

Public Workshop to Discuss Proposed Regulation for Energy Efficiency and Co-Benefits Audits for Large Industrial Facilities

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California Environmental Protection Agency



Air Resources Board



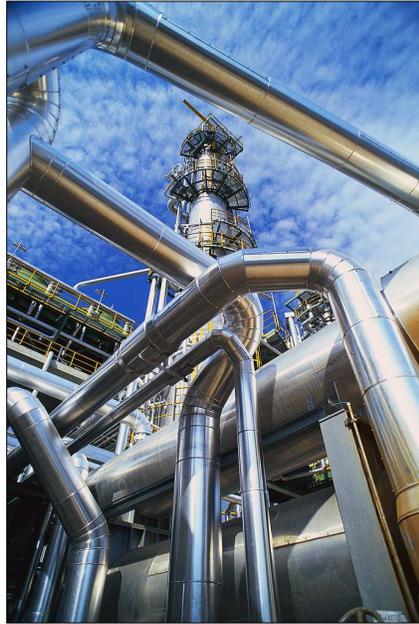
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Overview

- ◆ Background
- ◆ Draft Regulation
- ◆ Next Steps
- ◆ Issues
- ◆ Contacts



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Background

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Background

California Global Warming Solutions Act of 2006 (AB 32)

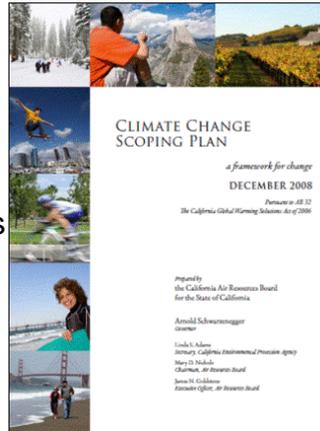
- ◆ Set the 2020 greenhouse gas (GHG) emissions reduction goals into law
- ◆ Directed the ARB to begin developing discrete early actions to reduce greenhouse gases
- ◆ Directed the ARB to prepare a Scoping Plan to identify how best to reach the 2020 limit



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AB 32 Scoping Plan Recommended Action

- ◆ Energy Efficiency and Co-Benefits Audits
 - who - large industrial sources, including power plants (emissions > 0.5 MMTCO₂E)
 - what - identify greenhouse gas emission reduction opportunities
 - other considerations - identify PM/NO_x/VOC emission reduction co-benefits



Purpose of the Proposed Regulation

- ◆ Develop comprehensive inventory of GHG emissions from large facilities
- ◆ Identify specific actions that could be taken to reduce GHG emissions
- ◆ For each specific action:
 - develop preliminary information on cost, cost effectiveness, timing, etc.
 - identify potential PM/NO_x/VOC co-benefits
- ◆ Use this information in designing approaches to maximize GHG and PM/NO_x/VOC reductions

About 70 facilities Subject to Regulation

Emissions > 0.5 MMT CO₂E

Also includes all transportation fuel refineries and cement plants

Source Category	Number of facilities	Total 2008 CO ₂ E Emissions for these facilities
Power Plants	27	34.9
Cogeneration Facilities	5	4.9
Refineries*	17	34.3
Oil & Gas Extraction	6	5.8
Cement Plants*	11	8.7
Hydrogen Plants	3	1.9
Mineral Plants	1	1.7
Totals	70	92

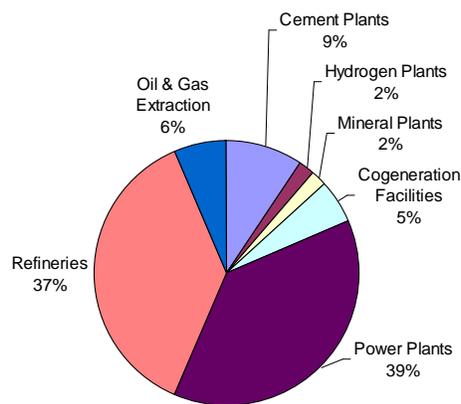
* Note: includes all refineries that produce transportation fuels and all cement plants

