



The Carbon Border Adjustment Mechanism

Dear participants,
Welcome to the webinar session on the

HYDROGEN SECTOR

Please be patient, the webinar will start at
15:30 (CET).

The Carbon Border Adjustment Mechanism (CBAM)

Webinar session on the Hydrogen 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: 15:30 (CET)

03 October 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 hydrogen 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

Contributes to decarbonisation
globally and to reaching climate
neutrality by 2050



Complements and
reinforces the EU ETS

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

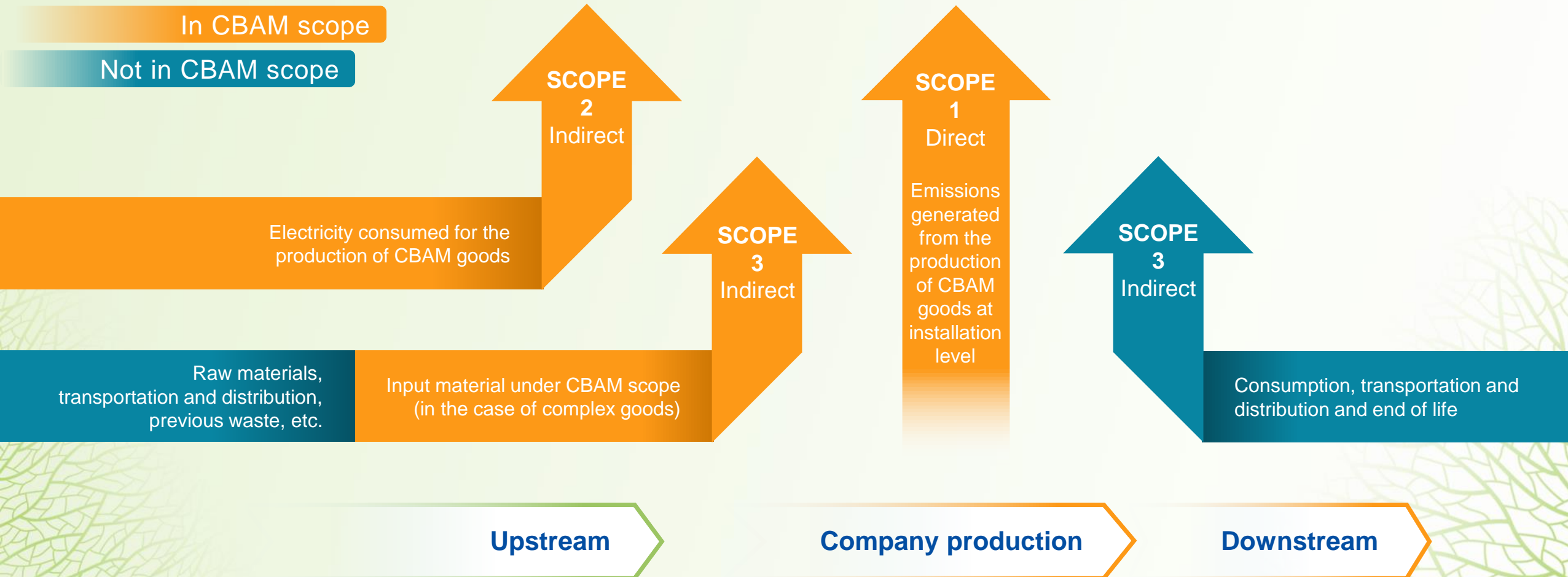
Report to be submitted quarterly

**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: Hydrogen

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 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 Hydrogen sector

CN CODE	AGGREGATED GOODS CATEGORY	GREENHOUSE GAS
HYDROGEN		
2804 10 000	Hydrogen	Carbon dioxide

