Carbon Border Adjustment Mechanism

Introduction & Transitional Period Guidance

Outline

- **Carbon Border Adjustment Mechanism – main features**
- The transitional period guidance for companies

Carbon Border Adjustment Mechanism (CBAM) as part of the European Green Deal

The ‘fit for 55’ package aims to deliver the transformational change needed in a cost-efficient and competitive way while ensuring a **just and fair transition.**

Contribute to the European Green Deal objective of EU-wide climate neutrality by 2050.

Ensure that the transition is fair and leaves no-one behind

Policy mix between pricing measures, targets, standards and support measures

The aim of the CBAM

Prevent carbon leakage to ensure effectiveness of EU climate policy

Complements and reinforces the EU ETS

Contribute to decarbonisation globally and to reaching climate neutrality by 2050

Key Elements of Design

Mirror EU **carbon pricing** through new mechanism for imports into EU

Aligned with **EU's international policies** and **legal commitments**, including WTO compatibility

Addressed to companies, not countries, based on **actual carbon content** of imported goods

Focus on **carbon intensive sectors**

Takes into account **carbon price effectively paid by third country operator**

Sectors

- In the **first phase**:


CEMENT


IRON & STEEL


ALUMINIUM

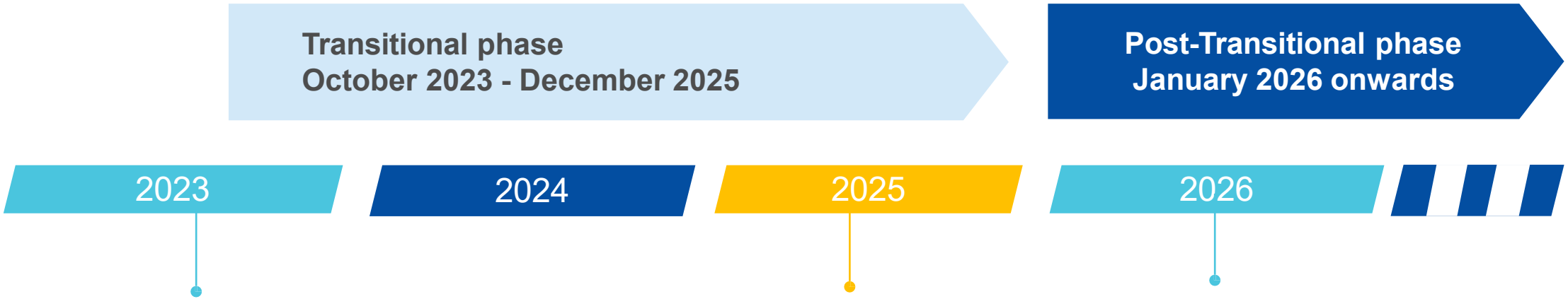

FERTILISER


ELECTRICITY


HYDROGEN

- **Includes some precursors and downstream products**
- **Selected on the basis of 3 criteria**:
  - ✓ *High risk of carbon leakage (High carbon emissions; High level of trade)*
  - ✓ *Covering more than >45% of CO_2 emissions of ETS sectors (54% of free allowances in 2021)*
  - ✓ *Practical feasibility*
- In a **second stage**, may be extended to other ETS sectors

Gradual implementation of CBAM



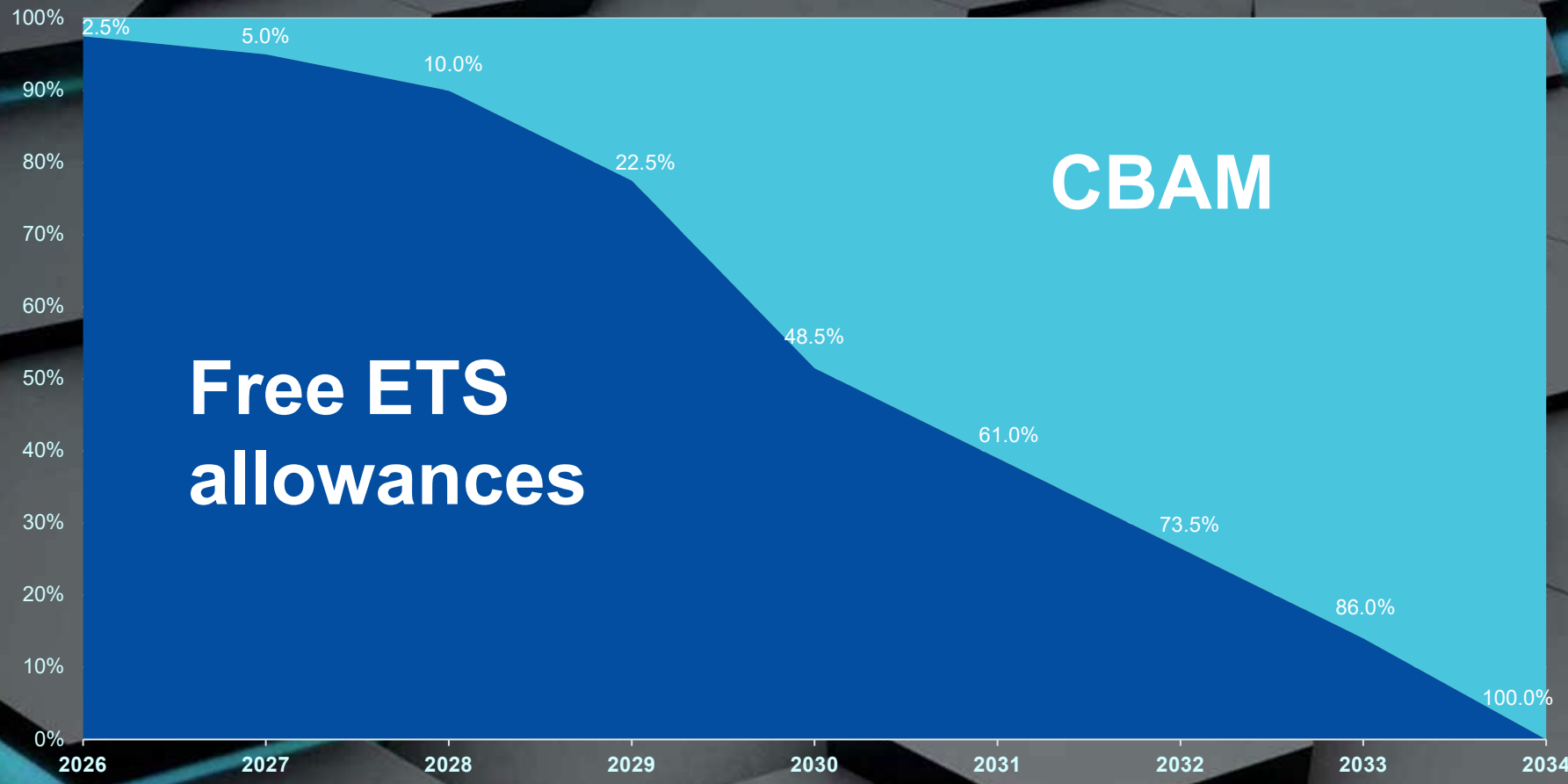
Monitoring and reporting **Implementing rules** adopted by the CBAM Committee (EU Member States)

Review 2025

- Potential scope extension to other ETS sectors
- Indirect emissions
- Impact on Least Developed Countries
- Progress in international climate discussions

Start of **gradual phase-in of CBAM**/phase out of free ETS allowances

Phasing-out of free allocation / Phasing-in of CBAM



Guiding Documents

01

The CBAM Regulation

Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism.

02

Implementing Regulation

Commission Implementing Regulation (EU) …/... of 17 August 2023 laying down the rules for the application of Regulation (EU) 2023/956 of the European Parliament and of the Council as regards reporting obligations for the purposes of the carbon border adjustment mechanism during the transitional period.

03

Guidance Document on CBAM Implementation for Installation Operators Outside the EU of 17 August 2023

