CleanBC Industrial Incentive Program

Pulp and Paper Sector Guidance

This guidance applies to reporting operations with primary NAICS codes as follows:

- NAICS – 322112: Chemical Pulp Mills
- NAICS – 322111: Mechanical Pulp Mills
- NAICS – 322121: Paper (except newsprint) Mills
- NAICS – 322122: Newsprint Mills

Sector: Pulp and Paper

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In addition to this guidance document, to assist in calculating inputs for the CIIP application process the ministry provides a spreadsheet with the appropriate calculation formulas built in (available via e-mail and webpage).

Quantification and Reporting of Emissions and Related Information

Unless explicitly stated otherwise in the CleanBC Industrial Incentive Program (CIIP) guidance, quantification and reporting of greenhouse gas emissions and related information under CIIP must comply with the Greenhouse Gas Industrial Reporting and Control Act (GGIRCA) and the Greenhouse Gas Emission Reporting Regulation (GGERR), including with the referenced in GGERR Western Climate Initiative (WCI) quantification methodologies.

The WCI methodologies typically applicable to pulp and paper manufacturing reporting operations include, but may not be limited to, the following:

- WCI.020 General Stationary Combustion
- WCI.040 Electricity Generation
- WCI.210 Pulp and Paper Manufacturing
- WCI.280 Mobile Equipment at Facilities

Emissions associated with purchased electricity or heat consumed at the reporting operation must not be included in the emissions total for CIIP purposes.
Emissions associated with self-generated electricity sold to the grid or with heat sold to a different industrial operation must also be excluded from the reporting operation’s emissions total for CIIP purposes. Therefore, to calculate the emissions total for CIIP purposes, emissions associated with sold electricity and heat must be subtracted from the total emissions that were reported in the Single Window Reporting System.

These emissions must be quantified in the following manner:

1) Partitioning all emissions associated with self-generated electricity and heat between emissions due to generated electricity and emissions due to generated heat

NOTE: In the case of pure electricity generation (not a combined heat and power unit) there is no partitioning between generated electricity and heat; proceed to the next step.

In the case of combined heat and power (CHP) generation (co-generation), select one of the three methodologies for allocating emissions listed in the WRI/WBCSD’s Allocation of GHG Emissions from a Combined Heat and Power (CHP) Plant document: 1) the efficiency method; 2) the energy content method, or 3) the Work Potential method.

It is recommended that the efficiency method be used (see methodology below). For guidance on using other methodologies, please see the document listed above.

\[
E_{EL} = \left( \frac{e_{EL}}{e_H} \right) \frac{P_{EL}}{P_H + P_{EL}} \cdot E_{EL+H} \\
E_H = E_{EL+H} - E_{EL}
\]

where:

- \(E_{EL}\) are the emissions allocated to all self-generated electricity (tCO2e)
- \(E_H\) are the emissions allocated to all self-generated heat (steam) (tCO2e)
- \(E_{EL+H}\) are the emissions allocated to all self-generated energy (tCO2e)
- \(P_{EL}\) is total produced electricity (GJ; 1 GWh = 3600 GJ)
- \(P_H\) is total produced heat (steam) (GJ)
- \(e_{EL}\) is efficiency of electricity generation (default value = 0.35)
- \(e_H\) is efficiency of heat (steam) generation (default value = 0.80)
In the absence of actual efficiency values for the specific CHP unit(s) in place, reporting operations must use the default values for the efficiencies of steam and electricity production as stated above. If efficiency values are available and sufficient justification is provided to the ministry, they must be reported and used in place of the default values.

2) Determining emission intensity of self-generated electricity and heat

Emissions intensity must be provided in tCO2e/GWh. GJs can be converted to GWh by dividing GJs by 3600. The Emission Intensity of self-generated electricity, in tCO2e/GWh, is:

\[ EI_{EL} = \frac{E_{EL}}{P_{EL}} \]

The Emission Intensity of self-generated heat, in tCO2e/GJ, is:

\[ EI_{H} = \frac{E_{H}}{P_{H}} \]

3) Allocating emissions to sold electricity and sold heat

Emissions associated with sold electricity are quantified as follows:

\[ E_{EL}^{sold} = EI_{EL} \times P_{EL}^{sold} \]

where:

\[ P_{EL}^{sold} \] is the amount, in GWh, of produced electricity sold to the grid (1 MWh = 3600 GJ).

Emissions associated with sold heat are quantified as follows:

\[ E_{H}^{sold} = EI_{H} \times P_{H}^{sold} \]

where:

\[ P_{H}^{sold} \] is the amount, in GJ, of produced heat sold.

Therefore the emissions total for CII purposes is:

\[ E_{CHP} = E_{onsite} - E_{EL}^{sold} - E_{H}^{sold} \]
where \( E_{\text{onsite}} \) is the reporting operation’s emissions total as required to be reported under GGIRCA and submitted in the Single Window Reporting System.

Reporting operations must demonstrate that the total amount of sold energy does not exceed that which is allowable under a fully executed purchase agreement. Records evidencing such agreements must be kept in accordance with GGERR.

All emissions from purchased electricity and/or heat must be allocated to the facility’s products. The applicant must add allocate emissions from generated electricity and/or heat to the products produced at the facility and/or to sold electricity.

**Reporting of Energy**

Applicants to the CIIP must also report annual amounts of heat and electricity:

- Generated on site – electricity in GWh and heat in GJ;
- Sold – electricity in GWh and heat in GJ;

For the purposes of CIIP it is assumed that:

- All energy generated on-site but not sold is used for production;
- All sold energy was generated on-site.

In the CIIP application, purchased electricity, self-generated electricity and heat and sold electricity are reported under the ‘Production’ tab.

To report energy generated on site, from the ‘Product or Service’ dropdown menu, select ‘Generated Electricity’ or ‘Generated Heat’ as applicable; enter the amount of electricity (in gigawatt hours) or heat generated (in gigajoules) and the associated emissions. To report self-generated electricity sold to the grid or heat sold to another operation, select ‘Sold Electricity’ or ‘Sold Heat’ as applicable and enter the amount (in gigawatt hours or gigajoules) and associated emissions.

**Quantification of Production**

Applicants to the CIIP must report annual production \( P_{pp} \) in tonnes of salable dry product. The term “salable” means products produced with the intention of either being sold as a product or as an input to another production process in a given reporting period. This amount includes all salable product produced during the reporting year, regardless of whether it is sold during the year or added to inventory. It does not include salable product sold from a previous year’s production.

Production must not include any waste products.
**Emission Intensity**

For the purposes of CIIP, the Emission Intensity of pulp and paper production $E_{IP}$ will be calculated as:

$$E_{IP} = \frac{E_{CHIP}}{P_{PP}}$$