

**PROPOSED REGULATION FOR ENERGY EFFICIENCY AND CO-BENEFITS
AUDITS OF LARGE INDUSTRIAL FACILITIES (November 2009)**

Adopt new Article 3 in Subchapter 10, sections 95134 to 95145, title 17, California Code of Regulations, to read as follows:

Article 3: Energy Efficiency and Co-Benefits Audits of Large Industrial Facilities

§ 95134. Purpose

The purpose of this article is to require energy efficiency audits of California's large industrial facilities in order to determine the potential for greenhouse gas emission reductions and other pollution reduction co-benefits.

NOTE: Authority Cited: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 41511, and 38530, Health and Safety Code.

§ 95135. Applicability

- (a) Except as provided in subsection (b), the regulation would apply to facilities in California meeting any of the following:
- (1) A facility with stationary sources that cumulatively produce 0.5 million metric tonnes of carbon dioxide (CO₂) equivalent (MMT_{CO₂E}) or more annually, including the emissions associated with the generation of electrical power used that is obtained from an outside source. This cumulative total is to be determined by one of the following methods:
 - a. reporting submitted in compliance with sections 95100 to 95133, title 17, California Code of Regulations, for the calendar year 2009;
 - b. 2004 or later Climate Change Action Registry reporting; or
 - c. most current data subject to Executive Officer approval;

For any of the above methods that do not include emissions from facility consumption of electricity from an outside source, those emissions must be calculated according to the method provided in § 95141 and added to the total;

- (2) Any petroleum refinery that produces petroleum-based transportation fuels that are released into commerce; or
- (3) Any cement plant.

- (b) The requirements of this section do not apply to combined cycle power plants built after 1995.
- (c) The Executive Officer may request a demonstration from any entity operating a facility to establish that a specified facility does not meet the applicability criteria specified in section 95135(a). Such demonstration shall be provided to the Executive Officer within 30 days of a written request received from the Executive Officer.

NOTE: Authority Cited: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 41511, and 38530, Health and Safety Code.

§ 95136. Definitions.

- (a) For the purposes of this article, the following definitions apply:
 - (1) “ARB” means the California Air Resources Board.
 - (2) “Audit report” or “report” means the report prepared by an operator or third party entity and submitted to ARB in order to comply with section 95140.
 - (3) “Best Available Data and Methods” means ARB methods for emissions calculations set forth in this article where reasonably feasible; or facility fuel use and other facility process data used in conjunction with ARB provided emission factors and other data; or other generally accepted methods for collecting and analyzing data.
 - (4) “British Thermal Unit” or “Btu” means the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit at about 39.2 degrees Fahrenheit.
 - (5) “Calendar year” means the time period from January 1 through December 31.
 - (6) “California Environmental Quality Act” or “CEQA” means the California law that sets forth a process for public agencies to make informed decisions on discretionary project approvals by requiring environmental impacts associated with a proposed project be eliminated or reduced and air quality mitigation measures be implemented.
 - (7) “Carbon dioxide” or “CO₂” means the most common of the six primary greenhouse gases, consisting on a molecular level of a single carbon atom and two oxygen atoms.