Reporting obligations in each phase

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

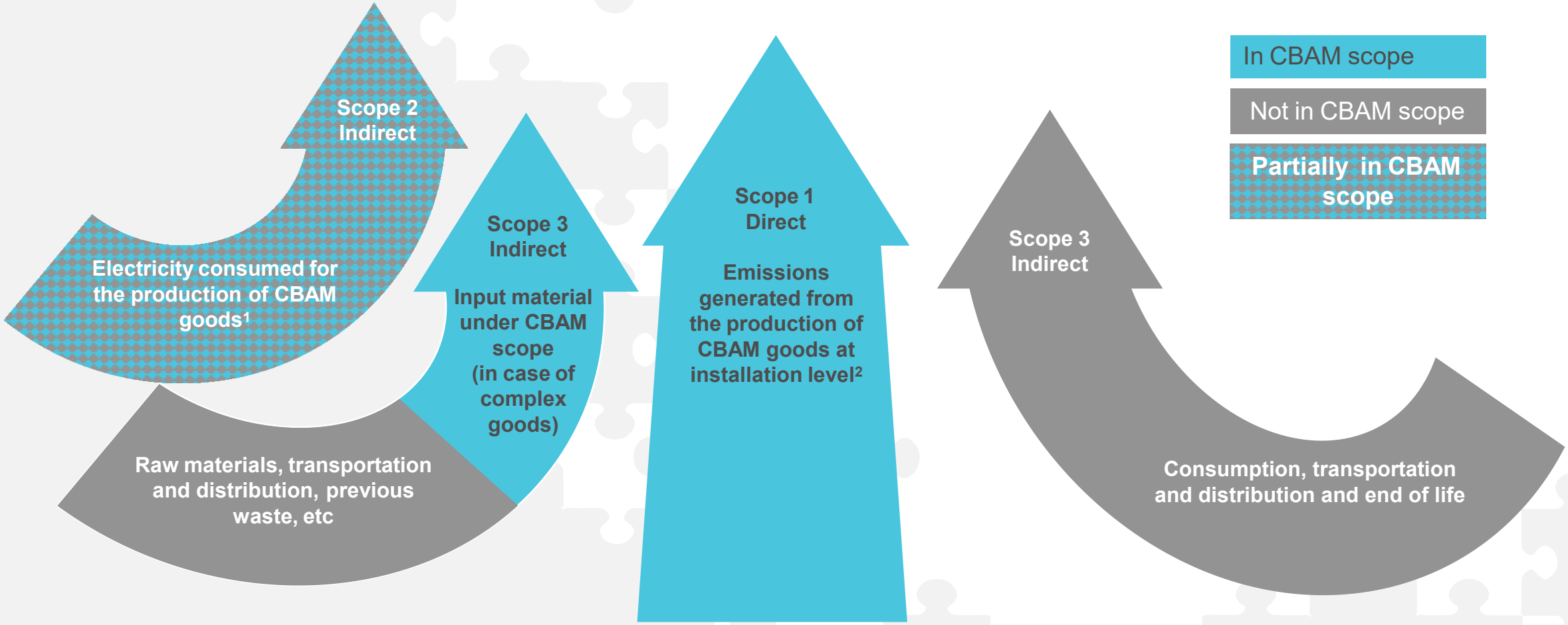
Post-transitional phase
January 2026 - onwards

CBAM Declaration containing the following:

- Total quantity of goods imported during the preceding calendar year
- Total embedded emissions in those goods
- Emissions to be verified by EU-accredited verifier
- Total number of CBAM certificates to be surrendered
- The carbon price effectively paid in the country of origin for the embedded emissions

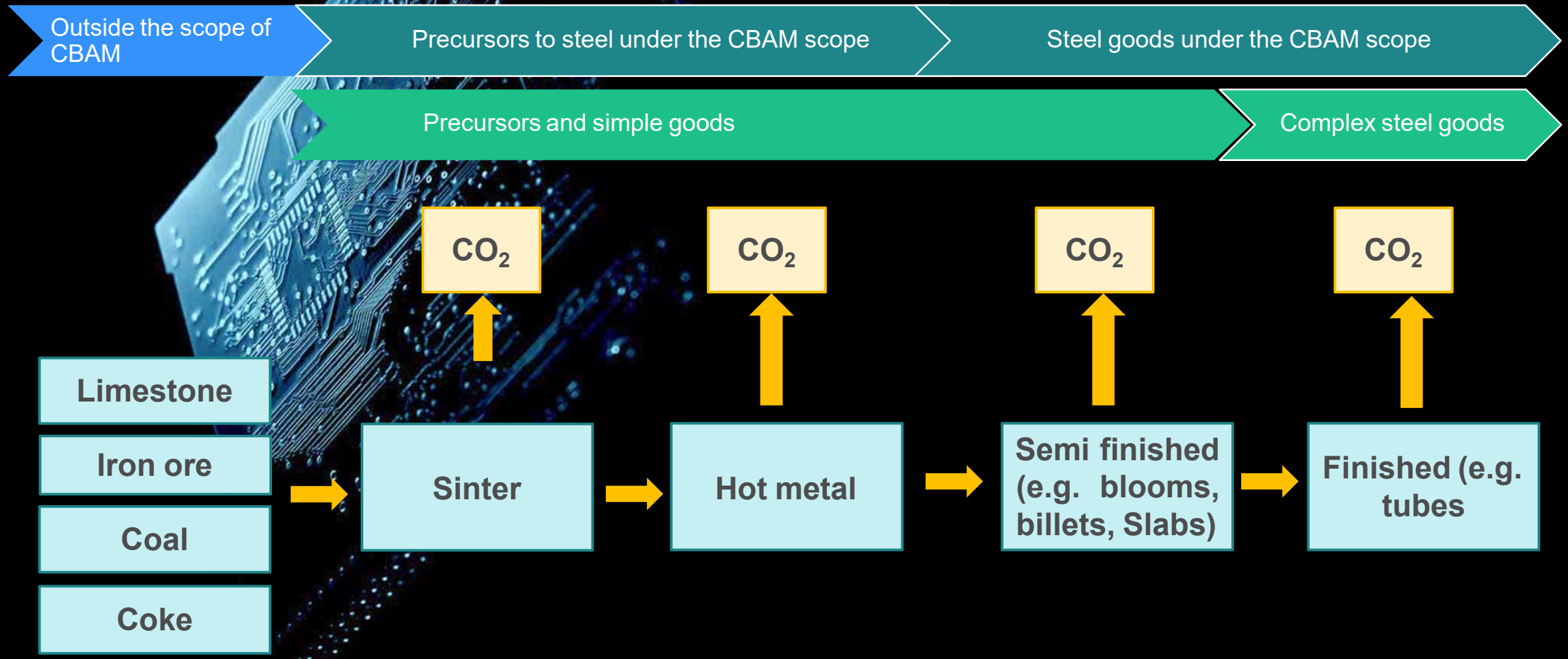
Declaration to be submitted each year

Emissions under CBAM scope

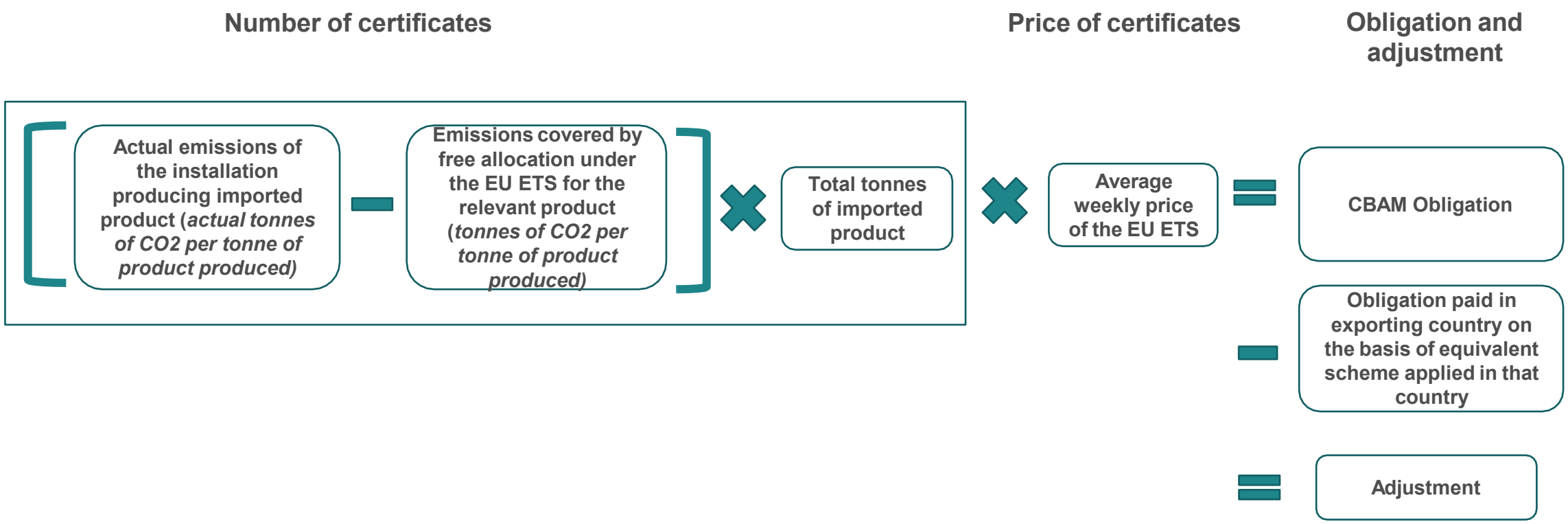


(1) During the transitional CBAM period, indirect emissions need to be reported for all CBAM sectors.
(2) Direct emissions include emissions from the production of heating and cooling, even if that production takes place outside the installation.

