EUROPEAN COMMISSION
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Directorate B - European and International Carbon Markets

Guidance Document n°6
on the harmonised free allocation methodology for the EUETS – 2024 revision

Cross-Boundary Heat Flows

Final version issued on 28 March 2024

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.

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1 Introduction

1.1 Scope of this guidance document

This guidance document is part of a group of documents, which are intended to support Member States[1], and their Competent Authorities, in the consistent implementation throughout the Union of the allocation methodology for the second allocation period in Phase 4 of the EU ETS, following the revision of the EU ETS Directive[2] and the Delegated Regulation of the Commission 2019/331 on "Transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of the EU ETS Directive" (FAR) [3,4], and the subsequent implementing acts. Guidance Document 1 on General Guidance to the Allocation Methodology provides an overview of the legislative background to the group of guidance documents. It also explains how the different Guidance Documents relate to each other and provides a glossary of terminology used throughout the guidance.

This guidance document describes allocation in the case of heat flows across an installation boundary, where heat is defined as measurable heat. The treatment of heat import and export from and to ETS installations, non-ETS entities and District Heating entries are described. Heat flows from non-ETS entities to other non-ETS entities are not relevant for allocation and therefore are not discussed in this document. Heat flows between two sub-installations within the same installation are covered in *Guidance Document 2 on allocation at the installation level*, this includes the treatment of cooling and heat recovery from another sub-installation (Section 3). The scope of this guidance document covers activity level data and allocation, other topics such as the benchmark update and emissions attribution are covered in *Guidance Document 5 on Monitoring & Reporting*.

Note on outstanding issues in this version of the guidance document

As decision-making on the allocation methodology is not yet finalised, certain elements of this guidance document are as yet undefined. This especially includes issues related to the revision of the FAR, the Regulation on Activity Level Changes (ALCR) and the revisions to the Accreditation and Verification Regulation. In addition, it can apply to references to

[1] When the term 'Member States' is used in this guidance document, this includes the EFTA countries covered by the EU ETS as applicable.

[2] Directive (EU) 2023/959 of the European Parliament and of the Council of 10 May 2023 amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union and Decision (EU) 2015/1814 concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading system (Text with EEA relevance), PE/9/2023/REV/1, OJ L 130, 16.5.2023, p. 134–202, see: http://data.europa.eu/eli/dir/2023/959/oj

[3] https://ec.europa.eu/transparency/documents-register/detail?ref=C(2024)441&lang=en

[4] Note that this document only covers the transitional harmonised free allocation to industry under Article 10a of the EU ETS Directive. Any allocation under Article 10c ("Option for transitional free allocation for the modernisation of the energy sector") is outside the scope of this document.

the outstanding legislation itself or to accompanying guidance documents that are still to be prepared or finalised.

1.2 Structure of this guidance document

The basic principles of cross-boundary heat flows are set out in Section 2. Cases of direct cross-boundary heat flows to and from ETS and non-ETS entities are discussed in Section 3. More complex cases involving heat exchange between multiple entities are discussed in Section 4 and examples of heat flows in more unusual cases are described in Section 5.

The structure of the 2024 version of Guidance Document 6 has not changed as compared to the 2019 version. The main changes in the document relate to the update of the allocation rules, and in particular to the following elements:

- Heat produced from electricity is eligible for free allocation;
- Some installations are included in the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC and are not eligible for free allocation;
- The Carbon Border Adjustment Mechanism has been introduced;
- A specific conditionality on allocation for District Heating installations in certain Member States has been defined.

Where ETS installations are mentioned in this guidance document, it is considered that these are not covered by the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC[5].

1.3 Where to find Guidance Documents

All the Commission's guidance documents, FAQs and templates in relation to the free allocation rules can be found under:
https://ec.europa.eu/clima/policies/ets/allowances_en#tab-0-1

In addition, the Commission has provided an extensive suite of guidance material in relation to MRVA (Monitoring, Reporting, Verification and Accreditation) under the EU ETS[6]. The user of the current document is assumed to be familiar with at least the basic principles of MRVA.

[5] Article 14 of Directive 2003/87/EC relates to monitoring and reporting of emissions, and Article 15 of this Directive relates to verification and accreditation. Installations which are covered by the EU ETS only for the purpose of these two articles are installations that combust fuels in installations for the incineration of municipal waste with a total rated thermal input exceeding 20 MW, in line with FAR Annex I.

[6] https://ec.europa.eu/clima/policies/ets/monitoring_en#tab-0-1 – see in particular the section "Quick guides"

2 Principles for the treatment of cross-boundary heat flows

Net heat flows

For the purpose of allocation only net measurable heat flows are of relevance[7]. See below for an explanation of what is meant by net.

Measurable heat flows *have all of the following characteristics:*

- *They are **net,** meaning that the heat content in the condensate or transfer medium returning[8] to the heat supplier is subtracted. For determination of net measurable heat data see section E.II in Guidance Document 3 on Data Collection and section 6.9 in Guidance Document 5 on Monitoring & Reporting.*
- *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** in principle **be measured by a heat meter**[9] (where a heat meter is any device that can measure the amount of energy produced based upon flow volumes and temperatures)*

In the case of cross-boundary heat flows, net measurable heat can be eligible for free allocation[10] under certain conditions, depending on the producer and consumer. The number of free allowances depends on the historical activity levels of the heat benchmark and district heating sub-installations[11], as described in section 3.

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[7] "'measurable heat' means a net heat flow transported through identifiable pipelines or ducts using a heat transfer medium, such as, in particular, steam, hot air, water, oil, liquid metals and salts, for which a heat meter is or could be installed" (FAR, Art. 2(7)).

[8] In case the condensate is not returned or its flow unknown, a reference temperature of 90°C is to be used, as explained in section 6.9 of Guidance Document 5 on Monitoring and Reporting.

[9] "'heat meter' means a thermal energy meter (MI-004) within the meaning of Annex VI of Directive 2014/32/EC of the European Parliament and of the Council [OJ L 135, 30.4.2004, p. 1.] or any other device to measure and record the amount of thermal energy produced based upon flow volumes and temperatures" (FAR, Art. 2(8)). For guidance on measuring thermal energy flow with heat meters and alternative options see section 6 of Guidance Document 5 on Monitoring and Reporting.

[10] See also Guidance Document 2 on the determination of free allocation.

[11] "The heat-related historical activity level shall refer to the median of annual historical import from an installation covered by the EU ETS, other than installations covered by the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC, production, or both, during the baseline period, of net measurable heat consumed within the installation's boundaries for the production of products, for the production of mechanical energy other than used for the production of electricity, for heating or cooling with the exception of the consumption for the production of electricity, or exported to an installation or other entity not covered by the EU ETS with the exception of the export for the production of electricity expressed as terajoule per year.

The district heating-related historical activity level shall refer to the median of annual historical import from an installation covered by the EU ETS, other than EU ETS installations covered by the EU ETS only for the

The basic principles of eligibility for cross-boundary heat flows are that

- the heat needs to be produced by an ETS installation,

AND

- only an ETS installation can receive free allocation.

Therefore, the types of heat for which an ETS installation can receive free allocation can be summarised as follows:

An ETS installation will receive free allocation for the net measurable heat

- ***produced*** *within the same installation*

AND/OR

- ***imported*** *from another EU ETS installation*

AND

- ***consumed*** *within the installation boundaries, outside the boundaries of any product benchmark*

AND/OR

- ***exported*** *for district heating purposes*

AND/OR

- ***exported*** *to non-ETS entities other than for district heating purposes*

Unless *it is used for the production of electricity or for the production of mechanical energy that is used for the production of electricity*. Also ineligible is net measurable heat that is recovered from nitric acid production.

In case of multiple flows of eligible heat, the annual activity level of a heat benchmark sub-installation is the sum of the eligible net measurable heat flows.

No distinction between different origins of heat

No distinction is made between net measurable heat from different sources, provided that it can be regarded as covered by the EU ETS.

In principle, net measurable heat is eligible for free allocation if it can be regarded as covered by the EU ETS. In particular this is likely to be the case for net measurable heat directly linked (combustion process or exothermic production process) to source streams which are contained in the monitoring plan (MP) under the Monitoring and Reporting regulation (MRR) 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. 16(5) of the FAR)
- The consumption of heat produced by a non-ETS installation or other entity (not covered by a GHG permit), as well as heat produced by installations covered by the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC, is not eligible for free allocation. (see Art. 15(4) and Art. 21 of the FAR)

purposes of Articles 14 and 15 of Directive 2003/87/EC, production, or both, during the baseline period, of measurable heat which is exported for the purposes of district heating expressed as terajoule per year." (FAR Art. 15(4)).

- The export or consumption of heat used for electricity generation is not eligible for free allocation. (see Art. 2(3a) and 15(4) of the FAR)

Some examples are given below of net measurable heat flows that may be encountered in practice, together with the eligibility for allocation.