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

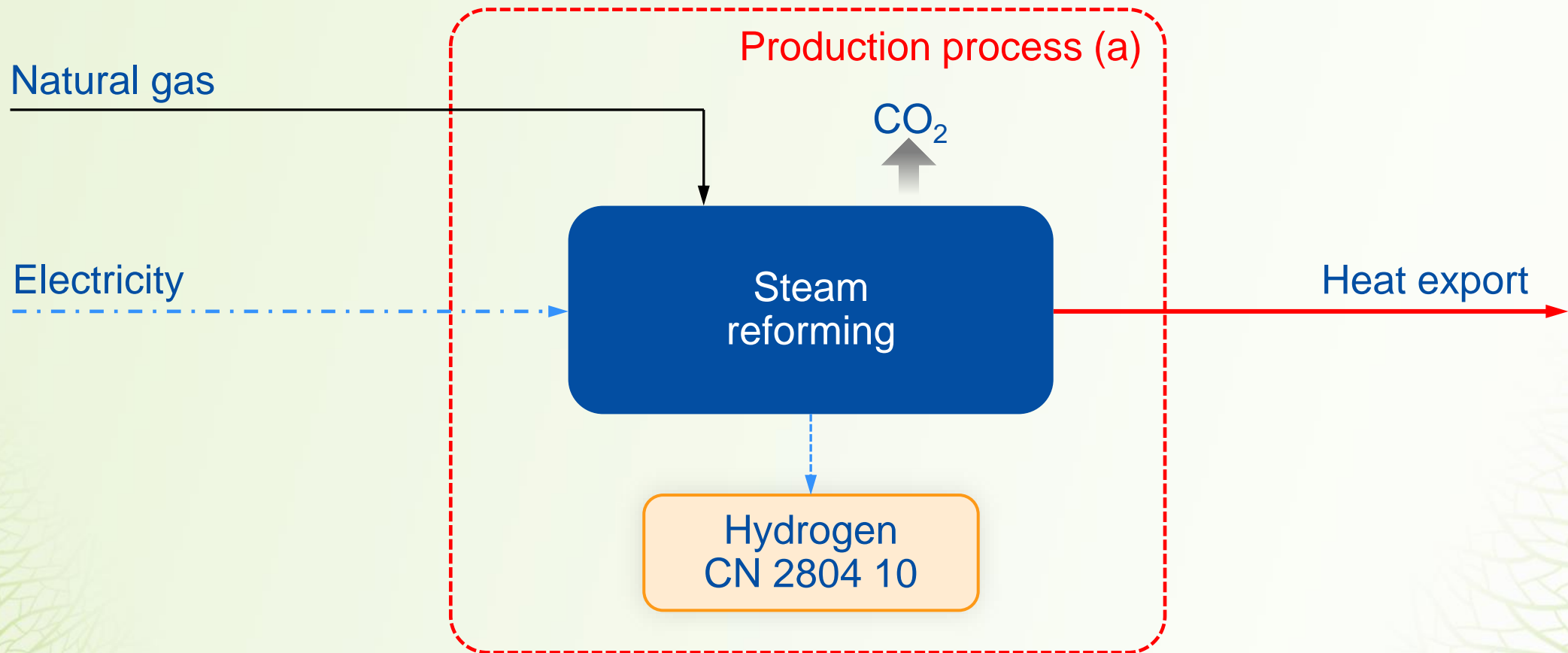
Step 3. Attribute emissions to production processes and then to goods

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 for steam methane reforming



Step 2: Monitoring – General

Direct emissions from fuels and materials

- Standard method, mass balance, continuous emissions monitoring

Direct emissions related to heat flows, if relevant

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

Waste gases, if relevant

- Determine flows and calorific values

Electricity produced, if relevant

Indirect emissions related to electricity consumption

- Determine electricity consumption for the production of CBAM goods

Precursors, if relevant

- Determine precursor consumption

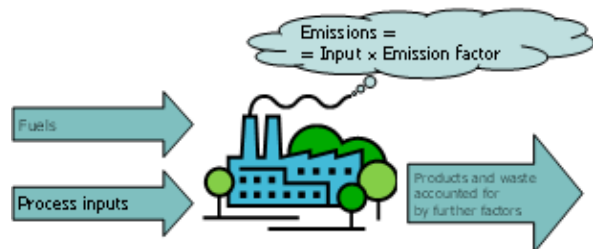
Step 2: Monitoring – Direct emissions

1

Calculation-based methodology

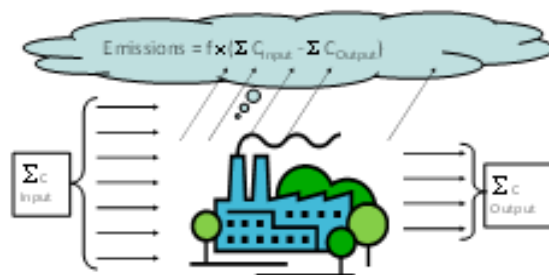
Standard method

- 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).

