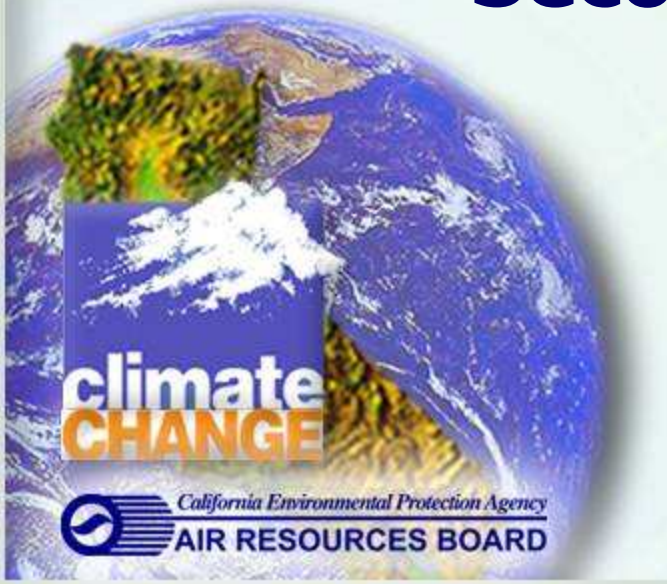
Greenhouse Gas Mandatory Emissions Reporting

Power/Utilities Sector
Second Technical Discussion



May 8, 2007
El Monte

Discussion Topics

- Updates on Prior Meetings
- Early Thinking on Characterizing Unspecified Purchases
- Overview of Proposed Data to be Reported
- CEC Quarterly Fuels and Energy Report
- Who Would Report
- Emission Methodologies
- Emissions From Known Power Purchases
- State Inventory Issues
- Next Meetings

Summary of Technical Discussion April 10, 2007

- Who Should Report to ARB
- Use of Fuel-Based Methodology
- Transmission and Distribution Losses
- Emission Formulas for SO2 Scrubbers and Coal Handling and Storage
- Emission Factors for Power Purchases
- Cogeneration Emissions
- Small Sources and Indirect Sources

Expected Inputs from CPUC/CEC Process

Need for standardized conventions to characterize power purchases.

A. Known Facility (i.e., QFs or Merchant)

B. Known Supplier/Unknown Facility
   Including Utilities, Federal agency purchases, and Independent Power Producers

C. Unknown Suppliers
   Includes unspecified CAISO spot market and market brokers

ISSUE: How to separate CA emissions from imported power for inventory purposes.

ARB Mandatory Reporting Interface with CCAR and CEC/CPUC

CCAR Power/Utilities Protocol
Voluntary GHG reporting
Entity Level Carbon Footprint

Provides CARB with methodologies to estimate GHGs from combustion sources, processes, fugitive emissions, indirect emissions, etc.

CPUC/CEC Phase 2 Proceedings
Implementation of Load-Based GHG Emissions Cap Program for the Electric Sector

Provides CARB with characterization of emissions associated with purchases from unknown facilities or unknown suppliers

CARB Mandatory Reporting of GHGs
AB32 Requires Load-Based Reporting

Reporting must support inventory development, sector analysis and strategy development

CPUC/CEC Activities

- Update on Workshops held
  April 12-13 and April 19-20

- Early Thinking on How to Characterize Unspecified Power Purchases

Overview of Proposed Data for Mandatory Reporting

See ARB Handout

Data Already Reported

CEC Overview of Quarterly

Fuels and Energy Reports and Others

Who Would Report (Draft Approach)

- Generating Facilities by Power Unit $\geq$ 1 MW (Fossil Fuels, Biomass/Biogas, Geothermal)
- No Reporting Directly to ARB by Zero-Emission Facilities--hydro, wind, nuclear (ARB gets data from CEC by Power Unit)
- All Retail Service Providers (RSP):

  Would report all fuel types including zero-emission power (ARB will review CEC and CCAR Reporting Formats)

Methods to Discuss Today

- Stationary Combustion
- Fugitive SF6
- Fugitive CO2 from Geothermal
- Air Conditioning/Refrigeration
- Fire Suppression Equipment

Draft Guiding Concepts For Stationary Combustion

- Use Single Emissions Methodology by Fuel Type so that a "ton is a ton"
- Achieve Highest Level of Accuracy Balanced Against Resource Burden

Proposed Methods

Option 1

- Fuel-Based Method

  Heat Content would be reported for all to determine efficiencies

  Carbon Content for specified fuels

Option 2

- CEMS Method

Stationary Combustion Natural Gas Method

Draft Approach

For Natural Gas Facilities that already report to U.S. EPA under Part 75

- Use Part 75 Appendix G Fuel-Based Method

For Natural Gas Facilities NOT Reporting to U. S. EPA under Part 75

- Use Measured Heat Content Methodology in CCAR Protocol (can measure heat content or get from supplier)

Stationary Combustion Coal Method

Draft Approach

For Coal Facilities that already report to U.S. EPA under Part 75

- Use Part 75 Appendix G Fuel-Based Method

  (Issues: Costs and Automated Software)

For Coal Facilities NOT Reporting to U. S. EPA under Part 75

- Measure Carbon Content and Heat Content

  (Issues: Costs and Frequency)

Stationary Combustion Other Fuels

- Landfill Gas
- Biomass
- Refinery Gas
- Coke
- Others

N20 and CH4 Emissions From Stationary Combustion

Draft Approach:

Use default emission factors. CCAR has provided factors based on fuel type, combustion technology, and equipment configuration.

Fugitive SF6 From Transmission and Distribution

Draft Approach is CCAR Mass Balance Methodology (Also U.S. EPA)

1. Determine Change in SF6 Inventory
2. Determine Purchases/Acquisitions of SF6
3. Determine Sales/Disbursements of SF6
4. Determine the Net Increase in Total Nameplate Capacity of the Equipment
5. Determine Total Annual Emissions (1+2-3-4)
6. Convert SF6 Emissions to CO2 equivalents

Fugitive CO2 From Geothermal

Draft Approach:

Rely on existing CEMS methodologies being used by geothermal facilities.

Issue: Do all geothermal facilities have CEMS?

Cooling and Fire Suppression

Draft Approach:

No mandatory reporting of GHGs for the power sector from

- Air Conditioning/Refrigeration
- Fire Suppression Equipment

Issue: Are there cooling units used in power production that use HFCs? Do such units require recharge?

Emissions From Known Purchases

- Rely on Emissions Reported by Individual Facilities—No default factors
- Should ARB serve as a repository for generator data for use by utilities/RSPs?

Upcoming Dates

Power/Utilities Technical Discussions

May 29, 2007 (Sacramento)

June 21, 2007 (Hold the date)

Mandatory Reporting Workshop

May 23, 2007

July 26, 2007

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