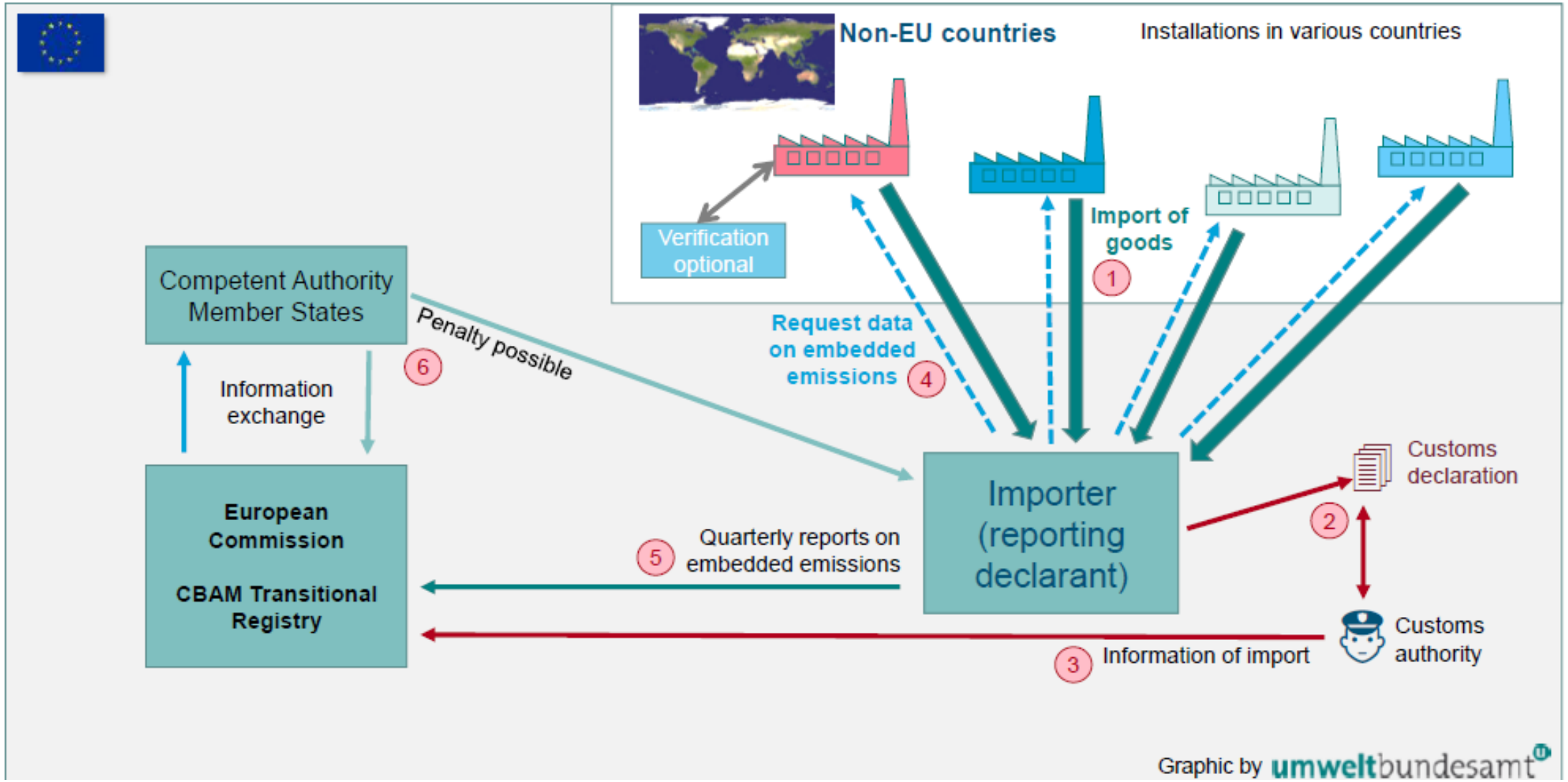
An example of simple and complex goods: iron and steel



Calculation of the adjustment



Reporting Responsibilities during Transitional Phase



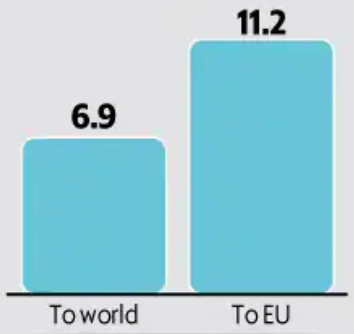
India’s Concerns

- **Increased Costs and Reduced Competitiveness**.
  - According to a report, the **CBAM will translate into a 20-35% tax on select imports** into the EU starting January 1, 2026.
    - ✓ India's **26.6% of exports** of iron ore pellets, iron, steel, and aluminum products go to the EU.
    - ✓ These products will be hit by CBAM. India exports these goods worth around **USD 8 billion annually to the EU**.
- **Compliance Issues**: CBAM shall **create administrative and technical challenges for Indian producers and importers,** who will have to monitor, calculate, report and verify their emissions according to the EU standards.
  - India’s smaller firms will lose out, as they did when the EU imposed a strict regime in 2006 (EU REACH) to regulate chemical imports.
- **Against FTA Norms:** CBAM is criticized as a **non-tariff barrier that undermines zero duty FTAs.**
- **Contradicts EU and Developed Nations' Commitment to Green Transition.**
- Undermines the principle of **'common but differentiated responsibility'** by restricting the developing world's ability to industrialize.

RISING TENSION

The proposed tax has raised concerns among Indian metal producers, who fear it will create a new trade barrier for exports to Europe.

Share (%) of CBAM products in India's exports



India's total exports of CBAM products to EU:

$8.22 bn

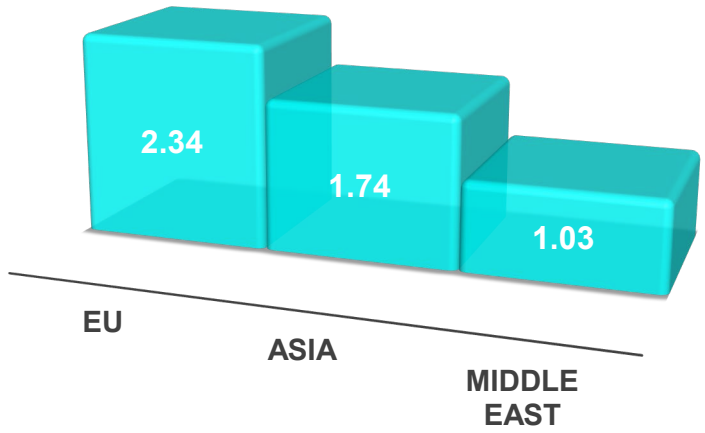
Impact on sectors covered under CBAM

mint

	Number of tariff lines affected	EU's share (%) in India's exports of CBAM products
↑ HIGH		
Iron ore, concentrates	16	19.9
Steel products	163	20
Iron and steel	473	31.4
Aluminium and products	85	27.7
↓ LOW		
Cement	14	6.1
Fertilizer	24	0.7
Hydrogen	1	0
Electrical energy	1	0

CBAM: Carbon Border Adjustment Mechanism

Top 3 Destinations for Steel Exports from India during 2022-23 (Mmt)



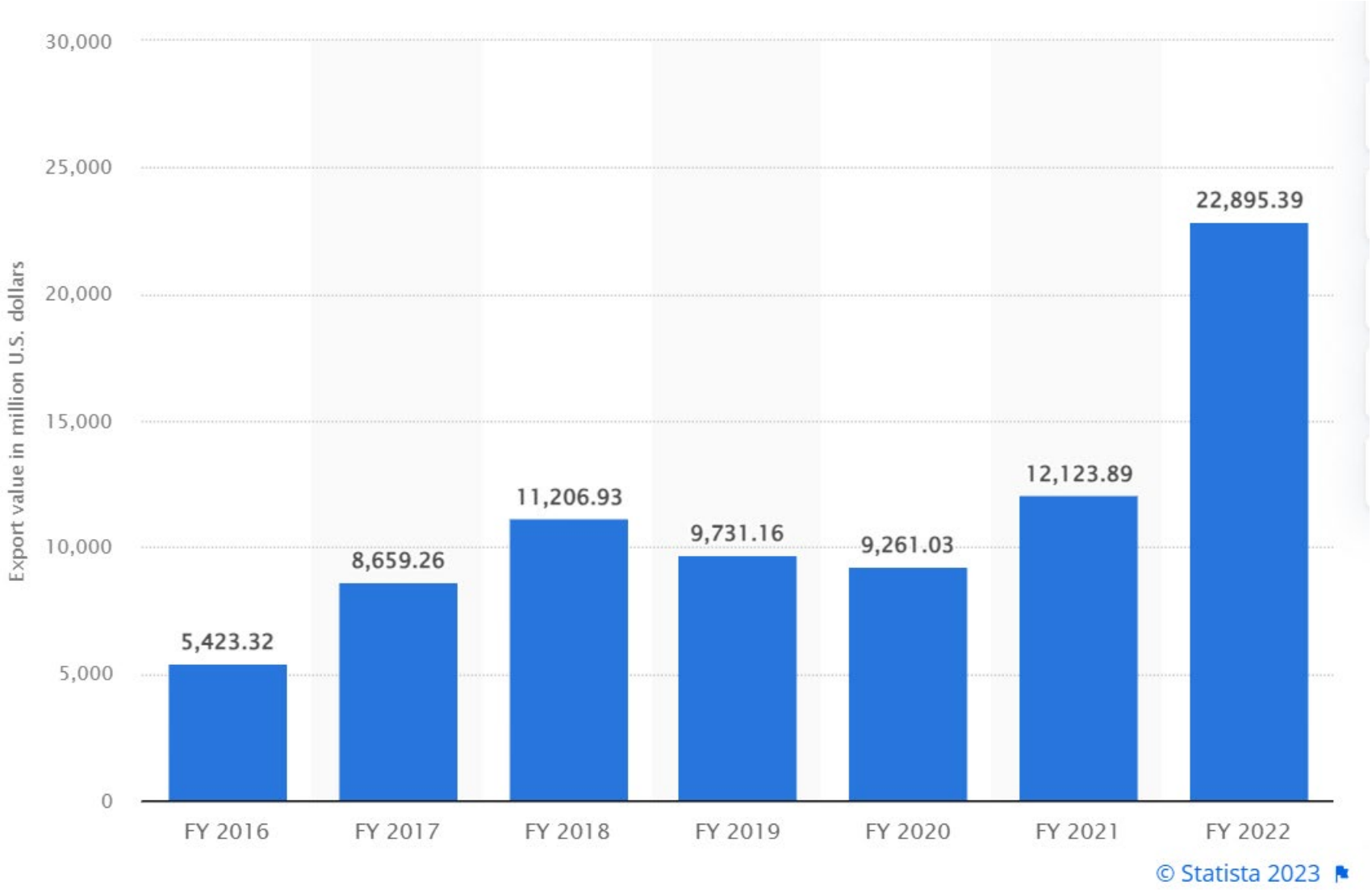
Source: drishtiias.com

Performance of Indian Iron & Steel during 2022-23

Item	Performance of Indian steel industry		
	April-March 2022-23*(mt)	April-March 2021-22 (mt)	% change*
Crude Steel Production	126.258	120.293	5.0
Hot Metal Production	81.099	78.223	3.7
Pig Iron Production	5.882	6.262	-6.1
Sponge Iron Production	43.557	39.200	11.1
Total Finished Steel (alloy/stainless + non-alloy)			
Production	122.276	113.597	7.6
Import	6.022	4.669	29.0
Export	6.716	13.494	-50.2
Consumption	119.864	105.752	13.3
Source: JPC; *provisional; mt=million tonnes			

