The Carbon Border Adjustment Mechanism

Dear participants,
Welcome to the webinar session on the

ALUMINIUM SECTOR

Please be patient, the webinar will start at 14:00 (CET).

The Carbon Border Adjustment Mechanism (CBAM)

Webinar session on the aluminium sector

Please make sure that you appear in Zoom with your name and affiliation.

If needed, rename yourself:

- Click on the "Participants" icon in the Zoom toolbar.
- In the "Participants" window, next to your name click on "More" and choose "Rename".
- Enter a new name and click "Rename" to save it. You will see the new name showing in the "Participants" window.

Starting time: 14:00 (CET)

21 September 2023

Housekeeping rules

- ✓ All participants are muted
- ✓ Webinar is being recorded and will be made public
- ✓ Video recording is not allowed
- ✓ Please write your questions in the chat – they will be answered at the end of the webinar
- ✓ A feedback survey will appear on your screen at the end of webinar
- ✓ The presentation will be uploaded on the DG TAXUD CBAM webpage, where you can also find additional materials.

Zoom poll

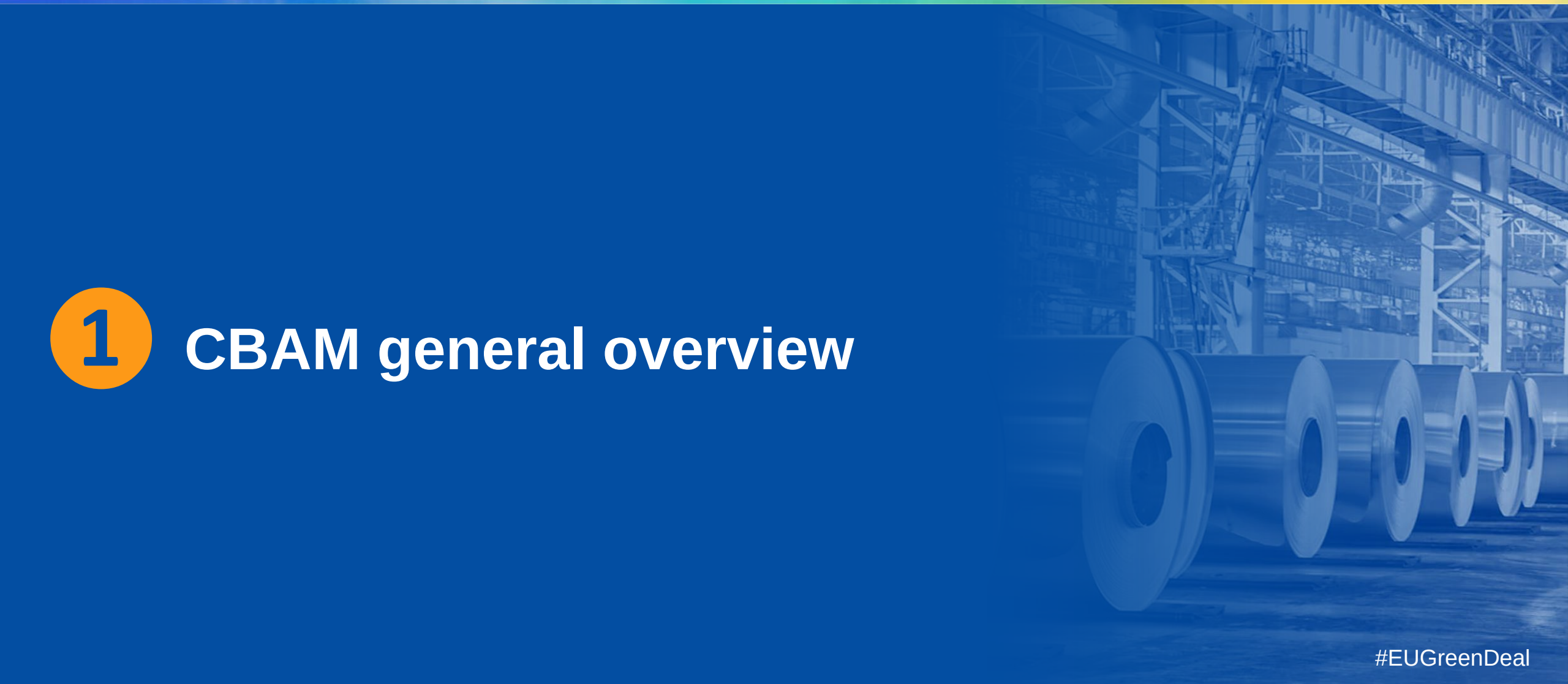
Question:
Which entity defines you best?

- EU Member State
- EU Importers
- Non-EU country
- Non-EU producer
- Non-EU exporter
- International organisation
- NGO & think tank
- Law firm, consultancy
- Academia
- Other

Webinar Agenda

1. CBAM general overview
2. Determination of embedded emissions in the aluminium sector
3. Overview of CBAM actors & reporting declarants
4. Submitting CBAM reports

