



Bay Area Clean Water Agencies

A Joint Powers Public Agency

Leading the Way to Protect our Bay



CH2MHILL

AB 32 Mandatory Reporting of Greenhouse Gases for POTWs

*BACWA Annual Meeting
San Leandro, CA*

Jim Sandoval/CH2M HILL

January 28, 2010

Agenda

- Goal of AB 32
- Why Implement a GHG Inventory?
- California Mandatory Reporting Requirements
- Verification Requirements
- Schedule Requirements
- Proposed Changes to Reporting Regulation
- USEPA Mandatory Reporting Rule
- BACWA Workshop Notice
- Q&A

Agenda

- **Goal of AB 32**

AB 32 - 2006 Global Warming Solutions Act

- **Reduce statewide greenhouse gas (GHG) emissions to 1990 levels by 2020** (approximately 30% reduction)
- Requires Air Resources Board to develop regulations on:
 - GHG Mandatory Reporting
 - Specific GHG emission-reduction requirements by 2012 (e.g. cap & trade)
- **Reduce statewide GHG emissions to 80% of 1990 levels by 2050**

Agenda

- **Why Implement a GHG Inventory?**

Why implement a GHG inventory?

- **Mandatory Reporting of GHG Emissions**
 - Regulatory driver
- **Cap & Trade**
 - Understand potential obligation to being “capped”
 - Ability to track emissions reductions for future cap & trade carbon offset credits
- **Environmental Stewardship**
 - Knowledge of a facility’s GHG emissions footprint & where produced in the processes
 - Preparing for future climate change regulations
 - Triple Bottom Line – fiscal, environmental, societal/political drivers
 - Expectations of community stakeholders

Agenda

- **California Mandatory Reporting Requirements**

Requirements that Impact POTWs

- **General Stationary Combustion (GSC)** - the combustion of fossil fuels AND biomass-derived fuels
 - Facilities that produce **$\geq 25,000$ metric-tons- CO_2/yr**
 - GSC sources: stationary turbines, boilers, internal combustion engines, flares, etc.
- **Electricity Generation and Cogeneration**
 - **≥ 1 MW** of total nameplate generating capacity, AND
 - **$\geq 2,500$ metric-tons- CO_2/yr** from electricity-generating activities

Approximate CO₂ Emissions by Fuel Type

Fuel Amounts Resulting in 25,000, 10,000, or 2,500 MT CO₂ by Fuel Type

Fuel Type	Fuel Units	Kg CO ₂ /Unit	Amount of fuel to produce 25,000 MT CO ₂	Amount of fuel to produce 10,000 MT CO ₂	Amount of fuel to produce 2,500 MT CO ₂
Natural Gas (unspecified) ¹	scf	0.0544	459,000,000	184,000,000	45,900,000
	MMBtu	53.02	471,500	188,600	47,150
Digester Gas ^{2,3}	scf	0.0438	571,000,000	228,000,000	57,100,000
	MMBtu	52.07	480,000	192,000	48,000
Landfill Gas ^{1,3}	scf	0.025	916,000,000	366,500,000	91,600,000
	MMBtu	52.03	480,500	192,000	48,050
Diesel/Distillate Fuel (#1, 2, & 4) ¹	Gallons	10.14	2,465,000	986,000	246,500
Motor Gasoline ³	Gallons	8.80	2,841,000	1,136,000	284,100
Sludge (dry) ^{1,4}	MMBtu	116	215,500	86,200	21,550

¹ (California Code of Regulations)

² (USEPA, 2009)

³ Does not include pass-through CO₂ emissions.

⁴ Dewatered digested Biosolids = 5,300 Btu/lb._{dry solids}; Chemical Precipitated Biosolids = 7,500 Btu/lb._{dry solids}; Dewatered Raw Biosolids = 10,300 Btu/lb._{dry solids};

http://www.biosolids.org/ems_main.asp?sectionid=48&pageid=189&pagename=Manual%20of%20Good%25 Chapter 15, Table 15.2 (National Biosolids Partnership, et al, January 2005)

CARB Web-based Reporting Tool

- Required method to submit emissions data to CARB
- Provides public access to reported GHG information
- Signature certification starts 3rd party verification process
- Verification opinion posted to tool
- Tutorial and actual tool available at <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-tool.htm>

Mandatory Reporting Resources

- CARB Mandatory Reporting Portal:
<http://www.arb.ca.gov/cc/ccei.htm>
- REGULATION: *Subchapter 10, Article 2, sections 95100 to 95133, title 17, California Code of Regulations*

BACWA Members Reporting to CARB (2008 Emissions)

Utility	Reporting Sector	CO2 Equivalent (CO2e) Emissions (metric tons)	
		CO2e Non-biomass	CO2e Biomass Only
CCCSD	GSC; Cogen; Electricity	25,201	41,539
San Jose/Santa Clara WPCP	GSC; Electricity	(72,906) 17,000	56,000
City Of Santa Rosa Wastewater	Other; Cogen	3,910	7,570
Union Sanitary District	Other; Cogen	3	7,091
EBMUD	GSC	317	64,373
Sunnyvale WPCP	Other; Electricity	629	11,987

Notes:

- GSC: General Stationary Combustion
- Cogen: Cogeneration Facility
- Electricity: Electricity Generation