Example 1: An ETS installation that produces paper consumes steam from a 40 MW CHP unit that is covered by the same GHG EU ETS permit. In this case the heat flow is not regarded as cross-boundary. The net measurable heat consumed by the installation is eligible for free allocation either under the product benchmark sub-installation (if any) or the heat benchmark sub-installation.

Example 2: An ETS installation that produces paper consumes net measurable heat from an external 5 MW boiler that is not covered by an EU ETS permit. In this case, the heat delivered to the EU ETS installation is not eligible for allocation. If consumed within a product benchmark sub-installation, it has to be considered as "heat import from non-ETS" in the heat balance and within the sub-installation.

Example 3: An ETS installation that produces paper consumes heat from an electric boiler. As electric boilers are covered by the EU ETS, the corresponding amount of heat is eligible for allocation.

Example 4: Within an ETS installation, net measurable heat from a nitric acid production process is used in fertiliser production that is covered by the same EU ETS permit. The heat delivered from the nitric acid sub-installation is not eligible for free allocation.

Example 5: A carbon black plant recovers net measurable heat from the exothermic production process and delivers it within the same installation to a district heating network. In this case, the carbon black is allocated via a product benchmark sub-installation, the recovered heat is eligible for free allocation and allocated via a district heating sub-installation (if not all heat is exported to district heating then the remainder may be eligible for allocation under a heat benchmark sub-installation).

District heating

In the case that net measurable heat is exported for district heating purposes, it is not allocated under the heat benchmark but under the dedicated district heating (DH) benchmark, which has its own sub-installation. The term "district heating purpose" is to distinguish exported heat eligible for free allocation ('measurable heat exported for the purpose of district heating') from non-eligible exported heat (for other purposes, such as for electricity production). *For more terminology related to district heating, see the text box here-after.*

Art. 2(4) of the FAR gives the following definition of district heating:

"'district heating' means the distribution of measurable heat for the purpose of heating or cooling of space or of production of domestic hot water, through a network, to buildings or sites not covered by EU ETS with the exception of measurable heat used for the production of products and related activities or the production of electricity."

One district heating sub-installation is defined, if both of the following apply:

- The installation produces measurable heat outside the boundaries of a nitric acid product benchmark sub-installation;

OR

- The installation imports measurable heat from another EU ETS installation, provided that the heat is not produced within the boundaries of a nitric acid product benchmark;

AND

- The heat is exported for the purpose of district heating.

District heating is characterised as follows:

- It concerns the distribution of **measurable heat** through a network;
- For the purpose of **heating or cooling of space,** or for production of **domestic hot water**;
- To buildings or sites **not covered by the EU ETS;**
- Excluding measurable heat used for the production of products and related activities or electricity.

Where an ETS installation both produces district heat and transfers heat produced by others for district heating, it needs a virtual split in order to calculate its allocation, see section 4.2.

For a district heating sub-installation, no distinction is made based on the carbon leakage status or the possible production of CBAM goods, as all heat is by definition used for the purpose of district heating, which is not exposed to a risk of carbon leakage, and is not among the CBAM goods. Therefore, a maximum of one DH sub-installation can be defined. To reward the efficient use of excess heat for district heating purposes, district heating sub-installations are not subject to the same decrease in Carbon Leakage Exposure Factor (CLEF) in the calculation of the amount of free allowances as other non-carbon leakage sub-installations are[12]. Instead, a CLEF of 0.3 continues to be applied for district heating sub-installations after 2025. DH operators in Member States with relatively high DH emissions can obtain an additional 30% of free allowances on the condition that they have a compliant Climate - neutrality plan in place *and* they make sufficient investments in the implementation of the planned emission reduction measures by 2030. *For more information on this conditional allocation, see Guidance Document 11 on Climate-neutrality plans as a condition to free allocation.*

[12] Subject to a potential review in accordance with Article 30 of the EU ETS Directive

District heating concepts in Phase 4

District heating is referred to in different ways in the relation to the EU ETS and its free allocation rules for Phase 4. A distinction can be made between:

- District heating as an **activity**, defined in Article 2(4) of the FAR as:
  "the distribution of measurable heat for the purpose of heating or cooling of space or of production of domestic hot water, through a network, to buildings or sites not covered by EU ETS with the exception of measurable heat used for the production of products and related activities or the production of electricity"
- A district heating **installation**, an installation producing heat for district heating, which can be an ETS installation or a non-ETS installation, depending on the type and capacity of the installation used;
- A district heating **distributor**, distributing the heat through a district heating network, which can either be produced by the distributor itself or purchased from third parties;
- A district heating **network,** the grid of pipelines and equipment used to distribute heat for the purpose of district heating;
- A district heating **sub-installation**, a sub-installation defined in an ETS installation for the purpose of determining the allocation to the installation related to measurable heat exported for the purpose of district heating, as defined in Article 2(5) of the FAR;
- District heating **purpose,** to distinguish exported heat eligible for free allocation ('measurable heat exported for the purpose of district heating') from non-eligible exported heat (for other purposes, such as for electricity production).

List of technical connections

Connections for import or export of heat, CO_2 or waste gas across the installation boundary are called technical connections. Each operator should clearly list all its technical connections in its baseline data report. All connected installations and entities have to be identified and notified to the competent authorities, as well as any changes in connections. *See Guidance Document 3 on Data Collection* for further guidance on data reporting.

Heat flow is a common type of technical connection. Heat flows between sub-installations within the same installation are not considered technical connections except when it is related to a nitric acid sub-installation. All technical connections need to be listed, including for heat flows which are not eligible for free allocation. All data including those on, or provided by, non-ETS entities related to cross-boundary heat flows are subject to independent verification.

3 Heat flows between one heat exporter and one heat importer

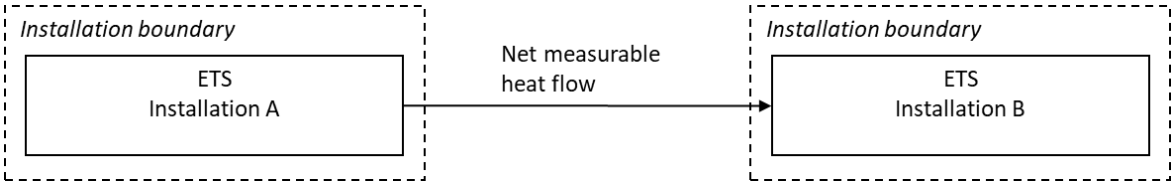
This section explains the calculation methodology for preliminary allocation related to direct cross-boundary net measurable heat flows, in general cases. For guidance on the calculation of the final allocation, on CLEF, on CBAM, and how the allocation calculation differs for situations such as new entrants, installations operating less than two years in the baseline period or activity level changes, please refer to Guidance Document 2 and Guidance Document 7.

3.1 Heat flows between two ETS installations

This section discusses the allocation in the case of heat flows from one installation to another installation, where both installations are in the EU ETS.

Figure 1 shows the situation discussed in this section.

Figure 1. Heat flows from an ETS installation to another ETS installation



Preliminary allocation

As a general rule, free allocation is given to the net measurable heat consuming installation. An overview of the preliminary allocation is given Table 1.

Type of sub-installation (CL non-CBAM, non-CL non-CBAM, or CL CBAM)

The type of sub-installation to be defined depends on the heat consumer, i.e., the product(s) produced by the sub-installation(s) consuming the heat in the importing ETS installation. *See Guidance Document 2 on determining the allocation at installation level for more information on how to define sub-installations.*

Table 1. Overview of preliminary allocation in case of a net measurable heat flow from one ETS installation to another ETS installation

Preliminary allocation to heat exporting installation A	Preliminary allocation to heat importing installation B
No allocation is given to the heat producer when exporting to ETS The part of the ETS installation A's heat that is exported to other ETS installations does not receive any allowances	*Where the heat imported is to be used within the perimeter of a product benchmark sub-installation:* The imported net measurable heat is taken into account in the product benchmark[13]. $F_{P,preliminary} = BM_P \times HAL_P \times CLEF_P \times CBAM_P$ *Allocation = Product Benchmark x amount of Product produced x Carbon leakage exposure factor of the heat consumer x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related related historical activity level (expressed in tonnes/year) $CLEF_P$: carbon leakage exposure factor of the product benchmark $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark

[13] Allocation for all net measurable heat, including imported heat, used to produce a product covered by a product benchmark is included in the allocation for the product benchmark, and therefore does not receive any additional allocation under a different sub-installation. See *Guidance Document 2 on determining the allocation at installation level for* further explanation on the way that product benchmarks are defined.

