CleanBC Industrial Incentive Program
Lime Sector Guidance
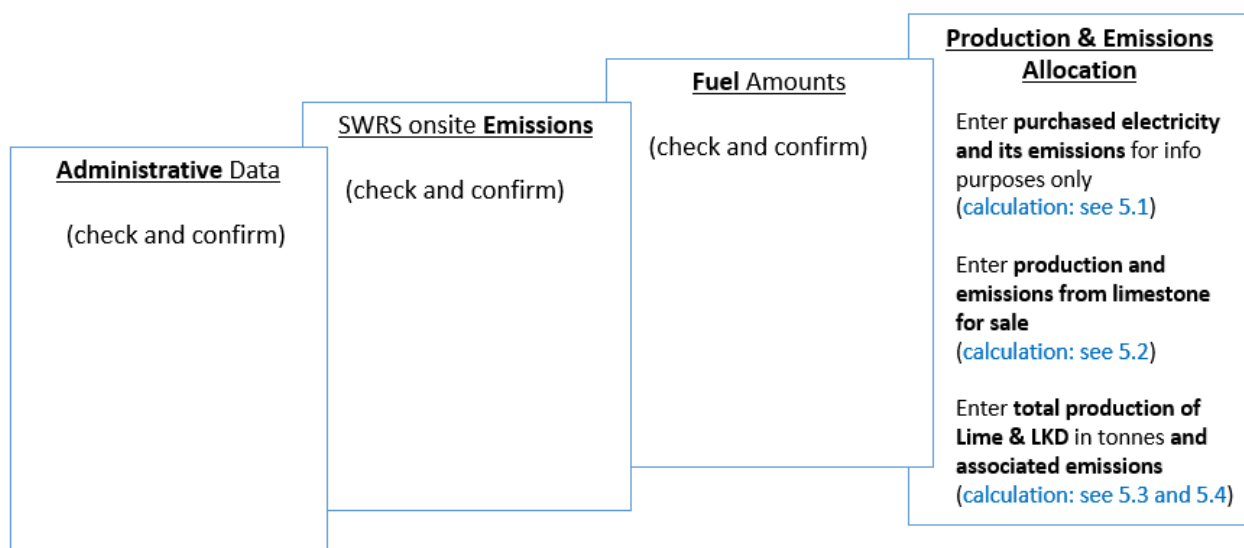
1. **Applicable NAICS codes:**

    - **NAICS – 327410: Lime Manufacturing**

| Sub-Sector	CIIP Product
Lime manufacturing	Lime at 94.5% CaO and Lime Kiln Dust
	Non-CIIP Product (excluded from benchmarking)
	Limestone for sale

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)

Production & Emissions Allocation

Enter **purchased electricity and its emissions** for info purposes only
(calculation: see 5.1)

Enter **production and emissions from limestone for sale**
(calculation: see 5.2)

Enter **total production of Lime & LKD** in tonnes **and associated emissions**
(calculation: see 5.3 and 5.4)

Fuel Amounts

(check and confirm)

SWRS onsite Emissions

(check and confirm)

Administrative Data

(check and confirm)

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

3. Facility Emissions for CIIP purposes
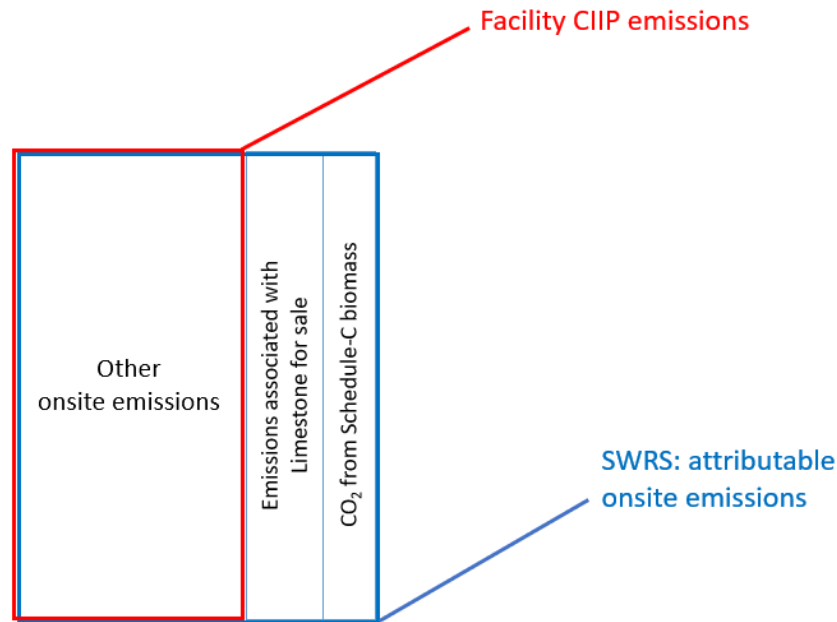
For the Facility emission total for CIIP purposes:

- Facility onsite emissions CO2 from Schedule C biomass are excluded,
- Facility onsite emissions from limestone for sale are excluded
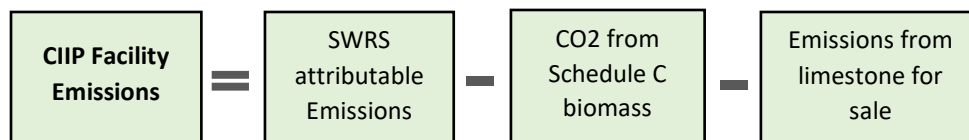
Or, equivalently,

$$E_{Facility}^{CIIP} = E_{Attr.}^{SWRS} - E_{CO2bioC}^{SWRS} - E_{Limestone\_for\_sale}$$

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

Facility emissions associated with limestone for sale production must be 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 though 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 'Offsite Emissions: Purchased Electricity', then 'Excluded Product: limestone for sale, and finally 'Lime at 94.5% CaO and lime kiln dust', as applicable, from the 'Product or Service' dropdown menu.

NOTE: Facility offsite emissions associated with purchased electricity must be calculated from electricity amount purchased and are required for information purposes only. These emissions do not count towards a facility's emission total for CIIP purposes (see section 3. above).

Allocating CIIP Facility emissions

CIIP facility emissions, calculated as shown in section 3, must be allocated to '**Lime at 94.5% CaO and lime kiln dust**'.

Select '**Offsite Emissions: Purchased Electricity**'
- Enter purchased electricity (in GWh). Enter 0 if not applicable.
- Calculate and enter the emissions associated with purchased electricity:
  - multiply the amount of purchased electricity by the published grid electricity emission intensity for the year, or
  - if preferred, use the calculator (see section **5.1** below for details)

Select '**Excluded Product: limestone for sale**'
- Enter non-calcinated limestone produced for sale (out of total limestone production) in tonnes.
- Calculate and enter the emissions associated with it, using the calculator (see section **5.2** below for details)

Select '**Lime at 94.5% CaO and lime kiln dust'**

- Enter total Lime at 94.5% CaO and Lime Kiln Dust production amount in tonnes, using the calculator (see section **5.3** below for details)

The production amounts above must include all lime, LKD, limestone and limestone for sale produced during the reporting year, regardless of whether it is sold during the year or added to inventory. It does not include amounts sold from a previous year's production.

Limestone for sale is not part of the benchmark for CIIP purposes.

- Calculate and enter the CIIP facility emissions, using the calculator (see section **5.4** 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 lime-producing reporting operations are:

- WCI.020 General Stationary Combustion
- WCI.170 Lime Manufacturing
- 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 (for information purposes only)', select the applicable electrical grid (Integrated or Fort Nelson) from the pulldown menu in cell D11. This will cause the appropriate electricity intensity factor in tCO2e/GWh to be displayed in cell F11.

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 F13, in tonnes CO2e. For example:

Purchased Electricity (for information purposes only)

INPUT each variable listed below:

Purchased Electricity

	Electrical Grid:		Amount	Units
Emissions Intensity Factor of Grid	Integrated Grid ▼	$EIF_{El.Grid}$	11.5	tCO_2e/GWh
Amount of electricity purchased		EL_PURCHASED	300.00	GWh
Emissions from Purchased Electricity		L_PURCHASED	3,450.00	tCO_2e

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;

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

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

Then

$$E^{Electr \cdot}_{Purchased} = EIF^{El \cdot Grid} * Q^{Electr \cdot}_{Purchased}$$

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 limestone for sale

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: If the limestone for sale production is zero (all production is lime & LKD), skip this section and enter 0 for the emissions associated with limestone for sale in the CIIP application.