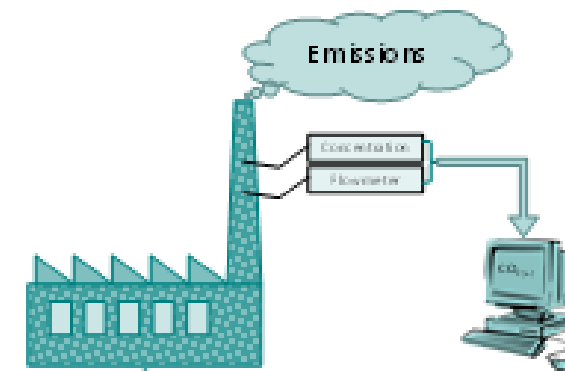


2

Measurement-based methodology

Continuous emissions monitoring system

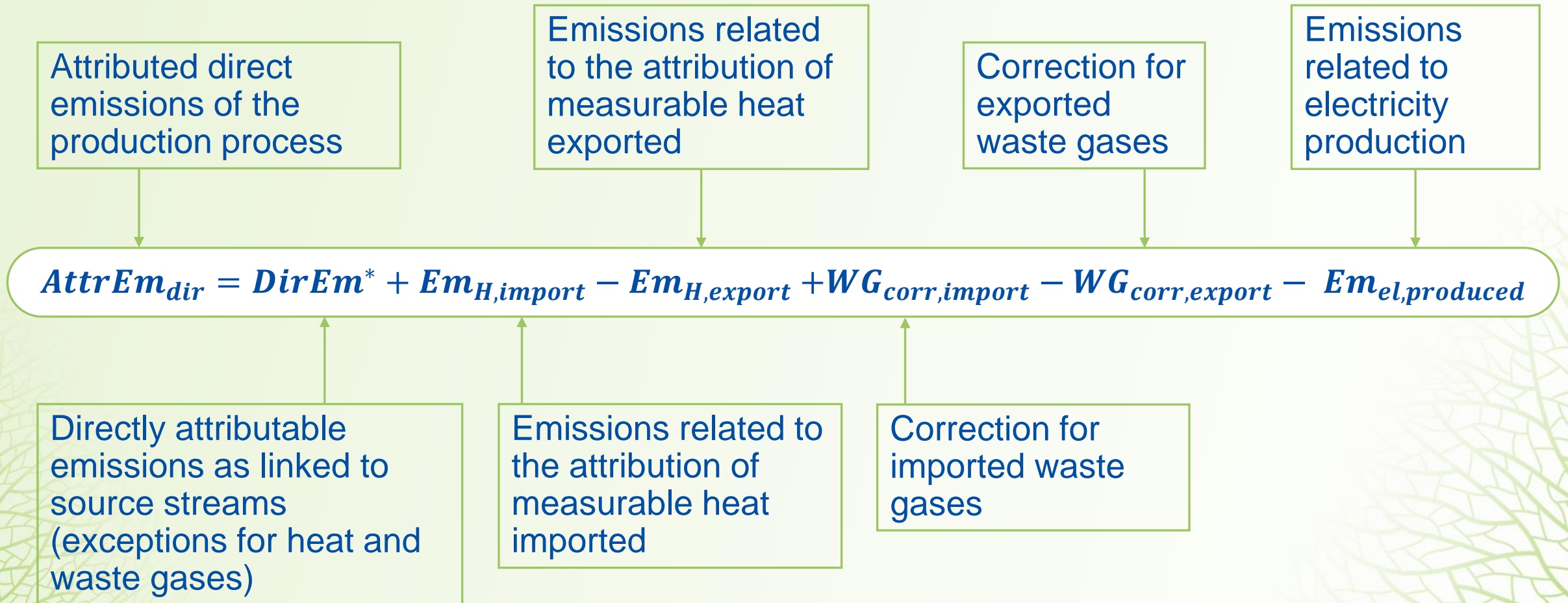
- measure GHG concentration directly in the stack or using extractive procedures
- measure flue gas flow
- determine emissions