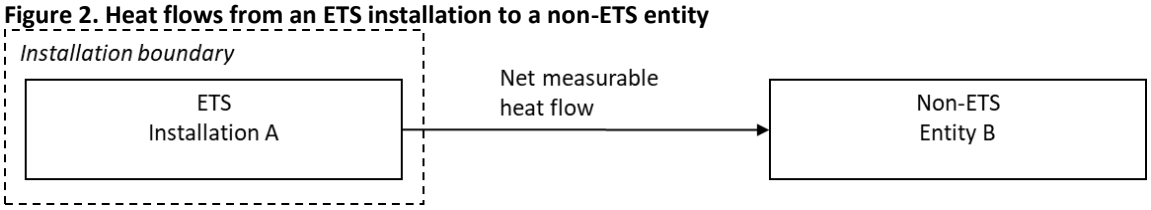
Preliminary allocation to heat exporting installation A	Preliminary allocation to heat importing installation B
	Where the net measurable heat imported is to be used outside the perimeter of a product benchmark sub-installation: The heat imported from ETS installations is taken into account in the historical activity level of the importing heat sub-installation: $$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$ *Allocation = Heat Benchmark x Heat consumed x Carbon leakage exposure factor of the heat consumer x Carbon border adjustment mechanism factor* where: $F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_H: the heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat consumed over the baseline period. $CLEF_H$: carbon leakage exposure factor of the consumer's heat sub-installation $CBAM_H$: carbon border adjustment mechanism factor for the heat sub-installation

3.2 Heat flows from an ETS installation to a non-ETS installation or entity

This section discusses allocation in the case where net measurable heat flows from an EU ETS installation, to an installation or entity that is not covered by the EU ETS, or to an installation covered by the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC. Whether the heat exported to the non-ETS heat consumer is used for the purpose of district heating[14] or not can have an impact on allocation. Both options are described below.

Figure 2 below shows the situation discussed in this section:

Figure 2. Heat flows from an ETS installation to a non-ETS entity



Preliminary allocation

In this situation, where the net measurable heat is consumed outside of the EU ETS, free allowances are given to the heat producer for the net measurable heat exported. Where heat is exported for district heating purposes, the net measurable heat is eligible under the district heating (DH) sub-installation of ETS installation A, otherwise the installation is allocated under a heat benchmark sub-installation. An overview of the preliminary allocation is given in Table 2.

Type of sub-installation

The non-ETS entities are by default deemed not exposed to significant risk of carbon leakage and producing non-CBAM goods.

However, in theory there are 4 possible types of non-ETS sub-installations to which heat can be exported:

- A district heating sub-installation
- A non-CL non-CBAM sub-installation (default case)
- A CL non-CBAM sub-installation
- A CL CBAM sub-installation

The district heating sub-installation is by definition not exposed to significant risk of carbon leakage and does not fall under the CBAM scope.

For other heat flows to non-ETS, a CL non-CBAM sub-installation, or a CL CBAM sub-installation can only be defined if the heat exporter provides satisfactory evidence that it

[14] 'district heating' means the distribution of measurable heat for the purpose of heating or cooling of space or of production of domestic hot water, through a network, to buildings or sites not covered by EU ETS with the exception of measurable heat used for the production of products and related activities or the production of electricity (FAR, Art. 2(4)).

exports net measurable heat to a non-ETS entity that is exposed to a significant risk of carbon leakage and producing a non-CBAM good in the first case, or a CBAM good in the latter. The operator will for example provide a verified list of its customers consuming the heat, giving the NACE/PRODCOM codes and CN codes of these customers, and the amounts of net measurable heat delivered to them. In the absence of such evidence, a non-CL non-CBAM sub-installation is to be used.

For the case of district heating, the carbon leakage exposure factor has been fixed at 0.3 for the entire 4th Phase (Art. 16(3) of the FAR).

If the heat that is exported to non-ETS is used for different products, some can be exposed to a significant risk of carbon leakage while others will not be, and some of the heat may be used to produce CBAM products while part of it will be used to produce non-CBAM products. Although such diversity is not likely to happen very often, up to 4 sub-installations may need to be defined, as listed at the beginning of this section. Section 4.1 considers this situation in more detail. *See also Guidance Document 2 for guidance on sub-installation split.*

Table 2. Overview of preliminary allocation in case of a heat flow from an ETS installation to a non-ETS entity

<table>
<tr><th>Preliminary allocation to heat exporting sub-installation A</th><th>Preliminary allocation to non-ETS heat importer B</th></tr>
<tr><td><u>Where non-ETS entity B has (wholly or partially) an activity other than district heating:</u>
The sub-installation exporting heat to non-ETS other than district heating is by definition a heat benchmark sub-installation.

The heat exported to non-ETS entities is taken into account in the historical activity level of the heat exporting sub-installation.

$$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor x Carbon border adjustment mechanism factor

where:
$F_{H,preliminary}$: annual preliminary allocation to the heat exporting sub-installation (expressed in EUAs/year)
BM_H: heat benchmark (expressed in EUAs/TJ)
HAL_H: the heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat produced and exported to non-ETS entity over the baseline period, unless used for electricity production.
$CLEF_H$: by default, the values to be used for the carbon leakage exposure factor and the
$CBAM_H$: carbon border adjustment mechanism factor are non-carbon leakage and non-CBAM, unless the heat exporter provides evidence that it exports heat to a non-ETS entity that is either carbon leakage non-CBAM, or carbon leakage CBAM.</td><td rowspan="2">Non-ETS entities cannot receive free allocation</td></tr>
<tr><td><u>Where non-ETS entity B is (wholly or partially) consuming heat for the purpose of district heating:</u>
The district heat exporting sub-installation of installation A is a district heating sub-installation.

The heat exported to district heating is taken into account in the historical activity level of the district heating sub-installation.

$$F_{DH,preliminary} = BM_H \cdot HAL_{DH} \cdot CLEF_{DH}$$Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor

where:</td></tr>
</table>

Preliminary allocation to heat exporting sub-installation A	Preliminary allocation to non-ETS heat importer B
$F_{DH,preliminary}$: annual preliminary allocation to the district heat exporting sub-installation (expressed in EUAs/year) $BM_{H:}$ heat benchmark (expressed in EUAs/TJ) HAL_{DH}: the district heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat produced and exported for district heating. $CLEF_{DH:}$ The carbon leakage exposure factor district heating is used.	

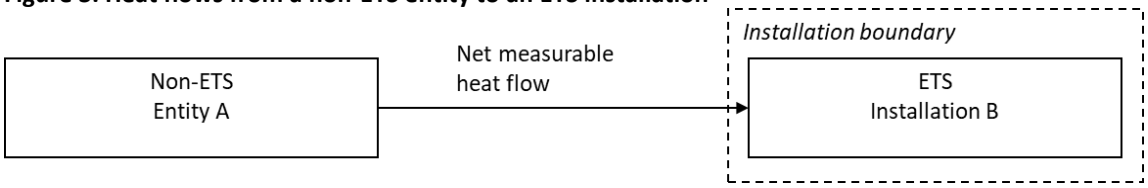
3.3 Heat flows from a non-ETS installation or entity to an ETS installation

This type of heat flow occurs when a heat importing installation is in the EU ETS, and receives heat from a heat exporter that is not in the EU ETS because it does not perform an activity listed in Annex I of the EU ETS Directive, or that is in the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC. This can for example be:

- An installation excluded from EU ETS for exclusively using biomass selling the heat produced to an ETS installation;
- An installation for the incineration of municipal waste[15] selling the heat produced to a ceramics plant;
- A 5 MW CHP selling the heat produced to a mineral wool plant.

Figure 3 below shows the situation discussed in this section:

Figure 3. Heat flows from a non-ETS entity to an ETS installation



Preliminary allocation

The consumption of heat produced outside the EU ETS is not eligible for free allocation. An overview of the preliminary allocation is given in Table 3.

Carbon leakage exposure factor

The carbon leakage exposure factor to be used is the carbon leakage exposure factor for the heat consuming sub-installation.

[15] Such an installation will be included in the EU ETS only for the purposes of Articles 14 and 15 of Directive 2003/87/EC.

