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REPUBLIC OF TÜRKİYE
MINISTRY OF ENVIRONMENT,
URBANIZATION AND CLIMATE CHANGE

Advancing ETS Readiness in Türkiye – Technical work on ETS benchmarks

This activity is part of the European Union Climate Dialogues Project (EUCDs)

ETS (practical wrap-up), ETS2, CBAM

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Agenda: What this wrap-up covers

Part 1	1. Benchmark determination methodology (FAR 2019/331 as amended); 2. Efficiency vs. heat/fuel fallback; 3. Phase 4 updates; 4. BDR-structure reminder.
Part 2	Two new building blocks: 5. ETS2 (second emissions trading system) 6. CBAM (Carbon Border Adjustment Mechanism).
The thread tying them together: how EU ETS, ETS2 and CBAM form one carbon-pricing architecture	
Why this matters for designing the Turkish ETS (TR ETS) pilot.	



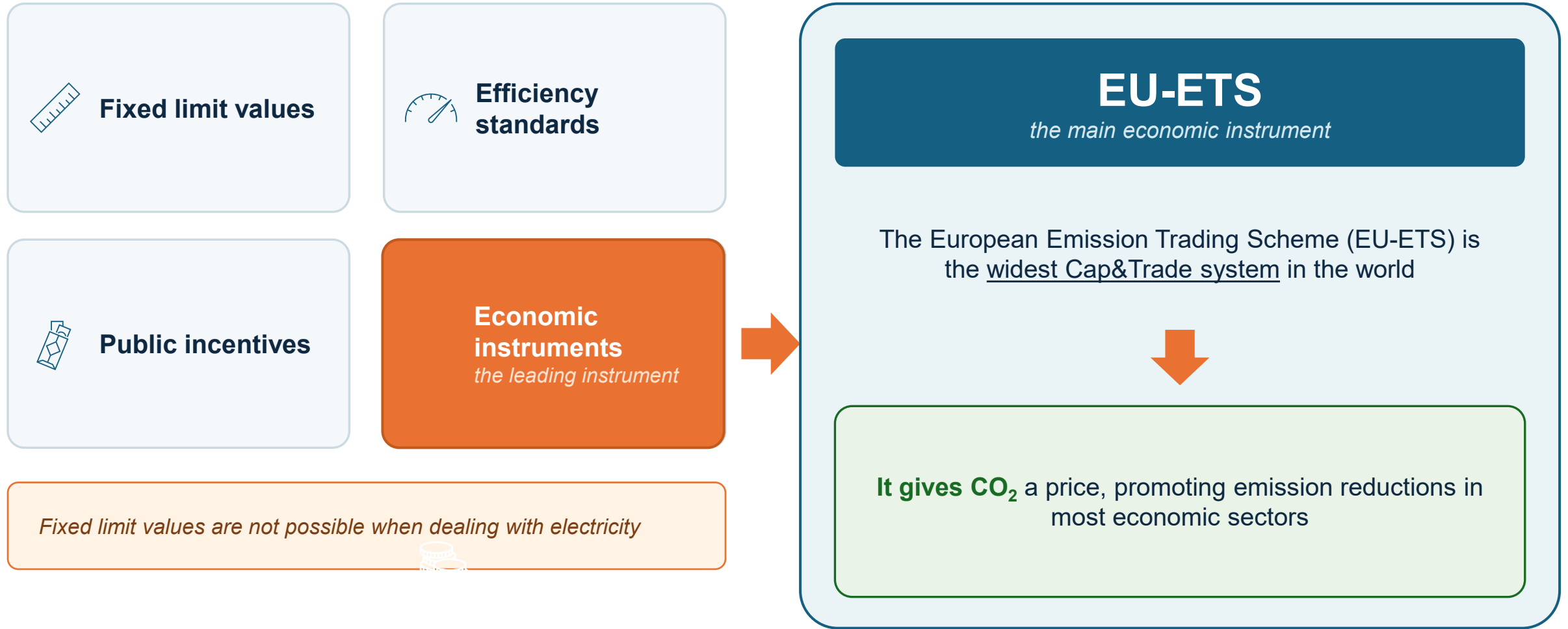
Continuity with the 2024 training

This is a reminder session — most of Part 1 was already covered in the 2024 training (Day 1).

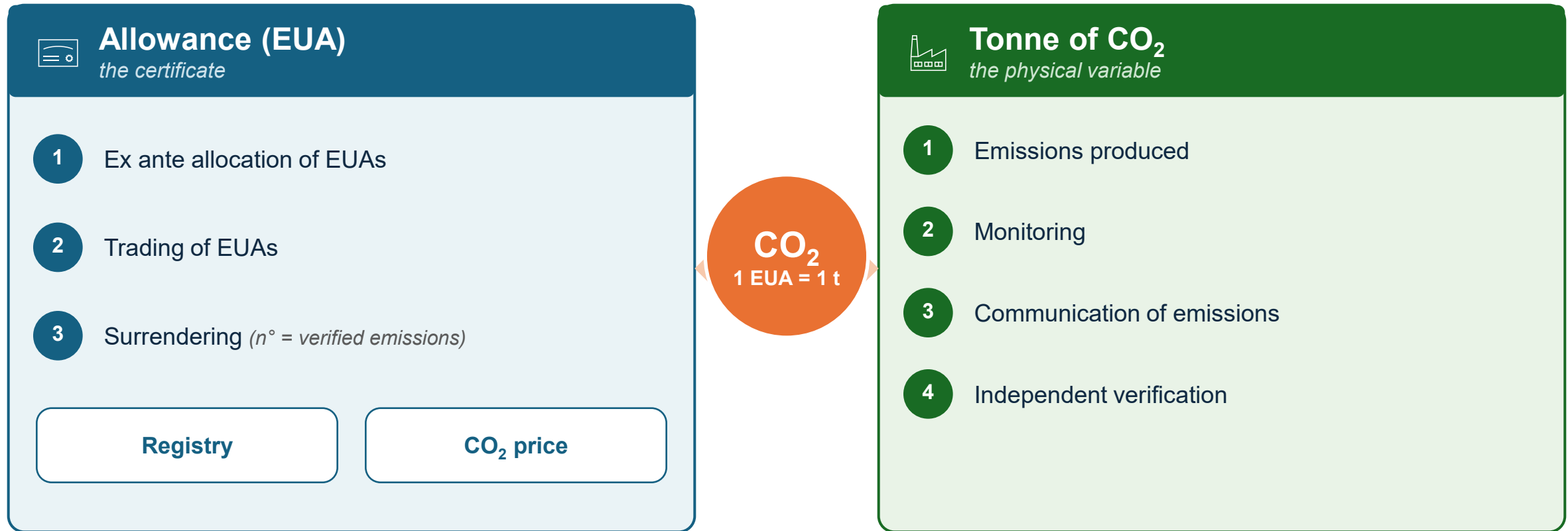
We refresh the logic, then go deeper on what is new in Phase 4 and on the ETS2 / CBAM connection.

Where a topic was taught in 2024, the slide carries a short “Covered in 2024” note.

How can we fight Climate Change?