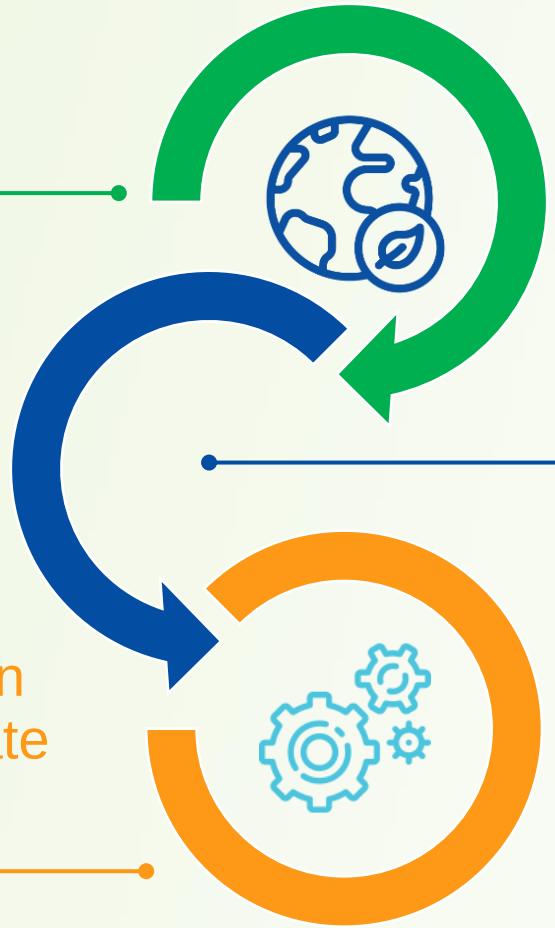
Carbon Border Adjustment Mechanism



1 CBAM general overview

The aim of CBAM

Prevents carbon leakage
to ensure effectiveness of
EU climate policy



Complements and
reinforces the EU ETS

Contributes to decarbonisation
globally and to reaching climate
neutrality by 2050

Reporting obligations in the transitional phase

October 2023 – December 2025

CBAM report containing the following:

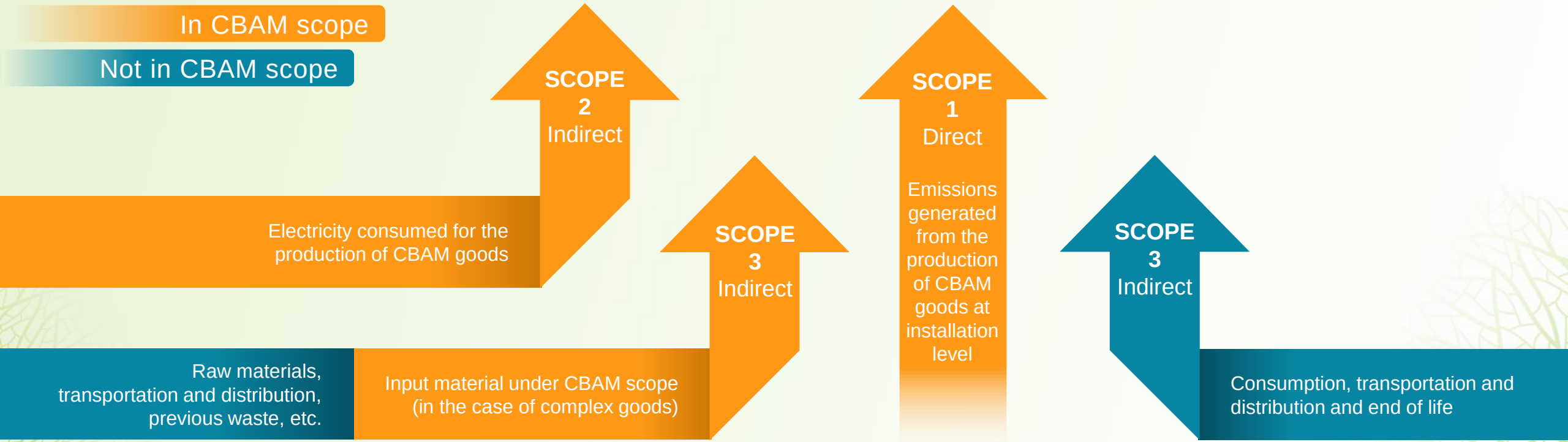
- Total quantity of goods imported during the preceding quarter
- Total embedded direct and indirect emissions
- The carbon price due in the country of origin for the embedded emissions

Report to be submitted quarterly

No verification of emissions by EU-accredited verifier

No CBAM certificates

CBAM emissions during the transitional phase



Carbon Border Adjustment Mechanism

2 Determination of embedded emissions: Aluminium

Key Terms

Simple goods

- goods produced from fuels and raw materials considered to have zero embedded emissions under CBAM

Complex goods

- goods produced from other CBAM goods (either simple or other complex goods)

Aggregated goods category

- group of CBAM goods with different CN codes but similar characteristics
- for each aggregated goods category (unwrought aluminium and aluminium products) and production route: provisions on system boundaries (inputs, outputs and corresponding emissions), emission monitoring and relevant precursors

Production process

- chemical or physical processes carried out in parts of an installation to produce goods under an aggregated goods category and its specified system boundaries

Production route

- specific technology used in a production process to produce goods

CBAM goods in the Aluminium sector

Aggregated goods category	Product CN Code	Description
Unwrought aluminium	7601	Unwrought aluminium
Aluminium products	7603	Aluminium powders and flakes
	7604	Aluminium bars, rods and profiles
	7605	Aluminium wire
	7606	Aluminium plates, sheets and strip, of a thickness exceeding 0,2 mm
	7607	Aluminium foil
	7608	Aluminium tubes and pipes
	7609 00 00	Aluminium tube or pipe fittings (for example, couplings, elbows, sleeves)
	7610	Aluminium structures
	7611 00 00	Aluminium reservoirs, tanks, vats and similar containers, for any material
	7612	Aluminium casks, drums, cans, boxes and similar containers
	7613 00 00	Aluminium containers for compressed or liquefied gas
	7614	Stranded wire, cables, plaited bands and the like, of aluminium, not electrically insulated
	7616	Other articles of aluminium