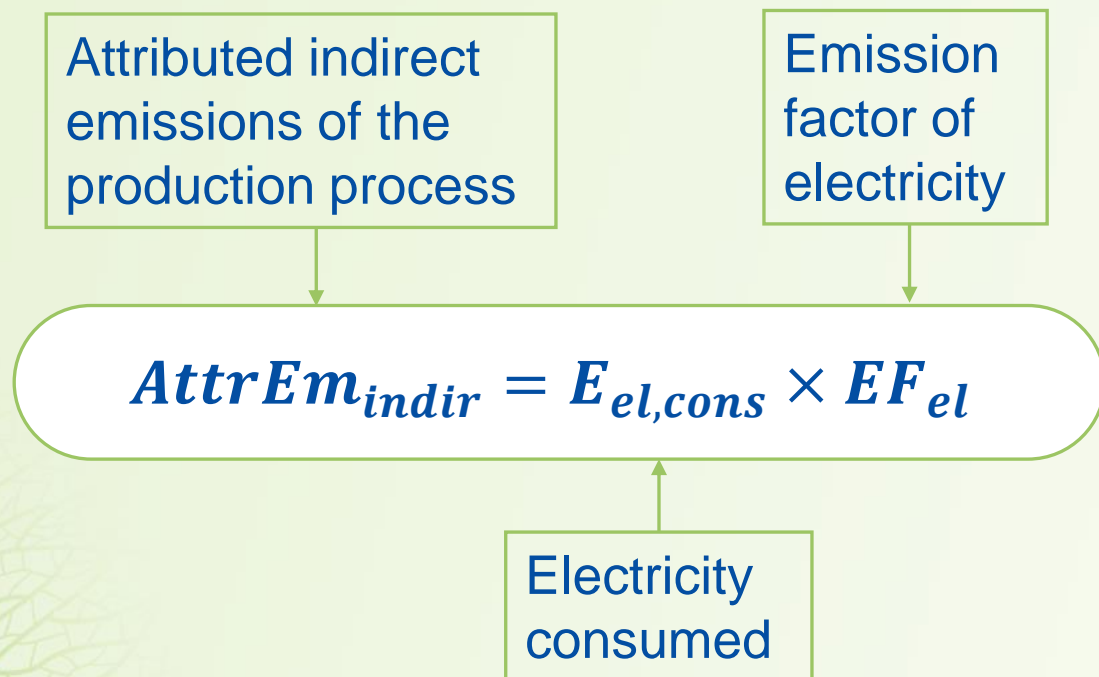
Step 2: Monitoring – Other methods

- 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.
 - A compulsory emission monitoring scheme where the installation is located.
 - 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



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 CO₂ emission factor)

2) Use of actual emission factors, in the case of:

- direct technical connection or
- power purchase agreement

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

For simple goods (Step 5):

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

Attributed emissions (direct or indirect)

Specific embedded emissions (direct or indirect)