Export Value of Iron and Steel from India

(in million U.S. dollars)



SAIL Products in demand in EU

- CR COils
- HR Coils/ Sheets
- Plate Mill Plates
- Slabs (Concast)
- Structurals

Outline

- Carbon Border Adjustment Mechanism – main features
- **The transitional period guidance for companies**

Implementing Regulation Principles of EU's approach

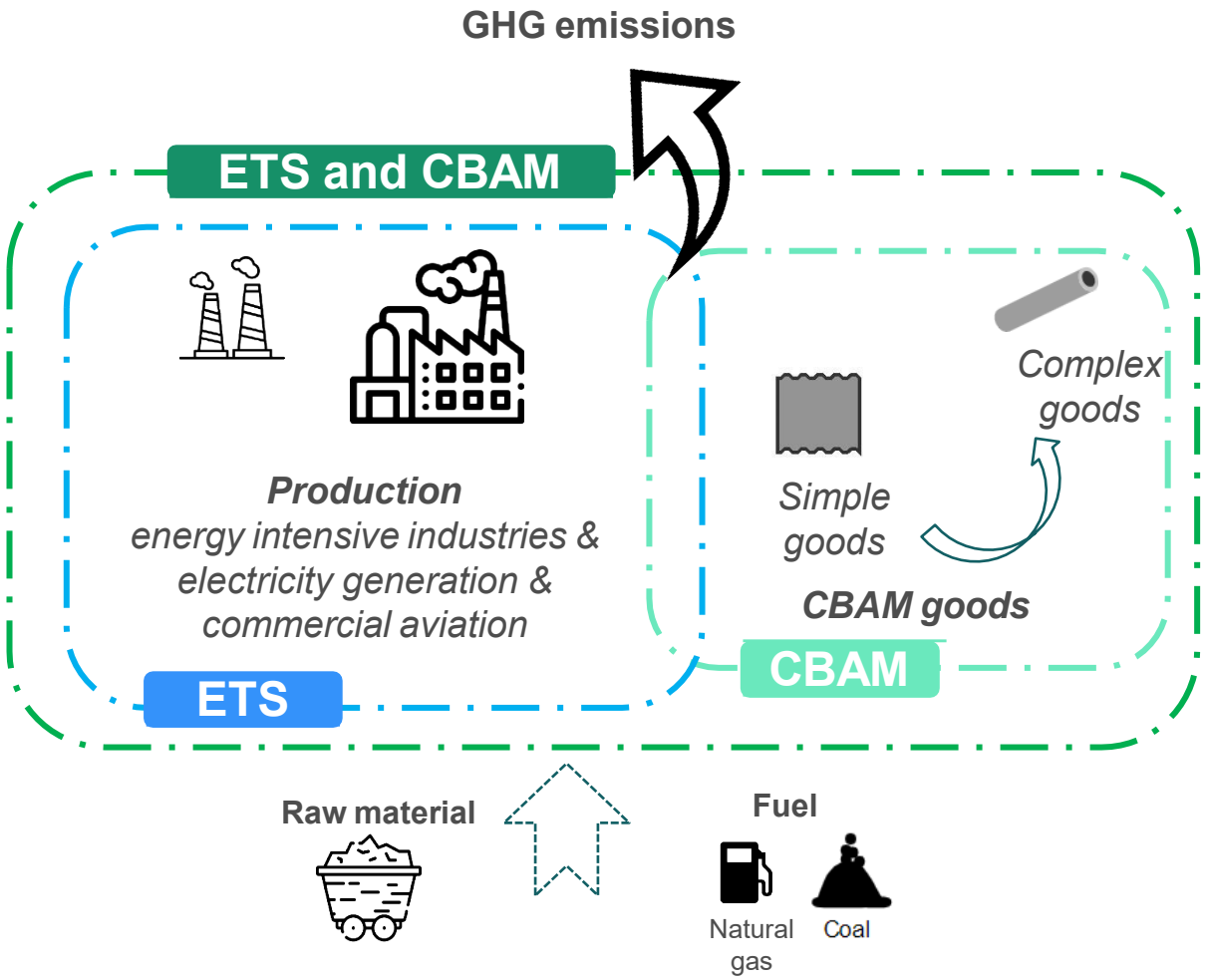
- The transitional period is a **learning phase** for all:
  - Understanding respective roles and tasks
  - Collection of information
  - Facilitate smooth roll out of the mechanism after the 2025

- The information collected will allow the European Commission to **further specify and finalise methodology and find synergies with existing monitoring schemes.**

- **The information collected will feed into the review of the mechanism by 2025** and provide further clarity of the functioning

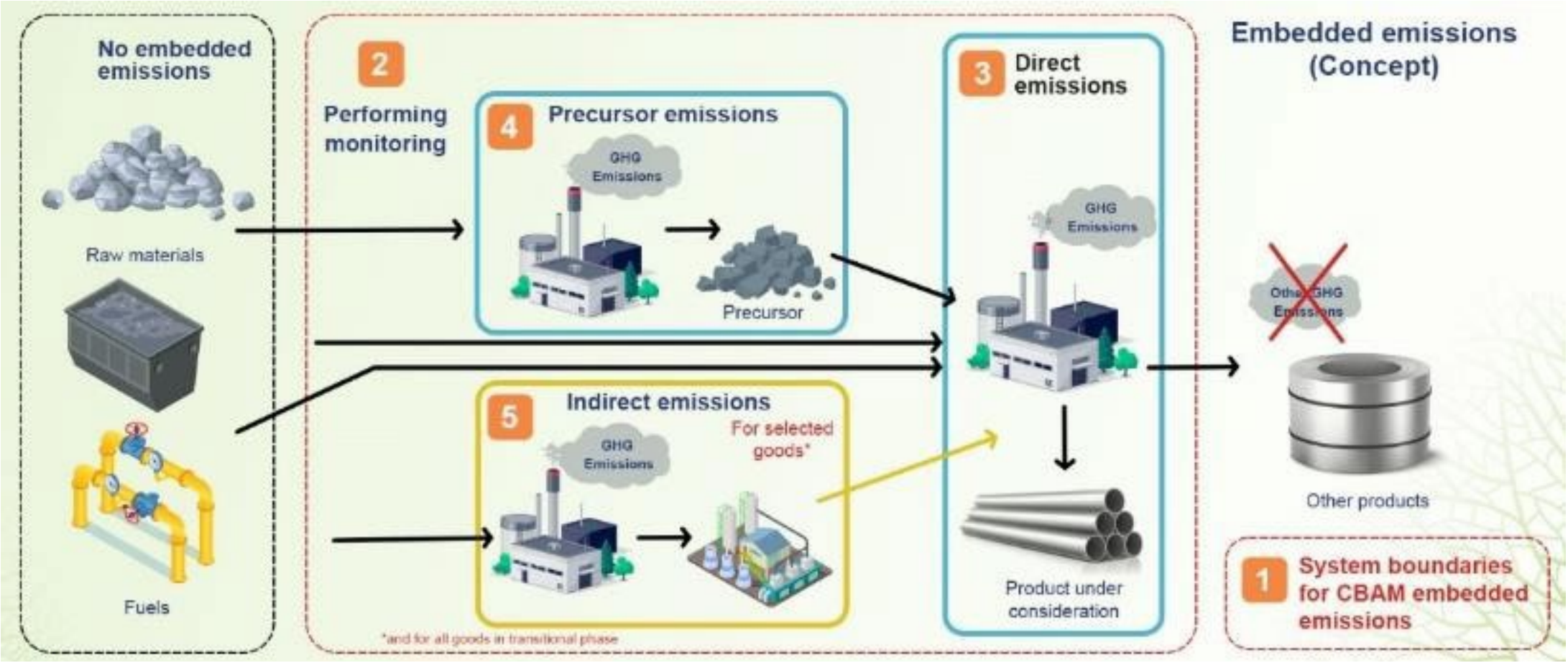
- **Reporting flexibilities** reflect the above and aim to introduce openness and balancing a smooth introduction with information needs

The CBAM methodology From installation to goods approach



- The scope of the ETS is based on installations carrying out activities leading to GHG emissions.
- The scope of the CBAM is based on “goods”.
- Therefore the CBAM methodology will translate ETS methods for the calculation of emissions at installation level into methods for imported goods
- This means setting rules to narrow the system boundaries from production sites down to the level of goods
- But a key difference between CBAM and ETS is the distinction simple and complex goods

Steps to determine embedded emissions



Steps to determine embedded emissions

Step 1: Define the installation's boundaries, production processes and production routes

Step 2: Perform monitoring:

- monitoring direct emissions at installation level, originating from fuel combustion
- monitoring flows of net measurable heat
- monitoring electricity consumption
- monitoring the consumption of precursors.

