

## Energy Efficiency & Co-Benefits Assessment Report Reporting Form Instructions

These instructions apply to the Excel worksheet reporting forms which are available at <http://www.arb.ca.gov/cc/energyaudits/energyaudits.htm>

***Use of these forms is voluntary*** and therefore not required to comply with the regulation's requirements that are specified in title 17, California Code of Regulations, sections 95600 to 95612. However, the forms are being provided as guidance and for the convenience of those required to report. Using these forms, directly or as a guide to assist in preparing your submittal, should help ensure that the information submitted is consistent with the requirements of the regulation. These forms may be modified as needed and future updates will be available on this website. If you have questions or suggested modifications to the forms or to these instructions, please contact either Cherie Rainforth at (916) 327-7213 or [crainfor@arb.ca.gov](mailto:crainfor@arb.ca.gov) or Douglas Grandt at (916) 324-0317 or [dgrandt@arb.ca.gov](mailto:dgrandt@arb.ca.gov). ARB staff is also available for meetings or telecons for any questions about the audit or if you wish staff to provide feedback on your audit approach.

### **Instructions:**

After downloading the Excel file, please save it to your local PC or server, giving the file a suitable name that identifies your organization and facility. As you complete the form, it is recommended that you save your work often in order to minimize the risk of losing the information that you enter.

When you open the Excel file, select the red "Start Here" tab. This is the "Welcome" page. Note the phone numbers and email addresses to contact if you have any questions or suggestions.

The different worksheets or tabs are color coded. Begin completing the information requested on the blue tab "Contact." Instructions for the "Contact" tab follow, below. After the blue "Contact" tab is the green "Certification" tab. Instructions for the green "Certification" tab follow, below.

Moving on to the right, there are three orange tabs provided to record the amount of energy consumed at a facility, CO2 emissions, criteria pollutant emissions, and toxic air contaminant emissions.

The yellow "Processes & Equipt." tab provides space for up to 40 systems or processes at the facility. Energy efficiency improvement opportunities may be recorded on the 40 pink "Process" tabs that follow on the right.

ARB staff has attempted to provide a simple means to record the information for your facility. It is possible that your information will require additional attachments. Please contact ARB staff for assistance if you have questions regarding this.

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Following are step by step instructions for the Excel worksheets, organized by the relevant title 17 section number for which the information is to be reported:

### **Facility/Company Contact Worksheet (Contact tab)**

§95604(a)                    (Section 95604(a) of title 17, California Code of Regulations)  
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Date: The date the form is being submitted may be entered here.

- (1) Facility Name: Name of the facility to which the Assessment Report applies may be entered here.
  - " ARB ID #: The ID number used by the facility when reporting GHG emissions data for the Mandatory GHG Emissions Reporting Regulation may be entered here.
  - " Physical Address: The physical address of the facility may be entered here.
  - " Mailing Address: The postal address for the facility may be entered here.
  - " Geographic Location: The latitude and longitude of the facility may be entered in decimal degrees.
  - " NAICS Code: The facility NAICS code as reported for the Mandatory GHG Emissions Reporting Regulation may be entered here.
- (2) Company Name: Please enter the company name only if it is different from the facility name entered above.
- (3) Contact Information: Please enter contact information for the person at the facility who is primarily responsible for the Assessment Report (Facility Operator). Also enter the contact information for the submitter, if different than the Facility Operator. Note that the regulation requires that Company Contact Information be completed in the assessment even if the report is submitted by a third party.
- (4) Third Party Report Submittal: If the facility assessment was conducted by a third party, please enter the third party's contact information here.
- (5) Facility Process Flow Diagram(s): Note that the regulation requires that process flow diagram(s) be included with the Assessment Report. Please label as Attachment A. The diagram(s) can be anonymized but note that the regulation requires that the assessment include the identification of each process or system along with its geographic location. The processes or systems may also be identified in the Processes, Systems, and Equipment worksheet (Processes & Equipt. tab). Please check the box if the diagram(s) is/are included.

