

CleanBC Industrial Incentive Program

Aluminum Sector Guidance

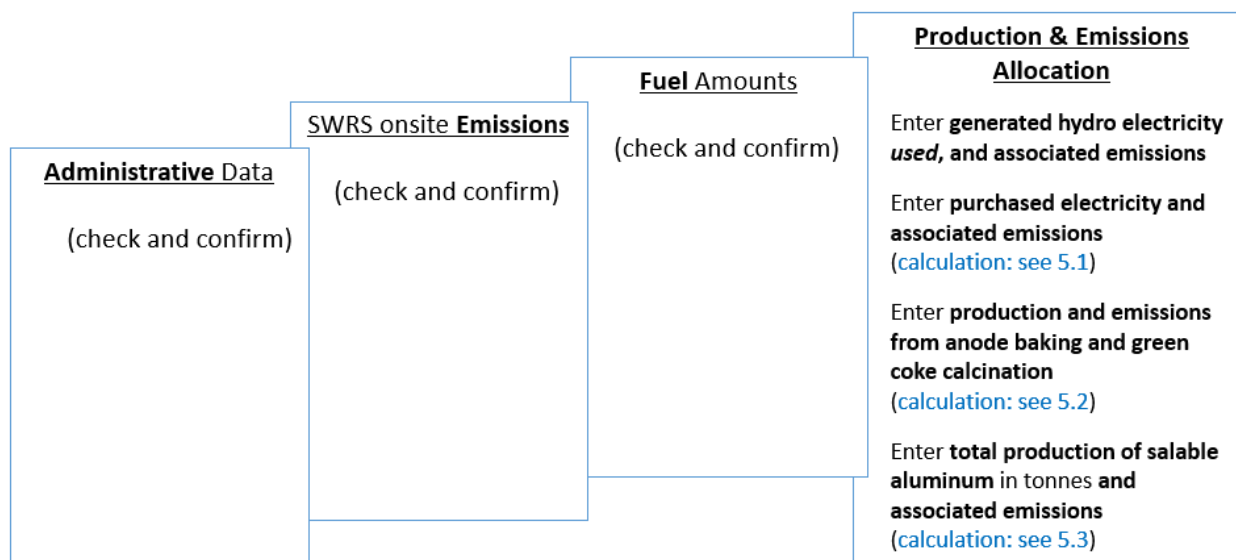
1. Applicable NAICS codes:

- **NAICS – 331313: Primary Production of Alumina and Aluminum**

Sub-Sector	CIIP Product
Aluminum Smelting	Smelting: Aluminum
	Non-CIIP Emissions (excluded from benchmarking)
	<ul style="list-style-type: none"> • Emissions associated with anode baking • Emissions associated with green coke calcination

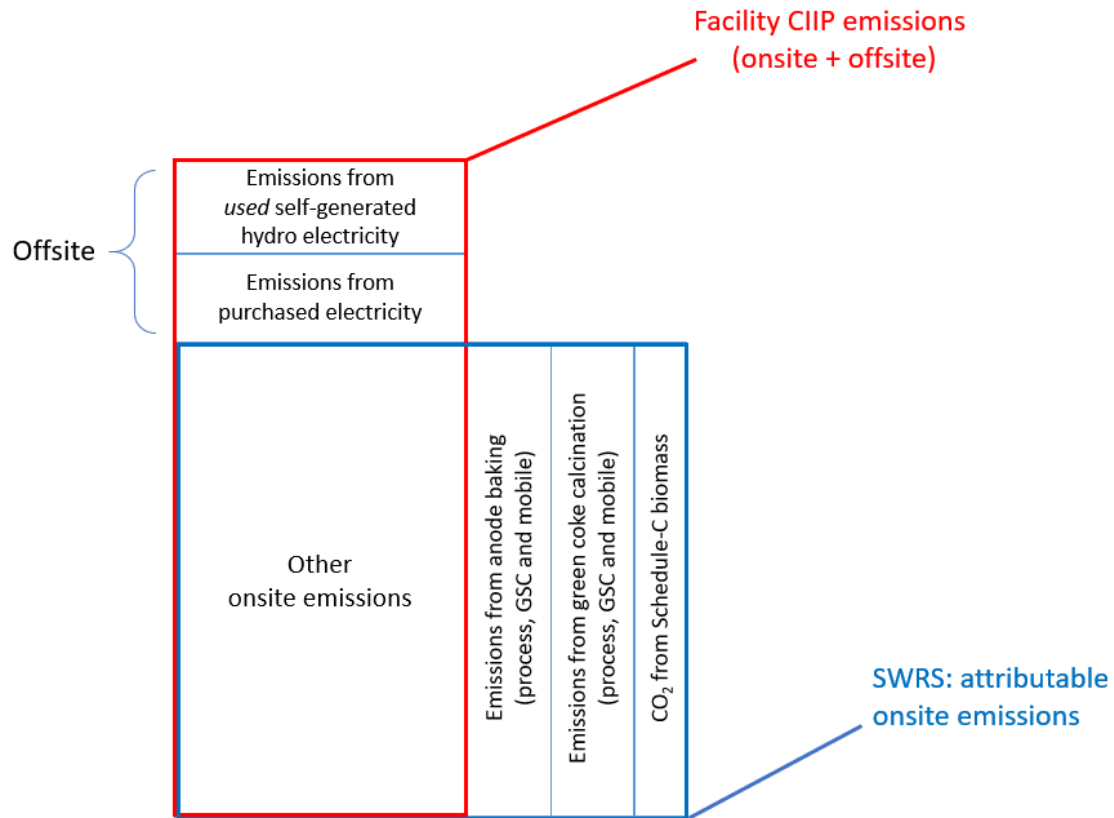
2. Quick Summary – Main Steps in CIIP application