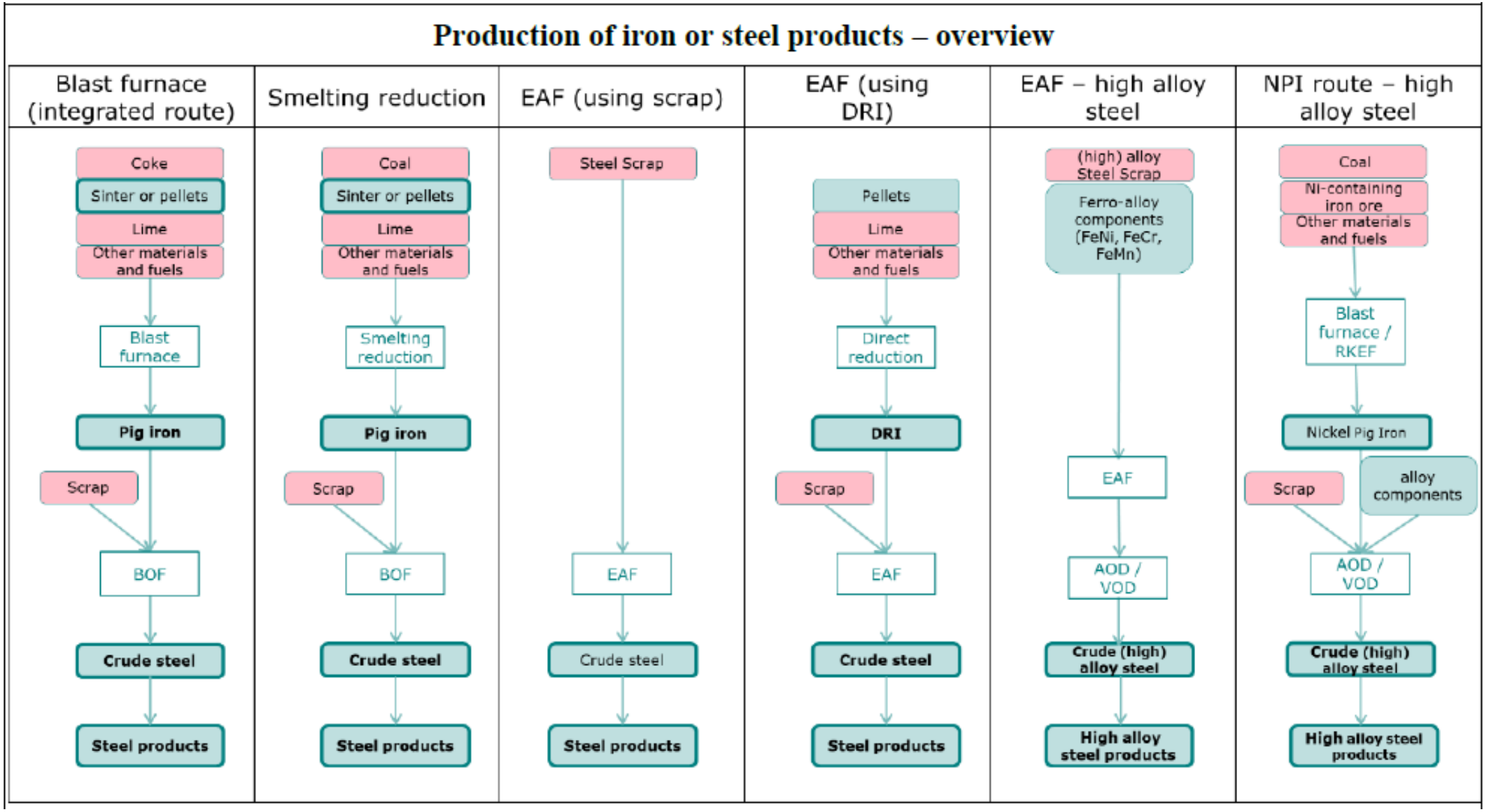
Step 3: Attribute Emissions to production processes, then to goods

Step 4: For complex goods, add embedded emissions of precursors

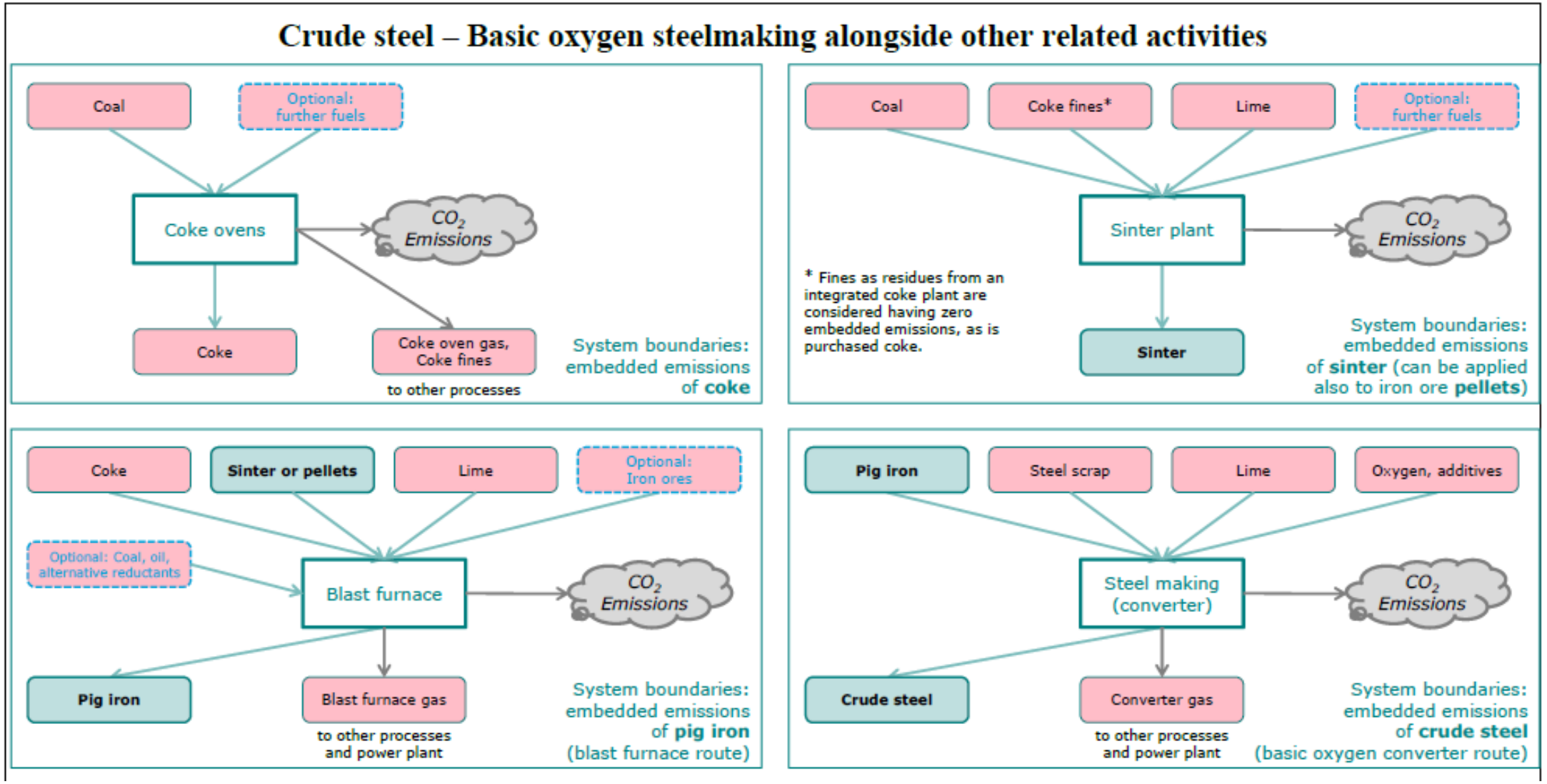
Step 5: Monitoring and reporting of indirect emissions