- (8) “Carbon dioxide equivalent” or “CO₂ equivalent” or “CO₂E” means a measure for comparing carbon dioxide with other GHGs, based on the quantity of those gases multiplied by the appropriate global warming potential (GWP) factor and commonly expressed as metric tonnes of carbon dioxide equivalents (MTCO₂E).
- (9) “Cement plant” means an industrial structure, installation, plant, or building primarily engaged in manufacturing Portland, natural, masonry, pozzolanic, and other hydraulic cements, and typically identified by NAICS code 327310.
- (10) “Clinker” means the mass of fused material produced in a cement kiln from which finished cement is manufactured by milling and grinding.
- (11) “Combined cycle power plant” means a power plant that uses the waste heat from a gas turbine to provide heat energy for a steam turbine.
- (12) “Criteria air pollutant” means an air pollutant for which acceptable levels of exposure can be determined and for which an ambient air quality standard has been set. Examples include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM₁₀ and PM_{2.5}. The term "criteria air pollutants" derives from the requirements that the United States Environmental Protection Agency must describe the characteristics and potential health and welfare effects of these pollutants.
- (13) “De minimis” means the limits specified in section 95103(a)(6) as reported for a source or sources that are calculated using alternative methods selected by the operator.
- (14) “Distillate fuel oil” means a general classification for a petroleum fraction produced in conventional distillation operations. It includes diesel fuels and fuel oils.
- (15) “Emissions” means the release of greenhouse gases, criteria air pollutants, or toxic air contaminants into the atmosphere from sources and processes in a facility.
- (16) “Emissions data report” or “greenhouse gas emissions data report” means the report prepared by an operator each year and submitted by electronic means to ARB that provides the information required by sections 95100 to 95133, title 17, California Code of Regulations (Regulation for the Mandatory Reporting of Greenhouse Gas Emissions).
- (17) “Energy” means any source of usable heat or power, such as fuel or electricity.

- (18) "Energy efficiency" means a measure of the ability to accomplish a task with the minimum energy expenditure.
- (19) "Energy efficiency audit" means a thorough assessment of a facility's energy consumption, associated emissions analysis, and energy efficiency improvement opportunities as specified in section 95137.
- (20) "Energy efficiency improvement project" means an undertaking involving such activities including, but not limited to, improvement in maintenance or other practices, monitoring systems, specific processes, or new or improved technologies, in order to increase energy efficiency at a facility.
- (21) "Entity" means a person, firm, association, organization, partnership, business trust, corporation, limited liability company, company, or government agency.
- (22) "Equipment" means any stationary article, machine, or other contrivance, or combination thereof, used for specific purposes within a facility; equipment shall not mean portable equipment, tactical support equipment, mobile vehicles, or generating units designated as backup or emergency generators in a permit issued by an air pollution control district or air quality management district.
- (23) "Executive Officer" means the Executive Officer of the ARB or his or her delegate.
- (24) "Facility" means any property, plant, building, structure, stationary source, stationary equipment or grouping of stationary equipment or stationary sources located on one or more contiguous or adjacent properties, in actual physical contact or separated solely by a public roadway or other public right-of-way, and under common operational control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.
- (25) "Fluorine" means the most reactive nonmetallic element, generally designated with the symbol "F" and with an atomic weight of 18.9984.
- (26) "Fuel" means solid, liquid, or gaseous combustible material used to create heat or power.
- (27) "Fuel analytical data" means any data collected involving, but not limited to, the mass, volume, flow rate, heat content, or carbon content of a fuel.
- (28) "Global warming potential" or "GWP factor" means the radiative forcing impact of one mass-based unit of a given greenhouse gas relative to an equivalent unit of carbon dioxide over a given period of time.

- (29) "Greenhouse gas" or "greenhouse gases" or "GHG" means carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).
- (30) "Greenhouse gas source" means any physical unit, process, or other use or activity that emits a greenhouse gas.
- (31) "Hydrocarbons" means chemical compounds containing predominantly carbon and hydrogen.
- (32) "Hydrofluorocarbons" or "HFCs" means a class of GHGs primarily used as refrigerants, consisting of hydrogen, fluorine, and carbon.
- (33) "Hydrogen" means the lightest of all elements, designated by the symbol "H" and with an atomic weight of 1.00797; commonly exists as a gas consisting on the molecular level of two hydrogen atoms.
- (34) "Hydrogen plant" or "hydrogen production facility" means a facility that produces hydrogen with steam hydrocarbon reforming, partial oxidation of hydrocarbons, or other processes.
- (35) "Kerosene" means a light distillate fuel that includes No.1-K and No. 2-K as well as other grades of range or stove oil that have properties similar to those of No. 1 fuel oil.
- (36) "Key activity" means a specific process or function performed within a facility.
- (37) "Kiln" means a device, including any associated preheater or precalciner devices, that produce clinker by heating limestone and other materials for subsequent production of Portland or other cement.
- (38) "Kilowatt hour" or "kWh" means the electrical energy unit of measure equal to one thousand watts of power supplied to, or taken from, an electric circuit steadily for one hour. (A watt is a unit of electrical power equal to one ampere under pressure of one volt, or 1/746 horsepower.)
- (39) "Material misstatement" means one or more inaccuracies identified in the course of verifying or reviewing reported data or statements that result in either reported data inaccuracies significantly exceeding the required accuracy or a conclusion that is inconsistent with observable reality.
- (40) "Methane" or "CH₄" means a colorless, odorless, flammable gas consisting on the molecular level of a single carbon atom and four hydrogen atoms.