Steps to determine specific embedded emissions

Step 1. Define the system boundaries associated with the production processes

Step 2. Identify relevant parameters and methods, then carry out monitoring

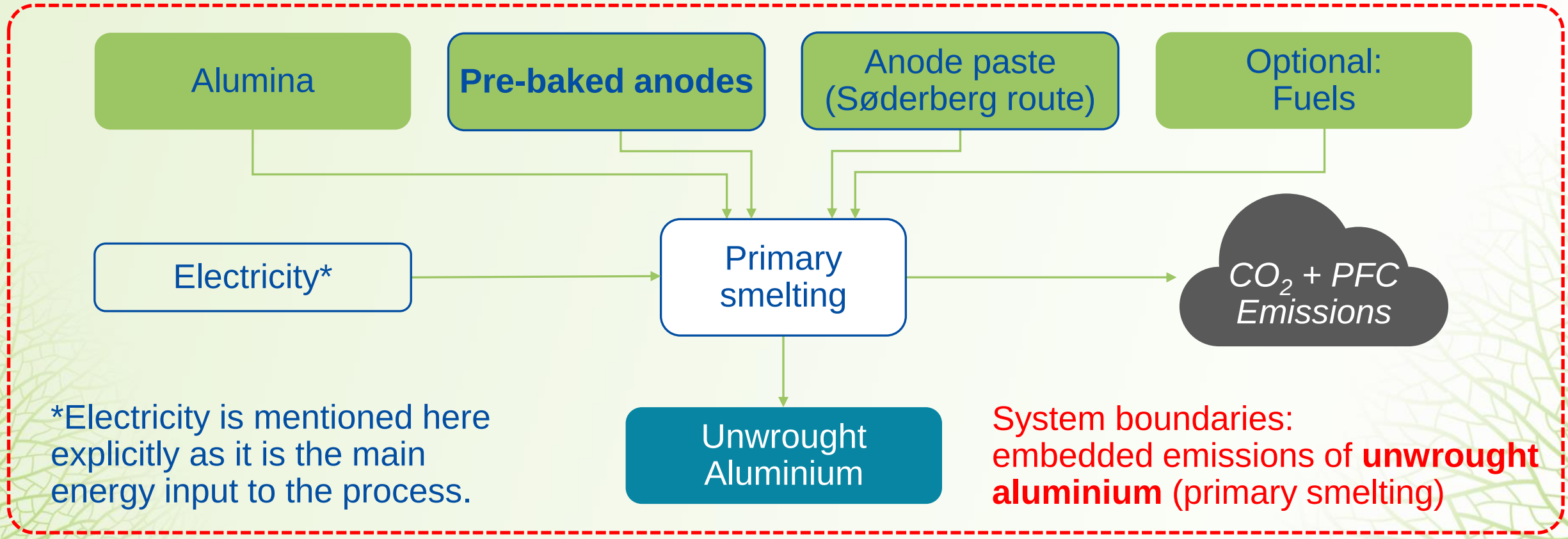
Step 3. Attribute emissions to production processes and then to goods

Step 4. Add the specific embedded emissions of relevant precursors

Step 5. Determine the specific embedded emissions of CBAM goods

Step 1: Define the system boundaries – Example

Unwrought aluminium - Primary (electrolytic) smelting production route



*Electricity is mentioned here explicitly as it is the main energy input to the process.

System boundaries: embedded emissions of **unwrought aluminium** (primary smelting)

Step 2: Monitoring – General

Direct emissions from fuels and materials

- Standard method, mass balance, continuous emissions monitoring

Electricity produced, if relevant

Direct emissions related to heat flows, if relevant

- Determine heat flows
- Emissions = heat flow × corresponding emission factor

Indirect emissions related to electricity consumption

- Determine electricity consumption for the production of CBAM goods

Waste gases, if relevant

- Determine flows and calorific values

Precursors, if relevant

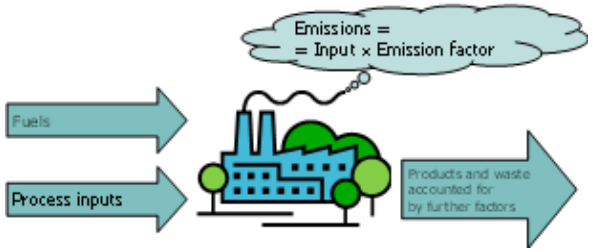
- Determine precursor consumption

Step 2: Monitoring – Direct emissions

1 Calculation-based methodology

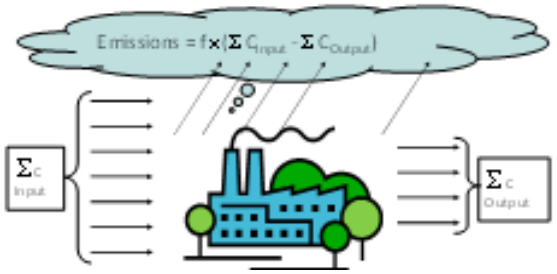
Standard method

- determine quantities of fuels and input materials consumed
- determine calculation factors such as net calorific value and emission factor
- determine emissions by multiplying consumption with calculation factors



Mass balance

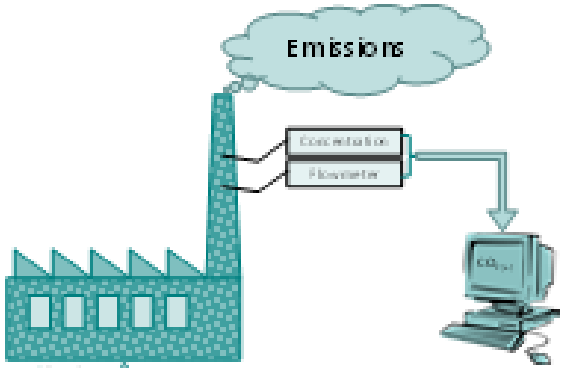
- determine carbon content in all fuels and input materials
- determine carbon content in all output materials
- determine emissions as difference between inputs and outputs
- typically relevant where carbon remains in the goods produced (e.g. steel).