Step 5: Monitoring and reporting of indirect emissions

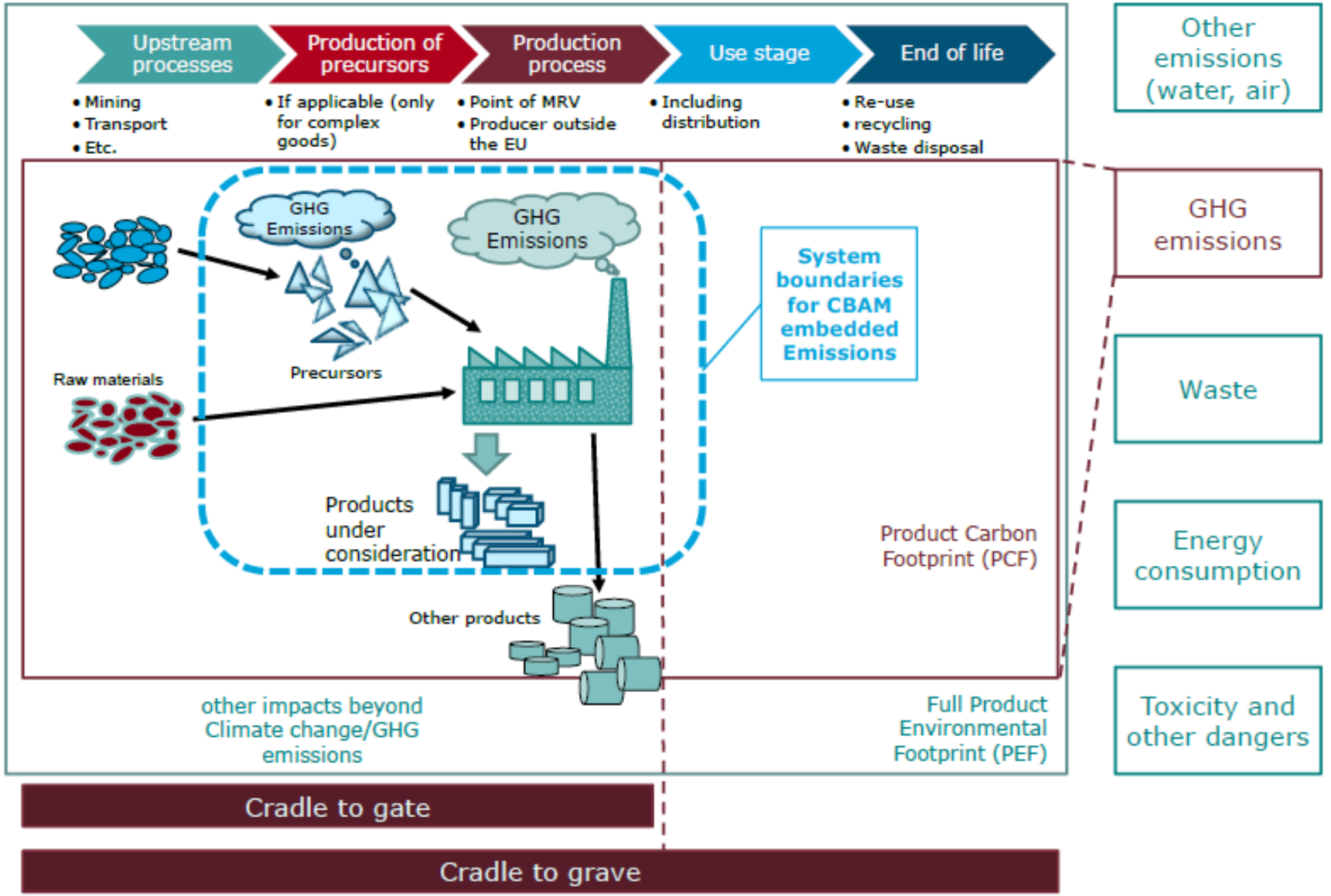
System Boundaries and Value Chain for the Production of Iron or Steel Products



System Boundaries of Basic Oxygen Steelmaking and Related Processes



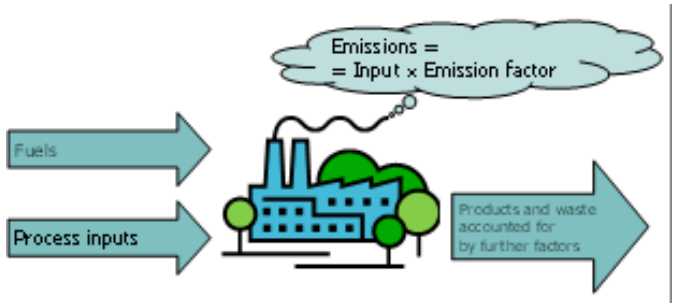
Comparison of Scopes in Product Footprints and CBAM



Monitoring methods for direct emissions

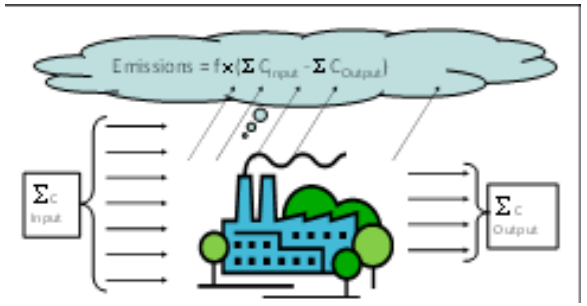
1. Calculation-based methodology

Standard methodology



Based on predetermined emission factors that represent the average emissions per unit of input or output.

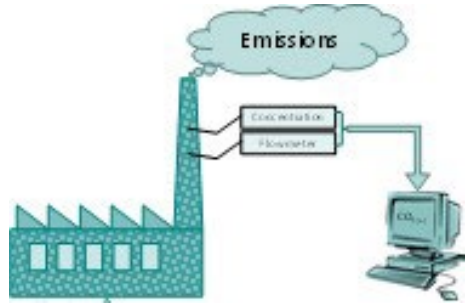
The mass balance method



Based on the idea that what comes into an installation cannot be more than what comes out.

2. Measurement-based methodology

Continuous emissions monitoring system



Continuous measurements of emissions from emission sources at the installation level. Emissions may be measured directly in the stack or using extractive procedures with a measurement instrument located close to the stack.

Monitoring methods for direct emissions

3. Other monitoring systems

Until 31 December 2024, the level of embedded emissions may be calculated using an ‘eligible monitoring, reporting and verification (MRV) system’, i.e. one of the following methods, if they lead to 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.

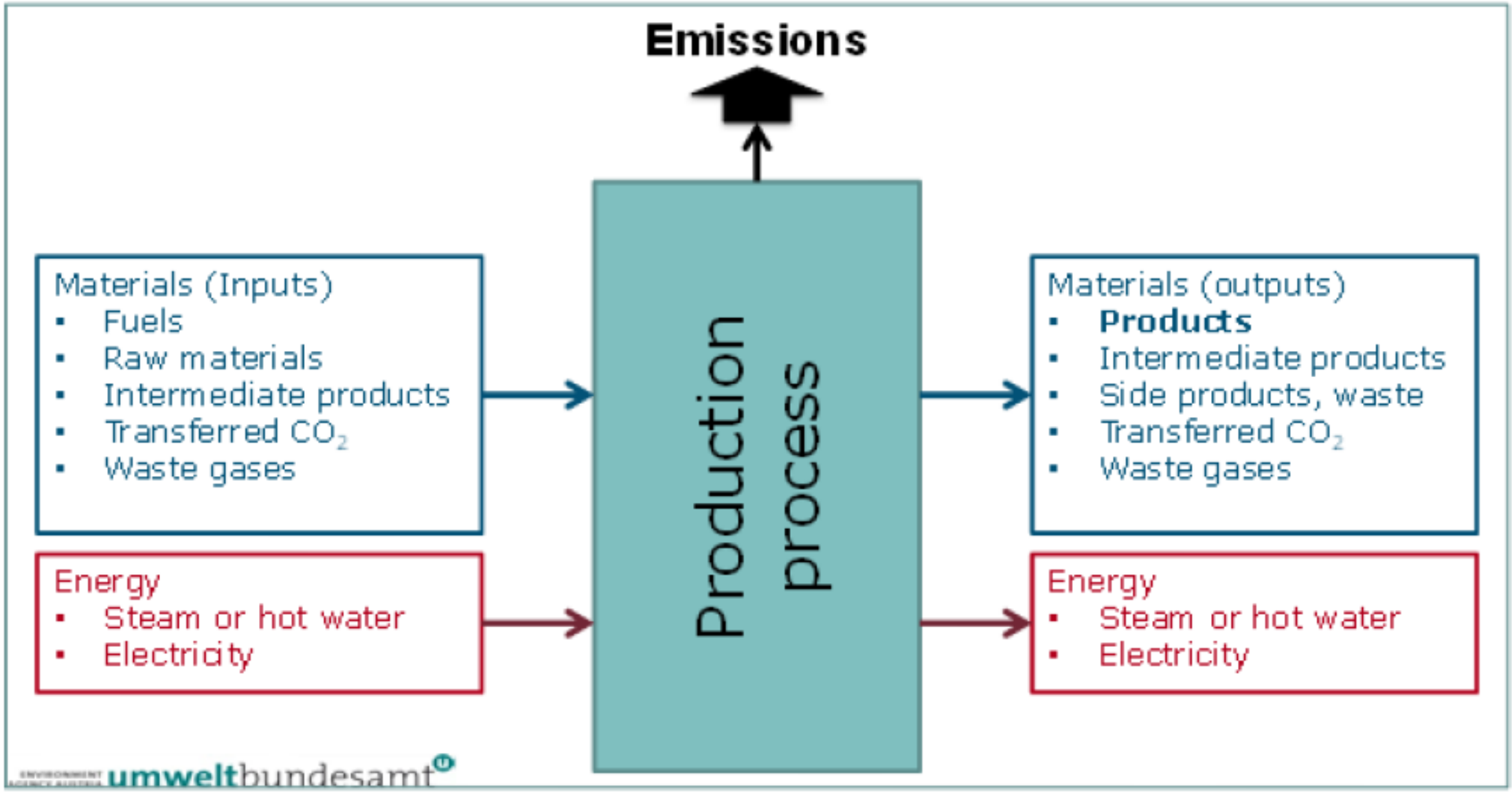
Typical Elements of Monitoring Methodology

- Data collection (metering data, invoices, production protocols, stock determination etc.).
- Sampling of materials and fuels.
- Laboratory analyses of fuels and materials.
- Maintenance and calibration of meters.
- Description of the calculations and formulae to be used.
- Documentation of standard values used and their sources.
- Control activities (e.g. four-eyes principle for data collection).
- Data archiving (including security to guard against manipulation).
- Regular identification of improvement possibilities in monitoring system.