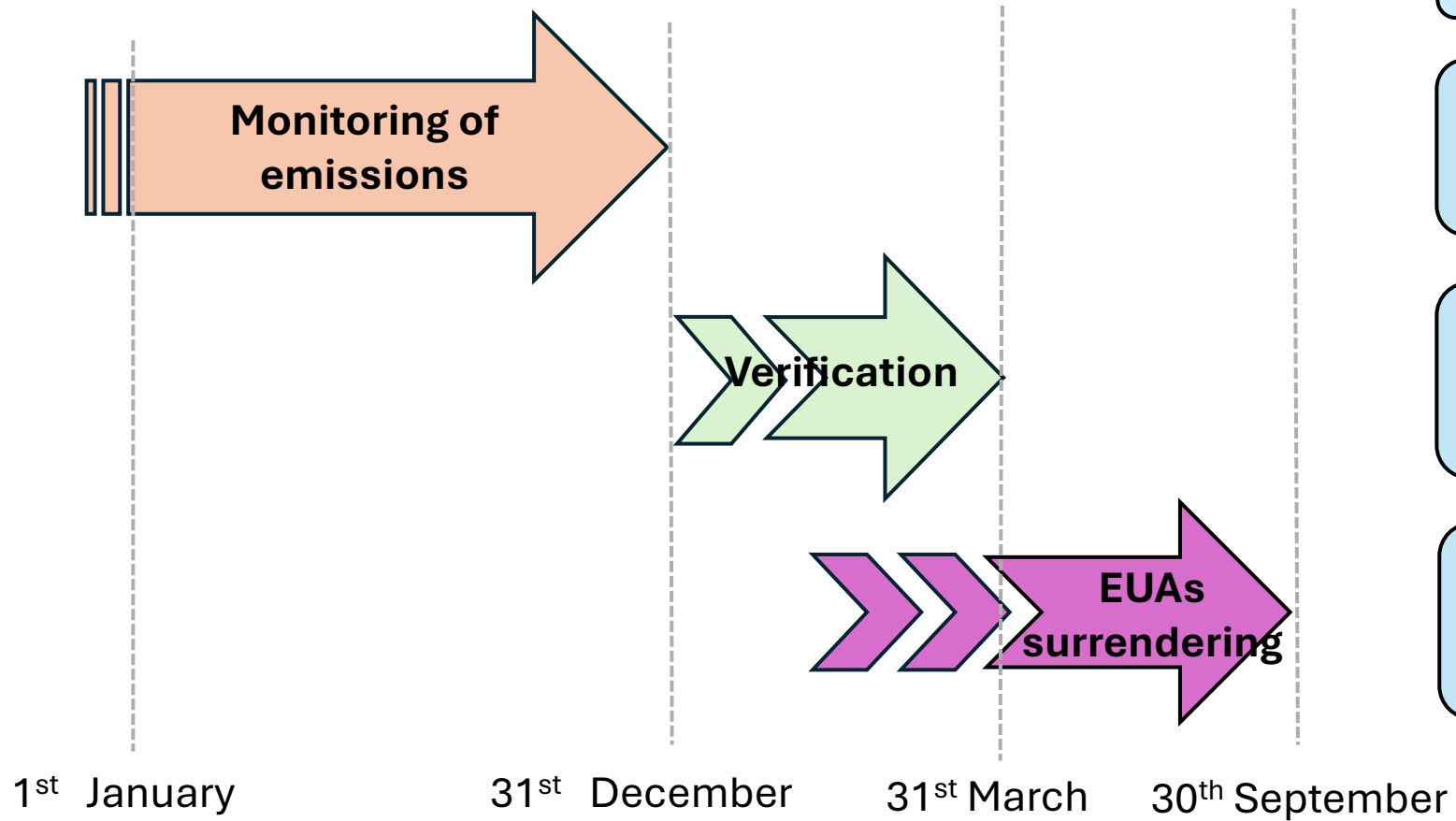


The double nature of CO₂ in the EU-ETS



Operator of the authorized installation

Compliance with the EU ETS throughout the year.



Who in the company?

➤ Internal resources/ or consultants

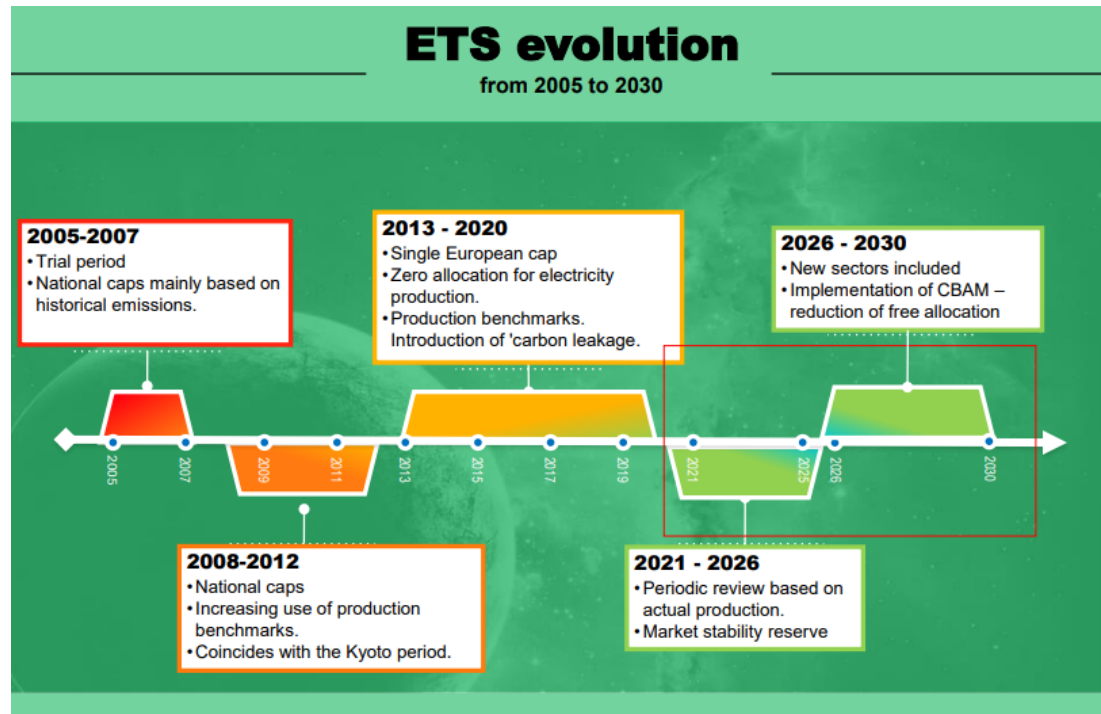
➤ Independent verifiers (to be accredited)

➤ Internal resources

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Part 1 — EU ETS benchmarking & fallbacks

- Recap: how free allocation is calculated, how benchmarks are set, how heat/fuel fallbacks work



- Focus on what changed in Phase 4 and on the Baseline Data Report (BDR).

The free allocation formula

$$\text{Free allocation} = \Sigma (\text{HAL} \times \text{BM} \times \text{CLEF} \times \text{CBAM factor} \times \text{Conditionality} \times \text{CSCF})$$

HAL

historical activity level

BM

benchmark value

CLEF

carbon-leakage
exposure factor

CBAM

free-allocation phase-
out factor

Cond.

efficiency / climate-
neutrality conditions

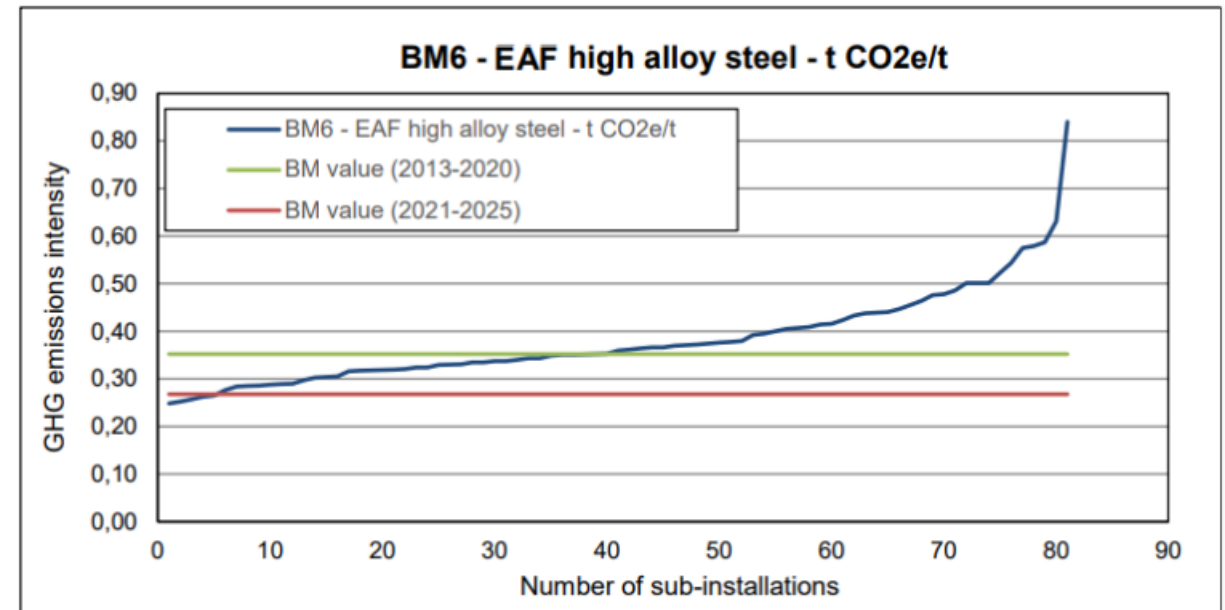
CSCF

cross-sectoral
correction factor

Applied per sub-installation, then summed over the installation. CBAM, Conditionality and CSCF were added / strengthened in Phase 4.

