EUROPEAN COMMISSION
DIRECTORATE-GENERAL
CLIMATE ACTION

Directorate B - European and International Carbon Markets

Guidance Document n°1
on the harmonised free allocation methodology for the EU ETS post 2020

General Guidance to the allocation methodology

Version issued on 19 September 2018 for comments

Prepared for the meeting of the Expert Group on Climate Change Policy on 2 October 2018

CONTENTS

1 Introduction

1.1 Status of the Guidance Documents

This guidance document is part of a group of documents, which are intended to support the Member States, and their Competent Authorities, in the coherent implementation throughout the Union of the allocation methodology for the fourth trading period of the EU ETS (post 2020) established by the Delegated Regulation of the Commission XX/XX on "Transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of the EU ETS Directive" (FAR).

The guidance does not represent an official position of the Commission and is not legally binding. However this guidance aims to clarify the requirements established in the EU ETS Directive and the FAR and is essential to understanding those legally binding rules.

This draft guidance document is based on a draft provided by a consortium of consultants (SQ Consult, Umweltbundesamt) and builds on the guidance documents developed for phase 3[1]. It takes into account the discussions at several meetings of the Expert Group on Climate Change Policy and written comments received from stakeholders and experts from Member States.

The guidance papers do *not* go into detail regarding the procedures that Member States apply when issuing greenhouse gas emissions permits. It is acknowledged that the approach to setting the installation boundaries laid down in GHG emissions permits differ between Member States.

1.2 Background of the FAR Guidance Documents

Specific topics were identified within the FAR which deserve further explanation or guidance. The FAR guidance documents intend to address these issues as specifically and clearly as possible. The Commission considers it necessary to achieve the maximum level of harmonisation in the application of the allocation methodology for Phase 4.

The FAR guidance documents aim at achieving consistency in the interpretation of the FAR, to promote harmonisation and prevent possible abuse or distortions of competition within the Community.

The full list of those documents is outlined below:

- Guidance document no. 1 – general guidance: this guidance gives a general overview of the allocation process and explains the basics of the allocation methodology.

[1] by a consortium of consultants (Ecofys NL, Fraunhofer ISI, Entec).

- Guidance document no. 2 – guidance on allocation methodologies: this guidance explains how the allocation methodology works and its main features.
- Guidance document no. 3 – data collection guidance: this guidance explains which data are needed from operators to be submitted to the Competent Authorities and how to collect them. It reflects the structure of the data collection template provided by the European Commission (EC).
- Guidance document no. 4 – guidance on NIMs data verification: this guidance explains the verification process concerning the data collection for the National Implementation Measures[2].
- Guidance document no. 5 – guidance on carbon leakage: this guidance presents the carbon leakage issue and how it affects the free allocation calculation.
- Guidance document no. 6 – guidance on cross boundary heat flows: this guidance explains how the allocation methodologies work in case of heat transfer across the 'boundaries' of an installation.
- Guidance document no. 7 – guidance on new entrants and closures: this guidance is meant to explain allocation rules concerning new entrants as well as the treatment of closures.
- Guidance document no. 8 – guidance on waste gas and process emission sub-installation: this guidance provides for explanation of the allocation methodology concerning process emission sub-installations, in particular, concerning waste gas treatment.
- Guidance document no. 9 – sector specific guidance: this guidance provides a detailed description of the product benchmarks as well as the system boundaries of each of the product benchmarks listed within the FAR.

This list of documents is intended to complement other guidance papers issued by the European Commission related to Phase 3 and 4 of EU ETS, in particular:

- Guidance on Interpretation of Annex I of the EU ETS Directive (excl. aviation activities), and
- Guidance paper to identify electricity generators

References to articles within this document generally refer to the revised (2018) EU ETS Directive and to the FAR.

1.3 Use of the Guidance documents

The guidance documents give guidance on implementing the new allocation methodology for Phase 4 of the EU ETS, as from 2021: the Member States may use this guidance when they perform the data collection pursuant to Article 24 of the FAR in order to define the complete list of installations as well as to calculate any free allocation to be determined for the National Implementing Measures (NIMs) pursuant to Article 11(1) of the Directive 2003/87/EC.

[2] Article 11 of Directive 2003/87/EC

Note on outstanding issues in this version of the Guidance Document
As decision-making on the allocation methodology is not yet finalized, certain elements of this Guidance Document are as yet undefined. This includes especially issues related to the implementing act still to be adopted on the detailed rules on the changes to allocations of free allowances, the update of the benchmark values and the new carbon leakage list. In addition, it can also apply to references to the outstanding legislation itself or to accompanying Guidance Documents that are still to be prepared or finalized.

In this Guidance Document, we have indicated such instances by yellow highlighting. Specifically for benchmark values and dates, 'XX' have been inserted as placeholders for the values and dates still to be determined. In addition, while not highlighted in yellow, specific FAR article references may be subject to change.

1.4 Scope of this guidance document

This guidance document explains the main principles and processes of the allocation methodology for Phase 4, without addressing specific allocation issues. It gives a short overview of the NIMs development process and describes the main features of the allocation methodology.

1.5 Additional guidance

Alongside the guidance documents, additional support to the Member State authorities is provided in the form of the EC-website, with a list of guidance documents, FAQs and useful references, https://ec.europa.eu/clima/policies/ets/allowances_en#tab-0-0 .

2 Objective

Before going into the details of the new allocation methodology some background information is provided here in order to understand how the new allocation methodology in Phase 4 connects to and differs from the allocation methodology used in the previous Phase.

The most recent amendment to the Directive on the EU ETS was published on 19 March 2018[3] .

Since Phase 3, the EU ETS is based on a Union-wide harmonised allocation method in which "auctioning should be the basic principle for allocation, as it is the simplest and generally considered to be the most economically efficient system"[4]. No free allocation shall, according to the revised Directive, be made in respect of any electricity production with the exception of electricity produced from waste gases[5]. Also, no free allocation shall be given to installations for the capture and pipelines for the transport of, or to storage sites for, carbon dioxide.

For other emissions, transitional free allocation based on Union-wide ex-ante benchmarks are, and will continue to be, used. This implies:

- For products with a product benchmark, the amount of free allocation is based on specific emissions at *product level*.
- "Transitional" means that the free allocation is initially 30% of the quantity determined via the Union-wide harmonised free allocation rules and decreases from 2026 onwards to 0% (and thus no free allocation).
- Exceptions are made for installations in sectors which are exposed to significant risk of carbon leakage, i.e. "an increase in greenhouse gas emissions in third countries where industry would not be subject to comparable carbon constraints"[6]. Those installations will receive free allowances of 100% of the quantity determined via the Union-wide harmonised free allocation rules.

