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Guidance Document n°5
on the harmonized free allocation methodology for the EU-ETS
post 2012

Guidance on carbon leakage

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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 new allocation methodology for Phase III of the EU ETS (post 2012) established by the Decision of the Commission 2011/278/EU on “Transitional community-wide and fully harmonised implementing measures pursuant to Article 10a(1) of the EU ETS Directive” (CIMs) and developing the National Implementation Measures (NIMs).

The guidance does not represent an official position of the Commission and is not legally binding.

This guidance document is based on a draft provided by a consortium of consultants (Ecofys NL, Fraunhofer ISI, Entec). It takes into account the discussions within several meetings of the informal Technical Working Group on Benchmarking under the WGIII of the Climate Change Committee (CCC), as well as written comments received from stakeholders and experts from Member States. It was agreed that this guidance document reflects the opinion of the Climate Change Committee, at its meeting on 14 April 2011.

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 CIM Guidance Documents

Specific topics were identified within the CIMs which deserve further explanation or guidance. The CIM guidance documents intend to address these issues as specific and clear as possible. The Commission considers it necessary to achieve the maximum level of harmonisation in the application of the allocation methodology for phase III.

The CIM guidance documents aim at achieving consistency in the interpretation of the CIMs, to promote harmonisation and prevent possible abuse or distortions of competition within the Community. The full list of those documents is outlined below: In particular:

- Guidance document n. 1 – general guidance: this guidance gives a general overview of the allocation process and explains the basics of the allocation methodology.
- Guidance document n. 2 – guidance on allocation methodologies: this guidance explains how the allocation methodology works and its main features.

- Guidance document n. 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 EC.
- Guidance document n. 4 – guidance on NIMs data verification: this guidance explains the verification process concerning the data collection for the National Implementation Measures¹.
- Guidance document n. 5 – guidance on carbon leakage: it presents the carbon leakage issue and how it affects the free allocation calculation.
- Guidance document n. 6 – guidance on cross boundary heat flows: it explains how the allocation methodologies work in case of heat transfer across the 'boundaries' of an installation.
- Guidance document n. 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 n. 8 – guidance on waste gas and process emission sub-installation: this document provides for explanation of the allocation methodology concerning process emission sub-installation, in particular, concerning the waste gas treatment.
- Guidance document n. 9 – sector specific guidance: this guidance provides for detailed description of the product benchmarks as well as the system boundaries of each of the product benchmarks listed within the CIMs.

This list of documents is intended to complement other guidance papers issued by the European Commission related to Phase III 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 EU ETS Directive and to the CIMs.

1.3 Use of the Guidance documents

The guidance documents give guidance on implementing the new allocation methodology for Phase III of the EU ETS, as from 2013: the Member States may use this guidance when they perform the data collection pursuant to Article 7 of the CIMs 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.

¹ Article 11 of Directive 2003/87/EC

1.4 Scope of this guidance document

This general guidance document explains the main principles and processes of the new allocation methodology, 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

Next to the guidance documents, additional support to the Member State authorities is provided in the form of a telephone helpdesk, and the EC-website, with list of guidance documents, FAQs and useful references,

http://ec.europa.eu/clima/policies/ets/benchmarking_en.htm .

2 Objective

The objective of this document is to provide guidance on the allocation of allowances to sectors deemed to be at risk and not at risk of carbon leakage in response to Directive 2009/29/EC (amending Directive 2003/87/EC, on the EU Emissions Trading System (EU ETS) Directive) and Decision 2010/2/EU. This document outlines how allocations will be calculated based on exposure to carbon leakage.

Sectors deemed to be at risk of carbon leakage are those sectors that may suffer a material competitive disadvantage against competitors located in areas outside the EU which do not have similar emission reduction commitments, which could in turn lead to an increase in greenhouse gas emissions. The Commission Decision determining a list of sectors and sub-sectors deemed to be exposed to a significant risk of carbon leakage (the “carbon leakage list”) was approved by Member States in 2009². The assessment was based on NACE and PRODCOM codes of sectors, subsectors and products and it identified 164 sectors deemed to be at risk. This will be referred to in this document as the carbon leakage list.