How a benchmark value is determined

- A product benchmark = average emissions of the 10% most efficient EU installations making that product.
- Expressed per tonne of product (e.g. t CO₂ / t product); set ex-ante in FAR Annex I.
- Efficient producers receive close to their needs; less efficient producers receive less than they emit.
- This builds a permanent incentive to decarbonise.





Benchmark update for Phase 4

Benchmark values are no longer frozen for a decade — they are updated. Two sets of values: one for 2021–2025, one for 2026–2030.

- 4th phase 1st period: each benchmark falls by min 0.2% and max 1.6% per year, depending on real sector progress.
- 4th phase 2nd period: each benchmark falls by min 0.3% and max 2.5% per year, being significantly updated to reflect technological progress and promote decarbonization.
- The revised Regulation of the benchmark values for the EU Emissions Trading System (EU ETS) for the 2026-2030 five-year period has been published in the Official Journal of the European Union on June 29th, 2026.

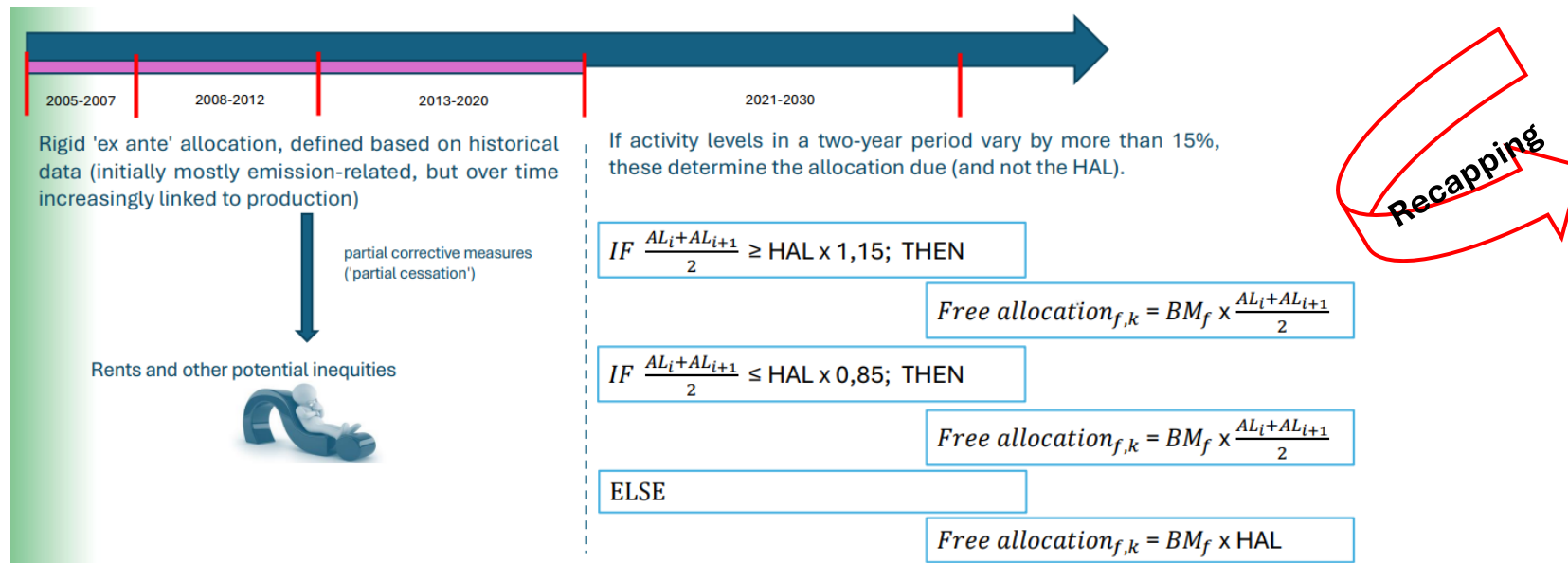
Goal: Align with EU climate targets (–55% emissions by 2030)

Main UPDATES

1. Real data	Benchmarks based on actual 2021–2022 plant efficiency (top 10%)
2. Tech-neutral	Broader definitions: green H ₂ , DRI steel, alternative cement, electrification incentives
3. Stricter cuts	Annual benchmark reduction rate → free allowances gradually decrease
4. Better data	Stricter checks, exclusions (ETS exits, new plants), no "negative efficiencies"

Dynamic allocation — the $\pm 15\%$ rule

- Allocation follows production: based on historical activity level (HAL) but adjusts to reality.
- If the 2-year average activity level rises or falls by more than 15% vs HAL, allocation is adjusted.
- Avoids over-allocation to shrinking plants and under-allocation to growing plants.
- Activity levels are reported every year (Activity Level Report).





The benchmark family

- 52 product benchmarks cover the main industrial products (iron & steel, cement, aluminium, chemicals, paper...): product benchmark sub-installation means inputs, outputs and corresponding emissions relating to the production of a product for which a benchmark has been set in Annex I
 - When no product benchmark applies, three fallback (efficiency) benchmarks are used: 1 heat benchmark · 1 fuel benchmark · 1 process-emissions approach.
 - 52 product benchmarks
 - 1 heat benchmark
 - 1 fuel benchmark
 - 1 process benchmark
- } Fall-back approaches
(when no product
benchmark is applicable)
- Each installation is split into sub-installations, each assigned to a benchmark.

The benchmark hierarchy

Step 1 — assign outputs to product benchmarks wherever one exists.

Step 2 — measurable heat not under a product benchmark → heat benchmark.

Step 3 — non-measurable heat from fuel combustion → fuel benchmark.

Step 4 — process emissions not covered above → process-emissions approach.

Sub-installation definitions

Product benchmark sub-installation — inputs, outputs, emissions for an Annex I product.

Heat benchmark sub-installation — measurable heat not under a product benchmark (produced or imported from ETS; consumed on site or exported to non-ETS; excluding electricity production).

Fuel benchmark sub-installation — non-measurable heat from fuel combustion (incl. safety flaring).

Process-emissions sub-installation — process CO₂ not from fuel combustion.