Table 3. Overview of preliminary allocation in case of a heat flow from a non-ETS entity to an ETS installation

<table>
<tr><th>Preliminary allocation to non-ETS heat producer A</th><th>Preliminary allocation to heat importing installation B</th></tr>
<tr><td rowspan="2">Non-ETS entities cannot receive free allocation</td><td>Where the heat is imported to be used within the perimeter of a product benchmark sub-installation:

The imported heat is not eligible for free allocation. However, the imported heat is taken into account by the product benchmark[13]. The allocation therefore needs to be corrected for the amount of imported heat.

$$F_{P,preliminary} = (BM_P \times HAL_P - BM_H \times H_{import}) \times CLEF_P \times CBAM_P$$
Allocation = (Product Benchmark x amount of Product produced
– Heat Benchmark x non-ETS Heat imported) x Carbon leakage exposure factor of the heat consuming sub-installation x Carbon border adjustment mechanism factor

where:
$F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year)
BM_P: product benchmark (expressed in EUA/tonne)
HAL_P: the product-related related historical activity level (expressed in tonnes/year)
BM_H: heat benchmark (expressed in EUA/TJ)
H_{import}: the heat import in the same baseline years as used for HAL_P (expressed in TJ/year)
$CLEF_P$: carbon leakage exposure factor of the heat consuming sub-installation
$CBAM_P$: carbon border adjustment mechanism factor for the product benchmark</td></tr>
<tr><td>Where the heat imported is to be used outside the perimeter of a product benchmark sub-installation:

The heat imported from non-ETS entities is not taken into account in the determination of the historical activity level. As a consequence, the heat benchmark sub-installation does not receive any allowances for the heat imported from non-ETS entities.</td></tr>
</table>

4 Heat flows involving multiple heat exporters and importers

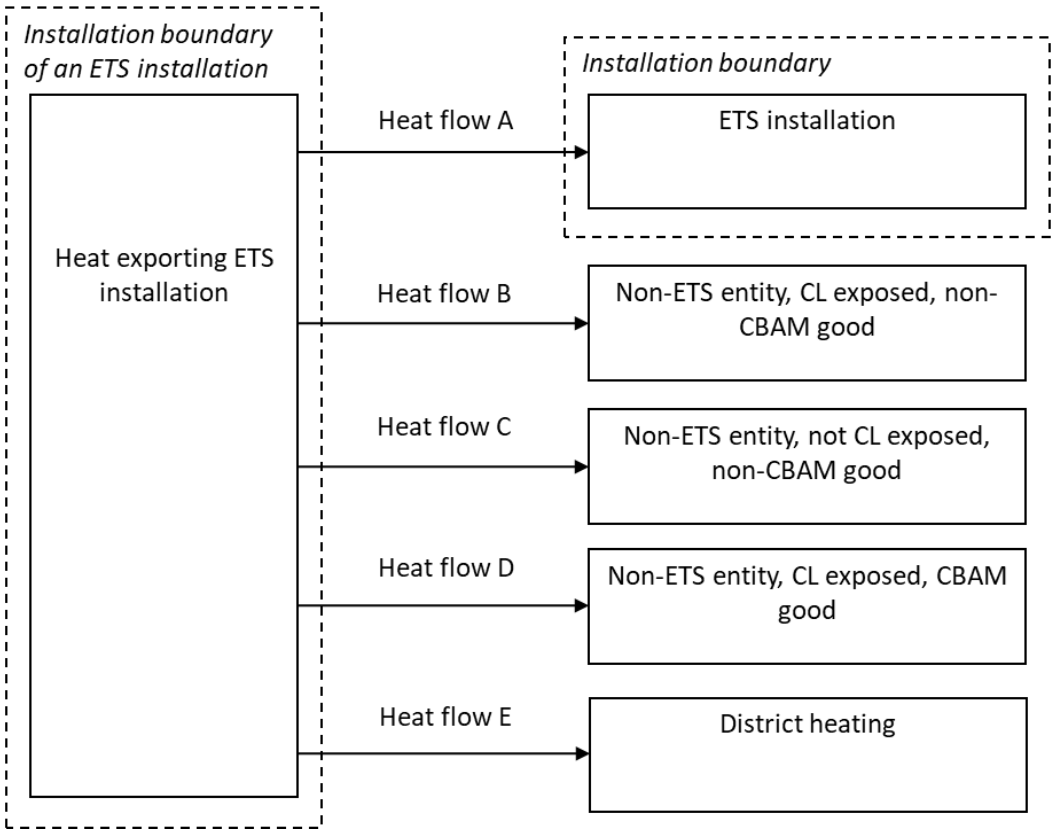
This section discusses situations in which more than one heat exporter or importer is involved.

4.1 One heat exporter and multiple heat importers

This section considers the case in which one ETS installation exports heat to both ETS installations and non-ETS entities with different carbon leakage (CL) exposure factors, and producing CBAM goods or non-CBAM goods.

Figure 4 shows the situation discussed in this section. The heat exporting installation needs to be divided into different sub-installations (*see Guidance Document 2 on Allocation Methodologies*)

Figure 4. An ETS installation exports heat to both ETS installations and non-ETS entities



Preliminary allocation

The preliminary allocation calculation is shown in Table 4, determined using the cases as discussed in sections 3.1 and 3.2 as building blocks:

- Heat export by an ETS installation to another ETS installation (heat flow A) is discussed in section 3.1. In this case the allocation goes to the heat importer; the exporting ETS installation does not receive allocation for the exported heat and therefore does not need any additional sub-installation for the exported heat.
- Heat flows to non-ETS entities can be of 4 types, as discussed in section 3.2. These 4 types will each have different combinations of CLEF and CBAM factors, depending on whether the non-ETS consumption of the heat flow is used for district heating purposes (heat flow E), exposed to carbon leakage and producing a non-CBAM good (heat flow B), exposed to carbon leakage and producing a CBAM good (heat flow D), or not exposed to carbon leakage and producing a non-CBAM good (heat flow C). For these 4 types of heat flows the allocation goes to the exporter. Each type of heat flow requires a different type of sub-installation.

Carbon leakage exposure factor and CBAM factor

For the ETS heat consumers the carbon leakage exposure factor to be used is the CLEF of the heat consuming sub-installation. Similarly, the CBAM factor to be used depends on the product produced by the heat consuming sub-installation.

The non-ETS entities are by default deemed not exposed to significant risk of carbon leakage and non-CBAM.

The district heating sub-installation is by definition not exposed to carbon leakage and non-CBAM. For the case of a district heating sub-installation, the carbon leakage exposure factor has been fixed at 0.3 for the entire 4th phase (Art. 16(3) of the FAR). *See also Guidance Document 2 for guidance on sub-installation split.*

For other heat flows to non-ETS, the CLEF for carbon leakage exposed sectors can only be used if the heat exporter provides satisfactory evidence that it exports heat to a non-ETS entity that is exposed to a significant risk of carbon leakage: the operator will for example provide a list of its customers consuming the heat, giving the NACE/PRODCOM codes of these customers and the amounts of heat delivered to them. In the absence of such evidence the CLEF for sectors not exposed to carbon leakage is to be used. The CBAM factor should then be adjusted accordingly, depending on whether the goods produced in the non-ETS entities are CBAM goods or not.

Table 4. Overview of preliminary allocation where an ETS installation exports heat to both ETS sub-installations and non-ETS consumers with different carbon leakage exposure factors.

Heat flow	Preliminary allocation
Heat flow from an ETS installation to another ETS installation: **Allocation goes to the ETS heat importer** Heat flow A	*The part of the ETS installation that **exports** heat to other ETS installations does not receive any allowances for the heat produced and exported.*
	*Where the heat **imported** is to be used **within** the perimeter of **a product benchmark sub-installation**:* The imported heat is taken into account in the product benchmark[13]. $$F_{P,preliminary} = BM_P \times HAL_P \times CLEF_P \times CBAM_P$$ *Allocation = Product Benchmark x amount of Product produced x Carbon leakage exposure factor of the heat consumer x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related related historical activity level (expressed in tonnes/year) $CLEF_P$: carbon leakage exposure factor of the product benchmark $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark
	*Where the heat **imported** is to be used **outside** the perimeter of **a product benchmark sub-installation**:* The heat imported from ETS installations is taken into account in the historical activity level of the importing heat sub-installation: $$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$ *Allocation = Heat Benchmark x Heat consumed x Carbon leakage exposure factor of the heat consumer x Carbon border adjustment mechanism factor* where: $F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_H: the heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat consumed over the baseline period. $CLEF_H$: carbon leakage exposure factor of the consumer's heat sub-installation $CBAM_H$: carbon border adjustment mechanism factor for the heat sub-installation

Heat flow	Preliminary allocation
Heat flow from an ETS installation to a non-ETS entity other than district heating: **Allocation goes to the ETS heat exporter** Heat flows B, C and D	*Where heat is **exported** to a non-ETS entity other than for district heating, the heat **exporting** sub-installation is by definition a heat benchmark sub-installation:* The heat exported to non-ETS entities is taken into account in the historical activity level of the heat exporting sub-installation: $$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$ *Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor x Carbon border adjustment mechanism factor* where: $F_{H,preliminary}$: annual preliminary allocation to the heat exporting sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_H: the heat-related historical activity level (expressed in TJ/year); i.e., the annual median of historical net measurable heat produced and exported to non-ETS entities over the baseline period, unless used for electricity production or district heating. $CLEF_H$: The carbon leakage exposure factor for non-carbon leakage exposed sectors is used (Heat flow C), unless the heat exporter provides evidence that it exports heat to a non-ETS entity that is exposed to a significant risk of carbon leakage (Heat flows B and D) $CBAM_H$: carbon border adjustment mechanism factor for a sub-installation producing non-CBAM goods is used (Heat flows B and C), unless the heat exporter provides evidence that it exports heat to a non-ETS entity producing a CBAM good (Heat flow D)
	Non-ETS entities cannot receive free allocation
Heat flow from an ETS installation for the purpose of district heating: **Allocation goes to the ETS heat exporter** Heat flow E	*Where heat is **exported** for district heating, the exporting ETS installation receives allocation under a district heating sub-installation:* The heat exported to district heating is taken into account in the historical activity level of the district heating sub-installation. $$F_{DH,preliminary} = BM_H \times HAL_{DH} \times CLEF_{DH}$$ *Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor* where: $F_{DH,preliminary}$: annual preliminary allocation to the district heat exporting sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ)

Heat flow	Preliminary allocation
	HAL_{DH}: the district heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat produced and exported for district heating. $CLEF_{DH}$: The carbon leakage exposure factor of district heating is used.
	Non-ETS entities cannot receive free allocation.