Phase 4 introduces a number of changes designed to further strengthen the EU ETS. This includes a change in approach for installations undergoing significant changes after the initial allocation has been made from one based on changes in the installation's capacity (as used in Phase 3) to one based on changes in the installation's production levels. The main differences in approach are summarized in the table below.

[3] https://eur-lex.europa.eu/eli/dir/2003/87/2018-04-08

[4] Directive 2009/29/EC, recital 15. The 2018 revision reiterates that 'The auctioning of allowances remains the general rule, with free allocation as the exception" (recital 8).

[5] Article 10a(1) of the ETS Directive

[6] Directive 2009/29/EC, recital 24

Starting in 2021, the total cap on emission allowances will decrease annually by 2.2%[7]. That will lead to 43% reduction of emissions in 2030 compared to 2005[8]. Fewer free allowances will be available than in Phase 3 because of the annual higher reduction factor and because of a fixed share of total allowances to be auctioned (57% of total)[9]. The lower amount of available free allowances will be used in a more focused approach to avoid carbon leakage, i.e. they are mainly reserved for sectors at the highest risk of relocating their production outside of the EU. These sectors will receive 100% of their allocation for free. For less exposed sectors, free allocation is phased out after 2026 from 30% to 0 at the end of Phase 4 (2030) [10]. In order to minimise the risk of introducing a cross sectoral reduction factor, a buffer has been set up, so up to 3% of the allowances that are allocated for auctioning can be reallocated for free allocation before introducing a cross sectoral reduction factor.

Allocation will be done in two rounds, once for the period 2021-2025 and again for the period 2026-2030.

Table 1: Main differences between EU-ETS in Phase 3 versus Phase 4

Phase 3	Phase 4
8-year trading period	10-year trading period
Cap reduced by 1.74% per year	Cap reduced by 2.2% per year
Allocation at the start of the trading period	Allocation in 2 rounds, for a 5-year period each
Transitional free allocation decreasing from 80% of calculated allocation in starting year to 30% in 2020	Transitional free allocation decreasing from 30% of calculated allocation after 2026 to 0% in 2030 (DH to remain at 30%)
Allocation changes as a result of significant capacity changes	Allocation changes as a result of significant changes in production level
New entrants include Greenfield plants[11], significant capacity extensions and opt-ins[12]	New entrants only include Greenfield plants
Amount of auctioned allowances depends on how many allowances are allocated for free	Amount of auctioned allowances is fixed at 57% of the total amount of allowances, however 3% can be moved to free allocation to avoid the use of a cross sectoral correction factor.
Carbon leakage status is determined by criteria for carbon cost and/or trade intensity	Carbon leakage status is determined by trade intensity multiplied with the emission intensity divided by the gross value added
Legal basis: • 2009 ETS Directive • CIMs Decision • NIMs	Legal basis: • 2018 ETS Directive • FAR regulation • Allocation change implementing act

[7] The Linear Reduction Factor, see Art.9 of the revised Directive.
[8] Art. 9 of the revised ETS Directive
[9] And the Market Stability Reserve
[10] With the exception of District Heating (DH) sub-installations, newly introduced in Phase 4. For these sub-installations, free allocation will remain at 30%, also after 2016 in order to stimulate the efficiency gains from DH compared to alternative heating methods.
[11] Defined by the date at which the permit has been obtained
[12] Inclusion of new activities or gases under Article 24 of the 2009 Directive

	• Carbon leakage delegated act • Benchmark update implementing act • NIMs

3 Description of allocation process

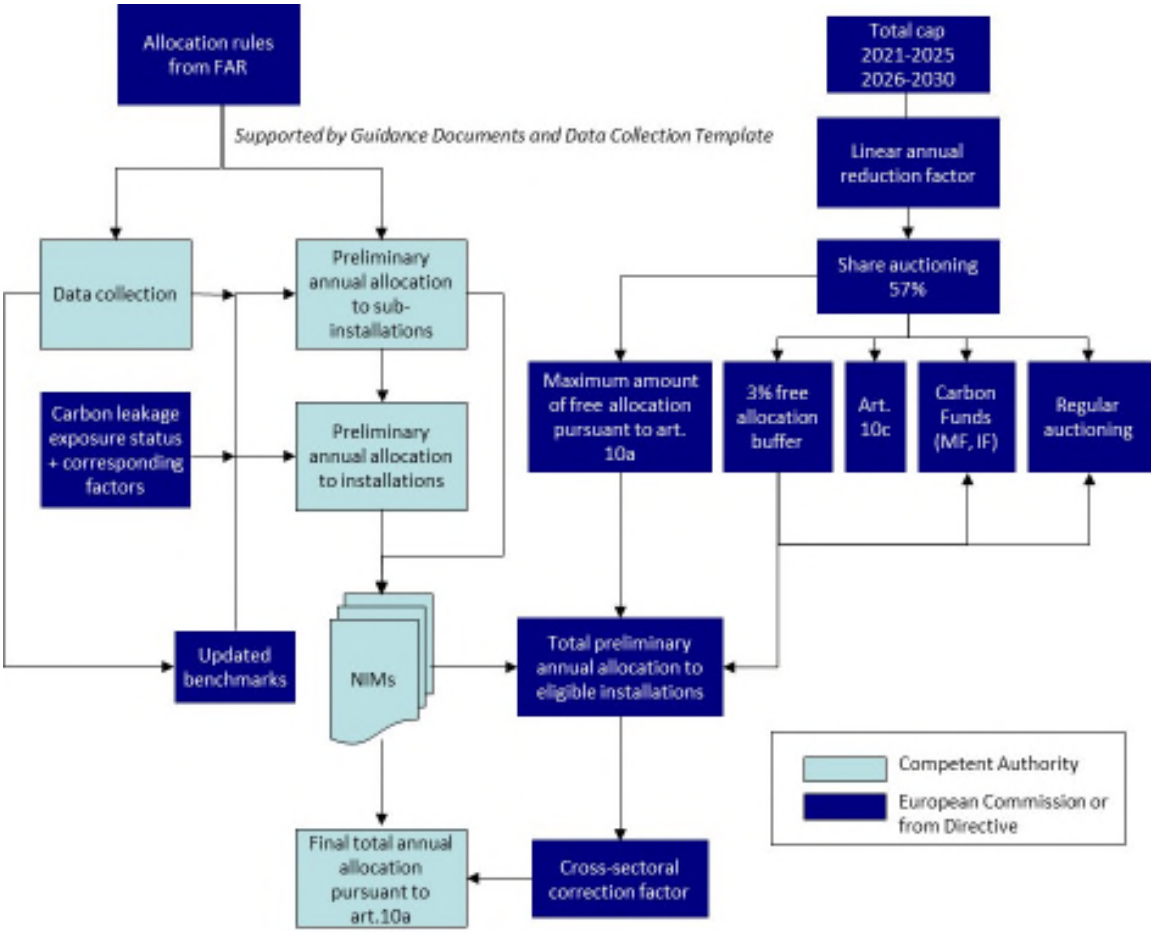

Figure 1 presents the main process leading to the final total annual amount of free allowances to installations.