Elements of Procedures for Monitoring Methodology

- Managing responsibilities and competency of personnel - description of roles and responsibilities.
- Data flow and control procedures.
- Quality assurance measures (checks to be carried out).
- Estimation method(s) for substituting data where data gaps are identified.
- Regular review of the monitoring methodology for its appropriateness.
- A sampling plan and process for revision, if required.
- Procedures for methods of analyses, if applicable.
- Procedure for demonstrating evidence for equivalence to EN ISO/IEC 17025 accreditation of laboratories.
- Procedures for use of measurement-based methodologies.
- Procedure for regular review and update of the list of products and precursors produced and/or imported.

Calculation of attributed direct emissions



Calculation of attributed direct emissions

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

Calculation of attributed direct emissions

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

The attributed direct emission of the production process over the whole reporting period in t CO_2.

The formula provides guideline for monitoring of parameters for installations consisting of more than one production process, or where heat supply is separated, or where waste gases or electricity production are found in the installation.

Calculation of attributed direct emissions

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

$Em_{Inst} = \Sigma^{n}_{i=1} Em_{calc,i} + \Sigma^{m}_{j=1} Em_{meas,j} + \Sigma^{l}_{k=1} Em_{other,k}$

Em_{Inst}… (direct) emissions of the installation in t CO_2;
$Em_{calc,i}$… emissions from source stream *i* determined using calculation-based methodology in t CO_2;
$Em_{meas,j}$… emissions from emission source *j* determined using measurement-based methodology in t CO_2;
$Em_{other,k}$… Emissions determined by another method, index *k* in t CO_2.

Combustion emissions: $Em_i = AD_i \bullet EF_i \bullet OF_i$ ($AD_i = FQ_i \bullet NCV_i$; $OF = 1 - C_{ash}/C_{total}$)

Process emissions: $Em_j = AD_j \bullet EF_j \bullet CF_j$

Calculation of attributed direct emissions

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

Emissions equivalent to the quantity of measurable heat imported to the production process in t CO_2 and includes heat imported from other installations, other production processes within the same installation, as well as heat received from a technical unit (e.g. a central power house at the installation, or a more complex steam network with several heat producing units) that supplies heat to more than one production process.

$$EmH,imp = Qimp \cdot EFheat$$

EF_{heat}… emission factor for the production of measurable heat, expressed in t CO_2/TJ;
Q_{imp}… net heat imported to and consumed in the production process expressed in TJ.

Calculation of attributed direct emissions

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

The emissions equivalent to the quantity of measurable heat exported from the production process in t CO_2.

For the exported heat either the emissions of the actually known fuel mix in accordance with guidelines, or – if the actual fuel mix is unknown – the standard emission factor of fuel most commonly used in the country and industrial sector, assuming a boiler efficiency of 90%.

Heat recovered from electricity-driven processes and from nitric acid production shall not be accounted.

Calculation of attributed direct emissions

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

The attributed direct emissions of a production process consuming waste gases imported from other production processes in t CO_2, corrected for the reporting period.

$$WG_{corr,imp} = V_{WG} \cdot NCV_{WG} \cdot EF_{NG}$$

V_{WG}… volume of the waste gas imported;
NCV_{WG}… net calorific value of the waste gas imported;
EF_{NG}… standard emission factor of natural gas as given Implementing Regulation.

Calculation of attributed direct emissions

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

The emissions equivalent to the quantity of waste gases exported from the production process in t CO_2, corrected for the reporting period.

$$WG_{corr,\text{exp}} = V_{WG,\text{exp}} \cdot NCV_{WG} \cdot EF_{NG} \cdot Corr_{\eta}$$

$V_{WG,exp}$… volume of waste gas exported from the production process;
NCV_{WG}… net calorific value of the waste gas exported;
EF_{NG}… standard emission factor of natural gas as given Implementing Regulation:
$Corr_{\eta}$… factor that accounts for the difference in efficiencies between the use of waste gas and the use of the reference fuel natural gas. The standard value is $Corr_{\eta}$ = 0,667.

Calculation of attributed direct emissions

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

The emissions equivalent to the quantity of electricity produced within the boundaries of the production process in t CO_2.

$$Em_{el} = E_{el} \bullet EF_{el}$$

Em_{el}… emissions related to electricity produced or consumed in t CO_2;
E_{el}… electricity produced or consumed expressed in MWh or TJ;
EF_{el}... emission factor for electricity applied, expressed in t CO_2/MWh or t CO_2/TJ.

Calculation of embedded emissions

Simple goods

$$SEE_{g,di} = \frac{AttrEm_g}{AL_g}$$

$$SEE_{g,indir} = \frac{AttrEm_{g,indir}}{AL_g}$$

$AttrEmindir = Em_{el},cons$

$Em_{el} = E_{el} \cdot EF_{el}$

$SEE_{g,dir}/SEE_{g,indir}$... specific embedded direct/indirect emissions in tCO_2e per t goods *g*

AL_g... Activity level of goods g (amount of the goods g produced in the reporting period in that installation, referring to the whole aggregated goods category)

Em_{el}... emissions related to electricity produced or consumed in t CO_2

E_{el}... electricity consumed in MWh or TJ

Feel... emission factor for electricity in t CO_2/MWh or t CO_2/TJ

Complex goods

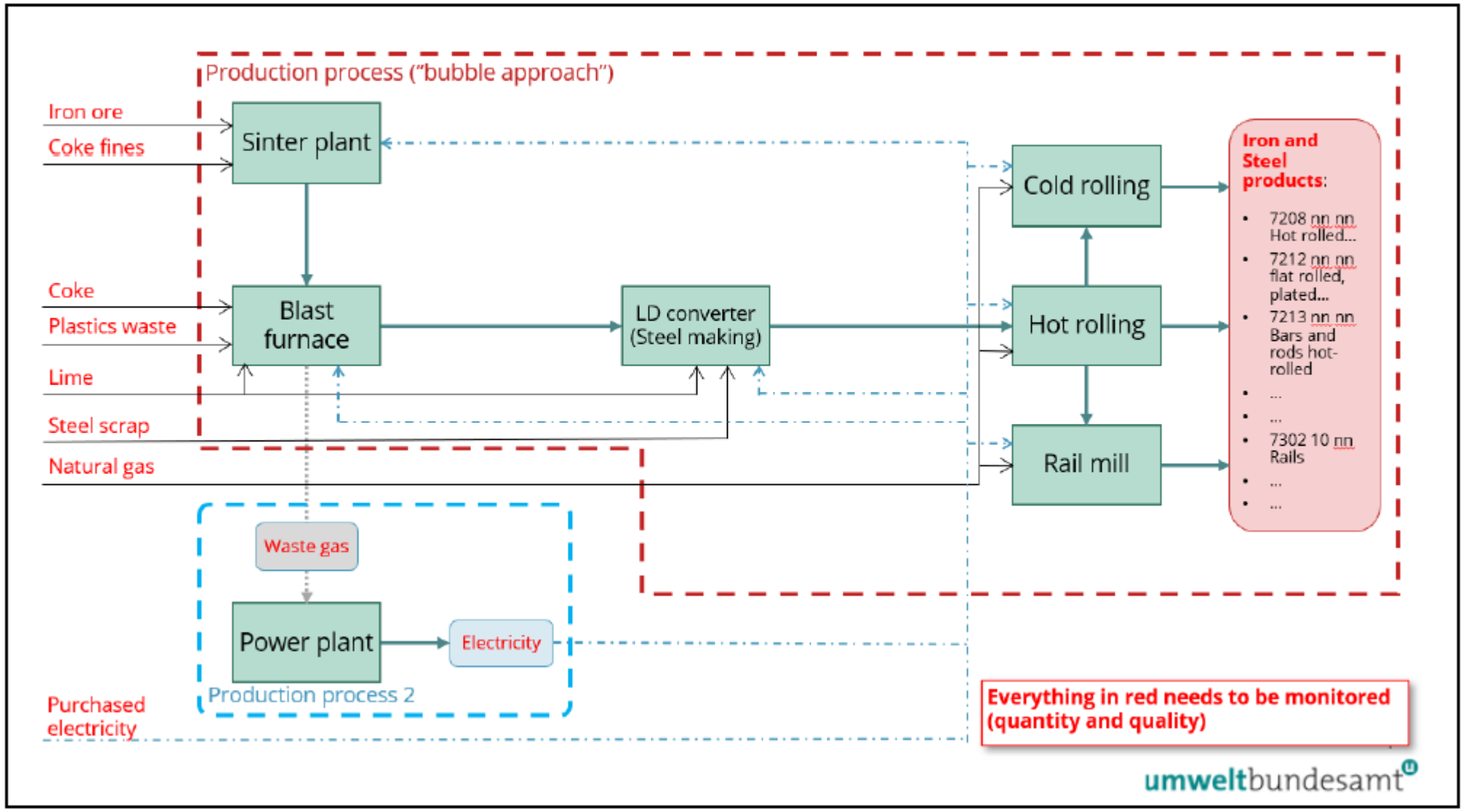
$$SEE_g = \frac{AttrEm_g + EE_{InpMat}}{AL_g}$$

$$EEInpMat = \Sigma Mi \cdot SEEi$$

EE_{InpMat} ... Embedded direct or indirect emissions of all precursors consumed

M_i ... Mass of precursor *i* used in the production process yielding goods *g*

Example of Complete Monitoring Approach for BF Route



How to submit a report?