Amount of goods produced

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

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

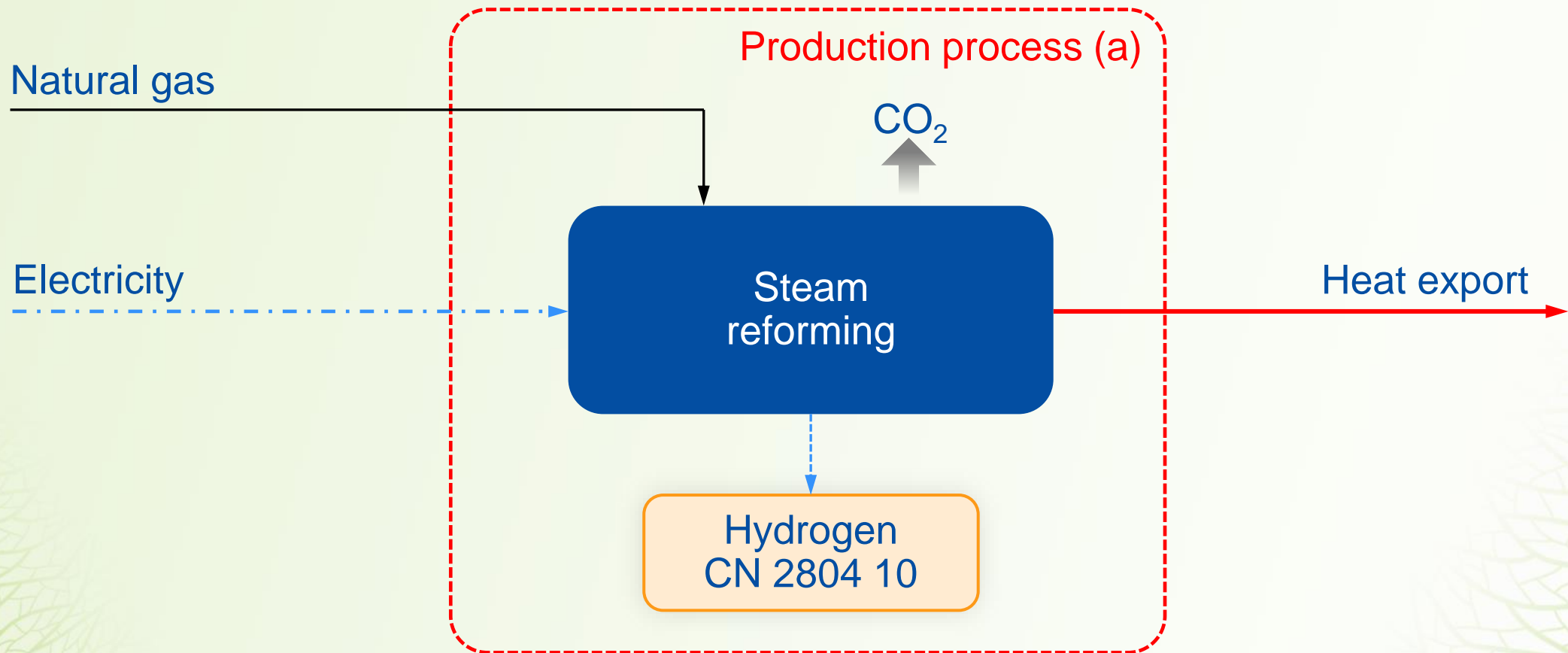
Specific embedded emissions (direct or indirect) of the precursors

Specific embedded emissions (direct or indirect)

Amount of precursors used per goods produced

Worked Hydrogen example (1/4)

Example for steam methane reforming



Worked Hydrogen example (2/4)

Total direct emissions attributed to hydrogen

Direct emissions	AD (t)	NCV (GJ/t)	Energy (TJ)	EF (t CO ₂ /TJ)	Emissions (t CO ₂)
Input natural gas	190 000	48	9 120	56,1	511 632
Heat export			-800	56,1	-44 880
Total direct emissions of the installation					466 752

Worked Hydrogen example (3/4)

Total indirect emissions attributed to hydrogen

Indirect emissions	MWh	EF (t CO ₂ / MWh)	Emissions (t CO ₂)
Electricity consumption	33 000	0,36655	12 096
Total indirect emissions of the installation			12 096

Worked Hydrogen example (4/4)