Based on 2008 GHG reporting data. Data for individual facilities may be accessed at:

http://www.arb.ca.gov/cc/reporting/ghg-rep/facility_summary.xls

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Distribution of Direct Emissions from these Facilities



Annual GHG Emissions of Largest Industrial Sources (2008 reporting data)

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Draft Regulation



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Draft Regulation

Draft Regulation



- ◆ Applicability
- ◆ Requirements
- ◆ Report Completeness
- ◆ Enforcement

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Applicability

- ◆ Facilities in California emitting ≥ 0.5 MMTCO₂E annually
 - based on 2010 reporting
 - direct emissions
 - stationary sources only
- ◆ Also include
 - all refineries producing transportation fuels released into commerce
 - all cement plants

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Three Elements to the Regulation Requirements

- ◆ Audit of facility energy consumption and emission sources
- ◆ Energy efficiency improvement analysis
- ◆ Report



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Energy and Emissions Audit Element

- ◆ Audit of energy usage and associated emissions
- ◆ Either facility-conducted or third-party audit
- ◆ Require use of ARB approved methods and emission factors
- ◆ Third-party verification of data using mandatory reporting data or local air district data

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Energy and Emissions Audit Element

Scope:

- ◆ Emission sources:
 - systems
 - processes
 - equipment
- ◆ Energy consumption by sources
 - fuels
 - electricity
- ◆ Emissions inventory by sources
 - GHG
 - PM/NOx/VOCs



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Energy and Emissions Audit Element

Data Required:

- ◆ Process flow diagrams
- ◆ Information on each source/process
 - equipment types
 - fuel and electricity consumed
 - CO₂E emissions
 - PM/NO_x/VOCs
- ◆ Copy of the verified greenhouse gas emissions data report



Energy and Emissions Audit Element

See Table 1 of Handout

Table 1 Facility Energy Consumption and Emissions Audit

Process/Key Activity		(2009) Annual Energy Use				Total Energy Use	CO ₂ E		Criteria Pollutants		TACs Potency Weighted
Name	Equip Types	Electricity	Fuel 1	Fuel 2	Fuel 3		Electricity Use	Fuel Combustion	PM	NO _x	
Primary kiln combustion	2.3										
Grinding	4.3, 4.4										
Facility Totals:											

Energy Efficiency Improvement Element

- ◆ Identify complete listing of specific actions that could be taken to reduce GHG emissions
- ◆ Develop preliminary information on cost, cost-effectiveness, timing, etc.
- ◆ Identify potential PM/NO_x/VOC co-benefits

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Energy Efficiency Improvement Element

- ◆ Complete assessment of all potential opportunities ranging from:
 - low-cost projects to those requiring large capital expenditures
 - implemented quickly to mid- and long-term projects
 - simple project to ones having extensive facility impacts

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Energy Efficiency Improvement Element

Data Required:

- ◆ Listing of efficiency improvement projects
 - type of project
 - equipment involved
- ◆ Status
 - implemented
 - scheduled
 - to be implemented
 - not to be implemented



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Energy Efficiency Improvement Element

Data Required:

- ◆ Project duration
- ◆ Preliminary costs
- ◆ Estimated energy savings
- ◆ Estimated emission reductions
- ◆ Simplified payback period
- ◆ Would CEQA be required?
- ◆ Would district permits be required?
- ◆ Other considerations

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Energy Efficiency Improvement Element

See Table 2 of Handout

Table 2 Energy Efficiency Improvement Opportunities

#	Category	Status	Est. Time / Project Start & End	Total Project Cost (\$)	Annual Energy Savings (MMBtu)	Annual Emissions Impacts			Annual Savings (\$)		Payback (Yrs)	Reg. Rqmts.		
						GHG Reductions (MT)	Criteria Pollutant Impacts (+/-) tpy		TACs Impacts (Potency Weighted) (+/-) tpy	Energy Expenditure		Other	CEQA	District Permits
							P	M						
1	2.3G	To be implemented	5 years / 11/2009 to 12/2014	1.7M	78,200	58			-2	230,000	5,000	7	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	4.3F	Not scheduled	6 months	900,000	23,500	20			0	80,000	0	11.3	<input type="checkbox"/>	<input type="checkbox"/>
3	4.4A	Implemented	2 months 2/2009 to 4/2009	25,000	5,000	5			0	20,000	3,000	1	<input type="checkbox"/>	<input type="checkbox"/>