4.2 Heat flows from an ETS exporter via a heat distributor

This section discusses allocation in the case of heat flows from an ETS installation to a heat distributor which distributes heat to both ETS and non-ETS consumers.

Definition of a heat distributor
A heat distributor is an entity which acts as an intermediary between heat producers and heat consumers. This means that in contrast to the situation described in section 4.1:

- The heat distributor is neither producing nor consuming the heat.
- There is no direct contractual relationship between the heat producer and the heat consumers concerning the delivery of heat.

Where there exists a direct heat delivery contract between heat producers and consumers, but the heat physically passes through an intermediate heat distributor, the rules described in this section don't need to be applied. In that case, the intermediate party is not considered to be a separate entity, but rather a part of the heat transfer infrastructure. The standard rules for heat flows apply (allocation to ETS heat consumers unless heat is imported from non-ETS heat producers, allocation to ETS heat producers if consumers are not covered by the ETS, see section 3).

In some cases, an installation can be both a heat producer covered under EU ETS and at the same time a heat distributor that also transfers heat that it didn't produce between other installations or entities. In such cases the installation will be virtually split into two parts: the ETS heat production part A transfers the produced heat to the non-ETS heat distributor part B. Even though in this case parts A and B are within the same installation, the allocation for the heat is done as if the parts weren't within the same installation: the allocation goes to ETS heat producer A (as the heat is regarded as delivered to a non-ETS entity B, see section 3.2). Both parts A and B can import heat from another EU ETS installation X, see Figure 5. Where part A imports heat (not shown) it gets the same allocation as if it produced the net measurable heat itself. Where part B imports the heat, in other words if installation X uses the part B heat transfer system without consumption by or transfer via part A, then installation X receives allocation for export to non-ETS.

Figure 5. Example of a virtual split of an ETS installation that is also a heat distributor

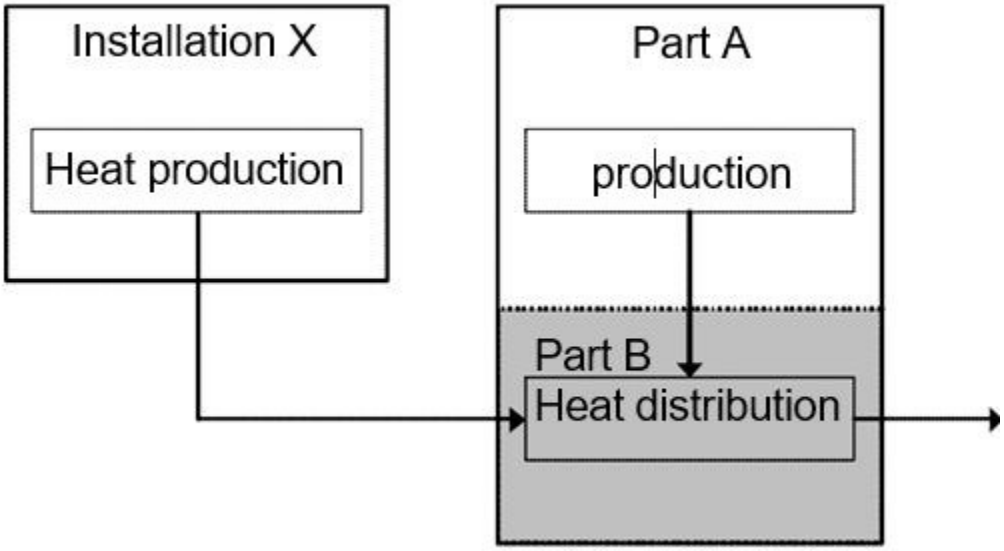


Figure 6 below shows the situation discussed in this section.

Preliminary allocation

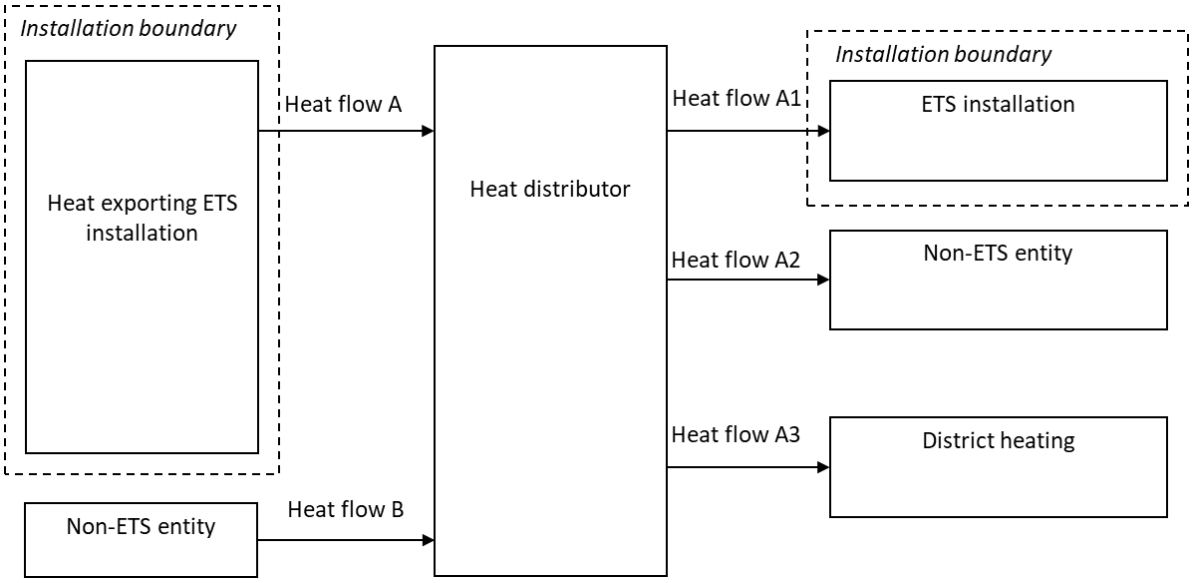
For the purpose of allocation, the heat distributor is regarded as a non-ETS entity, regardless of whether the installations to which it exports heat are ETS or non-ETS. Consequently, as a general rule:

- Heat producers covered by EU ETS that supply the heat distributor receive free allowances for the heat exported to the heat distributor (as it is non-ETS);
- Heat consumers that are supplied by the heat distributor don't receive free allowances, because the heat is supplied by a non-ETS entity: the heat distributor.

An overview of the preliminary allocation is given in Table 5. The rules for heat transfer via a heat distributor also apply in complex heat networks linking multiple producers and consumers.

Table 5 includes some exceptions to this general rule.

Figure 6. Heat flows from an ETS installation via a non-ETS distributor[16]



Carbon leakage exposure factor

The carbon leakage exposure factor to be used is the CLEF for non-carbon leakage exposed sectors unless evidence can be provided: on the carbon leakage exposure status of the heat consumer, or that the heat is consumed for district heating.

Such data can only be delivered to the ETS exporter by the heat distributor on a voluntary basis as there are no legal obligations for these entities in the context of the data collection. The ETS exporting installation will for example need a list of its customers consuming the heat, giving the NACE/PRODCOM codes of these customers and the amounts of heat delivered to them. In the absence of such evidence the CLEF for sectors not exposed to carbon leakage is to be used.

For the non-ETS and district heating installations, it is considered by default that non-CBAM goods are produced.