Who is the responsible for the reporting	• The reporting declarant • **Same as the authorised CBAM declarant but not authorisation** needed yet
How can the reporting declarant submit a report	• **Gain access to the CBAM transitional registry** – request log-in via portal • Fill out **mandatory fields** in the registry • Indicate if reporting is **by importer or on behalf of an importer** • Submit the report **no later than 1 month after the quarter**
Is there flexibility for the submission?	• **Yes** – A report can be modified **2 months after the reported quarter** • For the first two CBAM reports (due Jan and April 2024) modification is accepted until **July 2024** (deadline of third report) • After the deadlines possibility to request reopening for correction (IA-Article 9-3)

What to submit?

Role of third country operators of installation

- **Monitor and collect data** on embedded emissions –Possibility to use templates and guidance docs provided by the Commission
- **Communicate** data to reporting declarants – Possibility to use templates provided by the Commission
- Is verification needed: **Not yet**!

What information is necessary to be communicated for the reporting

- **Information on the goods**: Quantity / Type identified by CN code (8-DIGIT) / Country of origin
- **Info on the installation**: Company name / Address / Location / Geo coordinates
- **Info on the production**: Routes / Parameters
- **Information the emissions:** Specific direct and specific indirect
- **Information on carbon price paid** at production country (also for precursors)

Is there flexibility for the reporting?

- **Until 31 December 2024**
  - Methods used under monitoring, reporting and verification systems
  - OR methods used in case of (a) carbon pricing scheme, (b) emission monitoring scheme at the installation or (c) compulsory monitoring scheme
- **Until 31 July 2024** : any other referenced method
- **Possibility to use default values for input materials or subprocesses** when relatively minor (<20%) compared to total emissions

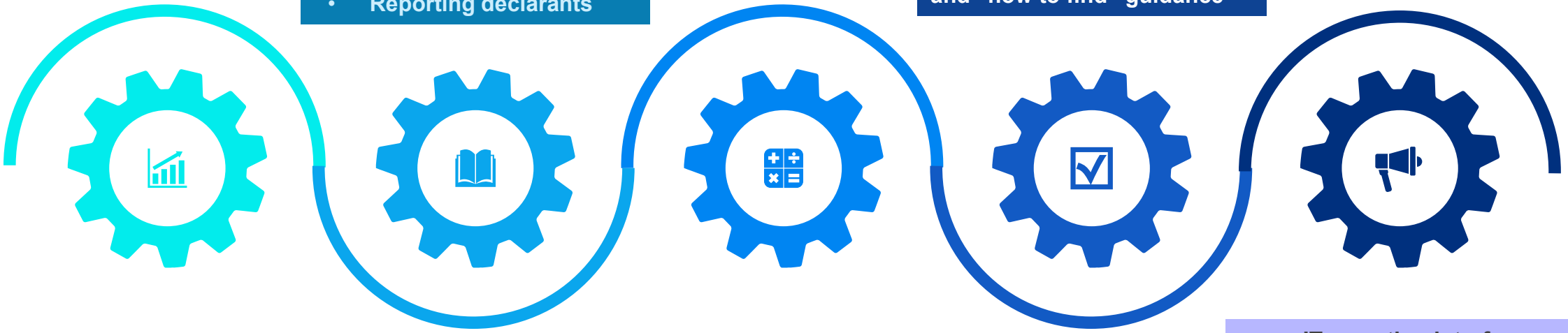
Guidance and support by the Commission communication and training

Guidance

Tailored guidance documents for
- Producers in third countries
- Reporting declarants

Dedicated information portal

Launch of dedicated Commission website with all information, specialised Q&A and “how to find” guidance



Training

- E-learning (General and sector specific)
- Webinars (General and sector specific)

Templates

Excel based templates to facilitate data collection and information exchange

IT reporting interface – transitional registry

- Dedicated IT interface for reporting and collection of information
- Detailed guidance for users

Thank You

Insert the Subtitle of Your Presentation

Commission tasks during the transitional period

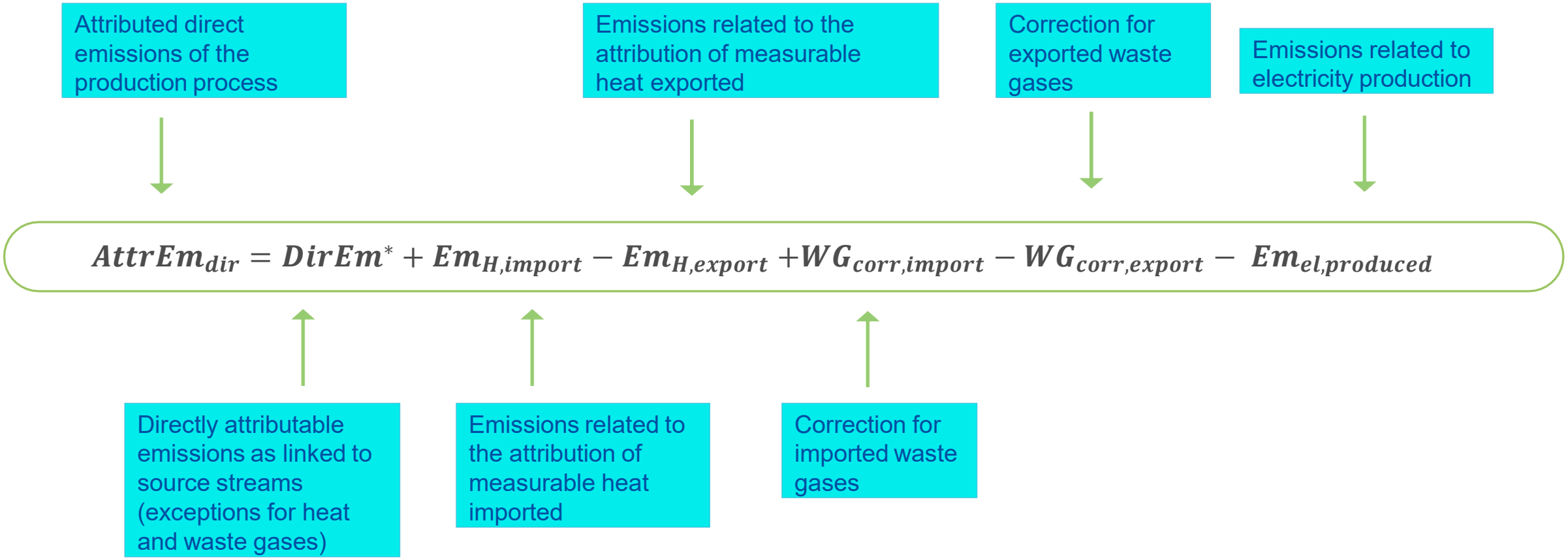
During the transitional period, the Commission will…

- Manage the CBAM Transitional Registry;
- Check the CBAM quarterly reports and communicate with national customs authorities;
- Analyse the impact of CBAM on exports, downstream products, trade flows, LDCs, etc.;
- Prepare secondary legislation for the definitive period: authorisation of declarants, accreditation of verifiers, CBAM registry, selling of CBAM allowances, carbon price paid, ETS price and benchmarks, final methodology, risk of circumvention, etc.
- Set up the Common Central Platform for the sale and repurchasing of CBAM allowances.

Scope of the EU Emissions Trading System

- carbon dioxide (CO_2) from
  - electricity and heat generation
  - energy-intensive industry sectors, including oil refineries, steel works, and production of iron, aluminium, metals, cement, lime, glass, ceramics, pulp, paper, cardboard, acids and bulk organic chemicals
  - aviation within the European Economic Area and departing flights to Switzerland and the United Kingdom
  - maritime transport, specifically 50% of emissions from voyages starting or ending outside of the EU and 100% of emissions from voyages between two EU ports and when ships are within EU ports.
- nitrous oxide (N_2O) from production of nitric, adipic and glyoxylic acids and glyoxal
- perfluorocarbons (PFCs) from the production of aluminium.

Calculation of attributed direct emissions



$Em_{Inst} = \Sigma^{n}_{i=1} Em_{calc,i} + \Sigma^{m}_{j=1} Em_{meas,j} + \Sigma^{l}_{k=1} Em_{other,k}$

Em_{Inst}… (direct) emissions of the installation in t CO_2;
$Em_{calc,i}$… emissions from source stream *i* determined using calculation-based methodology in t CO_2;
$Em_{meas,j}$… emissions from emission source *j* determined using measurement-based methodology in t CO_2;
$Em_{other,k}$… Emissions determined by another method, index *k* in t CO_2.

Combustion emissions: $Em_i = AD_i \bullet EF_i \bullet OF_i$ ($AD_i = FQ_i \bullet NCV_i$; $OF = 1 - C_{ash}/C_{total}$)

Process emissions: $Em_j = AD_j \bullet EF_j \bullet CF_j$

$$AttrEm_{dir} = \quad - Em_{H,export} + WG_{corr,import} - WG_{corr,export} - Em_{el,produced}$$

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