De minimis Sources and Fuel Measurement Accuracy

- ◆ May omit one or more sources that collectively emit $\leq 3\%$ total facility emissions
- ◆ Fuel use accuracy $\pm 5\%$
 - consistent with Mandatory Reporting Regulation

Reporting Element

- ◆ Facility compiles information from Elements 1 and 2
- ◆ Reports submitted to ARB to include:
 - process flow diagrams
 - all data in Tables 1 and 2 in workshop handout
 - additional background information
 - detailed supporting data retained by facility, available to ARB upon request
- ◆ ARB actions:
 - review/evaluate reports
 - completeness determination
- ◆ ARB releases Summary Reports

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Reporting Element

Completeness Determination:

- ◆ ARB will evaluate report for completeness and accuracy
- ◆ Rely on:
 - ARB in-house expertise
 - comparison of reports from similar facilities

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Reporting Element

Actions on Incomplete Reports:

- ◆ ARB may require either:
 - correction of the report deficiencies and resubmittal, or
 - third party audit subject to ARB approval of auditor

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Reporting Element

Summary Reports:

- ◆ ARB will release Summary Reports for each Source Category
 - key data element – Tables 1 and 2
 - discussion of results
 - recommendations for further action

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Enforcement

- ◆ Violations:
 - failure to submit any report or to include required information
 - knowingly submitting false information

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Next Steps



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What is the regulatory schedule?

- ◆ Staff report early March 2010
- ◆ Board meeting April 2010
- ◆ Facilities submit Reports to ARB
July/August 2011
- ◆ Public release of ARB Summary
Report November/December 2011



Issues

- ◆ Third-party audits
- ◆ Immediate project implementation
- ◆ Confidentiality/Transparency
- ◆ De minimus
- ◆ Reporting of toxic air contaminants

Third-Party Audits

- ◆ Data required for Energy and Emissions Audit Element verifiable with ARB mandatory reporting or local air district data
- ◆ ARB can require third-party audit if Energy Efficiency Improvement Element is found unacceptable

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Issues with Requiring Third-Party Audits

- ◆ Staff believes allowing a self audit option will:
 - result in a better products because the individuals most knowledgeable about the equipment/process would conduct the assessments
 - reduce the time required for rulemaking and implementation by 1 to 2 years
 - reduce the cost to the regulated community by a factor of 2 to 3
 - reduce ARB staff costs

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Requiring Immediate Actions Based on Audit Results

Concerns:

- ◆ What should be action trigger (GHG, GHG+Criteria, GHG+Criteria+location)?
- ◆ How justify action trigger in advance of audit data?
- ◆ How can public meaningfully input on projects in advance of audit data?
- ◆ How can ARB meet APA and CEQA requirements without good idea of scope and cost of projects?
- ◆ Likely to end up requiring projects that would be done anyway.

Confidentiality/Transparency

- ◆ ARB Summary Report would include data tables (example Tables 1 and 2 in workshop handout)
- ◆ Provides critical data to the public
- ◆ Protects confidential and trade secret information

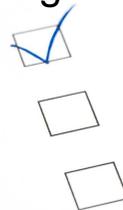
De minimus Levels

- ◆ Energy and Emissions Audit Element
 - may omit one or more sources that collectively emit $\leq 3\%$ total facility emissions
 - fuel use accuracy $\pm 5\%$
 - consistent with Mandatory Reporting Regulation
- ◆ Energy Efficiency Improvement Element
 - seeking input on de minimus levels

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Reporting of Toxic Air Contaminants

- ◆ Require reporting of key toxics
- ◆ Report as cancer potency weighted values
- ◆ ARB will provide additional guidance



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Webcast viewers may email questions and comments to:

sierrarm@calepa.ca.gov



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