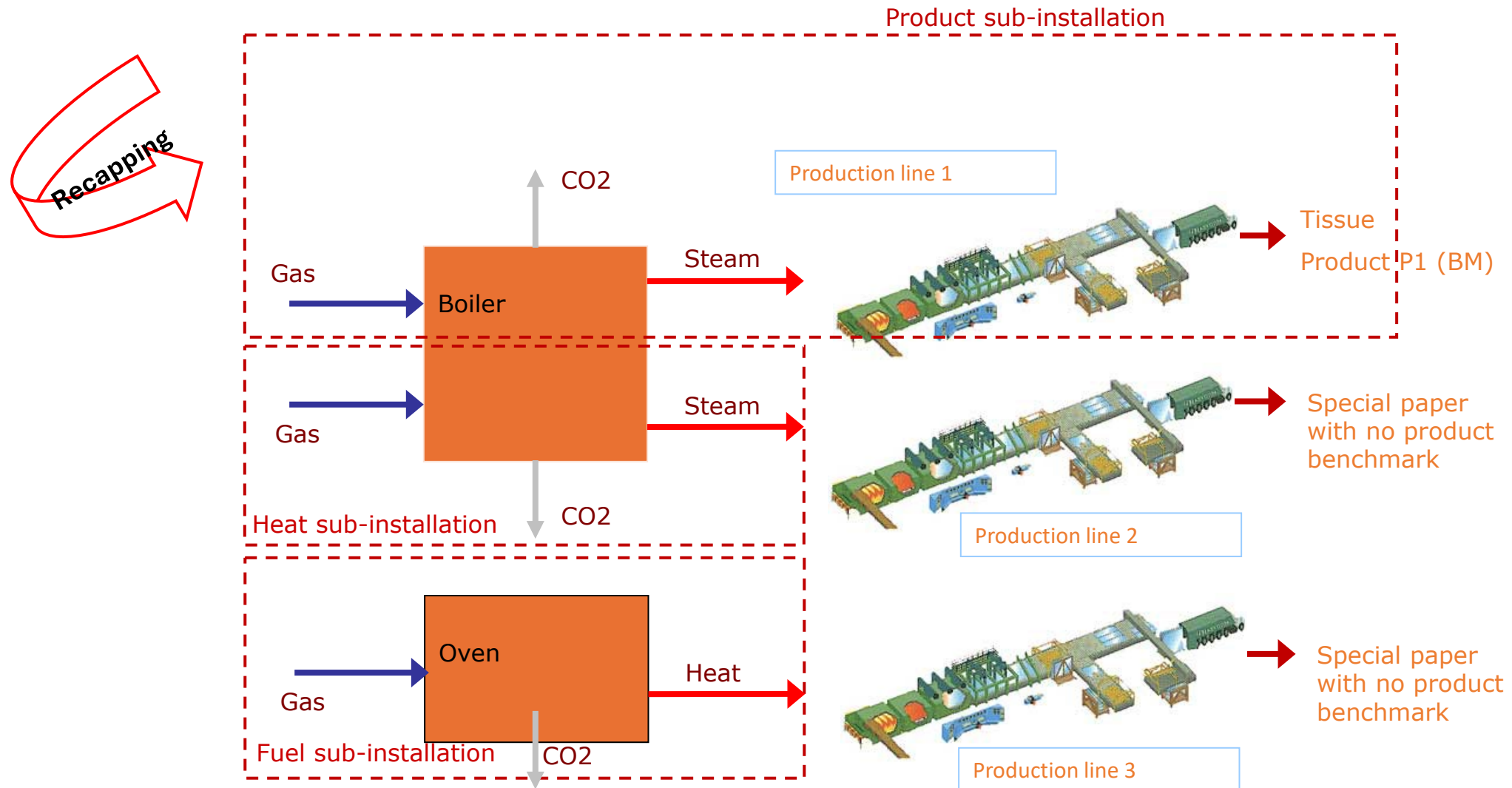
One unit, many sub-installations

A single physical unit (e.g. a boiler) can belong to several sub-installations.

A single sub-installation can contain several units / source streams.

The mapping mirrors the monitoring-plan logic from MRV.

It can change over time as production changes.



Heat benchmark — definition & formula

Covers measurable heat (steam, hot water) not attributable to a product benchmark.

$$F = \text{BM(heat)} \times \text{HAL} \times \text{CLEF} \times \text{CBAM factor}$$

HAL = median net eligible heat in the baseline period

= heat produced + imported from ETS installations – exported to non-ETS district heating (TJ/yr).

Heat benchmark value is set in EUAs per TJ — an energy-based, not product-based, benchmark.

The ±15% activity-level adjustment applies here too. The benchmark references an efficient natural-gas performance, so less efficient fuels receive less than they emit.

Fuel benchmark — definition & formula

Covers non-measurable heat produced by fuel combustion (including safety flaring).

$$F = \text{BM(fuel)} \times \text{HAL} \times \text{CLEF} \times \text{CBAM factor}$$

Activity level of a fuel flow: $AL = \text{Fuel quantity} \times \text{NCV}$ ($\times$ emission factor where relevant)

HAL = median annual energy consumption of the sub-installation (TJ/yr); NCV = net calorific value.

Typical cases: unmetered direct firing, gasoil for emergency generators, steel re-heating/rolling after continuous casting.

Energy-based benchmark referencing an efficient performance — high-emission fuels are penalised.

The efficiency lens

What fallbacks reward

Heat and fuel benchmarks are calibrated on an efficient, mostly natural-gas reference.

Installations using biomass + efficient boilers tend to do well against the benchmark.

Installations using less efficient boilers or higher-emission fuels receive less than they emit.

So the fallback is still an efficiency benchmark — it partly rewards better energy performance.

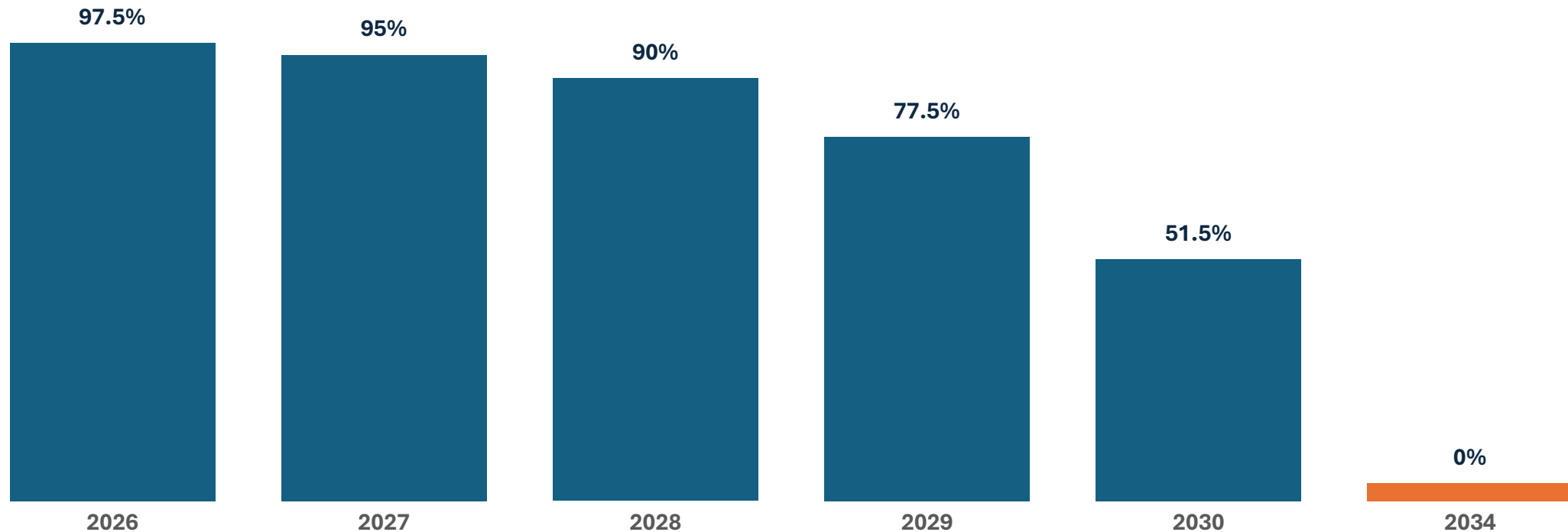


Phase 4 at a glance

Topic	Phase 3 (2013–2020)	Phase 4 (2021–2030)
Benchmarks	Essentially fixed	Updated each period
Allocation	Ex-ante & static	Dynamic · ±15% activity-level adjustment
Conditions	—	Energy-efficiency & climate-neutrality conditionality
Carbon leakage	Broad free allocation	List narrowed; CBAM factor replaces free allocation for CBAM sectors

CBAM factor — bridge to Part 2

For CBAM sectors, free allocation is multiplied by a declining CBAM factor (Art. 10a(1a)).



Free allocation for CBAM goods phases out to 0% by 2034. The cross-sectoral correction factor (CSCF) keeps total free allocation within the cap. As free allocation falls, CBAM takes over at the border.

The Baseline Data Report

The Purpose

The BDR (Baseline Data Report) is the data foundation of free allocation.

It reports, per sub-installation, activity levels, heat and energy flows, and emissions for the baseline period.

It is the main template operators submit to apply $\text{HAL} \times \text{BM} \times \text{CLEF} \times \dots$

It is verified before allocation is granted.



The Baseline Data Report

Structure & verification

Structured in sections (A–K): installation data, sub-installations, activity levels, heat/energy/emissions, connections, summary.

Built from monitored data consistent with the monitoring plan (MMP).

Verified by an accredited verifier (FAR Guidance GD4) before submission to the competent authority.

The CBAM factor is applied at the allocation stage, after the BDR data.