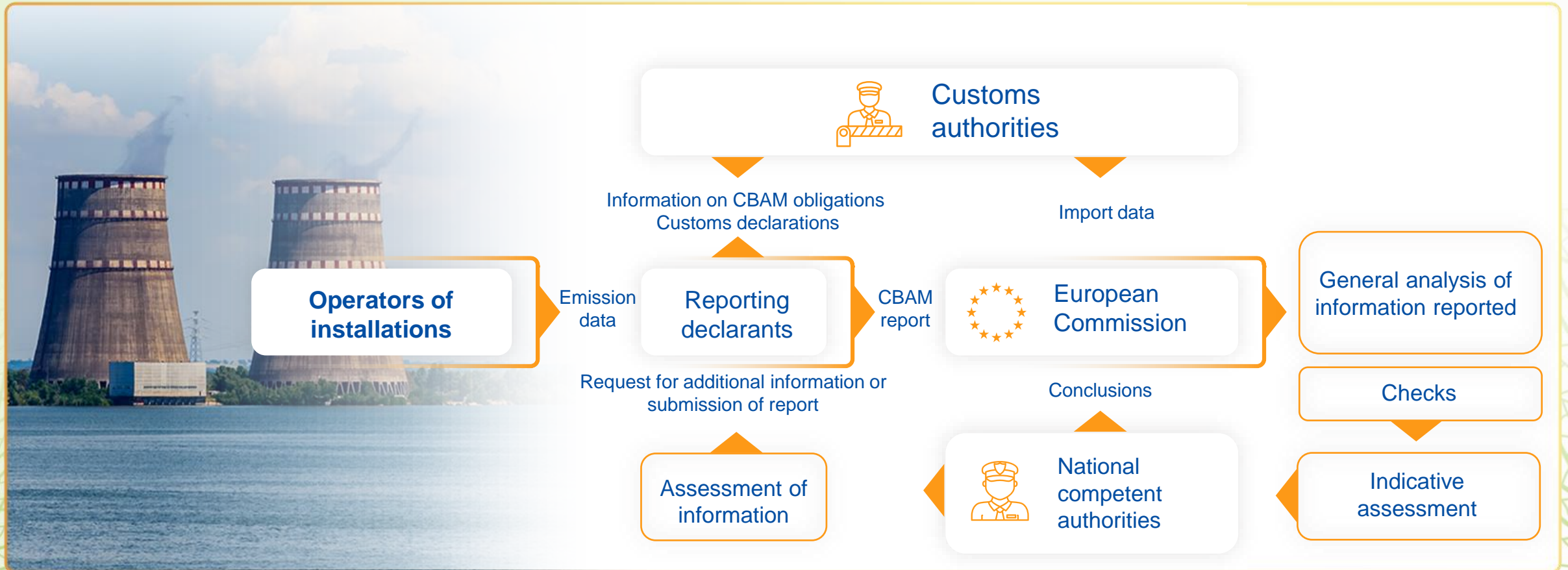
Calculation of embedded emissions of hydrogen product

Production		Process total emissions		Specific embedded emissions (SEE) (t CO ₂ / t H ₂)	
Product	Activity level (t)	Direct	Indirect	Direct	Indirect
Hydrogen	55 000	466 752	12 096	8,486	0,220

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)



Indirect customs representative
(Status: Importer)