Other CA POTWs

- Orange County Sanitation District - Plant 1
- Orange County Sanitation District - Plant 2
- City of San Diego, Metro Wastewater Dept, Point Loma Treatment Plant
- Fresno/Clovis Wastewater Reclamation Facility
- Sacramento Municipal Utility District (SMUD)
 - SPA, Carson Ice CG, McClellan, SCA, Cosumnes Power Plant
- South Orange County Wastewater Authority
- Oxnard Wastewater Treatment Plant
- City of Santa Cruz Wastewater Treatment
- Victorville Municipal - Foxborough
- Victorville Municipal - Plant No. 2-SCLA
- Joint Water Pollution Control Plant, LA County Sanitation Districts
- Monterey Regional Water Pollution Control Agency
- Encina Water Pollution Control Facility

Agenda

- Verification Requirements

Third Party Verification

- **Verification** -- Facilities that qualify for reporting are required to have a certified third party verify that the emissions monitoring and reporting complies with the requirements
 - Optional for 2008 emissions reported in 2009
 - **Required for 2009 emissions reported in 2010**
 - Verification opinion due 6 months after report submittal
 - CARB's conflict of interest approval process must be completed and approved before starting verification process
 - **Start the verifier COI & hiring process now!**

Agenda

- Schedule Requirements

Mandatory Reporting Schedule for POTWs

- Reporting 2009 emissions in 2010
- **Reports due April 1, 2010**
 - 2010 reports must meet full requirements of regulation
 - complete implementation of measurement program should have begun January 1, 2009
 - need monthly testing of higher heating value for 2009 digester gas
- **Verification opinion due October 1, 2010**
- Schedule is slightly different for other industries

Agenda

- Proposed Changes to Reporting Regulation

Key Proposed Reporting Regulation Modifications for 2011

- Lowering the reporting threshold to 10,000 metric tons CO_{2e}, rather than the current 25,000 metric tons CO₂
- Alignment with USEPA mandatory reporting requirements
- Alignment with California Cap & Trade Program
- Annual verification of emissions > 25,000 MT CO_{2e} (cap & trade threshold)
 - Third-party verification not required for facilities below the cap threshold

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- USEPA Mandatory Reporting Rule

USEPA Mandatory Reporting Rule

- Facilities that produce general stationary combustion \geq **25,000 metric-tons-CO₂-equiv/yr**
- POTWs excluded unless they meet this threshold
 - i.e., no electricity generation or cogeneration rules like California
- Threshold excludes CO₂ resulting from the combustion of biomass, but it includes CH₄ and N₂O emissions
- For details, go to <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

Agenda

- BACWA Workshop Notice

BACWA Workshop - Mandatory Reporting of GHGs

- Date: February 17, 2010, 9 am – 1 pm
- Location: EBMUD headquarters

BACWA Workshop - Mandatory Reporting of GHGs

- **I. Introduction – 9 am – 10 am**
 - Regulatory Overview
 - AB 32 Mandatory Reporting Program
 - USEPA Mandatory Reporting Rule
 - Requirements
 - General Stationary Combustion (GSC)
 - Electric Generation & Cogeneration
 - Data Requirements
 - Exceptions
 - Verification requirements
 - Schedule requirements
 - Proposed changes to the AB 32 program
- **II. Estimating GHG Emissions – Hands-On Training – 10 am – 12:00 pm**
 - Trainer will go through step-by-step calculations of a “case study” WWTP using a greenhouse gas (GHG) estimation tool (Excel-based)
 - participants have the option of bringing their own laptop to follow the trainer’s demonstration with a hands-on approach
 - the Excel tool will be distributed via email to participants ahead of time
- **III. Working Lunch Break – 12:00 pm – 1 pm**
 - Q&A session during lunch from 12 – 12:30 pm
 - Additional Q&A or hands-on training from 12:30 – 1pm

- QUESTIONS?



- Extra Slides

Reporting of Biogenic GHGs

- *“Biogenic origin” - recently contained in living organic matter*
- Biogenic CO₂ emissions from biomass-derived fuels
 - Required to be reported
 - Reported separately
 - Examples:
 - biogas (e.g. digester gas, landfill gas)
 - ethanol
 - biodiesel
 - biosolids
 - wood waste

Key Proposed Reporting Regulation Modifications for 2011

- Reporting threshold to be based on CO₂ equivalent emissions (CO_{2e}), rather than the current CO₂ only emissions.
- Lowering the reporting threshold to 10,000 metric tons CO_{2e}, rather than the current 25,000 metric tons CO₂
 - Third-party verification not required for facilities emitting between 10,000 MT and 25,000 MT CO_{2e}
- Annual verification of emissions > 25,000 MT CO_{2e} (cap & trade threshold)
 - Third-party verification not required for facilities below the cap threshold
- Possible changes to emissions distribution requirements for cogeneration
- Deadlines for reporting and verification may be changed to accommodate cap & trade
- Reduce duplicative reporting, CARB collaborating with USEPA to facilitate a single report that satisfies both state & federal mandatory reporting requirements
 - California's reporting requirements may change to be consistent federal rule
 - Some federal rule options may be limited to assure consistency and rigor for CA cap & trade program
- Additional miscellaneous changes to assure consistency and rigor needed to support the cap & trade