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### **Certification Worksheet (Certification tab)**

Some fields on this form will be automatically populated from the Company Contact form (e.g., Facility Name, ARB Identification Number, Physical Address, and contact information).

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- (b) Note that the regulation requires that the facility operator certify that the information is true, accurate, and complete and that the third party assessor is duly authorized to represent the facility and operator on all matters related to the Assessment Report. Please select “Operator Certified” from the drop-down list to certify.
- (c) Additionally, if the energy efficiency assessment was conducted by a third party, the regulation requires that the third party assessor certify that the information is true, accurate, and complete and that the third party assessor is duly authorized to represent the facility and operator on all matters related to the Assessment Report. The third party assessor may certify this by selecting “Third Party Certified” from the next drop-down list.

### **Facility Energy Consumption and CO<sub>2</sub>e Emissions Worksheet (Energy & CO<sub>2</sub> tab)**

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- (8A/B) 2009 Annual Consumption: The total amount of each fuel type consumed by the facility in 2009 (in MMBtu) may be entered here. Please only include fuel use from stationary sources – mobile combustion sources and portable equipment are exempt. Fuels not listed may be entered under “Other Fuels”. Note that the regulation does not distinguish between biogenic and non-biogenic fuels. Please list biogenic fuels under “Other Fuels”.
- (8C) Total Facility 2009 Energy Consumption: The total of all fuel amounts entered is automatically calculated and listed here.
- (8D) Facility 2009 Reported CO<sub>2</sub>e Emissions: Please enter the facility’s total CO<sub>2</sub>e emissions that were reported for the Mandatory GHG Emissions Reporting Regulation for the 2009 calendar year (MMTCO<sub>2</sub>e). Note that the regulation does not distinguish between biogenic and non-biogenic emissions. Please include both biogenic and non-biogenic emissions.

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**Facility Criteria Pollutant Emissions Worksheet (Criteria Pollutants tab)**

Note that the regulation requires that facilities report their facility criteria pollutant emissions for 2009 or the previous most recent 12-month period, as reported to or calculated by the local air quality management or air pollution control district (district) unless an alternate submission of emissions inventory data is agreed upon with the ARB Executive Officer.

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- (8E) Year Assigned: Please enter the year for which the emissions are reported (i.e., 2009). For facilities whose criteria pollutant emissions are reported on a 12-month basis versus calendar year basis, this would be the year to which the district has assigned the emissions.
- " Criteria Pollutants and amounts: Please enter the amounts of each criteria pollutant, preferably in tons/year. Note that the regulation requires that these amounts be the same as those reported to or calculated by the district for the same year.

**Facility Toxic Air Contaminant Emissions Worksheet (Toxic Air Contaminants tab)**

Note that the regulation requires that facilities report their facility toxic air contaminant emissions for 2009 or the previous most recent 12-month period, as reported to or calculated by the district unless an alternate submission of emissions inventory data is agreed upon with the ARB Executive Officer.

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- (8F) Year Assigned: Please enter the year for which the emissions are reported (i.e., 2009). For facilities whose toxic air contaminant emissions are reported on a 12-month basis versus calendar year basis, this would be the year to which the district has assigned the emissions.
- " Pollutant and amounts: Please enter each toxic air contaminant and its corresponding amount, preferably in pounds/year. Note that the regulation requires that the toxic air contaminants and amounts be the same as those reported to or calculated by the district for the same year.