BASELINE DATA REPORT for Phase 4 of the EU ETS

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[GUIDELINES AND CONDITIONS](#)

A. Sheet "InstallationData" - GENERAL INFORMATION ON THIS REPORT

- I [Identification of the Installation](#)
- II [Information on this baseline data report and conditionality of free allocation](#)
- III [List of sub-installations](#)
- IV [List of technical connections](#)

B+C. Sheet "Annual Emissions Data" for the Year:

- [2019](#)
- [2020](#)
- [2021](#)
- [2022](#)
- [2023](#)

D. Sheet "Emissions" - ATTRIBUTION OF EMISSIONS

- I [Total Direct Greenhouse Gas Emissions and Energy Input from Fuels](#)
- II [Attribution of emissions to sub-installations](#)
- III [Cogeneration tool](#)
- IV [Waste gas tool](#)

E. Sheet "EnergyFlows" - DATA ON ENERGY INPUT, MEASURABLE HEAT AND ELECTRICITY

- I [Total energy input](#)
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- III [Waste gas balance](#)
- IV [Electricity](#)

F. Sheet "ProductBM" - SUB-INSTALLATION DATA RELATING TO PRODUCT BENCHMARKS

- I [Historic Activity levels and disaggregated production details](#)

G. Sheet "Fall-back" - SUB-INSTALLATION DATA RELATING TO FALL-BACK SUB-INSTALLATIONS

- I [Historic Activity levels and disaggregated production details](#)

H. Sheet "SpecialBM" - SPECIAL DATA FOR SOME PRODUCT BENCHMARKS

- I [CWT \(Refinery products\)](#)
- II [Lime](#)
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- IV [Steam cracking](#)
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- VI [Hydrogen](#)
- VII [Synthesis gas](#)
- VIII [Ethylene oxide / glycols](#)
- IX [Vinyl chloride monomer \(VCM\)](#)

I. Sheet "MSspecific" - ADDITIONAL DATA REQUIREMENTS BY THE MEMBER STATE

- I [To be defined by the Member State](#)

J. Sheet "Comments" - COMMENTS AND FURTHER INFORMATION

- I [Documents supporting this report](#)
- II [Free space for all kinds of supplemental information](#)

K. Sheet "Summary" - OVERVIEW OF MOST IMPORTANT DATA

- I [Installation data](#)
- II [Baseline period and eligibility](#)
- III [Emissions and Energy Flows](#)
- IV [Sub-installation data relevant for allocation and benchmark update purposes](#)
- V [Calculation of preliminary annual amount of allowances allocated free of charge](#)



**BDR = Baseline Data
Report**



Recapping



$$Q = \sum_i Q_i = \sum_i \text{HAL}_i \times \text{BM}_i \times \text{CLEF}_i \times \text{CBAM}_i$$



A
B
C
D
E
F
G
H
I
J
K

1 Sub-installation with product benchmark 1:

EAF high alloy steel

		CL-exposed	Started	No. of BM	15(7).3?	BM value (min/max/actual)	
EAF high alloy steel		VERO	00/01/1900	6	FALSO	0,1760	EUA/tonnes
non-ETS heat		CBAM	HVC-Corr	VCM-F		0,3309	EUA/tonnes
Special factors:		VERO	0	1,0000			EUA/tonnes
		Unit	2019	2020	2021	2022	2023
HAL (Historic activity level) reported		tonnes	2.617.277	2.588.871	3.176.753	2.823.564	3.039.770
Values used for HAL calculation:		tonnes	2.617.277	2.588.871	3.176.753	2.823.564	3.039.770
Relevant electricity consumption		MWh / year	1.758.109	1.727.399	2.004.889	1.830.673	1.575.157
HAL total		Prelim Alloc Year 1 (min)		Prelim Alloc Year 1 (max)		Prelim Alloc Year 1 (actual)	
2.823.564 tonnes / year		496.947 EUA / year		934.261 EUA / year		EUA / year	



1 Total preliminary annual amount of allowances allocated free of charge:

The amounts displayed here reflect the calculation of preliminary annual number of allowances allocated free of charge in accordance with paragraphs 1 to 7 of Article 16 of the FAR, i.e. the factors referred to in Annex V of the FAR (referred to as "Carbon leakage factor" below) have already been applied. Pursuant to Article 16(3) of the FAR, for the district heating sub-installation this factor will be 0.3 for all years.

If for a sub-installation the calculated preliminary annual amount of allowances allocated free of charge results in a negative value, it is set to zero instead.

(a) Calculation of the minimum, maximum, or actual preliminary allocation?

Based on the selection made here, the indicative minimum, maximum or actual preliminary allocation, as determined in section IV above, will be shown.

Please note that the actual allocation can only be calculated once the new benchmark values are published. Before that, no calculations will be performed below, if "actual" is chosen.

If this field is left empty, the minimum preliminary allocation will be used as the default for all calculations below.

(b) Calculation factors:

	2026	2027	2028	2029	2030
Carbon leakage factor for non-CL sectors	0,3000	0,2250	0,1500	0,0750	0,0000
Carbon leakage factor for district heating	0,3000	0,3000	0,3000	0,3000	0,3000
<i>Note: for CL exposed sectors, the CL factor is 1.0000 for all years.</i>					
Factor for process emissions	0,9700	0,9700	0,9100	0,9100	0,9100

(c) CBAM factors:

	2026	2027	2028	2029	2030
CBAM factors for products covered by CBAM	0,9750	0,9500	0,9000	0,7750	0,5150

(d) Calculation in accordance with Article 16(1) to (7) of the FAR:

Sub-installation	2026	2027	2028	2029	2030	< avg. 10%?
1 EAF high alloy steel	484.523	472.100	447.252	385.134	255.928	



CBAM FACTOR



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Interactive Q&A – Part 1



➔ <https://partici.fi/23503622>



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Part 2 — ETS2 and CBAM

Two new instruments: ETS2 (carbon pricing for fuels) and CBAM (pricing imports).

Then the core objective: how EU ETS, ETS2 and CBAM connect.



Why a second emissions trading system?

- EU target: cut net greenhouse gases by at least 55% by 2030 (vs 1990) and reach climate neutrality by 2050.
- Buildings and road transport are a large share of emissions the original ETS does not price.
- ETS2 extends carbon pricing to these sectors under Fit for 55 — complementing, not replacing, ETS1 (now in Phase 4).

–55%

net GHG by 2030 (vs 1990)

–42%

ETS2 cap by 2030 (vs 2005)

2050

EU climate neutrality

What is ETS2?

A **new and separate cap-and-trade system** for CO₂ emissions from fuel combustion in road transport, buildings and additional sectors (small industry not in ETS1). Like ETS1 it caps total emissions and lets the market set the price — but the obligation sits **upstream**, on the companies releasing fuels for consumption.



Sectors

Road transport, buildings (heating) and additional sectors — Annex III of the ETS Directive



Point of regulation

Upstream: fuel suppliers / entities releasing fuel for consumption — not households or drivers



Allowances

Auctioned in full — no free allocation in ETS2



Purpose

Price the carbon content of fuels to drive cost-effective emission reductions



ETS1 vs ETS2 — same logic, different design

ETS1 (existing)

Regulation point: Downstream — at the installation that emits

Who is regulated: ~10,000 power & industry installations, aviation, maritime

Sectors: Power, energy-intensive industry, aviation, maritime

Emissions measured: Direct emissions at the installation

Allowances: Auctioning + some free allocation

ETS2 (new)

Regulation point: Upstream — at the entity releasing fuel onto the market

Who is regulated: Fuel suppliers (excise-duty liable) — far fewer than end-users

Sectors: Road transport, buildings, additional/small industry (Annex III)

Emissions measured: Emissions implied by the fuel released for consumption

Allowances: Auctioned in full (no free allocation)



Built on the ETS architecture — extending Phase IV logic

A separate system that deliberately reuses the proven legal and operational backbone of the EU ETS now running in its fourth trading period.

Same legal instrument

Established by amending the EU ETS Directive (2003/87/EC) via Directive (EU) 2023/959 — one coherent framework.

Same MRV principles

Shared monitoring, reporting & verification under the MRR (Reg. 2018/2066). “A tonne must be a tonne.”

Same market logic

A declining cap, auctioned allowances, a Market Stability Reserve and an annual surrender obligation.

Aligned trajectory

Both steepen their linear reduction factor to deliver the 2030 target and the path to 2050 neutrality.



A declining cap that guarantees the emission cut

The total quantity of ETS2 allowances is fixed and falls every year along a **linear reduction factor**, so that emissions from the covered sectors are **42% lower in 2030 than in 2005**. The cap — not the price — guarantees the environmental outcome.

