto gases as required
- Fuel testing, default factors, emissions monitoring specified by sector and process

Mandatory Reporting Summary

- Reporting begins in 2009 (for 2008 emission year)
- Verification begins in 2010
- First reports can use best available emissions information
- 2010 (i.e., 2009 reporting year) and future reports must use methods specified in regulation

Start Planning Now!

Process to Ensure Available Verifiers

- Third-party verifiers are consistent with existing GHG programs to ensure data integrity
- Welcome air districts and private consultants to act as verifiers
- Provides larger pool of qualified verifiers
- Provide choice to operators



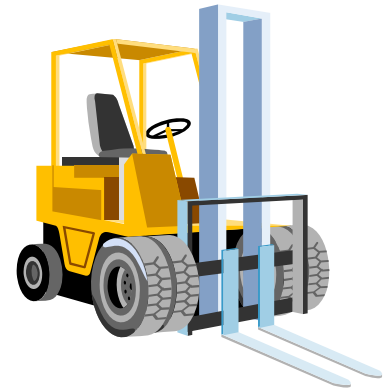
De Minimus Sources

- Proposal allows designation of small discrete sources as de minimis
- Up to 3 percent of facility CO₂e emissions, not to exceed 20,000 MT emissions
- Emissions are still reported but may be estimated through simpler methods



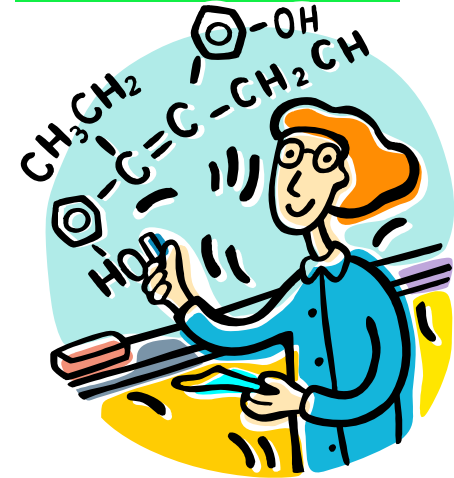
Mobile Sources

- Operator may elect to include GHG emissions from mobile combustion
- Mobile source reporting and reduction needs will be reviewed in context of scoping plan



Default Factors

- Appendix A provides default factors where use is specified
- Default factors are not always allowed!
- Option to develop source-specific emission factors



Regulation Schedule

- Adoption with changes proposed, December 6th 2007
- 15-Day notice with changes
- Begin with sources contributing the most to statewide emissions
- Account for all electricity consumed, including imports
- Use CCAR protocols as appropriate

Reporting Process

■ Reporting

- Operator submits required data to ARB each year by reporting deadline

■ Verification

- Verification team conducts verification when required and submits:
 - Detailed verification report to operator
 - Verification opinion to operator and ARB by verification deadline

Regulation Organization

- Applicability – Who has to report
- Subarticle 1–General Requirements
 - Definitions
 - General reporting requirements
 - Reporting and verification schedule
 - Record keeping, confidentiality, enforcement
- Subarticle 2 - Sector Specific Requirements
 - Cement, electric generating, retail providers, cogeneration, refineries, hydrogen plants, large stationary combustion sources

Regulation Organization (Cont)

- Subarticle 3– Calculation Methods for Multiple Sectors
 - CO₂ emissions from combustion using emission factors, heat content, carbon content, CEMS, etc.
 - CH₄ and N₂O emissions
 - Indirect energy use – Electricity, Cooling, Steam, etc.
- Subarticle 4 – Verification Requirements
- Appendix – Compendium of Emission Factors for reporting

General Requirements

- Annual reporting for each facility or entity subject to regulation
- The operator - party with “operational control” - has reporting responsibility
- Report emissions for specified facility sources and gases by fuel type
 - Additional data as specified

Applicability

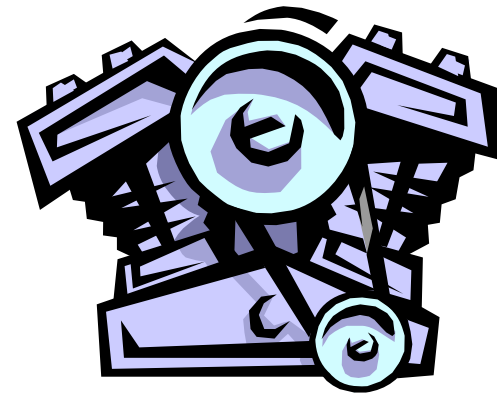
- Cement plants
- Oil refineries $\geq 25,000$ MT CO₂/yr, combustion and process emissions
- Hydrogen plants $\geq 25,000$ MT CO₂/yr
- Electric generating facilities* and electric retail providers
- Cogeneration facilities*
- Stationary combustion sources emitting $\geq 25,000$ MT CO₂/yr