Importer is the
reporting declarant

Importer or indirect
customs representative
may be the reporting
declarant

Subject to

reporting

obligations



Importer

Steps to comply with the CBAM reporting obligations

Step 1: Define the scope of goods concerned

Step 2: Determine the reporting period to use

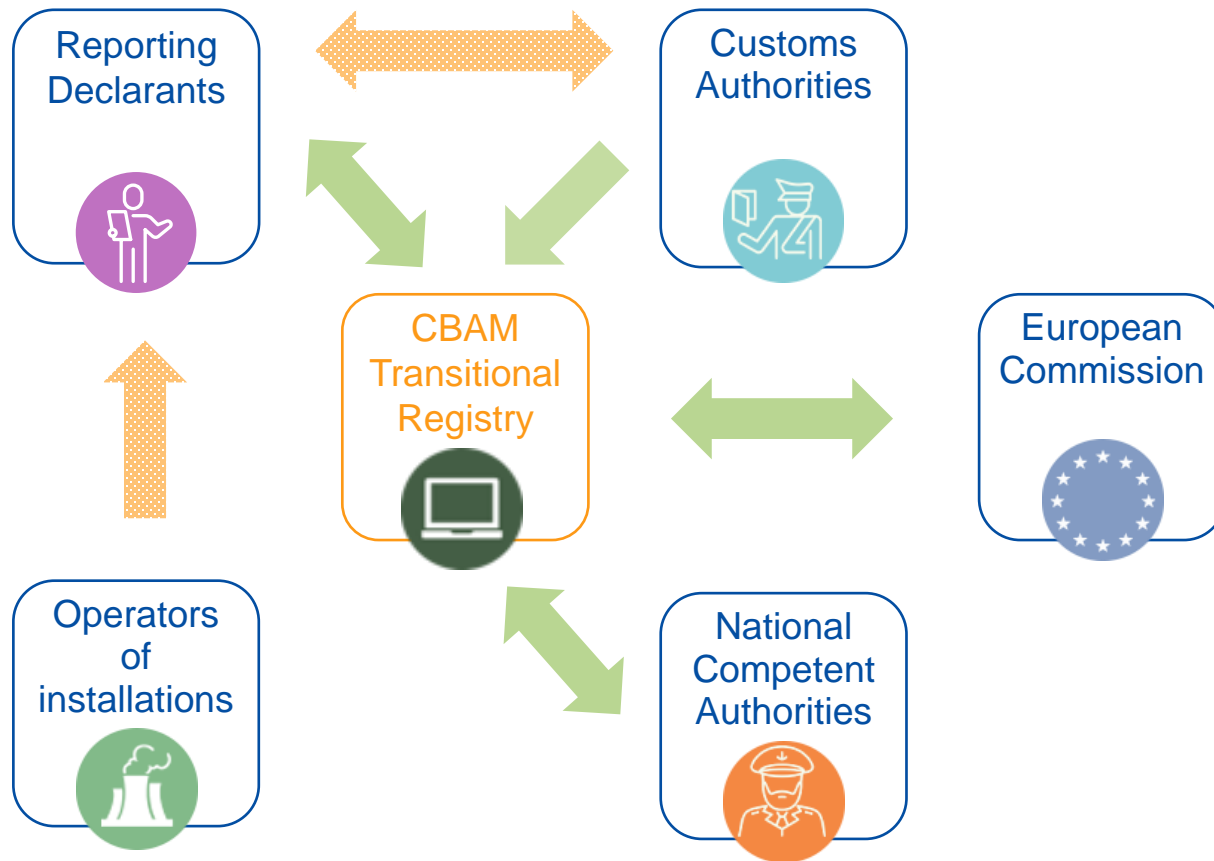
Step 3: Identify all the parameters you need to report