2 Measurement-based methodology

Continuous emissions monitoring system

- measure GHG concentration directly in the stack or using extractive procedures
- measure flue gas flow
- determine emissions



Step 2: Monitoring – PFC emissions

- **Emissions of perfluorocarbons (PFCs)** result from the reaction of the molten cryolite with the carbon anodes
- **Relevant PFCs** are perfluoromethane (CF_4) and perfluoroethane (C_2F_6)
- **Emissions related to anode effects** (i.e. high-voltage PFC emissions) are determined by using the slope method or the overvoltage method
- **Emission factors of the slope and overvoltage methods** are based on:
  1) Default values depending on the technology used or
  2) Installation-specific factors that are determined through measurements in ducts or stacks, taking into account the collection efficiency
- **Other PFC emissions** (i.e. low-voltage PFC emissions) are estimated using industry best practice (guidelines of the International Aluminium Institute)

Step 2: Monitoring – Other methods

1. **Other monitoring and reporting methods** until 31 December 2024, if similar coverage and accuracy of emissions data:
   - a carbon pricing scheme where the installation is located, or
   - a compulsory emission monitoring scheme where the installation is located, or
   - an emission monitoring scheme at the installation which can include verification by an accredited verifier.
2. **Other referenced methods** including default values until 31 July 2024
3. **Estimation of up to 20%** of the total embedded emissions in the case of complex goods (includes the use of default values)

Step 3: Attribution of direct emissions

Attributed direct emissions of the production process

Emissions related to the attribution of measurable heat exported

Correction for exported waste gases

Emissions related to electricity production

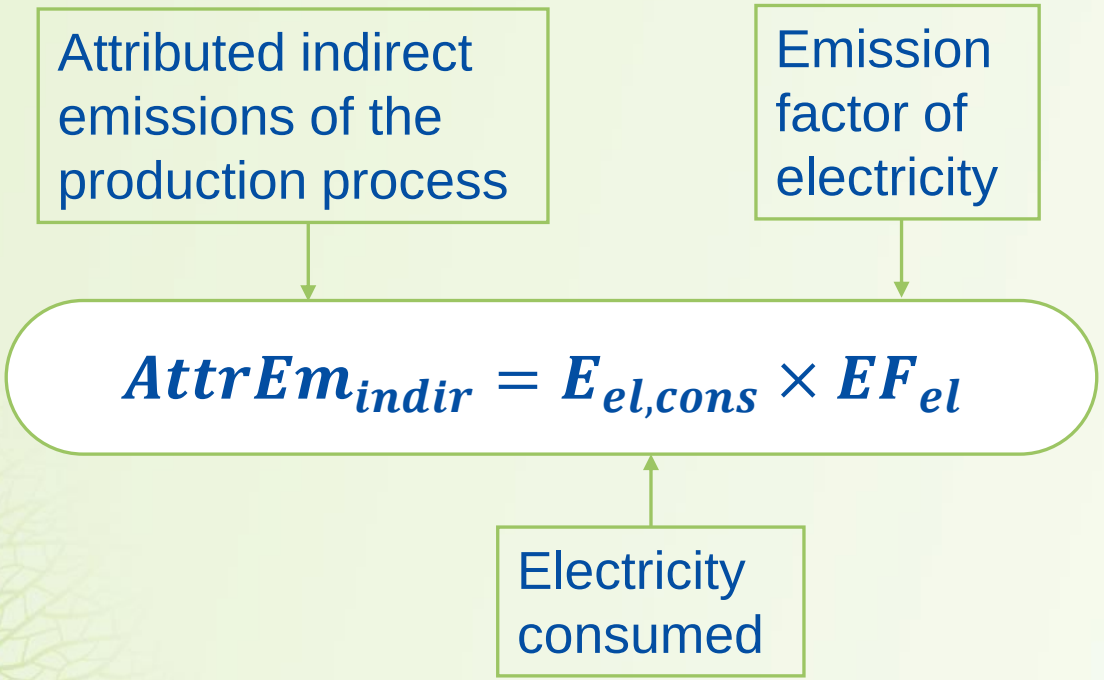
$$AttrEm_{dir} = DirEm^{*} + Em_{H,import} - Em_{H,export} + WG_{corr,import} - WG_{corr,export} - Em_{el,produced}$$

Directly attributable emissions as linked to source streams (exceptions for heat and waste gases)

Emissions related to the attribution of measurable heat imported

Correction for imported waste gases

Step 3: Attribution of indirect emissions



Emission factor of electricity

1) General case: use of default values
   - average emission factor of the country of origin, based on IEA data
   - other emission factors based on publicly available data (average emission factor or CO_2 emission factor)

2) Use of actual emission factors, if:
   - direct technical connection or
   - power purchase agreement

Steps 4 & 5: Precursors and calculation of specific embedded emissions

For simple goods (Step 5):

$$SEE_g = \frac{AttrEm_g}{AL_g}$$

- $AttrEm_g$: Attributed emissions (direct or indirect)
- SEE_g: Specific embedded emissions (direct or indirect)
- AL_g: Amount of goods produced