[16] The sum of A1+A2+A3 may be less than A due to heat loss, which is not eligible for free allocation

Table 5. Overview of preliminary allocation where an ETS installation exports heat via a non-ETS heat distributor to heat importers

Entity	Preliminary allocation
ETS installation exporting heat to heat distributor (Heat flow A)	*The heat exporting sub-installation by default is a non-CL non-CBAM heat benchmark sub-installation.* In the default case, the heat exported by the ETS exporter to the heat distributor (a non-ETS entity) is taken into account in the historical activity level of the heat exporting sub-installation: $$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$ *Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor x Carbon border adjustment mechanism factor* where: $F_{H,preliminary}$: annual preliminary allocation to the heat exporting sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_H: the heat-related historical activity level (expressed in TJ/year); i.e., the annual median of historical net measurable heat produced and exported to non-ETS entities over the baseline period, unless used for electricity production. $CLEF_H$ by default, the values to used for the carbon leakage exposure factor $CBAM_H$ and the carbon border adjustment mechanism factor are non-carbon leakage and non-CBAM, unless the heat exporter provides evidence that it exports heat to a non-ETS entity that is either carbon-leakage non-CBAM, or carbon leakage CBAM *If sufficient evidence can be provided, the following exceptions to the default allocation calculation are possible:* • Where there is a direct heat supply contract between the ETS heat producer and an ETS heat consumer, the allocation goes to the consumer instead of the producer. See section 3.1 for the preliminary allocation calculation in this case (may apply for heat flow A1). • Where there is a proven heat supply between the ETS heat producer and a non-ETS heat consumer, the ETS heat producer can apply for allocation under its heat benchmark sub-installation. The preliminary allocation calculation is equal to that of the default case above, but the CLEF value depends on the carbon leakage exposure status of the non-ETS consumer(s) (may apply for heat flow A2). • Where there is a proven heat supply by an ETS heat producer, via a heat distributor, to district heating, the ETS heat producer can apply for allocation under its district heating sub-installation. See section 3.2 for the preliminary allocation calculation in this case (may apply for heat flow A3).

Entity	Preliminary allocation
Non-ETS installation exporting heat to heat distributor (Heat flow B)	Non-ETS installations cannot receive free allocation.
Heat distributor	Heat distributors are regarded as non-ETS entities and cannot receive free allocation (where the heat distributor also produces and exports heat, the heat exporting part receives allocation analogous to an ETS installation exporting to a heat distributor).
ETS installation importing from a heat distributor (heat flow A1)	*In the default case, heat import from a non-ETS entity such as a heat distributor is not eligible for allocation.* Because the heat distributor is regarded as a non-ETS entity, this installation will not receive any allocation for the imported heat (an exception to this case is possible; see exception one in the list in the first line of this table). *Where the heat imported is to be used <u>within</u> the perimeter of <u>a product benchmark sub-installation</u> (heat flow A1):* The imported heat is not eligible for free allocation since it comes from a non-ETS entity. However, the imported net measurable heat is taken into account by the product benchmark[13]. The allocation therefore needs to be corrected for the amount of imported heat. $$F_{P,preliminary} = (BM_P \times HAL_P - BM_H \times H_{import}) \times CLEF_P \times CBAM_P$$ *Allocation = (Product Benchmark x amount of Product produced* *– Heat Benchmark x non-ETS Heat imported) x Carbon leakage exposure factor of the heat consuming sub-installation* *x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related related historical activity level (expressed in tonnes/year) BM_H: heat benchmark (expressed in EUA/TJ) H_{import}: the net measurable heat import in the same baseline years as used for HAL_P (expressed in TJ/year) $CLEF_P$: carbon leakage exposure factor of the heat consuming sub-installation $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark An exception is possible in the case of a direct heat supply contract between the ETS heat producer and an ETS heat consumer, then the allocation goes to the consumer instead of the producer. See section 3.1 for the preliminary allocation calculation in this case (may apply for heat flow A1).

Entity	Preliminary allocation
	Where the heat imported is to be used <u>outside</u> the perimeter of a product benchmark sub-installation (heat flow A1): In the default case, the heat imported from non-ETS entities is not taken into account in the determination of the historical activity level of the importing ETS installation. As a consequence, the heat benchmark sub-installation does not receive any allowances for heat imported from the heat distributor, a non-ETS entity. An exception is possible in the case of a direct heat supply contract between the ETS heat producer and an ETS heat consumer, then the allocation goes to the consumer instead of the producer. See section 3.1 for the preliminary allocation calculation in this case (may apply for heat flow A1).
Non-ETS installations importing heat from heat distributor (Heat flows A2 and A3)	Non-ETS installations cannot receive free allocation.

4.3 Heat flows from an ETS exporter to district heating

Special provisions apply to net measurable heat exported for the purposes of district heating. In line with Art. 10b(4) of the EU ETS Directive and Art. 16(3) of the FAR, the CLEF will not decrease from 0.3 after 2025 for heat exported for the purposes of district heating, in contrast to heat consumed in non-ETS sectors.

Figure 4 in section 4.1 provides an example of heat exported from an ETS installation directly to a district heating network.

Figure 6 in section 4.2 provides an example of heat exported from an ETS installation to a district heating network via a heat distributor.

Preliminary allocation

District heating is always considered non-ETS and does not fall under the CBAM scope. Therefore, preliminary free allocation will be given to the net measurable heat exporting ETS installation.

Carbon leakage exposure factor

A specific carbon leakage exposure factor is to be used for heat exported for the purposes of district heating. This factor is equal to the non-carbon leakage exposed sectors for the first 5-year period of 2021-2025 and remains 0.3 for the second 5-year period of 2026-2030 (in contrast with other non-carbon leakage exposed sectors for which the factor decreases after 2026).

In the case of net measurable heat exported for the purposes of district heating, the carbon leakage exposure factor is therefore a constant value of 30% over the whole Phase 4.

Table 6. Overview of preliminary allocation in case an ETS installation exports heat for the purpose of district heating

Exporter/ importer	Preliminary allocation
ETS exporter	*The following formula is to be used if either: heat is directly exported for the purpose of district heating, or heat is exported via a heat distributor AND if proof has been provided by the heat distributor that heat is exported for the purpose of district heating. Where export of heat via a heat distributor has no proof of use of the heat for district heating, then the situation should be treated as export of heat to non-ETS (see section 3.2 and Table 2).* *The heat exporting sub-installation is by definition a district heating sub-installation.* The net measurable heat exported to district heating is taken into account in the historical activity level of the district heating sub-installation. $F_{DH,preliminary} = BM_H \times HAL_{DH} \times CLEF_{DH}$ *Allocation = Heat Benchmark x amount of net exported Heat x Carbon leakage exposure factor* where: $F_{DH,preliminary}$: annual preliminary allocation to the district heat exporting sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_{DH}: the district heat-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat produced and exported for district heating. $CLEF_{DH}$: the carbon leakage exposure factor for district heating is used.

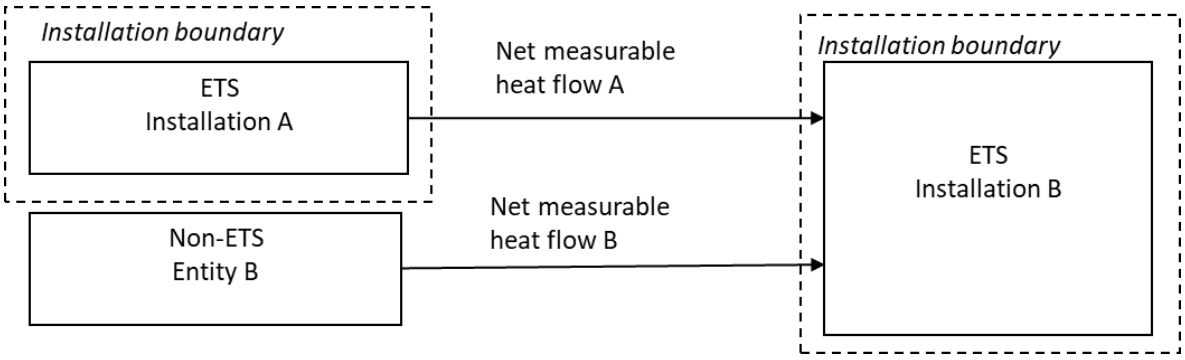
Exporter/ importer	Preliminary allocation
Heat distributor	Heat distributors are regarded as non-ETS entities and cannot receive free allocation.
District heating	District heating is by definition regarded as a non-ETS entity and therefore cannot receive free allocation.

4.4 Multiple heat exporters and one heat importer

This section considers the case in which an ETS heat installation imports heat from both an ETS installation and a non-ETS entity.

Figure 7 below shows the situation discussed in this section.

Figure 7. An ETS heat installation imports net measurable heat from both an ETS installation and a non-ETS entity



Preliminary allocation

Preliminary allocation is shown in Table 7 and is determined using the cases as discussed in sections 3.1 and 3.3 as building blocks:

- Heat import by an ETS sub-installation from an ETS installation: the allocation goes to the heat consumer, see section 3.1.
- Heat import by an ETS sub-installation from a non-ETS entity: heat import from outside ETS is not eligible for allocation, see section 3.3.

Carbon leakage exposure and CBAM factors

The carbon leakage exposure factor to be used is the CLEF for the heat consuming sub-installation, and the CBAM factor will be based on the product produced by the heat consuming sub-installation.

Table 7. Overview of preliminary allocation in case an ETS installation imports net measurable heat from both an ETS sub-installation and a non-ETS entity.