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**Processes, Systems, and Equipment Types Worksheet (Process & Equipt. tab)**

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- (6) Name of Process or System: Please enter each facility process or system. The facility operator may choose to group processes/systems where practical. Please only include stationary processes – mobile combustion sources and portable equipment are exempt and should not be included. Processes/systems and/or equipment may overlap as deemed appropriate by the facility operator (e.g., two or more processes/systems can include the same preheater).
- " Description: Please enter a description for each process/system included.  
*Example: Air Compressors – the plant operates four manually controlled air compressors with a combined total rating of 3,800 scfm; the air is delivered for plant end uses through the usual filter, regulator, and lubricator assembly; the plant's air pressure requirement is 90 psi.* (Lengthy descriptions will fit in the cell although they may not print completely on hard copy. An additional document may be submitted if you prefer to use a printed copy of a description.)
- " Equipment Types used: You may enter the equipment types used for each of the reported processes/systems using the table at the right of the form. (*Example: "4.2" for air compressors*). If the equipment type is not listed, please use the code for "Other" ("6.0") and briefly identify the equipment type.
- (7) Type of Energy Used: Please select the types of energy used from the drop-down menu in the Fuel Type Consumed column . Please enter all types; if the fuel type is not listed, please enter other fuel type manually. In the Purchased/Produced column, please indicate for each fuel type used whether the fuel is purchased, produced by the facility, or both.

**Energy Efficiency Improvement Opportunities Worksheet (Process tabs)**

Note that the regulation requires that the facility operator identify potential energy improvement opportunities for equipment, processes, or systems, that cumulatively account for at least 95 percent of the facility's total CO<sub>2</sub>e emissions in 2009 or 95 percent of the total facility energy consumed in 2009. Each process/system listed in the Processes, System, and Equipment Types worksheet will automatically be

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displayed and numbered in this current worksheet (scroll down in the worksheet to view them all). This is for your convenience in identifying opportunities.

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Improvement Identified?: For each process/system, please indicate if an energy efficiency improvement opportunity has been identified. If not, select No and skip to the next process/system number (on the next worksheet or tab). If yes, select Yes and complete the information below. Multiple improvement opportunities may be included for each process/system. Please only include a tear-down/rebuild improvement option if it is the only option available for the specific process/system.

(4B) Type of Improvement:

– Categories of Opportunity: You may use the category list provided at the right of the form to select the energy efficiency opportunity category that best fits the type of improvement (*Example: “E” for improvement in process control and “F” for investment in the same but more efficient technologies*). Up to five types may be chosen for each improvement opportunity. If the type is “Other”, please briefly describe in the provided cells.

(4C) Summary description: Please provide a summary description of the specific type of improvement. Note the regulation requires that the summary include, but not be limited to, a description of the equipment, process, or system(s) involved, the energy efficiency issues that have been identified, and a description of how the changes would benefit energy efficiency. *Example: The refinery’s high vacuum distillation unit originally prepared feedstock for the catalytic cracking unit, but it has changed service to produce another product from imported feedstock. The furnace is oversized for the new duty, resulting in energy loss from excess air being added that is heated and leaves as hot flue gas; reducing the number of active furnace cells will reduce the heat losses from the excess combustion air still being routed to the unused cells.*

(4D) Status of Improvement: You may use the drop-down list to select the status of the improvement. For projects that will be implemented but that do not have an end date, please select “On-going” (*Example: a management practice that will begin and will continue indefinitely*).

(4E) Rationale if Project Will Not Be Implemented: Note that the regulation requires that, if the status above is “Not Being Implemented,” a description of the reasons for not implementing be provided. This may be brief, i.e., too expensive, safety concerns, etc.

(4F) Estimated Time Frame for Project Implementation: If the status of the project is scheduled or ongoing, you may use the drop-down list in the Duration field, to

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select the number of months/years it will take to fully implement the project. Note that the regulation requires that the estimated completion year be provided for projects that are scheduled or on-going and the actual completion year if the project has been implemented.