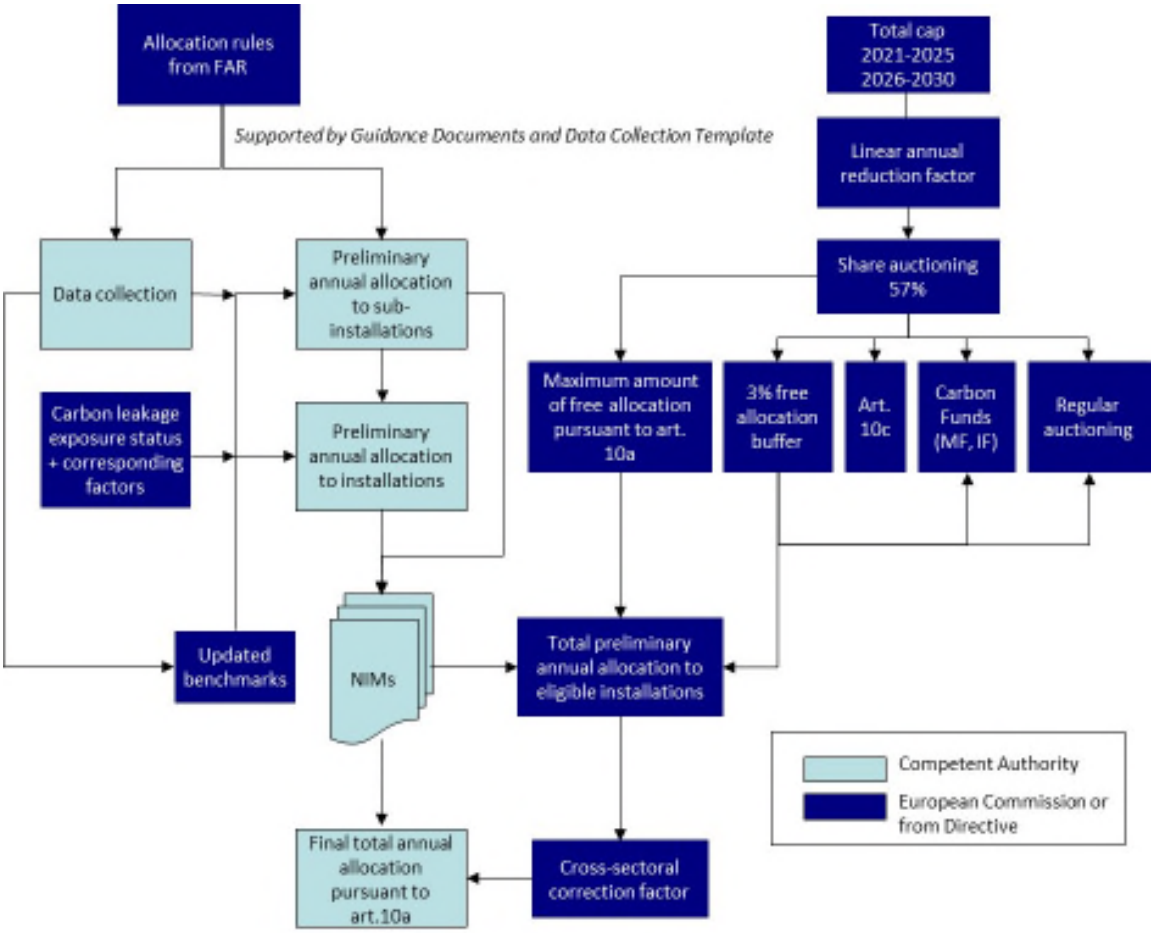

Figure 1: Process diagram of determination of final free allocation to installation. For certain installations (e.g. district heating) the Linear Reduction Factor may apply. This is not shown in the Figure for reasons of legibility.

The starting point of the process is the Union-wide and fully harmonised Free Allocation Rules[13], or so-called FAR, the allocation methodology regulation of the EC, which explains the basic elements of the harmonised allocation methodology in Phase 4.

The FAR lists:

- eligibility criteria for free allocation
- definitions of sub-installations (which determine how to split an installation into different sub-installations, if applicable)
- rules for determining historical activity levels per sub-installation
- sub-installation system boundaries and the starting point for the benchmark values (before update)[14]
- rules for determining attributable emissions per sub-installation for update of the benchmark values
- rules for the application of the carbon leakage exposure factor
- rules in case of cross-boundary heat flows
- rules for data collection, monitoring & verification

A number of elements of the allocation methodology are further elaborated in subsequent acts:

- The updated Benchmark values to apply in the calculation of sub-installation allocation are provided by the Benchmark Update Implementing act (BMU)[15]
- The updated Carbon Leakage List (CLL), identifying the sectors and activities eligible for 100% free allocation under the more for restrictive carbon leakage rules in Phase 4[16].
- The rules outlining how changes in a (sub-) installation's production levels affect its allocation are established in the Activity Level Change Implementing act (ALC)[17]

Based on the FAR, it is the task of the Competent Authorities (CA) to calculate the preliminary annual allocation on a sub-installation level. The EC provides for an electronic template to facilitate data collection.

On the basis of collected data, each Member State shall publish and submit to the EC the list of **all** incumbent installations covered by the EU ETS Directive within its territory and any free allocation to each installation. Hereinafter we refer to that list as NIMs (National Implementation measures). The NIMs will contain:

[13] Commission Decision determining transitional Union-wide rules for the harmonized free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC
[14] Annex 1 of the FAR
[15] Implementing act XX
[16] Delegated act XX
[17] Implementing act XX

- the preliminary annual number of emission allowances allocated for free to **sub-installations** (for the product, heat, and fuel benchmark sub-installations this is the benchmark value multiplied by the historical activity level)
- the preliminary annual number of emission allowances allocated for free per **sub-installation** multiplied by the relevant carbon leakage exposure factor
- the preliminary total annual amount of emission allowances allocated for free per **installation** (i.e. sum of the preliminary total annual amount of emission allowances per sub-installation)

Compared to Phase 3, the process in Phase 4 contains one additional step, aimed at updating the Benchmark values to be used in the calculation of the preliminary allocation levels at the sub-installation level on the basis of the data collected for the NIMs.