Entity	Preliminary allocation
ETS heat consumer A	*Where the heat **imported** is to be used within the perimeter of a product benchmark sub-installation:* The heat imported from ETS (flow A) does not impact the allocation calculation, but the allocation needs to be corrected for the amount of net measurable heat imported from the non-ETS installation or other entity. $$F_{P,preliminary} = (BM_P \times HAL_P - BM_H \times H_{non-ETS,\ import}) \times CLEF_P \times CBAM_P$$ *Allocation = (Product Benchmark x amount of Product produced – Heat Benchmark x Net measurable heat imported) x Carbon leakage exposure factor of heat consumer x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related related historical activity level (expressed in tonne) BM_H: heat benchmark (expressed in EUA/TJ) $H_{non-ETS,\ mport}$: the net measurable heat import from the non-ETS entities in the same base years as used for HAL_P (expressed in TJ/year) $CLEF_P$: carbon leakage exposure factor of the heat consuming product benchmark sub-installation $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark
	The heat importing sub-installation is not a product benchmark sub-installation. The heat imported from ETS installations is taken into account in the historical activity level of the heat importing sub-installation. The heat imported from non-ETS entities is not eligible for free allocation: $$F_{H,preliminary} = BM_H \times HAL_{H,eligible} \times CLEF_H \times CBAM_H$$ *Allocation = Heat Benchmark x Net measurable heat consumed (excl. heat from non-ETS entity) x Carbon leakage exposure factor of heat consumer x Carbon border adjustment mechanism factor of heat consumer* where: $F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) $HAL_{H,\ eligible}$: the net measurable heat-related historical activity level (expressed in TJ/year), by definition this historical activity level does not consider the heat imported from non-ETS entities. $CLEF_H$: carbon leakage exposure factor of the heat consuming sub-installation $CBAM_H$: carbon border adjustment mechanism factor of the heat consuming sub-installation

ETS heat exporter B	The part of the ETS installation that exports heat to other ETS installations does not receive any allowances for the heat export.
Non-ETS exporter C	Non-ETS entities cannot receive free allocation.

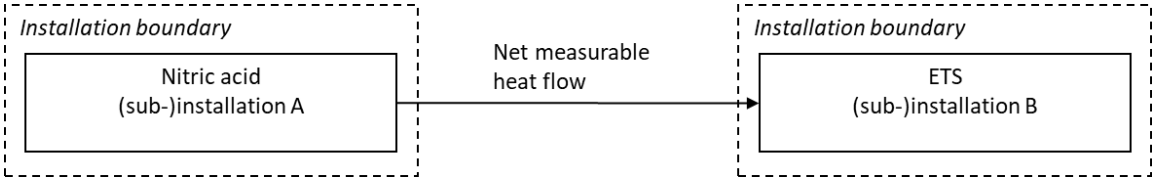
5 Special allocation examples

5.1 Heat flows from a nitric acid benchmark sub-installation to another sub-installation

This section discusses the allocation in the case of heat flows from a sub-installation that produces products covered by the nitric acid benchmark and another sub-installation, (see Art. 16(5) of the FAR).

Figure 8 shows the situation discussed in this section.

Figure 8. Heat flows from a nitric acid benchmark sub-installation to another sub-installation



Preliminary allocation

As a general rule, the preliminary allocation for the nitric acid benchmark (sub-) installation A will be calculated based on the product benchmark for nitric acid and its historic activity level. In the case of the nitric acid benchmark, the heat produced within the boundaries of the nitric acid sub-installation and exported outside of the sub-installation boundary is allocated under the nitric acid benchmark, so the exported heat should not receive allocation under another sub-installation of the same or another installation.

Therefore the preliminary allocation for the heat consuming (sub-) installation B needs to be adjusted for the allowances related to the nitric acid benchmark heat consumed, since the corresponding allowances are already allocated to the nitric acid producer.

An overview of the preliminary allocation is given Table 8.

Carbon leakage exposure and CBAM factors

The carbon leakage exposure factor to be used in the determination of the allocation to (sub-) installation B is the CLEF for the heat consuming sub-installation, and the CBAM factor will be based on the product produced by the heat consuming sub-installation.

Table 8. Overview of preliminary allocation in case of a net measurable heat flow from a nitric acid installation to another(sub-) installation or entity

Preliminary allocation to heat exporting nitric acid (sub-)installation A	Preliminary allocation to heat importing sub-installation B
Allocation is given to the nitric acid producer based on the nitric acid benchmark, but no additional allocation for the exported heat A (sub-)installation that exports heat to another (sub-)installation never receives any allowances for the heat export	*Where the heat imported is to be used within the perimeter of a product benchmark sub-installation:* The imported heat is not eligible for free allocation. The imported net measurable heat is however taken into account by the product benchmark[13]. The allocation therefore needs to be corrected for the amount of imported net measurable heat. The result cannot be negative: $F_{P,preliminary} = (BM_P \times HAL_P - BM_H \times H_{nitric\ acid,\ import}) \times CLEF_P \times CBAM_P$ *Allocation = (Product Benchmark x amount of Product produced – Heat Benchmark x Nitric acid net measurable heat imported) x Carbon leakage exposure factor of the heat consuming sub-installation x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related related historical activity level (expressed in tonnes/year) BM_H: heat benchmark (expressed in EUA/TJ) $H_{nitric\ acid,\ import}$: the net measurable heat import from a nitric acid sub-installation in the same baseline years as used for HAL_P (expressed in TJ/year) $CLEF_P$: carbon leakage exposure factor of the heat consuming sub-installation $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark
	Where the heat importing sub-installation is a heat benchmark sub-installation, the heat imported from a nitric acid sub-installation is non-eligible and therefore subtracted from the total heat HAL: $F_{H,preliminary} = BM_H \times (HAL_H - H_{nitric\ acid,\ import}) \times CLEF_H \times CBAM_H$ *Allocation = Heat Benchmark x (Total net measurable heat consumed – Net measurable heat consumed from nitric acid installation) x Carbon leakage exposure factor of the heat consumer x Carbon border adjustment mechanism factor of heat consumer* where: $F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ)

Preliminary allocation to heat exporting nitric acid (sub-)installation A	Preliminary allocation to heat importing sub-installation B
	$HAL_{H,total}$: the total net measurable heat-related historical activity level (expressed in TJ/year); i.e., the median of over the baseline of the annual net measurable heat consumed other than for electricity production or district heating $H_{nitric\ acid,\ import}$: the net measurable heat import from a nitric acid sub-installation in the same baseline years as used for $HAL_{H,total}$ (expressed in TJ/year) $CLEF_H$: carbon leakage exposure factor of the heat consumer $CBAM_H$: carbon border adjustment mechanism factor of the heat consuming sub-installation
	Where the heat importing installation contains a district heating sub-installation, the heat imported from a nitric acid sub-installation is non-eligible. If installation B exports heat for district heating purposes, and nitric acid is not the only heat source then the heat from nitric acid is subtracted from the total district heating HAL: $$F_{H,preliminary} = BM_H \times (HAL_H - H_{nitric\ acid,\ import}) \times CLEF_{DH}$$ *Allocation = Heat Benchmark x (Total net measurable heat exported to district heating – Net measurable heat consumed from nitric acid installation) x Carbon leakage exposure factor of the heat consumer* where: $F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) $HAL_{DH,total}$: the total net measurable heat-related historical activity level (expressed in TJ/year); i.e., the median of over the baseline of the annual net measurable heat consumed other than for electricity production or district heating $H_{nitric\ acid,\ import}$: the net measurable heat import from a nitric acid sub-installation in the same baseline years as used for $HAL_{H,total}$ (expressed in TJ/year) $CLEF_{DH}$: carbon leakage exposure factor of district heating
	Where the heat importing entity is not covered by EU ETS then neither the heat exporting nitric acid sub-installation nor the non-ETS entity receive any allocation.

5.2 Heat flows within an integrated paper mill

This section discusses the allocation in the case of heat flows within an integrated paper mill. An integrated paper mill includes at least a pulp product benchmark sub-installation and a paper product benchmark sub-installation. It is not uncommon that an integrated paper mill also has a heat benchmark sub-installation, which is only needed if:

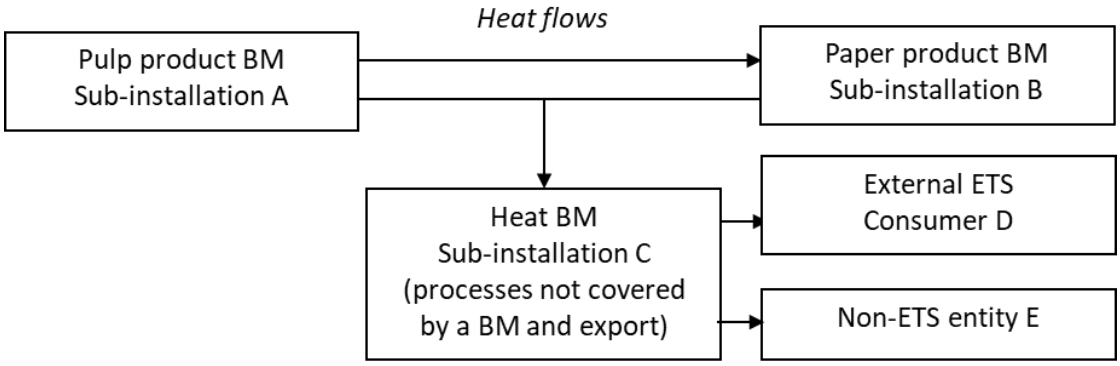
- The integrated paper mill also produces products which are not covered by a benchmark.
- The integrated paper mill also exports heat to non-ETS entities (other than for district heating, which has its own sub-installation type).

