

California Climate Action Registry

Annual Entity Emissions: Electric Power Generation/Electric Utility Sector

The following worksheets will aid you in reporting your emissions data under the California Climate Action Registry's Power/Utility Reporting Protocol, Version 1.1 (PUP).

All eligible reporters (facilities or entities with a NAICS code = 2211) are *required* to complete this form and upload it in to CARROT before the annual emissions inventory report can be verified.

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PUP Report worksheet

This is a locked workbook, containing cells in which you must enter data, and cells that calculate emissions using built-in formulas to help you report under the PUP. This worksheet is password protected to ensure consistency among all reporters.

California Registry Members only need to enter data in any cell with a border around it.

How to display formulas in locked cells: Cells without borders are locked cells and will calculate emissions based on your inputs. Click on any cell to view its formula using Excel's function feature (*fx*).

Notes: These cells help the public understand the information presented in the report and, in some cases, provide guidance about the type of information to include. *Notes* cells are locked.

Comments: provides a place where you can add text descriptions or clarifications about your emissions. *Comment* cells are unlocked and may be filled in as desired.

Completing the PUP Report

Below please find detailed instructions for how to complete the PUP Report. All ROW references below refer to a location on the *PUP Report tab*. If you still have questions after reviewing these guidelines please call the California Registry Member Services Team at 213-891-1444 x2.

Entity Information

This section includes information about baseline years (if selected), reporting scope, reporting boundaries, contact details, NAICS codes, and a brief description about the reporting entity. The information you enter about your entity should be the same as was entered in the CARROT report. (This PUP report may be viewed as a stand-alone document.) Some entities may have NAICS codes that differ from facility level codes. Any facility(facilities) with a NAICS code 2211 should complete the PUP Report. If the entity's NAICS code is 2211, then the PUP Report should be completed for the entity.

PUP Report Tab (Row 30-44) - Direct Emissions from Owned Facilities

In this section of the report, disclose your direct emissions as required by the PUP.

Total Direct Emissions should match the Total Direct Emissions reported in **CARROT**. In addition to reporting your Direct Emissions, you *must* also provide additional information about the proportion of direct emissions attributable to electricity consumed in California or in the rest of the United States.

Row 33: from Electric Power Generation - stationary combustion emissions from electric power generation and electric transmission and distribution activities. In this section *co-generation* units *should* include emissions from electric power generation, which will correspond to the inputs in the **Green** section **ROW 77 & 84** that will also reflect emissions from electric power generation only. Emissions from steam production should be included in Row 35.

Row 34: from Natural Gas Related Activities - stationary combustion emissions related to Natural Gas storage, processing, and transmission & distribution. These emissions generally only apply to utilities which deliver natural gas to an end-user. Emissions from the combustion of natural gas for the purpose of electric power generation should be included in ROW 33, not ROW 34.

Row 35: from Other On-Site Combustion - all other stationary combustion activities **NOT** relating to electric power generation, natural gas activities, or steam production, e.g., auxiliary power.

NOTE: All reporters must complete Row 33 - emissions from electric power generation; utilities that also distribute natural gas may also need to complete Row 34 - emissions from natural gas related activities. Most reporters will also need to complete Row 35 - emissions from other on-site combustion.

Rows 36 & 37: Process and Fugitive emissions - all process and fugitives emissions for the entire entity (for Natural Gas operations, guidance is forthcoming in the Natural Gas T&D GHG Reporting Protocol, expected later in 2009).

Rows 40 & 41: % of Net Generation Delivered to or Outside of CA - all utilities/power producers must report the percentage of power delivered within California as well as any percentage of power delivered outside of California. **NOTE:** The percentage of generation does **not** take into account T&D losses from wheeled power.

PUP Report Tab (Row 51-60): Indirect Emissions from Owned Facilities

In this section, report your indirect emissions from energy that you purchase **and** consume in your own operations. **Total Indirect Emissions** should match the Total Indirect Emissions reported in **CARROT**. **NOTE: Electricity Purchased and Consumed** (Row 52) should only include data about power that is purchased *and* consumed by the utility/power producer.