- (41) “Metric tonne” or “MT” or “tonne” means a common international measurement for the quantity of GHG emissions, equivalent to about 2204.6 pounds or 1.1 short tons.
- (42) “MMBtu” mean million British thermal units.
- (43) “Nitrous oxide” or “N₂O” means a GHG consisting at the molecular level of two nitrogen atoms and a single oxygen atom.
- (44) “No. 1 fuel oil” means a light petroleum distillate fuel oil that meets the specifications of ASTM Specification D396-07.
- (45) “Nonconformance” means the failure to use the methods or emission factors specified in this article to calculate emissions, or the failure to meet any other requirements of the regulation.
- (46) “North American Industry Classification System” or “NAICS” means a standard for use by Federal statistical agencies in classifying business establishments for the collection, analysis, and publication of statistical data related to the business economy of the United States.
- (47) “Operational control” means the authority to introduce and implement operating, environmental, health, and safety policies. In any circumstance where this authority is shared among multiple entities, the entity holding the permit to operate from the local air pollution control district or air quality management district is considered to have operational control for purposes of this regulation.
- (48) “Operator” means the entity having operational control of a facility, or other entity, from which an audit report is required under this regulation.
- (49) “Outside source” means a source of electricity not contained within a facility.
- (50) “Payback period” means the amount of time in years to recover the initial amount of capital required to implement an energy efficiency improvement project through resulting cost savings.
- (51) “Perfluorocarbons” or “PFCs” means a class of greenhouse gases consisting on the molecular level of carbon and fluorine.
- (52) “Petroleum” means an oily, thick, flammable liquid that is a mixture of various hydrocarbons occurring naturally within the earth and includes oil derived from tar sands, shale, and coal.
- (53) “Petroleum refinery” or “refinery” means any facility engaged in producing gasoline, aromatics, kerosene, distillate fuel oils, residual fuel oils, lubricants,

or other products through distillation of petroleum or through redistillation, cracking, rearrangement, or reforming of unfinished petroleum derivatives.

- (54) "Portable" is defined in title 17, California Code of Regulations, section 93116.2(a)(28).
- (55) "Portland cement" means hydraulic cement (cement that not only hardens by reacting with water but also forms a water-resistant product) produced by pulverizing clinkers consisting essentially of hydraulic calcium silicates, usually containing one or more of the forms of calcium sulfate as an inter-ground addition.
- (56) "Power plant" means a facility that generates electricity and includes one or more generating units at the same location.
- (57) "Process" means an action or series of actions performed in progressive and interdependent steps by equipment within a facility to produce or aid in producing a product such as cement, fuel, electricity, hydrogen, or other chemicals.
- (58) "Process flow diagram" means a schematic representation of a facility which identifies the processes or systems within the facility and any interaction between the processes or systems such as transfer of material or energy from one process or system to another.
- (59) "Residual fuel oil" means a general classification for the heavier oils, known as No. 5 and No. 6 fuel oils, that remain after the distillate fuel oils and lighter hydrocarbons are distilled away in refinery operations.
- (60) "Source" means greenhouse gas source, criteria air pollutant source, or toxic air contaminant source.
- (61) "Sulfur hexafluoride" or "SF₆" means a GHG consisting on the molecular level of a single sulfur atom and six fluorine atoms.
- (62) "System" means a group of interacting, interrelated, or interdependent processes within a facility.
- (63) "Tactical support equipment" is as defined in title 17, California Code of Regulations, section 93116.2(a)(36).
- (64) "Third party" means an entity hired by, but not otherwise affiliated with, a facility to conduct the facility's energy efficiency audit and/or develop the facility audit report.
- (65) "Ton" means a short ton equal to 2,000 pounds.