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

Carbon Border Adjustment Mechanism

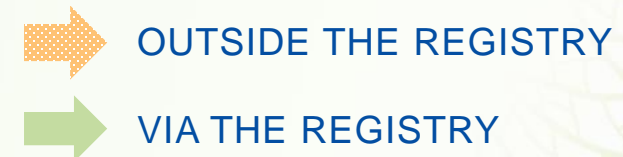
4 Submitting CBAM reports

Reporting in the CBAM Transitional Registry



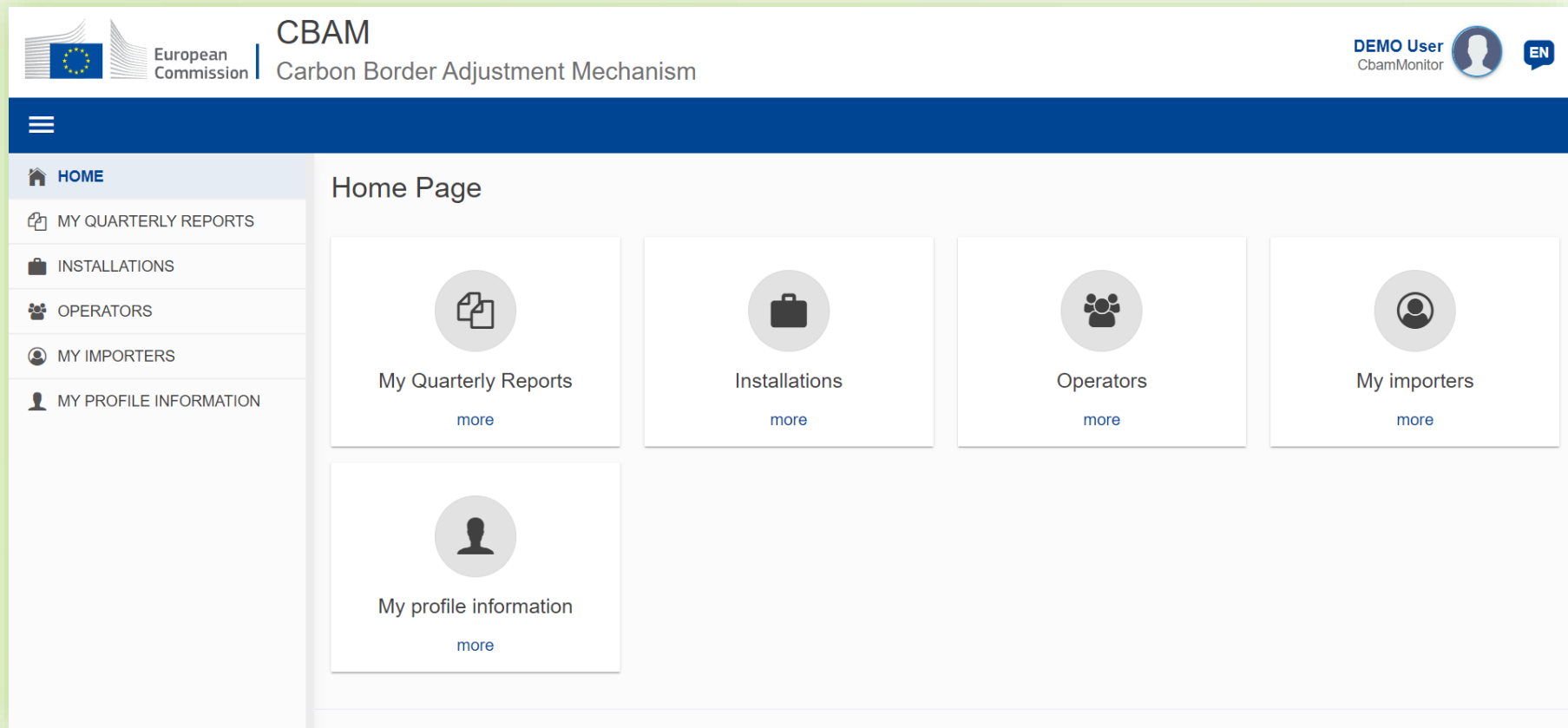
Key highlights

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



The CBAM Transitional Registry

<https://cbam.ec.europa.eu/declarant>



The screenshot displays the user interface of the CBAM Transitional Registry. At the top left, the European Commission logo is visible. The main header area contains the text "CBAM Carbon Border Adjustment Mechanism". On the top right, the user is identified as "DEMO User" with the role "CbamMonitor", accompanied by a profile icon and a language selector set to "EN".

A navigation menu on the left side lists the following options: HOME, MY QUARTERLY REPORTS, INSTALLATIONS, OPERATORS, MY IMPORTERS, and MY PROFILE INFORMATION. The main content area, titled "Home Page", features five interactive cards:

- My Quarterly Reports**: Represented by a document icon, with a "more" link below.
- Installations**: Represented by a briefcase icon, with a "more" link below.
- Operators**: Represented by a group of people icon, with a "more" link below.
- My importers**: Represented by a person icon, with a "more" link below.
- My profile information**: Represented by a person icon, with a "more" link below.

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

- Link to the CBAM Transitional Registry
- 2 guidance documents
- Communication template between importers and operators
- Registration to dedicated webinars
- Links to recordings of webinars through the [Customs and Tax EU Learning portal](#)
- Link to our E-learning materials through the [Customs and Tax EU Learning portal](#)
- Q&A and factsheet

The Carbon Border Adjustment Mechanism - Hydrogen Sector



5 minutes break

We will resume the webinar in 5 min
to answer questions from the chat

The Carbon Border Adjustment Mechanism - Hydrogen Sector

Thank you!