**94% of
point
source
CO₂
emissions**

* ≥ 1 MW and emit $\geq 2,500$ Metric Tons (MT) CO₂

Reporting Not Required For

- Reporting not required for backup or emergency generators
 - As designated in Air District permit
- Reporting not required for “portable equipment”
 - As defined in CA Code of Regulations



Reporting Schedule

- Reporting required by April 1 for general stationary combustion, electric generating and cogeneration facilities (Verification complete by October 1)
- Reporting required by June 1 for retail providers, marketers, oil and gas producers, cement plants, refineries, etc. (Verification complete by December 1)

...but review the rule specifically for your facility,
and look for changes!

Additional Reporting Methods

- Fuel analysis data capture, measurement requirements
- Choose fuel-based or CEMS method and stay with it
- New CEMS for reporting to be operational by Jan 2011
- Options to develop source-specific emission factors under supervision of air districts or ARB
 - CH₄ and N₂O for all facilities; CO₂ for biomass, municipal solid waste, geothermal

Appendix A: EFs and Methods

- Unit conversions
- Global warming potentials
- Method for approximating emissions based on amount of fuel used
- Emission Factors
- EPA method for determining emissions of high global warming potential compounds

Example CO₂ Emission Calculation

N.G. Fuel Combustion	Total	CO₂e Emissions* Metric Tons
Natural Gas (MMscf)	450	
Natural Gas** (MMBtu)	450,000	23,873
Grand Total Emissions		23,873 MT

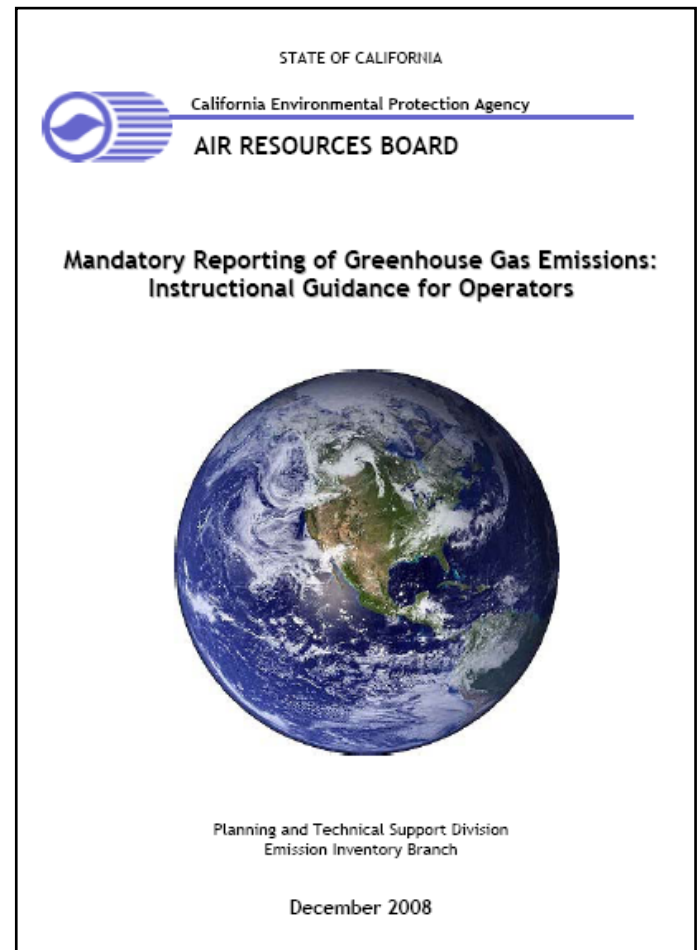
* Emission Factor: 53.02 Kg CO₂/MMBtu Natural Gas Combustion

** Assumes Higher Heating Value (HHV) = 1,000Btu/scf

Instructional Guidance for Operators

■ New Guidance Available (12/2/08):

- <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-guid/ghg-rep-guid.htm>



Resources and More Information

- CARB: <http://www.arb.ca.gov/cc/cc.htm>
- CARB Mandatory Reporting:
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>
- Calif. Climate Action Registry:
<http://www.climateregistry.org/>
- CARB/Mobil Sources:
<http://www.arb.ca.gov/cc/ccms/ccms.htm>