- (66) "Toxic air contaminant" means an air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health.

NOTE: Authority Cited: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 41511, and 38530, Health and Safety Code.

§ 95137. Energy Efficiency Audit Requirements.

(a) ***Facility Energy Consumption and Emissions Analysis.*** The operator of each applicable facility in section 95135(a) must conduct an energy consumption and emissions analysis that identifies the facility's processes and equipment types used in the processes, and provides energy consumption and resulting CO₂, criteria air pollutant, and toxic air contaminant emissions for the facility and each applicable process. Facilities that are required to comply with sections 95100 to 95133, title 17, California Code of Regulations (Regulation for the Mandatory Reporting of Greenhouse Gas Emissions) must provide fuel consumption, CO₂E emissions, and electricity usage data that corresponds to the facility's greenhouse gas emissions data report for the 2010 calendar year. Where appropriate, facilities should include 2010 annual criteria air pollutant and/or toxic air contaminant emissions data provided to local air quality management or air pollution control districts. Where appropriate, the Executive Officer may make a determination to allow data to be provided from a different calendar year(s) or a three-year average. Data requirements include the following:

- (1) Name of each process, system, or key activity;
- (2) For each process, system, or key activity identified in (1) above:
 - a. equipment types used;
 - b. amount of fuel consumed in 2010 for each fuel type (in MMBtu);
 - c. amount of electricity consumed in 2010 (in MMBtu);
 - d. total energy consumption (sum of b. and c. above);
 - e. CO₂E emissions resulting from each the electricity use and fuel combustion in b. and c. above as calculated according to methods provided in §95141;
 - f. criteria air pollutant emissions; and
 - g. toxic air contaminant emissions.
- (3) Process flow diagram of the facility, identifying each process or system; and

- (4) Copy of the verified greenhouse gas emissions data report submitted in compliance with sections 95100 to 95133, title 17, California Code of Regulations (Regulation for the Mandatory Reporting of Greenhouse Gas Emissions) for the 2010 calendar year.
- (b) **Energy Efficiency Improvement Analysis.** The operator of each applicable facility in section 95135(a) must conduct an analysis of the energy efficiency improvement opportunities that exist at the facility. The analysis must be a complete assessment of all potential opportunities, ranging from low-cost projects that could be implemented quickly to mid- and long-term projects requiring large capital expenditures and having extensive facility impacts. Data requirements include the following:
- (1) Type of equipment involved;
 - (2) Type of improvement, such as changes in maintenance practices or an investment in new technologies;
 - (3) Status of the improvement (i.e., under investigation, scheduled, on-going, completed, or not implementing);
 - (4) Time frame for the project and the estimated completion date for those that are under investigation, scheduled, or on-going, and the actual completion date for those that have been implemented;
 - (5) Total cost;
 - (6) Estimated annual energy savings;
 - (7) Estimated associated annual GHG emission reductions and co-pollutant impacts;
 - (8) Estimated annual cost savings, if applicable;
 - (9) Estimate of the simplified payback period in years, based on the calculation method provided in section 95141(e);
 - (10) Permit requirements;
 - (11) California Environmental Quality Act requirements; and
 - (12) Other implementation issues (including, but not limited to safety, noise, and water impacts).
- (c) **Procedures for De Minimis Sources.** The operator may elect to designate as *de minimis* one or more energy consuming sources that collectively emit no more than three percent of the facility's total CO₂E emissions. The operator shall identify the excluded energy consumers by equipment type and numbers of pieces of equipment per type. Alternatively, the operator may use the same *de minimis* values (emissions-based) as designated in the facility's mandatory greenhouse gas emissions report for the 2010 calendar year.
- (d) **Fuel Use Measurement Accuracy.** The operator shall employ procedures for fuel use data measurements (mass or volume flow) used to calculate GHG emissions that quantify fuel use with an accuracy within ± 5 percent. The operator shall make available to an inspector or agent of the Air Resources Board documentation to support this level of accuracy. The operator who measures solid fuels shall validate