The NIMs list shall also include installations that are classified as electricity generators[18] as well as the so called 'small emitters' referred to in Articles 27 and 27a of Directive 2003/87/EC.

See Section 5 of this Guidance Document and Guidance Document 2 on Allocation Methodologies for help and detailed guidance on how these values are calculated.

The EC will collect the NIMs of all Member States and compare the preliminary annual amount of emission allowances, (applying the appropriate carbon leakage factors) to non-electricity generators with the amount of allowances calculated according to Art. 10a (5) and 10a (5a)[19] of the EU ETS Directive. When needed, a cross-sectoral correction factor (CSCF) will be applied. If applied, the cross-sectoral correction factor would be identical for all incumbent[20] installations identified as non-electricity generators[21]. The need for, and value of, the factor could differ for different years in the fourth trading period.

The preliminary total annual amount of emission allowances allocated for free per installation as determined by the relevant competent authority will therefore be different from the final total amount of emission allowances allocated for free: benchmark values will be changed and the cross-sectoral correction factor might apply.

[18] For the classification of electricity generators please refer to *"Guidance paper to identify electricity generators"* discussed by the EC and the Member States on 18 March 2010 for guidance

[19] Art. 10a (5a) establishes a so-called 'free allocation buffer' from the amount of allowances to be auctioned. From this buffer up to 3% of total allowances can be added to the amount of free allowances available under Art. 10a to prevent the need to apply the CSCF.

[20] Not new entrants.

[21] Art.26.8 (sub-paragraph 2-3) of the FAR also provides for other installations (Art.10a(3) eligible for free allocation (district heating, high efficiency CHP. For such installations, the Linear Reduction Factor is applied to the preliminary free allocation to calculate final allocation at installation level in years the CSCF does not apply.

The final allocation could therefore be determined only once the need and the value of the cross-sectoral correction factor is determined.

4 Relevant installations

This section gives a general overview of eligible installations for the EU ETS in Phase 4.

4.1 Which installations are in the NIMs?

The National Implementation Measures (NIMs) will list all "incumbents" of EU ETS[22], i.e. installations that:

- Are part of the sectors included in EU ETS Phase 4[23]: to make sure that an installation is part of the scope of the EU ETS *please refer also to Guidance on Interpretation of Annex I of the EU ETS Directive (excl. aviation activities), CCC, 18 March 2010*;

AND

- Have obtained a GHG permit on or before 30 June 2019 for the period 2021-2025 or 30 June 2024 for the period 2026-2030.

Small emitters which a Member State may choose to exclude from the EU ETS pursuant to Articles 27 and 27a of the EU ETS Directive have to be listed as well. As the Commission may assess and, where appropriate, reject such exclusions, these (very) small emitters have to be considered as installations within the EU ETS in this first step.

Installations that join the EU ETS after 30 June 2019 or 30 June 2024, respectively, so-called new entrants[24], are not part of the NIMs for the corresponding allocation periods.

4.2 Who gets free allocation?

All installations in the NIMs are in principle eligible for free allocation, except installations producing electricity only or installations operated for the capture, transport and storage of CO_2.

For further details on eligibility criteria, refer to the relevant guidance documents, i.e.:

- *For waste gases, refer to Guidance Document 8, specifically relating to waste gases*
- *For flaring and safety flaring, refer to Guidance Document 2 on allocation methodologies*
- *For eligibility of heat for the heat benchmark, refer to Guidance Document 2 on allocation methodologies*

[22] For the formal definition of incumbents see Art 3(a) of the FAR (Commission Delegated Regulation XX/XX on "Transitional Union-wide rules for harmonized free allocation of emission allowances pursuant to Article 10a(1) of Directive 2003/87/EC)

[23] See activities listed in Annex I of the EU ETS Directive or is opted-in under Article 24 for the first time.

[24] For the definition of a 'new entrant' please refer to article 3(h) of directive 2003/87/EC

- *For eligibility of fuel for the fuel benchmark, refer to Guidance Document 2 on allocation methodologies*
- *For eligibility of process emissions, refer to Guidance Document 2 on allocation methodologies*

Even if not eligible for free allocation, installations producing electricity only or installations operated for the capture, transport and storage of CO_2 shall be included in the NIMs list.

"New entrants", which are not included in the NIMs, may also get free allocation*. For the definition of and specific rules for new entrants, Guidance Document 7 on new entrants and closures gives further explanation.*

5 Allocation methodology

This section gives a general overview of the allocation methodology. *For a more detailed explanation, see Guidance Document 2 on allocation methodologies* (at installation level)*, Guidance Document 5 on carbon leakage and Guidance Document 3 on data collection.*

5.1 Overview of methodologies

In general, industrial production processes have fuel and/or heat as input, and a product and/or heat as output (Figure 2)[25]

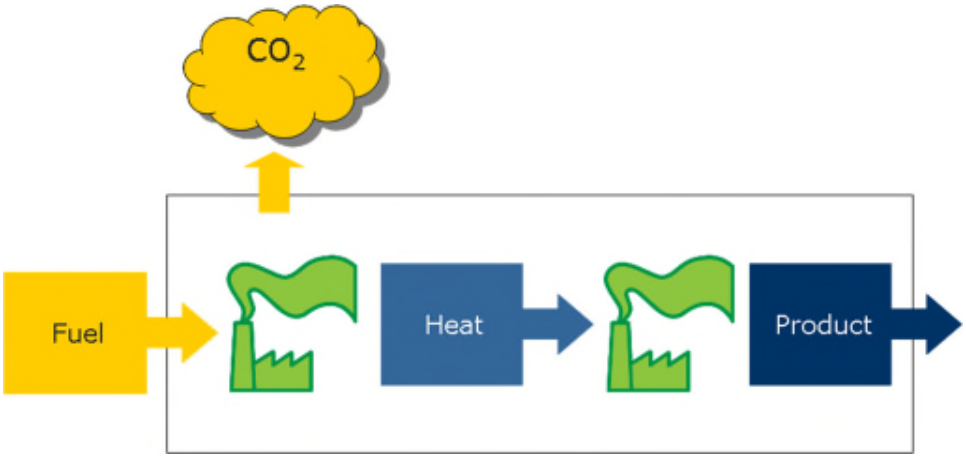

Figure 2: General picture of industrial production process

Each installation that is eligible for free allocation (see section 4.2) will receive allocation based on at least one of the following methodologies:

1. **Product benchmarking** (t CO_2 / t product); allocation is based on the production of products.
2. **Heat benchmarking** (t CO_2 / TJ of net measurable heat); allocation is based on the amount of measurable heat[26] consumed or exported to non-ETS installations or entities[27].
3. **Fuel benchmarking** (t CO_2 / TJ of fuel used); allocation is based on the amount of fuel consumed.