Full auctioning

100% of allowances auctioned — generating revenue for climate action

Linear reduction

The annual cap decline tightens supply and sustains the carbon-price signal

Sector coverage

Carbon cost reaches transport & heating fuels for the first time, EU-wide

-42%

ETS2 emissions by 2030 compared with 2005

*Reductions delivered by a fixed, annually declining
allowance cap*

Which fuels and sectors are covered?

Article 3(af) of the ETS Directive defines the fuels in scope by reference to the Energy Taxation Directive (2003/96/EC). Sectoral coverage follows **Annex III**, using the IPCC Common Reporting Format (CRF) categories.

Covered

- Commercial fuels in ETD Tables A & C: petrol, gas oil/diesel, kerosene, LPG, natural gas, heavy fuel oil, coal and coke
- Any product used as motor fuel or hydrocarbon used as heating fuel (“equivalent product”), incl. certain bio-based fuels and additives
- Fuels even where exempt from energy taxation under the ETD (Arts. 14–18)

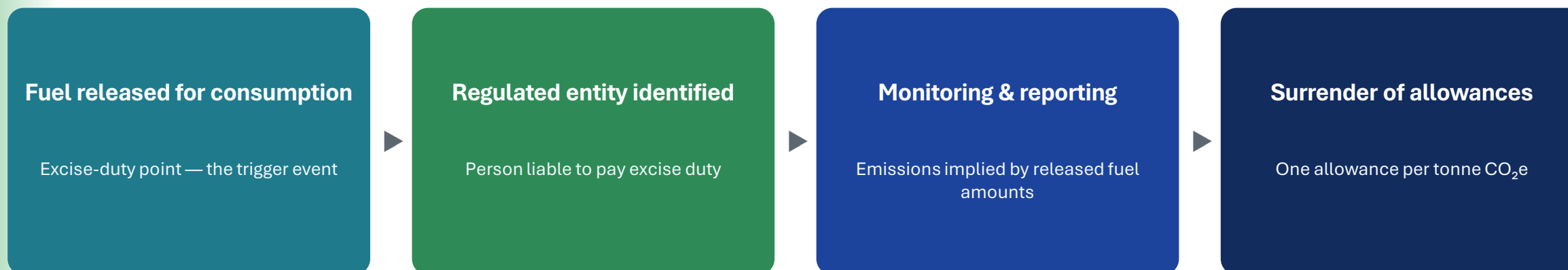
Excluded

- Peat; solid biomass (wood-based fuels); charcoal from wood
- Hazardous or municipal waste used as fuel
- Hydrogen and ammonia (no combustion CO₂)
- Biomass meeting RED II sustainability & GHG-saving criteria (zero-rated)
- Fuels not combusted (lubricants, urea for SCR, paraffin waxes)



Who is the “regulated entity”?

To avoid placing reporting duties on millions of households and drivers, ETS2 regulates **upstream**. The regulated entity (Art. 3(ae)) is, in principle, the entity **liable to pay excise duty** when fuel is released for consumption — aligning ETS2 with the existing excise / energy-taxation reporting infrastructure.



Linkage established through the Energy Taxation Directive (2003/96/EC) and Directive 2020/262/EU on excise duty.

The annual compliance cycle



“A tonne must be a tonne” → “a tonne must be an allowance.” Robust MRV ensures every tonne emitted is matched by one surrendered allowance — the basis of the system’s credibility and of the competent authority’s oversight role.



Roles and responsibilities

Regulated entity

- Draft & maintain the monitoring plan
- Monitor and prepare the annual emissions report
- Engage the verifier; surrender allowances

Verifier

- Independently verify the emissions report
- Operate under the AVR
- Issue the verification opinion

Competent authority

- Approve monitoring plans; issue GHG permit
- Receive & check reports; run inspections
- Correct verified figures where errors found

National accreditation body

- Accredite and supervise verifiers
- Safeguard verification quality
- Monitored by the Member State (AVR Art. 66)



What regulated entities must do

1 Hold a GHG permit

Obtain the greenhouse-gas emissions permit before fuels are released for consumption.

2 Approved monitoring plan

Submit a monitoring plan to the competent authority and keep it up to date.

3 Monitor & report

Apply the calculation-based methodology; submit a verified Annual Emissions Report.

4 Independent verification

Have the report verified by an accredited verifier under the AVR.

5 Surrender allowances

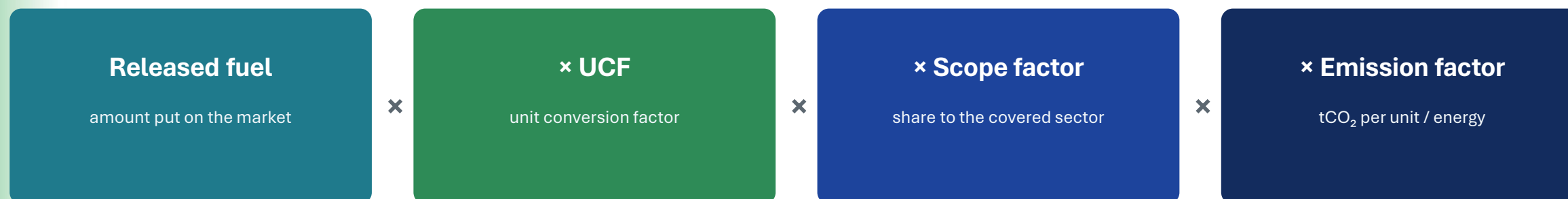
Surrender allowances matching verified emissions by 31 May each year.

6 Records & improvement

Archive data, run control activities, report monitoring-plan improvements.

Calculation-based approach

Emissions are calculated for each fuel stream by combining released fuel amounts with conversion, scope and emission factors:



Scope factor — apportions fuel to the sectors actually covered by ETS2 (avoiding double counting with ETS1). **Zero-rating** — the emission factor may be set to zero for biomass meeting RED II sustainability and GHG-saving criteria, and for qualifying RFNBOs, RCFs and synthetic low-carbon fuels.



The tier system — a building-block approach

Each parameter can be determined at a defined data-quality level (“tier”). Higher tiers mean greater accuracy and stricter requirements; the competent authority sets the minimum tier, with derogations possible for unreasonable cost.

Tier 1

Lower requirements · indicative for low-emitting entities

Tier 2

Intermediate accuracy requirements

Tier 3

Highest accuracy · strictest requirements

↑ increasing accuracy

Derogations & simplifications

- Lower tier allowed where higher tiers cause unreasonable cost
- Simplified uncertainty assessment for the scope factor
- Lighter regime for regulated entities with low emissions



Timeline to launch

2024–25

Monitoring plans submitted & approved; monitoring of emissions begins

2028

Start postponed by one year —
auctioning and carbon pricing
begin

2027

Originally scheduled start of
auctioning and carbon pricing

2029

First surrender of allowances
(for 2028 emissions)

Note: in 2026 the EU agreed to defer the start of ETS2 trading by one year (from 2027 to 2028) to ease the launch; monitoring and reporting obligations already apply. Confirm exact national dates with the competent authority.



ETS1 and ETS2 at a glance

Feature	ETS1	ETS2
Point of regulation	Downstream (emitter)	Upstream (fuel supplier)
Sectors	Power, industry, aviation, maritime	Transport, buildings, small industry
Allocation	Auction + free allocation	Full auctioning
2030 target	-62% vs 2005	-42% vs 2005
Status	Phase IV (2021–2030)	Launch deferred to 2028

ETS1 2030 ambition steepened to roughly -62% vs 2005 under Directive (EU) 2023/959.



What to remember

- 1 ETS2 extends carbon pricing upstream to transport and heating fuels — complementing, not replacing, ETS1.
- 2 It reuses the ETS architecture and MRV principles, with a fixed cap delivering –42% by 2030 vs 2005.
- 3 Regulated entities are fuel suppliers: permit, approved monitoring plan, verified reporting and surrender.
- 4 A price-stability mechanism and the Social Climate Fund manage cost and protect vulnerable groups.

Sources: European Commission MRR Guidance for ETS2 regulated entities (8 Oct 2025) · Reg. (EU) 2018/2066 (consolidated) · Directive (EU) 2023/959.