In the calculator, in the section on emission allocation to limestone for sale, in the blue cells:

- Enter GSC (General Stationary Combustion) emissions associated with drying limestone for sale **only** (tonnes CO2e)
- Enter total Mobile Combustion emissions from the SWRS report (tonnes CO2e)
- Enter total limestone production (tonnes)
- Enter non-calcinated limestone produced for sale, out of the total (tonnes)

Based on the data entered above, the calculator automatically determines the total emissions associated with limestone for sale. For example:

Limestone for sale Emissions Allocation

Emissions: Mobile, and GSC for drying *only*	Amount	Units
GSC emissions for limestone-for-sale drying process **only**	100.00	tCO2e
Mobile Combustion emissions from SWRS report	250.00	tCO2e

Limestone production

Product		Units
Total limestone production	400.0	tonnes
Non-Calcinated limestone produced for sale, out of the total	120.0	tonnes

Emissions Allocation:

Total Emissions for Limestone for sale:	175.00	tCO2e

Enter the emissions associated with limestone for sale in the CIIP application.

The calculator uses the following methodology to determine these emissions:

If

$E^{dryerGSC}$ (input) are the facility's general stationary combustion emissions associated with the drying limestone for sale only;

E^{MC} (input) are the facility's mobile combustion emissions from the SWRS report;

P^{LS_total} (input) is the total limestone production;

$P^{LS\_for\_sale}$ (input) is the limestone for sale production, out of the total (non-CIIP product);

Then

$$E_{LS\_for\_sale}^{MC} = \left(\frac{P^{LS\_for\_sale}}{P^{LS\_total}}\right) * E^{MC}$$

and

$$E_{Limestone\_for\_sale} = E^{dryerGSC} + E_{LS\_for\_sale}^{MC}$$

5.3 Calculating Lime and Lime Kiln Dust Production adjusted to 94.5% CaO content lime

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 on Lime and Lime Kiln Dust Production, in the blue cells, for each month:

- Enter monthly lime production (tonnes) and enter its CaO content (%)
- Enter monthly lime kiln dust (LKD) production (tonnes)

NOTE: The data must be the same as that entered into the SWRS emission report.

Based on the data entered above, the calculator automatically determines equivalent lime production adjusted to 94.5% CaO content and displays combined adjusted lime + LKD production.

For example:

Data from SWRS emisison report	Lime Production	CaO Content of Lime	Lime Kiln Dust Production		
	Tonnes	%	Tonnes		
January	500.00	94.5%	50.00		
February	500.00	92.0%	45.00		
March	500.00	91.0%	40.00		
April	450.00	92.0%	45.00		
May	350.00	92.5%	50.00		
June	480.00	94.5%	55.00		
July	400.00	95.0%	50.00		
August	350.00	90.0%	40.00		
September	450.00	93.5%	35.00		
October	550.00	93.0%	54.00		
November	500.00	94.0%	45.00		
December	500.00	94.5%	50.00		
Total annual production at 94.5% CaO content Lime:	5448.25		559.00	**6,007.25**	tonnes
				GRAND TOTAL	

Enter the total amount of lime at 94.5% CaO + LKD production in the CIIP application.

The calculator uses the following methodology to determine lime at 94.5% CaO + LKD production:

If

P_m^{Lime} (input) is the monthly amount of lime, in tonnes (from SWRS emission report);

CaO_m (input) is the associated monthly average percentage (%) of CaO in that lime (from SWRS emission report);

P_m^{LKD} (input) is the monthly amount of LKD, in tonnes (from SWRS emission report);

94.5   is the reference fraction of CaO (%) for lime equivalency;

Then

$$P^{Lime+LKD} = \frac{1}{94.5} * \sum_{m=1}^{12}\left(P_m^{Lime} * CaO_m\right) + \sum_{m=1}^{12}\left(P_m^{LKD}\right)$$

5.4 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	65,000.00	tCO2e
-- CO2 emissions from Schedule C biomass	100.00	tCO2e
-- Emissions associated with Limestone for sale	838.94	tCO$_2$e
CIIP Facility Emissions	**64,061.06**	**tCO2e**

Enter the CIIP Facility Emissions in the CIIP application.