- 2.1 Complete and submit a facility emission report in the Single Window Reporting System (SWRS)
- 2.2 Complete and submit a CIIP application (it is pre-filled with SWRS data where applicable)



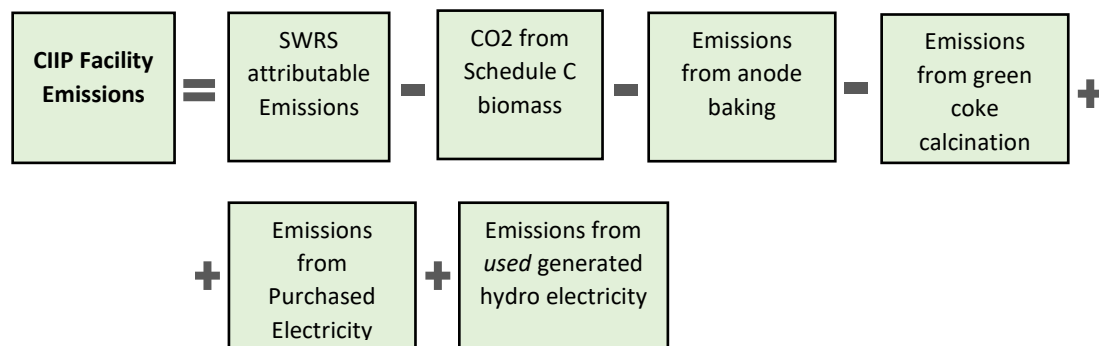
(calculation) steps are detailed in section **5. Calculation Methodologies** below.

3. Facility Emissions for CIIP purposes



For the Facility emission total for CIIP purposes:

- Facility onsite emissions CO₂ from Schedule C biomass are excluded,
- Facility onsite emissions from anode baking are excluded,
- Facility onsite emissions from green coke calcination are excluded,
- Facility offsite emissions from *used* generated hydro electricity are included, and
- Facility offsite emissions from purchased electricity are included.



Or, equivalently,

$$E_{Facility}^{CIIP} = E_{Attr.}^{SWRS} - E_{CO2bioC}^{SWRS} - E_{Anode\ baking} - E_{Green\ coke\ calcination} \\ + E_{Purchased}^{Electr.} + E_{Hydro\ used}^{Electr.}$$

Facility onsite emissions are pre-filled in the CIIP application, where possible, with data submitted through the SWRS system.

Facility emissions associated with anode baking and green coke calcination must be entered in the *Production and Emissions Allocation* section of the CIIP application.

Facility offsite emissions associated with electricity purchased, or with self-generated hydro electricity *used*, must be calculated from the respective electricity amounts. Both amounts and emissions are entered in the *Production and Emissions Allocation* section of the CIIP application.

4. Completing a CIIP Application

The CIIP application has four sections. Where possible, the *Administrative*, *SWRS Onsite Emissions* and *Fuels* sections are pre-populated with data reported through the SWRS system. Applicants must review, confirm, and, if applicable, update this information and also enter production and emissions allocation information in the *Production and Emissions Allocation* section.

Administrative Data

Most information in the administrative section will be pre-populated from SWRS.

- Review pre-populated data for accuracy
- Enter the BC Corporate Registry number as it appears on orgbook.gov.bc.ca

NOTE: The BC Corporate Registry number and the operator's legal name on the CIIP application must match the entry on OrgBook. The incentive payment will be issued to the legal business name as it appears on the CIIP application.