Your indirect emissions may also include emissions from energy purchased outside your own service territory and/or T&D losses from purchased power that crossed your lines. For transparency, you should break out the emissions by type of service including **direct access** - power that is delivered into your territory at the request of an end-user, **wheeled power** - power transmitted across your service territory to serve other end-users, and **purchases** - power that is purchased and subsequently delivered to your customers.

PUP Report Tab (Row 64-65): De Minimis Emissions

This section of the PUP Report should match your **De Minimis Emissions** summary as reported in **CARROT**.

PUP Report Tab (Row 70-91): Generation & Purchased Power Information

In this section, you must disclose information about your activities relevant to your inventory. This includes the total MWh (Column C) and corresponding CO₂ (Column E) from all power generated and purchased for delivery to retail customers. You should *not* include any emissions from non-power generation sources in this section (e.g. mobile combustion, fugitive emissions, etc). Only CO₂ emissions, *not* CO₂e, should be reported in this section.

NOTE: CO₂ emissions reported as **Owned Generation Total (Net)** (Cell E71) should be roughly equal to the total CO₂ from Electric Power Generation (minor differences may occur due to rounding errors) (Cell D33).

Row 72: Fossil Generation (Net) = Enter MWh and CO₂ values that correspond to power generation from fossil fuels (coal, natural gas, oil, distillate fuel/diesel, etc.), excluding MWh and CO₂ from co-generation facilities.

Row 73: Biogenic Generation (Net) = Enter MWh and CO2 values that correspond to power generation from biogenic fuels, including landfill gas, MSW, wood, wood waste, etc. **NOTE:** All California Registry members using the PUP, regardless of whether or not their NAICS code is 2211, **must** include CO2 emissions associated with biogenic energy. *CO2 emissions from biogenic generation are not included in any metric calculation.*

Row 74: Geothermal Generation (Net) = Enter MWh and CO2 values that correspond to power generation from geothermal activities. **NOTE:** All California Registry members using the PUP, regardless of whether or not their NAICS code is 2211, **must** include CO2 emissions associated with geothermal activities. *CO2 emissions from geothermal generation are not included in any metric calculation.*

Row 75: Other Renewable Generation (Net) = Enter MWh and CO2 values that correspond to power generation from renewable sources. Renewable sources/energy includes, but is not limited to, energy derived from solar, wind, hydroelectric (<30MW), tidal power, sea currents, and ocean thermal gradients.

Row 76: Zero Emission Generation (Net) = Enter MWh and CO2 values that correspond to power generation from sources with zero CO2 emissions, e.g., large hydro and nuclear.

Row 77: Co-generation (Net) = Enter MWh and CO2 values that correspond to power generation from co-generation units. **NEW:** report CO2 emissions associated with the electrical MWh generated **only**; subtract out any emissions associated from the production of steam that is not recaptured to generate electricity. By subtracting out the emissions associated with steam production the emissions efficiency metric reveals that the member is generating fewer emissions, which reflects the efficiency of their co-generation system. Co-generation emissions should include emissions from co-generation, combined heat & power, and district heating. *See GRP Chapter 8, Section III.8.5 and WRI/WBCSD GHG Protocol Initiative calculation tools for both Combined Heat & Power (CHP) and Pulp & Paper Mills for guidance on allocating emissions from a co-generation & CHP plants.*

Row 78 (calculated values): Purchased Power Total (Net) includes the total MWh and corresponding CO2 emissions from all the purchases documented in Rows 79 through 85. In Rows 79 through 85, include all power purchased and delivered to the service area through Power Purchase Agreements, power trades, and spot market purchases. Purchased Power Total (Net) should reflect *all* MWhs and CO2 emissions from power purchases, and not just the emissions from T&D losses that were reported in Rows 56-59. Wholesale purchases that are resold (and not delivered to the service area) should not be included. This section should **not** include power that is purchased **and** consumed by the utility.

Row 79: Purchased Fossil Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from fossil fuels (coal, natural gas, oil, distillate fuel/diesel, etc.), excluding MWh and CO2 from purchased co-generation.