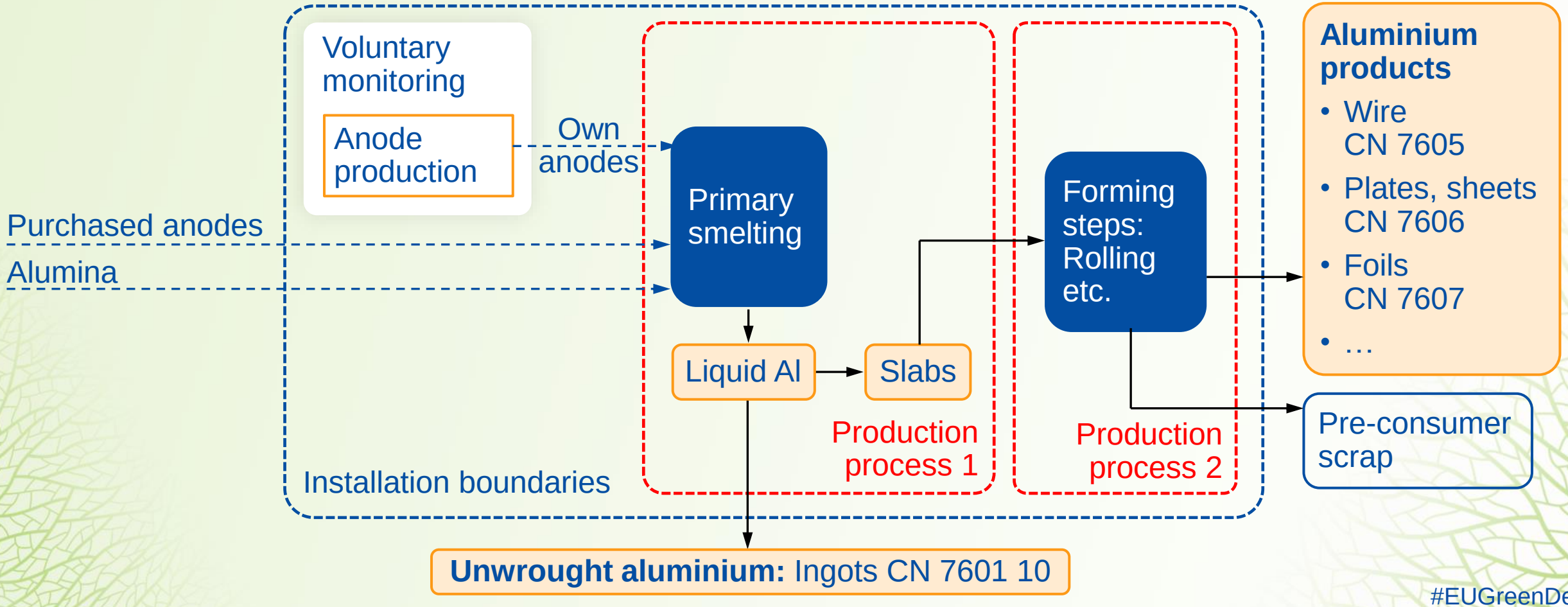
For complex goods using precursors as input (Steps 4 and 5):

$$SEE_g = \frac{AttrEm_g}{AL_g} + \sum_{i=1}^{n} m_i \cdot SEE_i$$

- SEE_g: Specific embedded emissions (direct or indirect) of the precursors
- $AttrEm_g$: Specific embedded emissions (direct or indirect)
- m_i: Amount of precursors used per goods produced

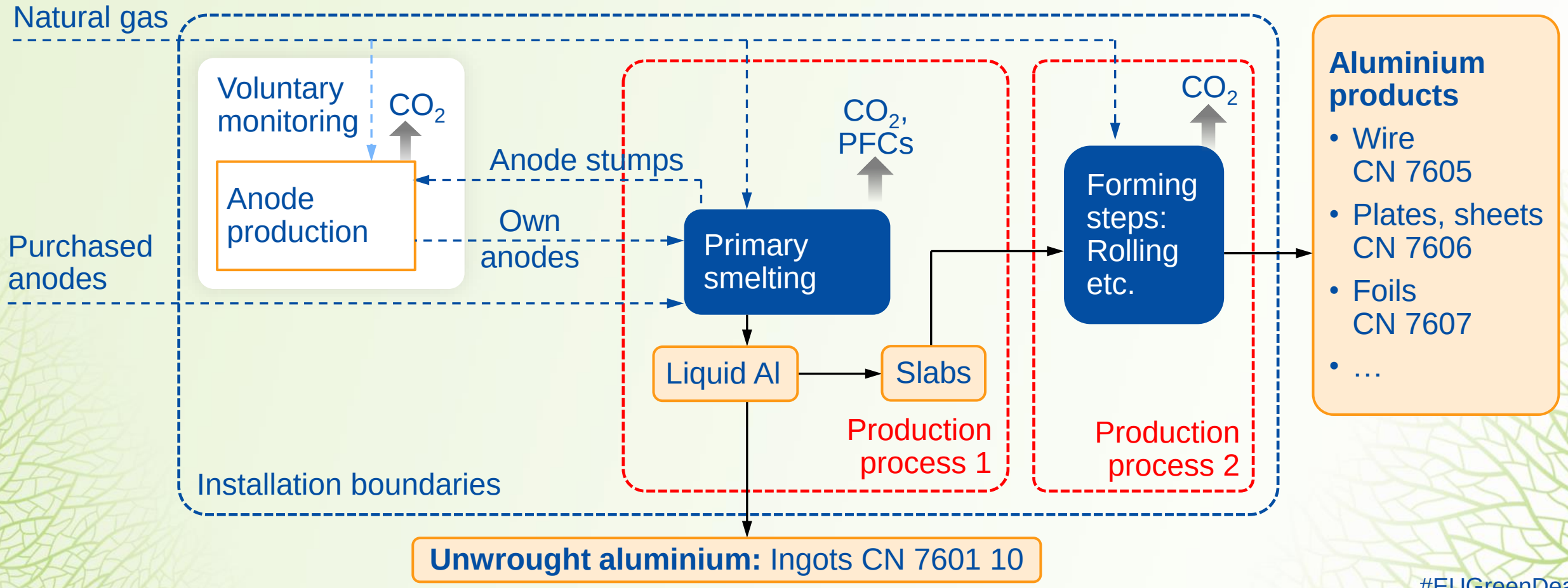
Worked aluminium example (1/6)