- Please ensure all mailing addresses follow the [Canada Post address format](#)
- Enter at least one application contact. The Primary Application Contact field will be pre-populated based on the user who starts an application; please confirm or edit as applicable. This will be the primary contact CAS will use for all application-related correspondence: questions, application status changes, review results, etc. A Secondary Application Contact can be added, if applicable. Please note that automated system messages such as application status updates will only be sent to the primary contact.
- Choose the primary NAICS code that the facility operates under from the available list. The NAICS codes in the pre-populated list reflect the sectors eligible to apply for CIIP. You will not be

able to enter a NAICS code that is not on the list. The production information required to be entered in the *Production and Emissions Allocation* section will depend on the NAICS code selection

If you believe your facility's sector is eligible but your NAICS code is not on the list, please contact the CIIP team at GHGRegulator@gov.bc.ca.

SWRS Onsite Emissions

This section is pre-filled with data from the facility's SWRS report. Please review and confirm. If the information needs updating, this likely means that the SWRS report has to be updated first.

Fuels

This section is pre-filled with data from the facility's SWRS report. Please review and confirm. If the information needs updating, this likely means that the SWRS report has to be updated first.

Production & Emissions Allocation

NOTE: The ministry provides a calculator spreadsheet with the appropriate calculation formulas built in, to assist in calculations at this step of the CIIP application process (available [at this link](#)).

NOTE: To enter data as required in this section, first select 'Generated hydro electricity used', then 'Offsite Emissions: Purchased Electricity', then 'Excluded emissions – anode baking', then 'Excluded emissions – green coke calcination', and finally 'Smelting: Aluminum', as applicable, from the 'Product or Service' dropdown menu.

Allocating CIIP Facility emissions

CIIP facility emissions, calculated as shown in section 3, must be allocated to '**Smelting: Aluminum**'.

Select '**Generated hydro electricity used**'

- Enter generated hydro electricity used (in GWh). Enter 0 if not applicable.
- Enter 0 for the emissions associated with that electricity (do not leave blank).
 - (We have determined that the hydro dam has negligible methane emissions at present; consequently, the emissions intensity for self-generated hydro electricity was changed to 0 (zero).)

Select '**Offsite Emissions: Purchased Electricity**'

- Enter purchased electricity (in GWh). Enter 0 if not applicable.
- Calculate and enter the emissions associated with purchased electricity, using the calculator (see section 5.1 below for details).

Select '**Excluded emissions – anode baking**'

- Enter baked anode production in tonnes.

- Calculate and enter the associated emissions, using the calculator (see section 5.2 below for details).

Select **‘Excluded emissions – green coke calcination’**

- Enter calcined coke production in tonnes.
- Calculate and enter the associated emissions, using the calculator (see section 5.2 below for details).

Emissions associated with anode production and green coke calcination are not part of the benchmark for CIIP purposes.

Select **‘Smelting: Aluminum’**

- Enter production of salable aluminum in tonnes.

Salable aluminum includes all salable aluminum produced during the reporting year, regardless of whether sold during the year or added to inventory. It does not include salable aluminum sold from a previous year’s production.

Salable aluminum production must not include any waste products.

- Calculate and enter the CIIP facility emissions, using the calculator (see section 5.3 below for details).

Summary

Review your application for accuracy, review the terms and conditions, and submit the application.

The system will automatically perform some checks for consistency. If inconsistencies are found, the application will show a warning message, highlighting the issue requiring attention. To address any highlighted inconsistencies, you must go back to the relevant application section/tab and either correct the reported values or provide an explanation by entering a comment in the relevant section.

Additionally, the system may detect errors in your application, such as missing data. These errors must be corrected in order to submit an application. In certain exceptional cases when the issue cannot be addressed through the application system, you will have the ability to override the error message by providing an explanation and then submit the application.

Any unresolved warnings or errors may delay the processing of your application.

5. Calculation Methodologies

Unless explicitly stated otherwise in 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 aluminum smelting reporting operations are:

- WCI.020 General Stationary Combustion
- WCI.040 Electricity Generation
- WCI.070 Primary Aluminum Production
- WCI.280 Mobile Equipment at Facilities

A CIIP applicant must first submit an emission report in SWRS (SWRS report) complying with GGIRCA and GGERR and using the WCI methodologies. A CIIP application is then pre-filled where possible with applicable information from the SWRS report.

5.1 Calculating emissions associated with purchased grid electricity

The ministry provides a calculator spreadsheet with the appropriate calculation formulas built in, to assist in calculations at this step of the CIIP application process (available [at this link](#)).

In the calculator, in the section 'Purchased Electricity', select the applicable electrical grid (Integrated or Fort Nelson) from the pulldown menu in cell D19. This will cause the appropriate electricity intensity factor in tCO₂e/GWh to be displayed in cell F19.