fuel consumption estimates with a belt or conveyor scale calibration and retain record of such calibration.

§ 95138. Data Completeness, Document Retention and Recordkeeping, and Additional Data Requirements.

- (a) **General Requirements.** The operator shall establish and document a system that provides clarity, transparency, and completeness of data and processes sufficient to facilitate replication of the audit information reported as specified by this article. The operator shall make every reasonable effort to complete an audit report that contains no material misstatement and is in conformance with the data collection methodologies specified by this article.
- (b) **ARB Determination of Data Completeness.** The Executive Officer will make an initial determination of completeness for each audit report, followed by a final determination of completeness, as follows:
- (1) **Initial Determination of Completeness.** Within 30 days of receiving the operator's audit report, the Executive Officer will conduct a preliminary review of the submitted report and make a determination whether the audit report is initially deemed complete, using criteria including, but not limited to, the following:
- a. Required energy efficiency consumption and emissions data;
 - b. number of projects reported;
 - c. equipment involved;
 - d. types of projects reported; and
 - e. project timeframes.

If the audit report is initially deemed incomplete, the Executive Officer will notify the operator in writing, via either an electronic submission or hard copy, of the initial determination of an incomplete report and may require the operator to do one of the following:

- i. correct the report's deficiencies and resubmit to the ARB within 30 days; or
 - ii. conduct a third-party audit following the requirements in section 95139.
- (2) **Final Determination of Completeness.** Within 90 days of receiving the operator's audit report, the Executive Officer will conduct a thorough review of the submitted report and make a final determination whether the audit report is deemed complete, using the criteria in (1)(a) through (1)(e) above. If the Executive Officer deems the audit report incomplete during the final determination of completeness, the Executive Officer will notify the operator in writing, via either an electronic submission or hard copy. The Executive

Officer will choose to either require the operator to provide additional analysis or to conduct a third-party audit, following the requirements in section 95139.

- (c) **Document Retention and Recordkeeping.** The operator shall retain documents regarding the procedures used to obtain the data supplied as specified by this article for a minimum of five years following submittal of the audit report. The retained documents, including energy consumption and emissions data, shall be sufficient to allow for the verification of the audit report.
- (d) **Additional Data Requirements.** Upon request by ARB, the operator shall provide to ARB within 30 days access to all documents, including data and methodologies, used to develop the audit report.

§ 95139. Incomplete Audit Reports and Third Party Audits.

- (a) **Third Party Audit Report.** In the event that an operator is required per section 95138 (b) to complete a new audit, conducted by a third party, all requirements of sections 95137 through 95140 shall apply.
 - (1) Within 60 days of receiving notification from ARB of its determination of an incomplete audit report, the operator must submit a written application to the Executive Officer for approval of the operator's chosen third party auditor. The application must include the following:
 - a. third party auditor company name;
 - b. third party auditor contact name, title, address, phone number, and email address;
 - c. demonstration of the third party auditor's qualifications to effectively conduct a facility-wide audit report as required by this regulation;
 - d. a quote from the third party auditor for conducting the audit, And
 - e. a signed statement from the third party auditor that they have no interest, material or otherwise, in the facility or relationship with facility personnel or owners that could be construed as adversely affecting their impartiality.
 - (2) The Executive Officer shall approve the third party auditor selected by the facility upon determining that the requirements of (a)(2) above have been met.
 - (3) The operator must submit the completed third party audit report within 90 days of receiving Executive Officer approval of the third party auditor.