For all pulp production except recovered paper pulp, free allocation is only granted to pulp placed on the market and not processed into paper at the same installation or at a technically connected installation (FAR, Art. 16(6)[17]). This also applies to heat recovered from any pulp benchmark other than for recovered paper pulp.

Example: if a pulp mill produces 100 tonne of pulp and only 1 Adt (Air Dried Tonne) is sold on the market, then only 1 Adt is eligible for free allocation under this benchmark.

Figure 9 shows the situation discussed in this section.

Figure 9. Heat flows in an example of an integrated paper mill



Preliminary allocation

[17] "Where an installation encompasses sub-installations producing pulp (short fibre kraft pulp, long fibre kraft pulp, thermo-mechanical pulp and mechanical pulp, sulphite pulp or other pulp not covered by a product benchmark) exporting measurable heat to other technically connected sub-installations, the preliminary total amount of emission allowances allocated free of charge shall, without prejudice to the preliminary annual numbers of emission allowances allocated free of charge for other sub-installations of the installation concerned, only take into account the preliminary annual number of emission allowances allocated free of charge to the extent that pulp products produced by this sub-installation are placed on the market and not processed into paper in the same or other technically connected installations." (FAR Art. 16(6))

As a general rule, the preliminary allocation for an integrated paper mill will be based on the sum of the allocation for the two product benchmark sub-installations and the heat benchmark sub-installation. For the determination of the pulp product benchmark sub-installation, a special rule applies: The preliminary allocation for pulp product sub-installation A will be calculated based on the product benchmark for the pulp product and the historic activity level of pulp produced and placed on the market and not processed into paper in sub-installation B. As is the case with all product benchmark sub-installations, any heat produced and/or consumed within the boundaries of a pulp benchmark sub-installation, is included in the benchmark definition and therefore this heat will not receive any additional allocation under a heat benchmark sub-installation.

The preliminary allocation for paper product sub-installation B will be calculated based on the product benchmark for the paper product and the historic activity level of paper production. It will not receive any additional allocation for consumed heat as this is included in the product benchmark.

Heat benchmark sub-installation C will only receive allocation for the net measurable heat consumed at the installation outside the boundaries of the product benchmark sub-installations for pulp and paper and for the net measurable heat delivered to external non-ETS consumers (Entity E). Where any net measurable heat is exported to district heating it will receive allocation under a district heating sub-installation.

An overview of the preliminary allocation is given Table 9.

Carbon leakage exposure and CBAM factors

For both product benchmark sub-installations and the heat benchmark sub-installation(s), the respective carbon leakage exposure and CBAM factors have to be applied.

Table 9. Overview of preliminary allocation for an example case of an integrated paper mill with net measurable heat flows both within and across its boundaries

Sub-installation	Preliminary allocation
Preliminary allocation to pulp product sub-installation A	*The part of the pulp produced in sub-installation A that is transferred to paper sub-installation B is not eligible for allocation.* *All heat consumed in sub-installation A, even if produced outside of its boundaries, is included in the benchmark definition, therefore this* sub-installation does not receive any additional allowances for the production or consumption of heat
	Allocation is given to the pulp product sub-installation based on the respective pulp benchmark, but (except in the case of the recovered paper pulp benchmark) <u>only</u> for the production of pulp that is put on the market and not processed into paper in sub-installation B. $F_{P,preliminary} = BM_P \times HAL_{P\ export} \times CLEF_P \times CBAM_P$ *Allocation = Product Benchmark x amount of produced pulp placed on market x Carbon leakage exposure factor of pulp production x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the pulp producing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) $HAL_{P,\ export}$: the historical activity level related to the production of <u>pulp that is placed on the market and not processed in sub-installation B</u> (expressed in tonne/year) $CLEF_P$: carbon leakage exposure factor of pulp production $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark
Preliminary allocation to paper product sub-installation B	Allocation is given to the paper product sub-installation based on the respective paper benchmark. $F_{P,preliminary} = BM_P \times HAL_P \times CLEF_P \times CBAM_P$ *Allocation = Product Benchmark x amount of Product produced x Carbon leakage exposure factor of paper production x Carbon border adjustment mechanism factor* where: $F_{P,preliminary}$: annual preliminary allocation to the paper producing sub-installation (expressed in EUA/year) BM_P: product benchmark (expressed in EUA/tonne) HAL_P: the product-related historical activity level (expressed in tonne/year) $CLEF_P$: carbon leakage exposure factor of paper production $CBAM_P$: carbon border adjustment mechanism factor for the product benchmark The sub-installation does not receive any additional allowances for the production or consumption of heat.

<table>
<tr><th>Sub-installation</th><th>Preliminary allocation</th></tr>
<tr><td>Preliminary allocation to heat consuming sub-installation C</td><td>
Where heat is consumed inside the installation <u>and</u> outside the boundaries of all product benchmark sub-installations:

$$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$
Allocation = Heat Benchmark x net measurable heat consumed outside boundaries of product benchmarks x Carbon leakage exposure factor of the heat consuming process x Carbon border adjustment mechanism factor of heat consumer

where:
$F_{H,preliminary}$: annual preliminary allocation to the heat importing sub-installation (expressed in EUAs/year)
BM_H: heat benchmark (expressed in EUAs/TJ)
$HAL_{H,total}$: the net measurable heat-related historical activity level (expressed in TJ/year); i.e., the median of over the baseline of the annual net measurable heat consumption outside the boundaries of product benchmark
$CLEF_H$: carbon leakage exposure factor of the heat consuming process
$CBAM_H$: carbon border adjustment mechanism factor of the heat consuming sub-installation
</td></tr>
<tr><td></td><td>
Where heat is exported to an external ETS consumer D:

The exporting sub-installation receives no allocation for heat exported to ETS consumers.
</td></tr>
<tr><td></td><td>
Where heat is exported to a non-ETS entity (other than for district heating):

The net measurable heat exported to non-ETS entities is taken into account in the historical activity level of the heat exporting sub-installation:

$$F_{H,preliminary} = BM_H \times HAL_H \times CLEF_H \times CBAM_H$$
Allocation = Heat Benchmark x amount of net exported measurable Heat x Carbon leakage exposure factor x Carbon border adjustment mechanism factor of heat consumer

where:
$F_{H,preliminary}$: annual preliminary allocation to the heat exporting sub-installation (expressed in EUAs/year)
BM_H: heat benchmark (expressed in EUAs/TJ)
HAL_H: the net measurable heat-related historical activity level (expressed in TJ/year); i.e., the annual median of historical net measurable heat produced and exported to non-ETS entities over the baseline period, unless used for electricity production or district heating.
$CLEF_H$: by default, the values to be used for the carbon leakage exposure factor $CBAM_H$: and for the carbon border adjustment mechanism factor are non-carbon leakage and non-CBAM, unless the heat exporter provides evidence that it exports heat to a non-ETS entity that is either carbon leakage non-CBAM, or carbon leakage CBAM.
</td></tr>
</table>

Sub-installation	Preliminary allocation
	*Where heat is **exported** for district heating, the exporting ETS installation receives allocation under a district heating sub-installation:* If heat is exported to district heating, then an additional district heating benchmark sub-installation would be needed (not shown in Figure 9). Allocation to that additional sub-installation would take into account the historical activity level of the district heating sub-installation. $$F_{DH,preliminary} = BM_H \times HAL_{DH} \times CLEF_{DH}$$ *Allocation = Heat Benchmark x amount of net exported measurable Heat x Carbon leakage exposure factor* where: $F_{DH,preliminary}$: annual preliminary allocation to the district heat exporting sub-installation (expressed in EUAs/year) BM_H: heat benchmark (expressed in EUAs/TJ) HAL_{DH}: the district heating-related historical activity level (expressed in TJ/year); i.e., the median of annual net measurable heat produced and exported for district heating. $CLEF_{DH}$: the carbon leakage exposure factor district heating is used.
Preliminary allocation to External ETS Consumer D	*The allocation to an ETS installation which imports heat from another ETS installation that includes a pulp benchmark sub-installation is the same as import from any other ETS installation: the free allocation goes to the importing installation. See section 3.1 for the preliminary allocation calculation in this case.*
Preliminary allocation to non-ETS entity E	*Non-ETS entities cannot receive free allocation.*