Aluminium example - Overview



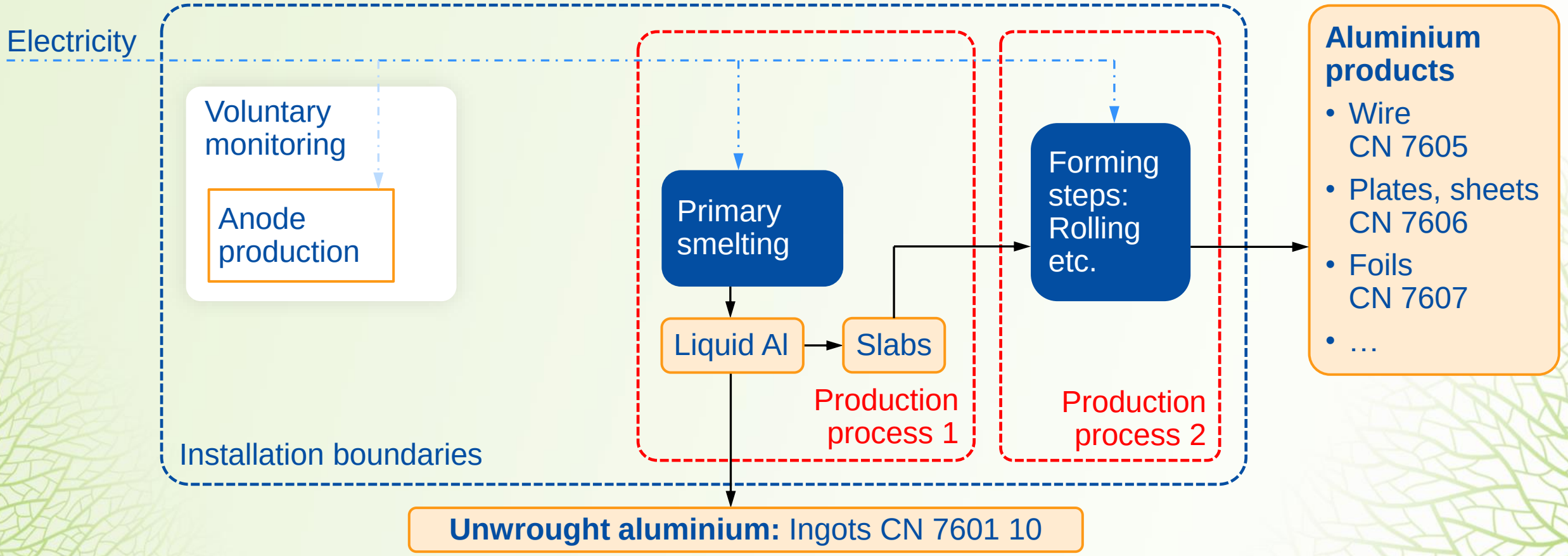
Worked aluminium example (2/6)

Source streams for monitoring of direct emissions



Worked aluminium example (3/6)

Indirect emissions monitoring (electricity consumption)



Worked aluminium example (4/6)

Installation's total direct emissions

Direct emissions	Consumption (t)	Emissions (t CO_2e)
From electrodes (using factor 3,664 t CO_2 / t C)	69 000	252 816
From natural gas (NCV = 48 GJ/t, EF = 56,1 t CO_2 / TJ)	12 219	32 902
From PFCs	NA	25 282
Total Process 1 (primary aluminium)	**NA**	**311 000**
From natural gas (NCV = 48 GJ/t, EF = 56,1 t CO_2 / TJ)	1 962	5 283
Total process 2 (final aluminium products), emissions from natural gas	**1 962**	**5 283**
Total direct emissions of the installation	**NA**	**316 283**

Worked aluminium example (5/6)

Installation's total indirect emissions

Indirect emissions	**Electricity consumed** (MWh)	**Emission factor** (t CO_2e / MWh)	**Emissions** (t CO_2e)
Process 1 (primary)	3 000 000	0,410	1 230 000
Process 2 (final products)	105 000	0,410	43 050
Total indirect emissions			1 273 050

Worked aluminium example (6/6)