In the blue cell, enter the amount of purchased electricity (in GWh).

Emissions associated with purchased grid electricity are then automatically calculated and displayed in cell F21, in tonnes CO₂e. For example:

Purchased Electricity

INPUT each variable listed below:

Purchased Electricity

	Electrical Grid:		Amount	Units
Emissions Intensity Factor of Grid	Integrated Grid	EIF _{El. Grid}	11.5	tCO ₂ e/GWh
Amount of electricity purchased		PURCHASED	300.00	GWh
Emissions from Purchased Electricity		PURCHASED	3,450.00	tCO ₂ e

Choose grid
from dropdown
menu

Enter the amount of emissions from purchased grid electricity in the CIIP application.

The calculator uses the following methodology to determine emissions associated with purchased grid electricity:

If

$EIF^{El\cdot Grid}$ (selection) is the grid electricity emission factor for the selected grid and applicable year, in tCO₂e/GWh;

$Q_{Purchased}^{Electr\cdot}$ (input) is the quantity of purchased grid electricity, in GWh;

$E_{Purchased}^{Electr\cdot}$ are the emissions associated with purchased grid electricity, in tCO₂e.

Then

$$E_{Purchased}^{Electr\cdot} = EIF^{El\cdot Grid} * Q_{Purchased}^{Electr\cdot}$$

where $EIF^{El\cdot Grid}$ data comes from the published [electricity emission intensity factor for grid-connected entities](#) for the selected grid for applicable year.

5.2 Calculating emissions associated with anode baking and green coke calcination

The ministry provides a calculator spreadsheet with the appropriate calculation formulas built in, to assist in calculations at this step of the CIIP application process (available [at this link](#)).

In the calculator, in the section 'Non-CIIP Emissions (excluded from benchmarking)', in the blue cells:

- Enter Process emissions from anode baking and green coke calcination from the SWRS report (tonnes CO₂e)
- Enter General Stationary Combustion (GSC) emissions associated with anode baking and green coke calcination (tonnes CO₂e)
- Enter Mobile Combustion (MC) emissions associated with anode baking and green coke calcination (tonnes CO₂e)
 - In the absence of other measurement, divide mobile emissions equally between anode baking and green coke calcination.

The calculator then displays the total emissions associated with anode baking and with green coke calcination as the sum of the Process, GSC and MC components for each. For example:

Non-CIIP Emissions (excluded from benchmarking)

INPUT emissions:

Do not leave blank - enter zero if needed

	Emissions	Units
Process Emissions from SWRS report		
(Process) Anode Baking	10,000.00	tCO ₂ e
(Process) Green Coke Calcination	10,000.00	tCO ₂ e
General Stationary Combustion Emissions		
(GSC) Anode Baking	10,000.00	tCO ₂ e
(GSC) Green Coke Calcination	10,000.00	tCO ₂ e
Mobile Combustion Emissions*		
(MC) Anode Baking	10,000.00	tCO ₂ e
(MC) Green Coke Calcination	10,000.00	tCO ₂ e

*In the absence of other measurement, divide *mobile* emissions equally between anode baking and green coke calcination.

Emissions associated with Anode Baking	30,000.00	tCO ₂ e
Emissions associated with Green Coke Calcination	30,000.00	tCO ₂ e

Enter the emissions associated with anode baking in the CIIP application.

Enter the emissions associated with green coke calcination in the CIIP application.

5.3 Calculating CIIP Facility emissions

The ministry provides a calculator spreadsheet with the appropriate calculation formulas built in, to assist in calculations at this step of the CIIP application process (available [at this link](#)).

In the calculator, in the section 'CIIP Facility Emissions', in the blue cells:

- Enter SWRS attributable onsite emissions, including from Schedule C biomass (tonnes CO₂e)
- Enter CO₂ emissions from Schedule C biomass (tonnes CO₂e)

The calculator then displays the CIIP Facility emissions. For example:

CIIP Facility Emissions

INPUT emissions where applicable:

Do not leave blank - enter zero if needed

	Emissions	Units
SWRS Attributable Emissions	400,000.00	tCO ₂ e
-- CO ₂ emissions from Schedule C biomass	100.00	tCO ₂ e
-- Emissions associated with Anode Baking	30,000.00	tCO ₂ e
-- Emissions associated with Green Coke Calcination	30,000.00	tCO ₂ e
+ Emissions from Generated hydro electricity <u>used</u>	-	tCO ₂ e
+ Emissions from Purchased Electricity	2,910.00	tCO ₂ e
CIIP Facility Emissions	342,810.00	tCO₂e

Enter the CIIP Facility Emissions in the CIIP application.