**Attention:** Each of the remaining items discussed below allow attachments to be included to provide additional information not contained in the form itself. Please label attachments as noted in the form, with a numbering system to identify the improvement and the process/system. These are numbered in the instructions below as follows: Attachment #-x-y (Attachment type – process/system # – improvement #). *Example: Attachment C-2-3 for estimated average recurring costs/year for process/system #2, improvement #3.*

- (4G) **Estimated One-Time Cost:** Please enter the project's estimated total one-time budgetary costs (in 2010 dollars). Note the regulation requires that this total include, but not be limited to, capital costs of equipment, installation, design, construction, and permits. These costs may be determined at a preliminary, budgetary level and not through a detailed cost analysis. If other enabling projects are required in order for this project to be implemented, please also include those associated costs. For describing the estimated one-time cost, the operator may include an attachment for each improvement identified. Please check the corresponding box if Attachment B-x-y is submitted with the report.
- (4H) **Estimated Average Recurring Costs/Year:** Please enter the estimated total average recurring annual budgetary costs (in 2010 dollars). Note the regulation requires that this total include, but not be limited to, operation and maintenance costs. These costs may be determined at a preliminary, budgetary level and not through a detailed cost analysis. The operator may include an attachment for describing and itemizing the estimated annual recurring costs. Please check the corresponding box if Attachment C-x-y is submitted with the report.
- (4L) **Estimated Annual Cost Savings:** If the identified improvement is expected to result in annual cost savings, please enter the estimated amount here (in 2010 dollars). If not, please enter "0". If the facility operator wishes to supply an explanation of any applicable estimated annual costs savings, the explanation may be included as an attachment. Please check the corresponding box if Attachment D-x-y is submitted with the report.
- (4I) **Estimated Project Life:** Please enter the estimated project life in years. The project life is the length of time the implemented improvement project is expected to be in effect. If the facility operator wishes to supply additional information regarding estimated project life, the information may be included as an attachment. Please check the corresponding box if Attachment E-x-y is submitted with the report.
- (4J) **Estimated Average Energy Savings/Year:** Please enter the estimated average annual energy savings, preferably in MMBTU. For consistency, we would prefer

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that you use high heat values (HHV). If the facility operator wishes to supply additional information, including a breakdown of estimated savings by fuel type, you may include Attachment F-x-y and check the box.

- (4K/M) Average Annual Emissions Impacts: Please enter the total estimated annual emission impacts for greenhouse gases (CO<sub>2</sub>e), criteria pollutants, and toxic air contaminants, preferably in thousands of metric tonnes for greenhouse gases, tons for criteria pollutants, and pounds for toxic air contaminants. For each group of pollutants, you may include a corresponding attachment and mark that the attachments are included with the report (Attachment G-x-y for greenhouse gases, Attachment H-x-y for criteria pollutants, and Attachment I-x-y for toxic air contaminants). Note the regulation requires that a detailed specification of the estimation method, source test method, or other measurement method that was used to quantify the estimated emission impacts be provided. The facility may use default emission factors for fuel combustion as provided by the districts for toxic air contaminants and criteria pollutants, and as provided by the Mandatory Greenhouse Gas Emissions Reporting Regulation for CO<sub>2</sub>e. ARB staff is available to provide additional guidance as needed.

If the emissions estimation method, source test method, or other measurement method that was used to quantify the estimated emission impacts for one opportunity is used to evaluate the emissions impacts for additional improvement opportunities, you may refer to the first emissions impact attachment and do not need to submit additional identical attachments for these other improvement opportunities.

The attachments may include a breakdown of the individual pollutant impacts, i.e., for criteria pollutants, may include impacts for each of the following: TOG, ROG, CO, NO<sub>x</sub>, SO<sub>x</sub>, PM, PM<sub>10</sub>; the list of toxic air contaminants will vary by facility.

- (4N) Air Quality Permits, CEQA, and Other Considerations: Note the regulation requires that any impacts to district air quality permit requirements, California Environmental Quality Act requirements, or other implementation considerations (i.e., safety, zoning, water, etc.) , be identified for each specified improvement. These may be included as an attachment. Please check the corresponding box if Attachment J-x-y is submitted with the report.