[25] Electricity may also be an energy input to the industrial process, but in view of free allocation it is in most cases not relevant to consider. An exception to this rule is the electricity consumption by production processes covered by product benchmarks in which the use of electricity and fuels are exchangeable. For more information on this topic see Section 3.1 of Guidance Document 2 on Allocation Methodologies.

[26] See Annex B for a definition of measurable heat

[27] Heat exported for district heating purposes is allocated to a different sub-installation that the heat consumed on-site or exported for non-DH purposes. Allocation for DH sub-installations is based on the amount of measurable heat consumed, using the same heat benchmark.

4. **Process emissions approach**; allocation is 94.10% of historical emissions

The free allocation of allowances will be based to the extent feasible on Union-wide ex-ante product benchmarks, as this provides the broadest incentive for emission reductions. However, not in all cases product benchmarks can be defined, e.g. because of too diverse or changing product mix. In these cases, the so-called 'fall-back' approaches using the heat benchmark, the fuel benchmark or the process emissions approach are used, in the order listed above as required by Art.10(2) of the FAR. Regardless of the allocation methodology used, energy efficiency improvements anywhere in the production process chain will result in less heat or fuel demand per tonne of product, leading to fewer emissions per tonne of product.

Using these methodologies, the preliminary annual number of emission allowances per sub-installation can be calculated for all sources of emissions in the EU ETS that are eligible for free allocation. Table 2 summarizes the general characteristics of each allocation methodology. The table also shows when which methodology should be used. Proper use of the methodologies ensures that all emissions are covered by one and only one methodology.

For more detailed conditions on the application of the allocation methodologies, we refer to Guidance Document 2

Table 2: Characteristics of the allocation methodologies

Methodology	Value	Unit	Conditions	Relevant emissions
Product benchmark	See Annex I of the FAR for starting values, BMU for final values	t CO_2 / unit product	- Product benchmark available	Emissions within system boundaries of product as referred to in Annex I of the FAR
Heat benchmark (incl. for district heating)	Starting value: 62.3 Updated value: XX	t CO_2 / TJ	- No product benchmark available - Heat is measurable	Emissions relating to production of the consumed measurable heat, not covered by a product benchmark
Fuel benchmark	Starting value: 56.1 Updated value: XX	t CO_2 / TJ of fuel	- No product benchmark available - Heat is not measurable - Fuel is combusted	Emissions originating from the combustion of fuels, not covered by product or heat production benchmark.
Process emission approach	94.10 % of historical emissions (t CO_2)		- No product benchmark available - Heat is not measurable - Emissions are not resulting from combustion of fuel - Emissions are "process emissions"[28]	All emissions within installation not covered by previous approaches, but not including non-eligible emissions.

[28] According to art. 3(j) of FAR, voted by the CCC on the XX. For more details, please also refer to guidance document on allocation methodologies.