Row 80: Purchased Biogenic Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from biogenic fuels, including landfill gas, MSW, wood, wood waste, etc. **NOTE:** All California Registry members using the PUP, regardless of whether or not their NAICS code is 2211, **must** include CO2 emissions associated with biogenic energy. *CO2 emissions from purchased biogenic generation are not included in any metric calculation.*

Row 81: Purchased Geothermal Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from geothermal activities. **NOTE:** All California Registry members using the PUP, regardless of whether or not their NAICS code is 2211, **must** include CO2 emissions associated with geothermal activities. *CO2 emissions from purchased geothermal generation are not included in any metric calculation.*

Row 82: Purchased Other Renewable Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from renewable sources. Renewable sources/energy includes, but is not limited to, energy derived from solar, wind, hydroelectric (<30MW), tidal power, sea currents, and ocean thermal gradients.

Row 83: Purchased Zero Emission Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from sources with zero CO2 emissions, e.g. large hydro & nuclear.

Row 84: Purchased Co-generation Power (Net) = Enter total MWh and CO2 values that correspond to purchased MWh power from co-generation units. Co-generation emissions should include emissions from co-generation, combined heat & power, and district heating. NOTE: **only** report the CO2 emissions associated with the electrical MWh purchased AND subtract out emissions associated with purchased steam. Emissions from purchased steam should be included in the blue section of the PUP Report worksheet and CARROT.

Row 85: Purchased Wholesale Power (Net) = Enter total MWh and CO2 values that correspond to purchased power from the spot market where the generation type is unknown. EPA eGRID sub region emission factors should be used to calculate CO2 emissions for spot market purchases, if more accurate data is not available. This section should **not** include power that is purchased and consumed by the utility.

PUP Report (Row 107-111): Emissions Efficiency Metrics

Row 109: Electricity Deliveries: Only power utilities that 1) deliver power to an end-user/retail customer, 2) own transmission & distribution lines, AND 3) purchase power to meet load-based demand should report an electricity deliveries metric. **Row 107** of the PUP Report asks "Do you deliver power to an end-user/retail customer?" If you respond YES the Electricity Deliveries metric will generate a calculation. If you respond NO, because you are an Independent Power Producer that does not deliver power to an end-user/retail customer, the Electricity Deliveries metric will state N/A. For more information see Section 9.2 of the PUP.

Row 110: Net Generation: All power reporters report a net generation metric, which includes CO2 emissions from Owned Generation Total (Net) / MWh from Owned Generation Total (Net). This metric will be automatically calculated based upon inputs in the green section of the worksheet.

Row 111: Net Fossil Generation: All power reporters report a net fossil generation metric, which includes CO2 emissions from **Fossil & Co-generation - Electric power only Generation (Net)** / MWh from **Fossil & Co-generation - Electric power only Generation (Net)**. This metric will be automatically calculated based upon inputs in the green section of the worksheet.

HFC & PFC Worksheet

This worksheet helps you calculate and disclose your HFC and PFC emissions. This worksheet is linked to the PUP Report worksheet. Data inputs into the HFC & PFC worksheet will populate the PUP Report with the corresponding information about your HFC and PFC emissions.

This worksheet is broken into four sections: fugitive, process, de minimis, and optional emissions. Please ensure you are entering emissions in the appropriate section. Enter your annual use of HFCs and PFCs in pounds, and the worksheet will calculate the metric tons of HFCs, PFCs, and CO2e (based on the Global Warming Potential of the chemical species of HFC or PFC) associated with those emissions.

Final Check before Uploading your Report

As the last step, please make sure to double-check that these points have been addressed, before you upload your report in CARROT:

- Do your direct, indirect, and de minimis emissions match the corresponding totals in CARROT?
- Is the amount in cell E71 (Green section) similar to the amount in cell D33 (Blue section)?
- Do cells E71 - E85 only include CO2 emissions (*not* CO2e)?
- Are you reporting the correct metrics for your entity?
- Is your PUP Report a public document? (All entities/facilities with the NAICS code 2211 **must** have a **publicly available** PUP Report.)

Submitting your PUP Report

Once you have completed the PUP Report, you should convert it to a PDF and upload it to CARROT under the "Optional Reporting" tab. Make sure you have the PUP Report worksheet open when you convert it to PDF. Converting this spreadsheet to a PDF makes it easier for the public to download and helps to ensure consistency between reports. *If you do not convert the spreadsheet to PDF, your HFC and PFC information will be made available to the public.*