§ 95140. Reporting Requirements.

The operator of each applicable facility in section 95135(a) must submit the data required in sections 95137 and 95139 in an audit report as required below:

- (a) By December 31, 2011, the operator of each applicable facility in section 95135(a) must provide the following information to the Executive Officer:
 - (1) Facility name, identification number, physical address, mailing address, location, NAICS code;
 - (2) Company name (if different than facility name);
 - (3) Name and contact information including email address and telephone number of the facility operator submitting the audit report and the person primarily responsible for preparing and submitting the audit report;
 - (4) If the audit were conducted by a third party, the name and contact information including email address and telephone number of the company conducting and submitting the audit report and the person primarily responsible for preparing the audit report; and
 - (5) Information listed in sections 95137 and 95139, if applicable.
- (b) All documents required under this article to be submitted to the Executive Officer shall be submitted as follows:

California Air Resources Board
Stationary Source Division, Energy Audits
P.O. Box 2815
Sacramento, California 95812-2815
- (c) An alternative method, including electronic submittals, may be approved by the Executive Officer.
- (d) The Executive Officer will establish an Internet site ("Audit Report Internet site") in which all audit reports will be made available to the public. Completed audit reports submitted to ARB will be posted on the Audit Report Internet site by March 1, 2012, or within 30 days of being deemed complete per sections 95138 and 95139, whichever is later.

§ 95141. Calculation Methods.

- (a) For greenhouse gas emissions based on fuel consumption, the operator shall use the emissions calculation methods identified in the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Subchapter 10, Article 2, title 17, California Code of Regulations.
- (b) For greenhouse gas emissions based on electricity consumption TBD
- (c) For criteria air pollutant and toxic air contaminant emissions TBD
- (d) Energy consumption unit conversion calculations TBD: need fuel use (gas, solids) – checking GHG reporting regulation to see if they have ones we can use
- (e) Simplified payback period will be calculated as the total capital cost associated with the project divided by the annual cost saving achieved due to implementation of the project.

§ 95142. Confidentiality.

- (a) Emissions data submitted to the ARB under this article is public information and shall not be designated as confidential.
- (b) Any entity submitting information to the ARB pursuant to this article may designate information that is not emissions data as confidential because it is a trade secret or otherwise exempt from public disclosure under the California Public Records Act (Government Code section 6250 et seq.). All such requests for confidentiality shall be handled in accordance with the procedures specified in title 17, California Code of Regulations, sections 91000 to 91022.

NOTE: Authority cited: Sections 38580, 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 38580, 39600, 41511, and 38530, Health and Safety Code.

§ 95143. Enforcement.

- (a) Knowing submission of false information, with intent to deceive, to the Executive Officer or an agent or representative of the Air Resources Board, shall constitute a single, separate violation of the requirements of this article for each day after the information has been received by the Executive Officer.
- (b) Failure to submit any report or to include in a report all information required by this article, or late submittal of the report, shall constitute a single, separate violation of this article for each day that the report has not been submitted beyond the required

submittal date, as specified in sections 95139(a) and 95140(c). For the purposes of this section, “report” means any document required to be submitted by this article.

NOTE: Authority cited: Sections 38580, 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 38580, 39600, 41511, and 38530, Health and Safety Code.

§ 95144. Severability.

Each part of this article shall be deemed severable, and in the event that any provision of this article is held to be invalid, the remainder of this article shall continue in full force and effect.

NOTE: Authority cited: Sections 39600, 39601, 41511, 38510, and 38530, Health and Safety Code. Reference: Sections 39600, 41511, and 38530, Health and Safety Code.

§ 95145. Incorporation by Reference.

The following documents are incorporated by reference into this article. These materials are incorporated as they exist on the date this article is adopted.

(a) Regulation for the Mandatory Reporting of Greenhouse Gas Emissions, Subchapter 10, Article 2, title 17, California Code of Regulations.

(b) Need to add document from which the electricity conversion will be obtained