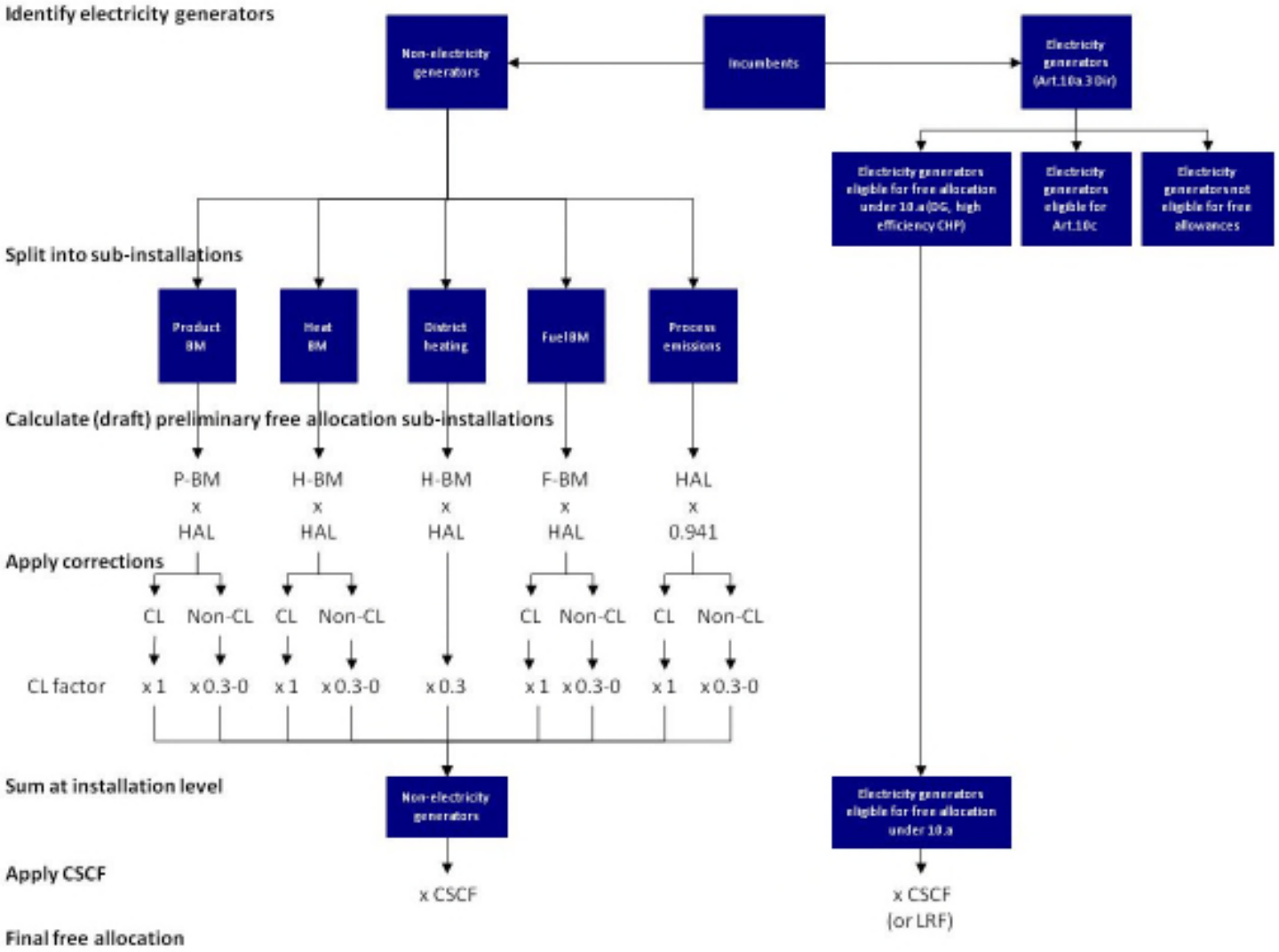

Figure 3 Steps in the calculation of the free allocation at installation level

5.2 Split into sub-installations

To correctly apply the relevant allocation methodology in the right order, the installation in many cases has to be split into so-called sub-installations.

A sub-installation means all inputs, outputs and corresponding emissions related to a specific allocation regime. The boundaries of a sub-installation are not necessarily defined by boundaries of physical process units.[29] These inputs and outputs should take in due account only relevant source streams[30], as monitored according to the Monitoring & Reporting Regulation (MRR) and listed within the monitoring methodology plan, if any. This means that source streams related to non-ETS activities or gases shall not be taken into account when splitting the installation into sub-installations. A deep knowledge of the scope of the EU ETS and of the MRR is required when performing the split into sub-installations exercise. *Guidance Document 2 on allocation methodologies provides further information on this topic.*

If an installation produces more than one product with a product benchmark (suppose there are *n* product benchmarks applicable), then the same number (*n)* of "sub-installations" needs to be defined, with the system boundaries of each sub-installation matching with the boundaries of the respective product benchmark. For these sub-installations, the product benchmark methodology should be applied.

The remaining part of the installation (the part for which no product benchmarks apply) can be divided into a maximum of 7 sub-installations (fallback sub-installations): one sub-installation deemed exposed to carbon leakage and one deemed not exposed to carbon leakage, for each fall back methodology (see also paragraph 5.3.1), plus a separate district heating (DH) sub-installation, as is shown in the table below[31].

Table 3: Maximum number of possible sub-installations in case of fall back approaches

Allocation Methodology	Carbon leakage	Non-carbon leakage	District heating
Heat benchmark	1	1	1
Fuel benchmark	1	1	
Process emissions approach	1	1	

[29] See FAR for formal definitions of five types of sub-installations: a product benchmark sub-installation (Art. 3(b)), a heat benchmark sub-installation (Art. 3(c)), a district heating sub-installation (Art.3(d)), a fuel benchmark sub-installation (Art. 3(f)) and a process emissions sub-installation (Art. 3(j)).

[30] a 'source stream' means a specific fuel type, raw material or product giving rise to emissions of relevant greenhouse gases at one or more emission sources as a result of its consumption or production

[31] District heating is not considered to be exposed to a risk of carbon leakage, so only one type of sub-installation is distinguished. However, in the calculation of the preliminary amount of free allowances, DH sub-installations are treated differently than non-Carbon leakage installations, in that they will continue to receive 30% of the calculated amount of free allowances under art.10a (CLEF = 0.3) also after 2026. This is done to promote the efficiency gains attained by DH compared to decentralized heat generation.

In principle, heat is eligible for free allocation if it can be regarded as covered by the EU ETS and if it is not produced via electric boilers. This is in particular likely to be the case for measurable heat directly linked (combustion process or exothermic production process) to source streams which are contained in the monitoring plan (MP) of an installation covered by the EU ETS.

Exceptions to this rule are the following:

- The export or consumption of heat produced in the nitric acid production process is not eligible for free allocation as this heat is already taken into account by the nitric acid benchmark. (see Art 26 (5) of the FAR)
- The consumption of heat produced by a non-ETS plant or unit (not covered by a GHG permit) is not eligible for free allocation. (see Art. 28b and Art. 32 of the FAR)

The export or consumption of heat used for electricity generation is not eligible for free allocation (see Art. 3 (c) and 28b of the FAR).

Carbon leakage: why is there more than one sub-installation possible per fall-back approach?

Consider a fictitious dairy plant with a boiler that produces measurable heat for both the production of milk powder (deemed exposed to carbon leakage in EC decision 2010/2/EU[32]) and for a liquid milk sterilization process (not deemed exposed to carbon leakage in EC decision 2010/2/EU[33]). Neither of the products is covered by a product benchmark, therefore the heat benchmark methodology should be applied if possible. Since there is measurable heat consumed in these production processes, indeed this fall-back approach is applicable. However, the heat is consumed by two production processes, each with a different carbon leakage status. Therefore, the consumed heat (produced by the boiler) has to be split into two sub-installations: one for each carbon leakage status[34]. In fact, this applies to all inputs, outputs and corresponding emissions referred to in the definition of 'heat benchmark sub-installation' (see Article 3(c) of the FAR). The same logic also applies to fuel and process emissions sub-installations relating to products with different carbon leakage statuses. Combined, this leads to the maximum number of n+6 sub-installations[35].

See Guidance Document 3 on Data Collection for details on how to apply a distribution key to attribute activities to more than one sub-installation.

Due care should be taken that:

[32] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010D0002:EN:NOT
[33] Ibid.
[34] If at least 95% of the total heat consumed in the installation has the same carbon leakage status, it can be assumed that the remaining amount of consumed heat (5% or less) has also this same carbon leakage status. The same "de minimis" rule applies to fuel benchmark sub-installations and to process emissions sub-installations. The rule is explained in more details in guidance document 5 on carbon leakage.
[35] n+7 including the district heating sub-installation

- No overlap occurs between the sub-installations (no double-counting)
- The corresponding inputs (fuel, heat, etc.) and outputs (products, heat, electricity, etc.) have all been taken into account.

5.3 Correction factors

The preliminary annual amount of allocation determined at sub-installation level can be lowered by several correction factors, which are briefly described here.

5.3.1 Carbon leakage exposure factor

Detailed explanation can be found in Guidance Document 5 on carbon leakage.

The preliminary annual amount of emission allowances is multiplied by the so-called "carbon leakage exposure factor" (CLEF).