CBAM— Carbon Border Adjustment Mechanism

Pricing the carbon embedded in imports of carbon-intensive goods

- CBAM applies a carbon cost to imports of selected carbon-intensive goods entering the EU.
- Goal: a level playing field — imports face a cost equivalent to the EU ETS price on domestic producers.
- It is the import-side answer to carbon leakage, paired with the phase-out of free allocation.
- Covered sectors: iron & steel, aluminium, cement, fertilisers, hydrogen, electricity.

CBAM in the definitive period

From 1 January 2026, imports of CBAM goods are subject to a financial adjustment:

Embedded emissions

– EU free allocation

– Carbon price paid abroad

Authorised CBAM declarants report embedded emissions in a CBAM declaration and surrender CBAM certificates.
The Commission and national competent authorities review declarations and verification.
The deduction of free allocation is the explicit link to the EU ETS (next section).

Embedded emissions — actual vs default

Actual values — monitored and reported per Impl. Reg. (EU) 2025/2547; verified by an EU-accredited verifier.

Default values — country/route-specific values in Annex I to Impl. Reg. (EU) 2025/2621.

Default values are set deliberately high, to encourage use of actual verified data.

Simple goods vs complex goods: complex goods add the embedded emissions of their precursors.

CBAM verification & accreditation

Actual emissions must be verified by a verifier accredited by an EU Member State National Accreditation Body (NAB).

Verifiers demonstrate knowledge of ISO 14065 and ISO 17029 and of the CBAM rules.

The verifier reviews the methodology, visits the installation, and issues a verification report (Annex VI).

Same independent-assurance logic as the EU ETS verification framework.

Key CBAM implementing acts

- (EU) 2023/956 — the CBAM Regulation (base act), amended by (EU) 2025/2083.
- (EU) 2025/2547 — methodology for calculating embedded emissions.
- (EU) 2025/2621 — default values (Annex I).
- (EU) 2025/2620 — free-allocation adjustment and CBAM benchmarks (the ETS link).



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Why this matters for designing the Turkish ETS (TR ETS) pilot.	

The linkages — ETS · ETS2 · CBAM

The core learning objective: how the three instruments form one architecture.

ETS1 ↔ CBAM, ETS1 ↔ ETS2, and what it means for Türkiye.



탄소국경조정제도
SINIRDA KARBON DÜZENLEME MEKANİZMASI
MEKANİZM ВУГЛЕЦЕВОГО КОРИГУВАННЯ ІМПОРТУ
कार्बन सीमा समायोजन तंत्र
MÉCANISME D'AJUSTEMENT CARBONE AUX FRONTIÈRES
炭素国境調整措置
ISIXHOBO SOKUHLENGHALENGISA UMDA WE-KHABON
碳边境调节机制

কারিন বার্ডার ایڈজস্টমেন্ট মিকানিজম
MECANISMO DE AJUSTE EN FRONTERA POR CARBONO
MECANISMO DE AJUSTAMENTO CARBÓNICO FRONTEIRIÇO
الآلية الحدودية لضبط الكربون
PENYESUAIAN BATAS KARBON



One carbon-pricing architecture

EU ETS (ETS1)
power & heavy industry —
downstream

ETS1 is the reference; ETS2 extends coverage to new sectors; CBAM extends the ETS1 price to imports.

ETS2
transport, buildings, small
industry — upstream

CBAM
imports of ETS1 goods — at the
border

**Shared backbone: declining cap / carbon price • MRV • verification • annual
surrender**

ETS1 ↔ CBAM (1): free-allocation hand-over

Inside the EU, free allocation to CBAM sectors phases out via the CBAM factor (Art. 10a(1a)): from 2026, reaching 0% in 2034.

At the border, CBAM phases in over the same window.

The importer's CBAM bill is reduced by the free allocation EU producers still receive — so the two move in lock-step.

Net effect: EU producers and importers converge on the same carbon cost.

ETS1 ↔ CBAM (2): benchmarking

The free-allocation adjustment uses CBAM benchmarks set in Impl. Reg. (EU) 2025/2620 (Annex).

CBAM benchmarking consistent with EU ETS product benchmarks, though many more benchmarks has been set

Simple goods use the relevant CBAM benchmark; complex goods as well, where emissions combine the embedded emissions of their precursors.

So the same benchmark logic taught for the ETS reappears inside CBAM.

ETS1 ↔ CBAM (3): shared MRV discipline

Embedded-emissions monitoring for CBAM mirrors the EU ETS MRV rules.

Verification uses accredited verifiers and the EU ETS accreditation framework (NABs, ISO standards).

Default vs actual values mirror the measured-vs-default choice in ETS monitoring.

One measurement philosophy across ETS1, ETS2 and CBAM.

ETS1 ↔ ETS2: shared architecture

Same legal instrument: ETS2 created by amending the ETS Directive (2003/87/EC) via Dir. (EU) 2023/959.

Same MRV principles under the MRR (Reg. 2018/2066).

Same market logic: declining cap, auctioned allowances, Market Stability Reserve, annual surrender.

Difference: ETS2 regulates upstream and auctions 100% — no benchmarks, no free allocation.

ETS1 ↔ ETS2: complementary coverage

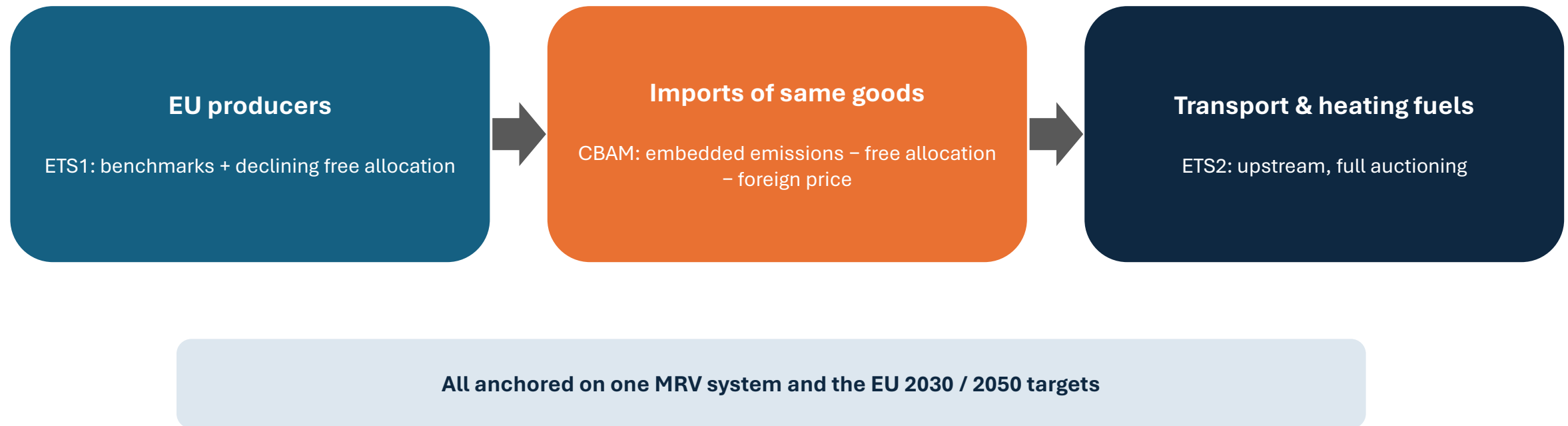
ETS1 covers power, industry, aviation, maritime; targets $\approx -62\%$ by 2030 (vs 2005).

ETS2 covers road transport, buildings, small industry; targets -42% by 2030 (vs 2005).

The scope factor prevents the same fuel being priced twice across the two systems.

Together they extend carbon pricing across most of the EU economy.

The carbon-pricing value chain





What this wrap-up covers

Part 1	Day 1 recap: benchmark determination methodology (FAR 2019/331 as amended); efficiency vs. heat/fuel fallback; Phase 4 updates; BDR-structure reminder.
Part 2	Two new building blocks: ETS2 (second emissions trading system) and CBAM (Carbon Border Adjustment Mechanism).
The thread tying them together: how EU ETS, ETS2 and CBAM form one carbon-pricing architecture	
Why this matters for designing the Turkish ETS (TR ETS) pilot.	



Why this matters for the TR ETS pilot

Türkiye's main exports to the EU are well represented in CBAM sectors (iron & steel, aluminium, cement, fertilisers).