Calculation of specific embedded emissions of complex final aluminium goods

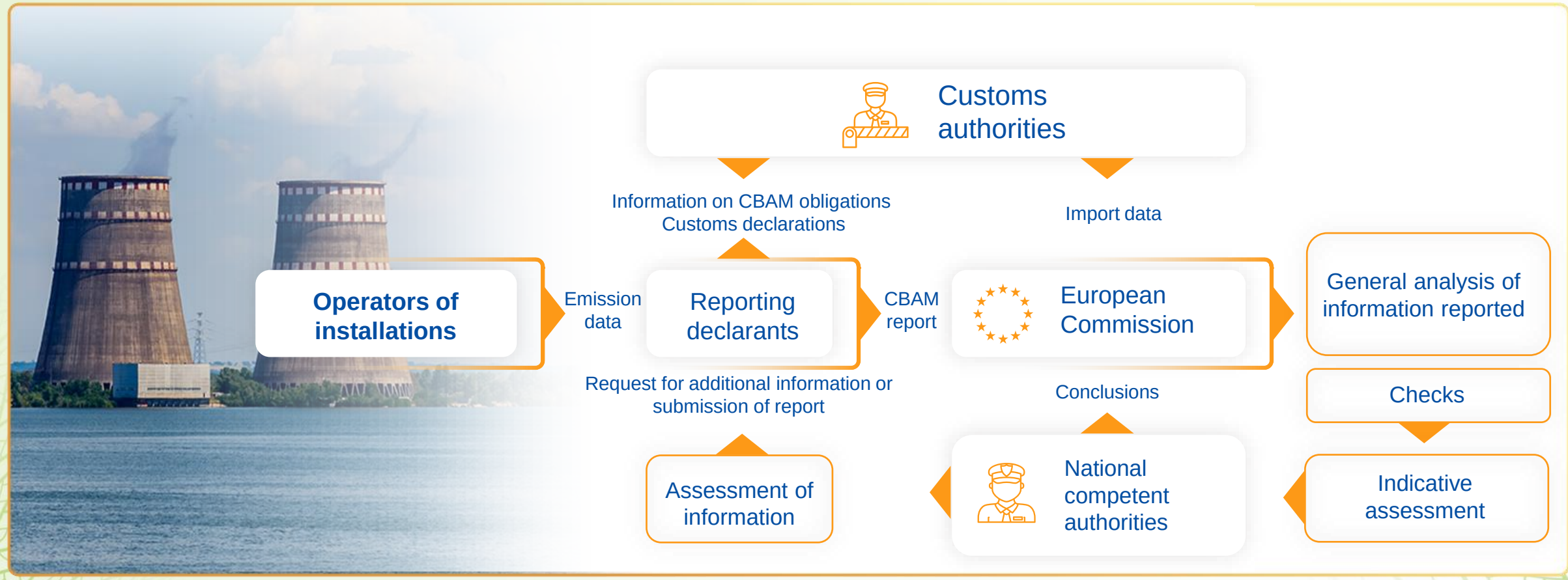
	Production levels		Direct emissions (t CO_2e)	Indirect emissions (t CO_2e)	Mass ratio (Mi) of precursor (t/t)	Direct SEE (t CO_2e/t)	Indirect SEE (t CO_2e/t)
Process 1 (Unwrought aluminium – ingots and slabs)							
	Ingots	80 000					
	Slabs	120 000					
Unwrought aluminium	**Total**	**200 000**	**311 000**	**1 230 000**		**1,555**	**6,150**
Process 2 (Aluminium products)							
Precursor	Slabs	120 000			1,062	1,651	6,531
Process 2		113 000	5 283	43 050		0,047	0,381
Aluminium products						**1,698**	**6,912**

Carbon Border Adjustment Mechanism

3

Overview of CBAM actors & reporting declarants

Overview of the actors in CBAM



Who are the reporting declarants?

Rules for Representatives

No representation by others - Own import

Direct customs representative (Status: Customs Declarant)

Importer is the reporting declarant

Indirect customs representative (Status: Importer)

Importer or indirect customs representative may be the reporting declarant

Subject to reporting obligations

Steps to comply with the CBAM reporting obligations

Step 1: Define the scope of goods concerned

Step 2: Determine the reporting period to use

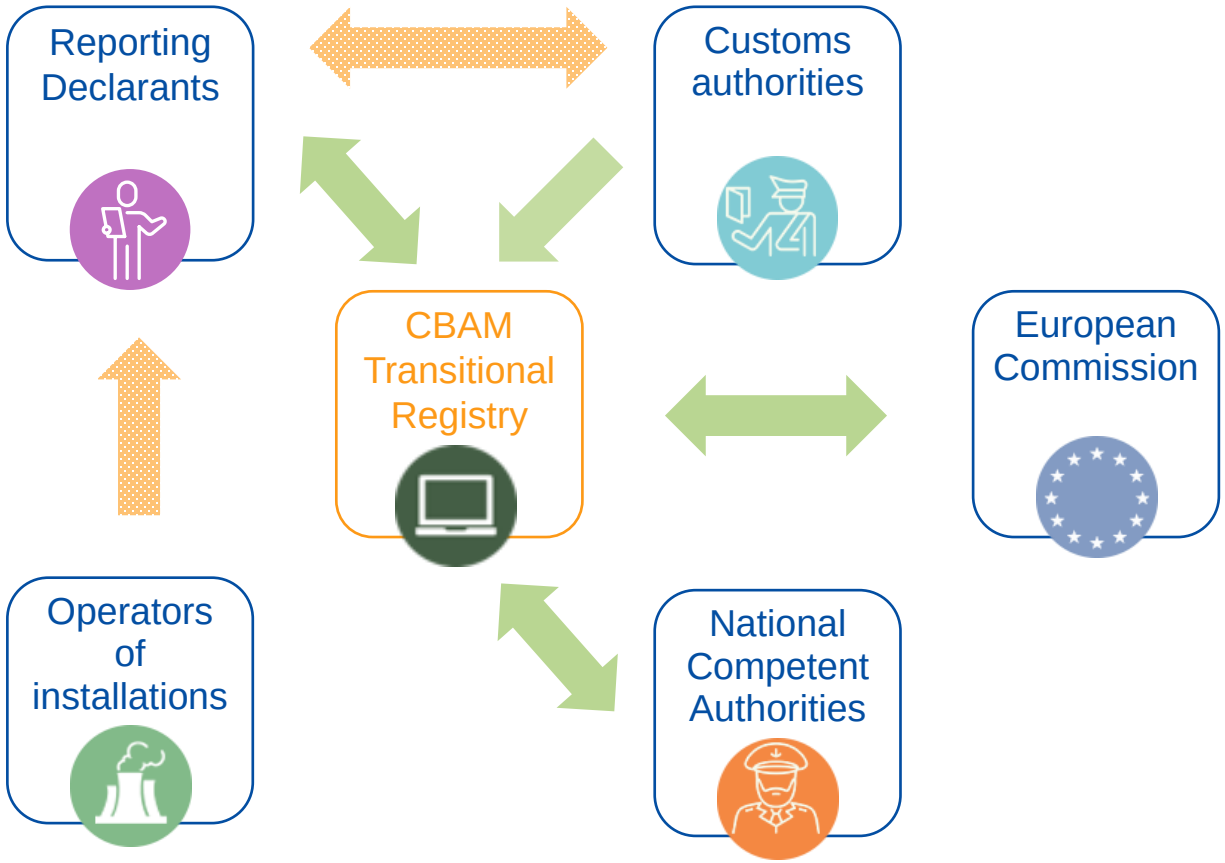
Step 3: Identify all the parameters you need to report