The Commission has established a (preliminary) list of sectors and sub-sectors deemed to be exposed to a significant risk of carbon leakage. The carbon leakage exposure factor (CLEF) used for allocation to these sectors is 1.00 for all years.

For allocation to sectors not on this list, the carbon leakage exposure factor is 0.30 until 2026, declining to 0 in 2030. This implies that from then on installations that are part of these sectors will each year receive fewer allowances than the year before. The operators of those installations therefore have to buy more and more allowances in order to comply (assuming constant emissions over the years).

Table 4 gives an overview of carbon leakage exposure factors:

Table 4. Overview of carbon leakage exposure factors

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Exposure factor (CLEF) for significant carbon leakage (CL) risk	1	1	1	1	1	1	1	1	1	1
CLEF for no significant CL risk	0.300	0.300	0.300	0.300	0.300	0.300	0.225	0.150	0.075	0
CLEF for district heating[36]	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300	0.300

After application of the Carbon Leakage Exposure Factor either the Cross-Sectoral Correction Factor or the linear reduction factor may be applied.

[36] subject to review in accordance with Article 30 of the Directive

5.3.2 Cross-sectoral correction factor

To all installations which are not identified as "electricity generator" the cross-sectoral correction factor should be applied, if necessary.

A cross-sectoral correction factor could be needed to ensure that the total amount of free allocation to non-electricity generators does not exceed the maximum amount of free allocation pursuant to art. 10a (5) and 10a (5a) of the ETS Directive[37]. The preliminary free allocation could therefore be different from the final free allocation that operators would receive.

The need for, and if applicable the value of, a cross-sectoral correction factor will be assessed by the Commission after receiving all NIMs, on the basis of the preliminary free allocation, applying the carbon leakage factor. If applied, the cross-sectoral correction factor would be identical for all incumbent installations. The need for, and value of, the factor could differ for different years in the fourth trading period.

See also Section 2 of this Guidance Document and Section 6 of Guidance Document 2 for the equation for the application of the cross-sectoral correction factor.

5.3.3 Linear reduction factor

In line with Article 9 of the revised Directive, the total amount of allowances issued for free shall decrease each year from 2013 in a linear manner by a factor of 2.2%. For installations that are identified as "electricity generator", as well as new entrants, the preliminary total annual amount of allocation will therefore be reduced each year with 2.2% of the preliminary total annual amount of allocation with 2021 as the reference year. For electricity generators that are eligible for free allocation (district heating, high efficiency CHP), the LRF only applies in case no CSCF applies in a given year.

See Section 6 of Guidance Document 2 for the equation for the application of the linear reduction factor.

5.4 Background to product benchmarks

Starting point for the product benchmarks used in Phase 4 are the benchmark values determined for Phase 3 in the CIMs. These were based on the average of the 10% most greenhouse gas efficient installations, in terms of metric tons of CO_2 emitted per ton of product produced at European level in the years 2007-2008 (see Figure 4).

[37] Maximum amount of free allocation pursuant to art. 10a (5) of the revised ETS directive = total ETS cap * (1 the auctioning share (0.57) + the free allocation buffer (0.03)).

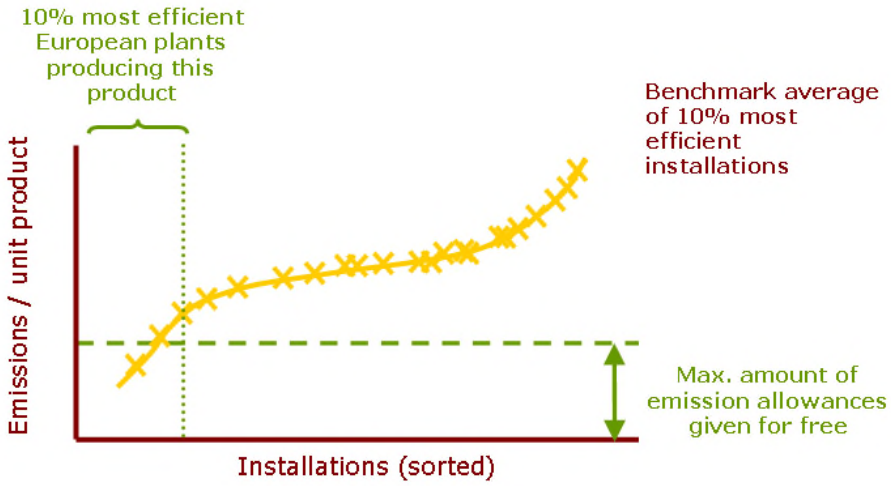

Figure 4: Determination of product benchmark value.

For the purpose of later phases, the benchmark values established through this approach are regularly updated to avoid windfall profits and reflect technological progress since 2008[38].

Product benchmarks are not differentiated by technology, fuel mix, size, age, climatic circumstances or raw material quality of the installations producing the product.

The Commission has consulted relevant stakeholders, including the sectors concerned, to determine the list of products for which product benchmarks should be used. The final list, which can be found in Annex I of the FAR, contains 52 products for 21 sectors and covers about XX% (estimate) of the free allocation. The resulting list also contains definitions of system boundaries and products.

The preliminary annual number of allowances in the product benchmark approach is calculated by multiplying the benchmark value with the relevant historical activity level.

For the final total annual amount of emission allowances allocated free of charge, additional factors are applicable (see section 5.3).

[38] For Phase 4 the update will be based on applying an annual improvement rate for each benchmark (between 0.2% and 1.6%/yr) to the Phase 3 benchmark values over the period 2008-2023 and 2008-2028. For the first update, this will be done based on the corresponding data related to the attributable emissions to each sub-installation for the years 2016-2017, provided in the initial data collection effort. *For more information, see Guidance Document 2.*

Additional guidance can be found in Guidance Document 3 on data collection, Guidance Document 2 on allocation methodologies, and Guidance document 9 with sector-specific guidance.

References

- MEMO/08/796, "Questions and Answers on the revised EU Emissions Trading System", Brussels, 17 December 2008

- Directive 2003/87/EC, revised consolidated version, 8 April 2018

- Discussion Paper on Allocation Rules - EU ETS post 2012, version 3.0 of 20 July 2010

- Guidance on Interpretation of Annex I of the EU ETS Directive (excl. aviation activities), CCC, 18 March 2010.