A credible TR ETS with benchmarking can let domestic carbon costs be deducted from CBAM bills.

Reusing EU ETS methodology (benchmarks, MRV, verification) eases both compliance and trade.

Sequencing option: build ETS1-style benchmarking first; ETS2-style fuel coverage can follow.

Key takeaways

Benchmarks reward the best 10% and are updated each Phase 4 period (0.2%–1.6%/yr); allocation is now dynamic ($\pm 15\%$).

Fallbacks (heat/fuel/process) are efficiency benchmarks too — they reward better energy performance.

Phase 4 adds conditionality and a CBAM-driven phase-out of free allocation (to 0% by 2034 with current rules).

ETS1, ETS2 and CBAM are one architecture: shared MRV; CBAM benchmarks derive from ETS benchmarks; free-allocation phase-out and CBAM phase-in mirror each other.



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REPUBLIC OF TÜRKİYE
MINISTRY OF ENVIRONMENT,
URBANIZATION AND CLIMATE CHANGE

Interactive Q&A – Part 3



➔ <https://partici.fi/23503622>

References / legal basis

- EU ETS Directive 2003/87/EC (amd. Dir. (EU) 2023/959); FAR (EU) 2019/331; MRR (EU) 2018/2066; AVR (EU) 2018/2067.
- ETS2: Directive 2003/87/EC Chapter IVa; MRR Arts. 75a–75r; Reg. (EU) 2024/2493; EC MRR Guidance for ETS2 (8 Oct 2025).
- CBAM: Reg. (EU) 2023/956 (amd. 2025/2083); Impl. Regs (EU) 2025/2547, 2025/2621, 2025/2620; transitional Reg. (EU) 2023/1773.
- FAR Guidance GD1–GD12; EU ETS benchmark-curve factsheets.



Back-up slides

Carbon leakage & CLEF

- Carbon-leakage-exposed sectors keep a CLEF of 1 (100% of benchmark-based allocation).
- Non-exposed sectors are phased down toward 0 by 2030.
- The carbon-leakage list is set by Commission decision for the period.
- CLEF protects competitiveness while the carbon price rises.

How does carbon leakage occur?



Result:

- Carbon-intensive production could move to countries with less strict climate policy.
- Imported products could have price advantage at the expense of the environment.





Conditionality of free allocation

- Energy-efficiency: installations under the EED that ignore audit recommendations lose 20% of free allocation (with defined exemptions).
- Climate-neutrality: “worst performers” (above the 80th percentile of their benchmark curve) must adopt a climate-neutrality plan or lose 20%.
- Both push the most carbon-intensive operators to invest.
- Guidance: GD11 (climate-neutrality plans) and GD12 (energy-efficiency).

A. Installation Data	Navigation area:	Table of contents	Previous sheet	Next sheet	Summary
	Top of sheet	Installation ID	Contact persons	Verifier	Further information
	End of sheet	Application & Conditionality	Baseline period	Sub-installations	Technical connections

II Information on this baseline data report and conditionality of free allocation

1 Application for free allocation:

(a) Application for free allocation:

Please confirm here that you hereby apply for a free allocation of allowances under Article 10a of the Directive:

The operator of this installation confirms that an application for free allocation under Article 10a of the EU ETS Directive is hereby filed.

(b) Consent to use the data contained in this file:

The data contained in this file will be used by the competent authority for determining the free allocation pursuant to Article 10a of the EU ETS Directive, and by the European Commission for updating benchmark values. Furthermore these data will be notified to the European Commission in part or as a whole, if requested so, for the purpose of scrutinizing the national implementation measures pursuant to Article 11(1) of the EU ETS Directive.

If the operator confirms point (a) above, it is automatically assumed that this also confirms consent to use data contained in this file.

The operator of this installation confirms that this report may be used by the competent authority and the European Commission.

2 Conditionality 1: Outstanding recommendations for energy efficiency improvement measures

Pursuant to Article 22a(1) of the FARI, free allocation shall be reduced by 20% if not all relevant recommendations of the energy audit report or the certified energy management system under Article 8 of Directive 2012/27/EU (the Energy Efficiency Directive) have been implemented.

(a) Recommendations for energy efficiency measures for this installation relevant?

Please select "TRUE" here if the company your installation pertains to has corresponding obligations under Article 8 of Directive 2012/27/EU

(b) Are there any outstanding recommendations from 2019-2022 which have not yet been implemented?

Please select "TRUE" here if the energy efficiency audits or the certified energy management system under point a) resulted in recommendations for improving the energy efficiency during 2019 to 2022(1) AND there are remaining recommendations for which measures have not been implemented by the time of submitting this report.

Recommendations under b) might not be relevant for free allocation conditionality

Select "TRUE" here if any of the recommended measures under b) can be disregarded for the respective reasons listed in Article 22a(1). Those reasons are the following:

- Article 22a(1)(d): one or more recommendation does not lead to energy savings within the system boundaries of the industrial process
- Article 22a(1)(a): the pay-back period of one or more recommendation exceeds 3 years
- Article 22a(1)(b)(i): the investment costs exceed either 5% of the installation's annual turnover, OR 25% of the installation's profit
- Article 22a(1)(b)(ii): the investment costs exceed 50% of the average annual economic equivalent of final allocation that would be reduced
- Article 22a(1)(e): the installation-specific operating conditions, including planned or unplanned periods of maintenance, have not occurred yet

Please consult Guidance Document 12 for detailed guidance on the points above.

Not related to industrial | Investment costs >5% | Investment costs >50% | Conditions not yet

< > ... b_Guidelines & conditions A_InstallationData B+C_Emissions_Y1 B+C_Emissions_Y2 B+C_Emissions_Y3

The monitoring plan in ETS2 — the foundation of MRV

Typical content

- Data collection (metering, invoices) and fuel/material sampling
- Laboratory analyses; meter maintenance & calibration
- Calculations, formulae and software used
- Methods to identify end-consumers' CRF categories
- Control activities (e.g. four-eyes principle)
- Data archiving and protection against manipulation
- Regular identification of improvement possibilities

Approval & changes

- Submitted to and approved by the competent authority
- Significant changes require CA approval (Art. 75b(3) MRR)
- Non-significant changes only need notification

Why it matters

- Ensures completeness, consistency & comparability of data
- Minimises administrative burden through written procedures
- Must be approved before monitoring begins



Milestones of the annual cycle (year N)

When	Who	What
1 Jan – 31 Dec N	Regulated entity	Monitor emissions over the calendar year
By 30 April N+1	Entity / Verifier	Prepare & submit the verified Annual Emissions Report to the CA
April – May N+1	Competent authority	Possible spot checks; require corrections if applicable
By 31 May N+1	Regulated entity	Surrender allowances equal to verified emissions
By 31 July N+1	Regulated entity	Submit monitoring-plan improvement report, if applicable

Indicative timeline per the MRR (Arts. 75p–75r). Member-State law may set earlier dates (report by 31 March at the earliest).



Price stability and the social dimension

Containing price volatility

- A dedicated Market Stability Reserve underpins the ETS2 market
- Price-control trigger: extra allowances released if the price exceeds €45/tCO₂e (2020 prices)
- Reinforced measures allow up to 80 million additional allowances to be injected per year
- Aim: a smoother launch and protection against excessive price spikes

Social Climate Fund

- Financed by ETS2 revenues to support vulnerable households and transport users
- Operational from 2026, ahead of carbon pricing
- Mobilises around €86.7 billion over 2026–2032
- Member States deliver measures through national Social Climate Plans



Key legal references

Directive 2003/87/EC

The EU ETS Directive — establishes emissions trading; Chapter IVa governs ETS2.

Reg. (EU) 2018/2066 (MRR)

Monitoring & Reporting Regulation — Arts. 75a–75r set the ETS2 MRV rules.

Accreditation & Verification Reg. (AVR)

Governs verification of reports and accreditation of verifiers.

Directive (EU) 2023/959

2023 revision that created ETS2 and tightened the ETS framework (Fit for 55).

Reg. (EU) 2024/2493

Latest amendment of the MRR adapting monitoring & reporting for ETS2.

RED II & ETD (2003/96/EC)

Sustainability/zero-rating criteria and the fuel-scope and excise linkage.