Step 4: Collect data on carbon price due in jurisdiction if any

Carbon Border Adjustment Mechanism

4 Submitting CBAM reports

Reporting in the CBAM Transitional Registry



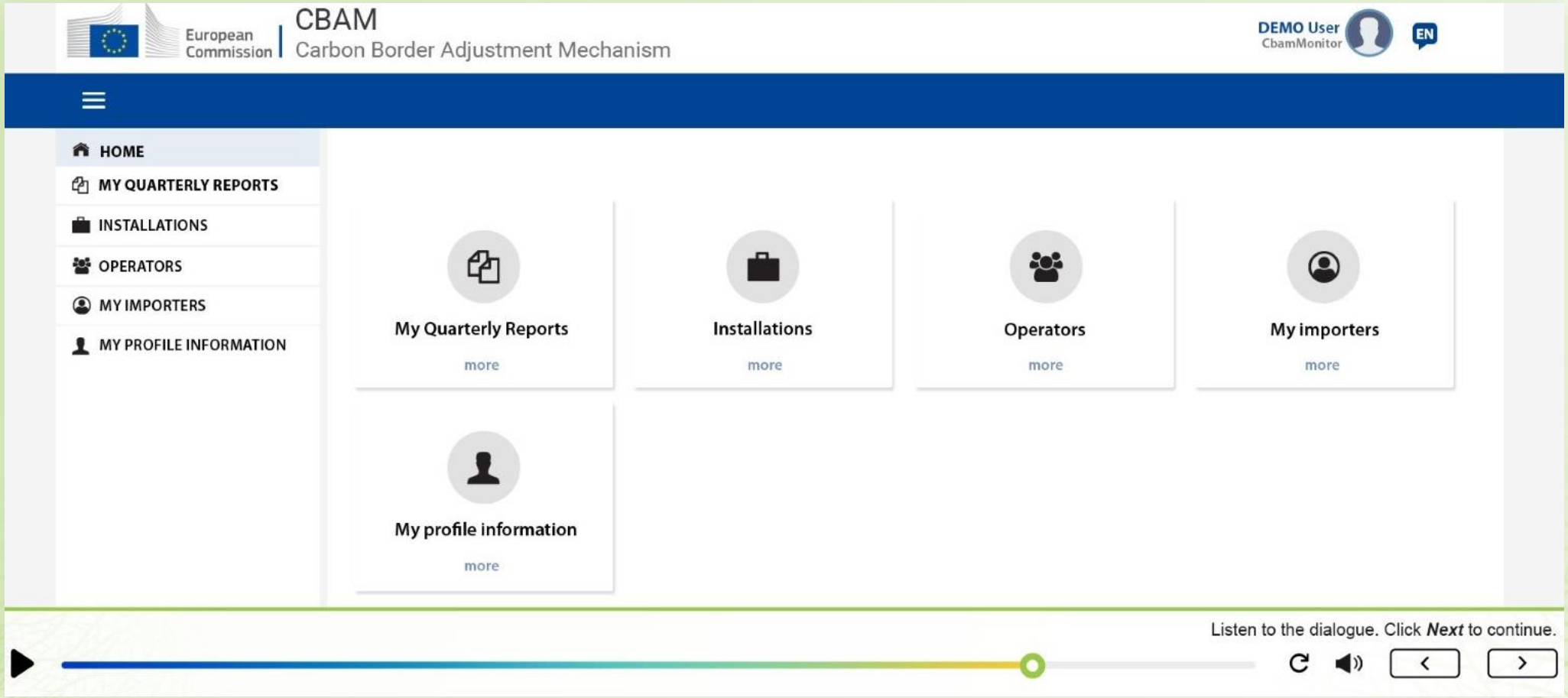
Key highlights

- Single platform to create synergies
- Tool to perform CBAM-related tasks
- Secured platform to ensure confidentiality of information

OUTSIDE THE REGISTRY

VIA THE REGISTRY

The CBAM Transitional Registry



Timeline for reporting declarants

REPORTING PERIOD	SUBMISSION DUE BY	MODIFICATION POSSIBLE UNTIL*
2023: October – December	**2024:** January 31	**2024:** July 31
2024: January – March	**2024:** April 30	**2024:** July 31
2024: April – June	**2024:** July 31	**2024:** August 30
2024: July – September	**2024:** October 31	**2024:** November 30
2024: October – December	**2025:** January 31	**2025:** February 28
2025: January – March	**2025:** April 30	**2025:** May 31
2025: April – June	**2025:** July 31	**2025:** August 31
2025: July – September	**2025:** October 31	**2025:** November 30
2025: October – December	**2026:** January 31	**2026:** February 28

**After the modification deadline, reporting declarants may request reopening of the file before the national competent authority for eventual corrections.*

Where to find further information on CBAM?

Visit the CBAM webpage regularly – our one-stop shop

https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en

- 2 guidance documents
- Communication template between importers and operators
- Registration to dedicated webinars
- Link to our E-learning materials through the Customs and Tax EU Learning portal
- Q&A and factsheet
- Soon: link to the recording of these webinars

The Carbon Border Adjustment Mechanism-Aluminium Sector

Thank you!