Annex A Timeline - key dates from the revised EU ETS

XX	After a three-month scrutiny period by the Parliament and the Council, the Commission adopts Union-wide rules for harmonised free allocation of emission allowances.[39]
30 June 2019	Date which separates “new entrants” and “incumbents” for the first allocation period in Phase 4. See section 4.1 of this guidance document.[40]
30 September 2019	Publication and submission of National Implementation Measures by MS[41] for the first allocation period in Phase 4.
28 February 2021	Issuance of the first quantity of free allowances of the first allocation period in Phase 4 to installations.[42]
30 June 2024	Date which separates “new entrants” and “incumbents” for the second allocation period in Phase 4.
30 September 2024	Publication and submission of National Implementation Measures by MS[43] ” for the second allocation period in Phase 4.
28 February 2026	Issuance of the first quantity of free allowances of the second allocation period in Phase 4 to installations.[44]

[39] Article 10a(1) of the revised ETS Directive
[40] Article 3h of the revised ETS Directive
[41] Article 11(1) of the revised ETS Directive
[42] Article 11(2) of the revised ETS Directive
[43] Article 11(1) of the revised ETS Directive
[44] Article 11(2) of the revised ETS Directive

Annex B List of definitions

This annex provides a list of definitions of concepts relevant for free allocation in Phase 4 of the EU ETS. The definitions given here are informal definitions which have been developed to facilitate understanding. The definitions in this Annex do not replace definitions as given in the legal texts of the revised EU ETS Directive or the FAR and have no legal status.

Allowance
Allowance to emit one tonne of carbon dioxide equivalent during a specified period, which shall be valid only for the purposes of meeting the requirements of the EU ETS Directive and shall be transferable in accordance with the provisions of the EU ETS Directive.

Annex I activities
List of activities in the first Annex of the EU ETS Directive, which defines "categories of activities to which the Directive applies". In other words: Annex I defines activities and activity thresholds determining which installations should be included in the EU ETS.

Combustion of fuels
Any oxidation of fuels, regardless of the way in which the heat, electrical or mechanical energy produced by this process is used, and any other directly associated activities, including waste gas scrubbing.

Competent Authority
Competent Authority or Authorities as designated under Article 18 of Directive 2003/87/EC. Each Member State can have one or more Competent Authorities.

Electricity Generator
Installation that, on or after 1 January 2005, has produced electricity for sale to third parties, and in which no activity listed in Annex I is carried out other than the 'combustion of fuels'.

EU ETS Directive
Directive 2003/87/EC, most recently amended by Directive 2018/410/EC, making it the so-called "revised EU ETS Directive".

Incumbent
Any installation within the scope of the EU ETS, which is not a new entrant.

Installation

A stationary technical unit where one or more activities listed in Annex I of the EU ETS Directive are carried out and any other directly associated activities which have a technical connection to the activities carried out on that site and which could have an effect on emissions and pollution

Measurable heat

Measurable heat flows has all of the following characteristics:

- They are net, meaning that the heat content in the condensate or transfer medium returning to the heat supplier is subtracted
- The heat flows are transported through identifiable pipelines or ducts

AND

- The heat flows are transported using a heat transfer medium, e.g. steam, hot air, water, oil, liquid metals or salts

AND

- The heat flows are or could be measured by a heat meter (where a heat meter is any device that can measure the amount of energy produced based upon flow volumes and temperatures)

New entrant

Any installation carrying out one or more activities listed in Annex I of Directive 2003/87/EC which obtained a greenhouse gas emission permit after 30 June 2019 for the first allocation period, and after 30 June 2024 for the second allocation period in Phase 4.,

Operator

Any person that operates or controls an installation or, where this is provided for in national legislation, to which decisive economic power over the technical functioning of the installation has been delegated;

Process emissions sub-installation

Process emissions sub-installation can be any of the following, when emissions occur outside the boundaries of a product benchmark:

- non-CO_2 greenhouse gas emissions (i.e. N_2O for specific sectors; see Annex I of the EU ETS Directive for the list of activities for which N_2O emissions are included in the EU ETS for Phase 4)
- CO_2 emissions from any of the activities (i) to (vi) listed in Art 3(j) of the FAR
- Emissions from the combustion of the CO emitted by any of activities (i) to (vi) listed in Art 3(j) of the FAR, if it is combusted to produce heat or electricity. Only emissions which are additional to the emissions that would occur if natural gas was used are taken into account. Also only the “technically usable energy content” is considered, which means that a correction based on the difference in efficiencies between the use of waste gas and the use of the reference fuel the amount is applied to the resulting amount. This type of process emissions refers to waste gases. See Guidance Document 8 on Waste Gases for more guidance on this topic.

'Process emissions' as defined by the Monitoring and Reporting Regulation are not necessarily coincident with 'process emissions' defined when dealing with sub-installation splitting for the purpose of allocation

Sub-installation
A sub-installation means all inputs, outputs and corresponding emissions related to a specific allocation regime.

Waste gases
Waste gases when they occur outside the boundaries of a product benchmark are gases containing incompletely combusted carbon produced as a result of any of activities (i) to (vi) listed in Art 3(j) of the FAR.

See Guidance Document 8 on Waste Gases for more guidance on this topic.

Annex C List of abbreviations

ALC	Activity Level Change Implementing act
Adt	Air Dried Tonnes
BFG	Blast Furnace Gas
BOFG	Blast Oxygen Furnace Gas
BM	Benchmark
BMU	Benchmark Update Implementing act
CA	Competent Authorities
CCS	Carbon Capture and Storage
CCU	Carbon Capture and Utilisation
CEMS	Continuous Emissions Monitoring Systems
CEN	European Committee for Standardization
CHP	Combined Heat and Power
CIMs	Transitional Community-wide and fully harmonised Implementing Measures pursuant to Article 10a(1) of the EU ETS Directive
CLL	Carbon Leakage List, Delegated act
COG	Coke Oven Gas
CSCF	Cross Sectoral Correction Factor
CWT	CO_2 weighted tonne
EC	European Commission
CLEF	Carbon leakage Exposure Factor
ETS	Emissions Trading System (in these Guidance Documents refers to the EU ETS)

EU ETS	European Emissions Trading System
FAR	Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a(1) of the EU ETS Directive
GDP	Gross Domestic Product
GHG	Greenhouse Gas
HAL	Historical Activity Level
IPPC	Integrated Pollution Prevention and Control
ISO	International Organization for Standardization
MS	Member States
MRR	Monitoring and Reporting Regulation
MRV	Monitoring, Reporting and Verification
NCV	Net Calorific Value
NIMs	National Implementation Measures
RF	Reduction Factor
QA/QC	Quality Assurance / Quality Control
UCTE	Union for the Co-ordination of Transmission of Electricity
VCM	Vinyl Chloride Monomer