NACE codes are 4-digit codes used to classify which specific sector an installation belongs to, based on the activities carried out. The codes are taken from the Classification of Economic Activities in the European Community. Version 1.1 of NACE³ should be used for the determination of the carbon leakage status. The PRODCOM code is an 8-digit code and stands for the PROducts of the European COMMunity Inquiry. It is a survey of manufactured products governed by an EU Regulation (3924/91). The product definitions are standardised across the EU to give comparability between Member States’ data and the production of European aggregates at product level. There is a direct relationship between the NACE and PRODCOM codes and the first 4 digits of the PRODCOM code match the 4 digits of the NACE v1.1 code. It is important to note the 2007 version of PRODCOM codes⁴ should be used as this relates to NACE v1.1.

² 2010/2/EU: Commission Decision of 24 December 2009 determining, pursuant to Directive 2003/87/EC of the European Parliament and of the Council, a list of sectors and subsectors which are deemed to be exposed to a significant risk of carbon leakage. Available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:001:0010:0018:EN:PDF>

³

http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_1_1&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

⁴

http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=PRD_2007&StrLanguageCode=EN&IntPcKey=&StrLayoutCode=HIERARCHIC

The aim of identifying sectors deemed to be at risk of carbon leakage is to ensure that free allowances can be distributed appropriately to maintain competitiveness amongst European industries to avoid an increase in emissions.

3 Approach

3.1 General rules

Under the revised EU ETS, which will apply from 2013, installations in sectors deemed to be exposed to a risk of carbon leakage will receive up to 100% of the allowances free of charge at the level of a benchmark. Sectors not deemed at risk of carbon leakage will instead receive 80% of their allowances free of charge at the level of a benchmark and this proportion will decrease to 30% in 2020 and 0% in 2027. The Commission determined the list in 2009 and will determine new ones every five years thereafter. The agreed list will apply until 2014. Sectors can be added to the carbon leakage list during phase 3 (2013-2020) on an annual basis if they meet the quantitative or qualitative criteria defined in article 10a. Sectors cannot be removed from the list before 2014. A new list of sectors will apply for the period 2015-2019. Another list will apply for the year 2020. Member States' Competent Authorities are required to update, within 3 months, their National Implementing Measures NIMs based on any changes to the list of sectors and resubmit this to the Commission⁵.

Free allowances will, in principle, be allocated based on product-specific benchmarks for each relevant product as listed in Annex I and II of the CIM. Allocation for eligible emissions not covered by the product benchmarks shall be calculated via the fall back approaches (heat benchmark, fuel benchmark or grandfathering process emissions)⁶.

The calculation of the preliminary allocation of free allowances includes multiplication by a carbon leakage exposure factor (see Table 2.1). For the sectors included in the carbon leakage list, this carbon leakage exposure factor will be 1 (100%), whereas for other sectors the factor will be a decreasing factor: 0.80 in 2013 and reducing linearly each year to 0.30 in 2020 (see Table 3-1). This means that all sectors will receive free allowances based on a benchmark, and therefore only the most efficient installations will receive the highest share of allowances for free. The carbon leakage exposure factor is applied at sub-installation level.

⁵ This new list might be based on other versions of the NACE and PRODCOM codes than the ones used for the 2013/2014 list.

⁶ For more information on allocation rules see Guidance Document 2.

Table 3-1– Carbon leakage exposure factors

Year	2013	2014	2015	2016	2017	2018	2019	2020
Exposure factor (EF) for significant carbon leakage (CL) risk	1	1	1	1	1	1	1	1
EF for no significant CL risk ⁷	0.8000	0.7286	0.6571	0.5857	0.5143	0.4429	0.3714	0.3000

3.2 Carbon leakage factors applied to product benchmarks

A product benchmark sub-installation deemed at risk of carbon leakage would apply the following formulae to calculate the preliminary allocation for that sub-installation:

Table 3-2 Sub-installation at risk

Year	Formula
2013	Allowances sub-installation 1= HAL x Prod BM x 1
2014	Allowances sub-installation 1= HAL x Prod BM x 1
2015	Allowances sub-installation 1= HAL x Prod BM x 1
2016	Allowances sub-installation 1= HAL x Prod BM x 1
2017	Allowances sub-installation 1= HAL x Prod BM x 1
2018	Allowances sub-installation 1= HAL x Prod BM x 1
2019	Allowances sub-installation 1= HAL x Prod BM x 1
2020	Allowances sub-installation 1= HAL x Prod BM x 1

Where:

HAL = Historical Activity Level

Prod BM = Benchmark value for the Product manufactured in sub-installation 1

⁷ The values of EF_{i,k} in the non exposed case for each year k (from 2013 up to 2020) are calculated as:
 $EF_{i,k} = 0.5/7 * (2020 - k) + 0.3$

Whereas a sub-installation not deemed at risk of carbon leakage would apply the following formulae across 2013 -2020:

Table 3-3 Sub-installation not at risk

Year	Formula
2013	Allowances sub-installation 2 = HAL x Product BM x 0.8
2014	Allowances sub-installation 2 = HAL x Product BM x 0.7286
2015	Allowances sub-installation 2 = HAL x Product BM x 0.6571
2016	Allowances sub-installation 2 = HAL x Product BM x 0.5857
2017	Allowances sub-installation 2 = HAL x Product BM x 0.5143
2018	Allowances sub-installation 2 = HAL x Product BM x 0.4429
2019	Allowances sub-installation 2 = HAL x Product BM x 0.3714
2020	Allowances sub-installation 2 = HAL x Product BM x 0.3

Where:

HAL = Historical Activity Level

Prod BM = is the benchmark value for the Product manufactured in sub-installation 2

To calculate the amount of allowances for benchmarked products, the carbon leakage list is used, so for example, if the product is on the list (i.e. the NACE code or the PRODCOM code is on the list) the factor to use is 1, if not, the declining factor given in Table 3-1 is to be used. Version 1.1 of NACE shall be used and consequently for PRODCOM the 2007 version that is related to NACE revision 1.1. For clarity, the relevant carbon leakage exposure status for product benchmarks is also given in the CIM in Annex I.

3.3 Carbon leakage factors applied to fall-back approaches

When heat and fuel benchmarks, and allocation based on historical emissions are involved, the process is the same. The carbon leakage exposure factor to use depends on whether or not the heat, fuel or process emissions are associated with a process to manufacture a product included in the carbon leakage list. If the product

manufactured is on the list the factor to use is 1 across all years, otherwise the declining factor is to be used.

When a sub-installation exports heat to another installation, more attention is needed. In the case that a sub-installation exports heat to an ETS plant, the carbon leakage status of the heat-importing ETS plant is applied. This can be derived from the carbon leakage list depending on the product(s) that the importing plant manufactures. It is important to define the carbon leakage status of the installation receiving the heat because, under the CIMs, allowances are given to heat consumers, unless the importing installation is not in the ETS in which case the allowances are given to the producer of the heat⁸.

If a sub-installation exports heat to a non ETS plant, the carbon leakage status of the importing installation is assumed to be not at risk by default, unless the “at risk” status of the importing installation not in the EU ETS can be proven and the relevant documentation is included in the data collection report. The Competent Authorities need to review these documents and accept them before the formula can be changed.

A more practical example of how the allowances are calculated and distributed between the various operators is given in the case study in the next chapter.

3.4 The “de minimis rule”

Following Art 10(5) of the CIMs when dealing with fall back approaches, if there are two carbon leakage statuses in one installation for each fall back approach, the CIMs foresee a possible method for simplifying the data collection if one activity level can be considered as "dominant".

More specifically, when at least 95% of the historical activity level of the heat benchmark sub-installation, of the fuel benchmark sub-installation, or of the process emissions sub-installation serves sectors or subsectors deemed to be exposed to a significant risk of carbon leakage, the sub-installation as a whole is deemed to be exposed to a significant risk of carbon leakage.

The reverse is also true and the whole installation is deemed not exposed to a significant risk of carbon leakage. In both cases it is not necessary to determine the allocation for the remaining 5% of emissions separately.

As the historical activity level is based on the median value over the baseline period, this “de minimis” rule will apply to this median value, regardless of whether the 95% rule held true every year of the baseline period or not.

⁸ For more information about the allocation procedure in case of heat flows, please refer to the Guidance Note n°6 on “Cross-boundary heat flows”.

4 Case study: Installation without product benchmarks and with different Carbon Leakage status

In the example treated here the installation produces three products: A, B, and C. The NACE code or PRODCOM code (these are more disaggregated than the NACE codes) is then checked against the list of products deemed at risk of carbon leakage.

To put this into a practical example, it is assumed that the installation produces crude soy bean oil (Product A, Prodcom 15411210), crude rape seed oil (Product B, Prodcom code 15411260) and refined soy bean oil (Product C, Prodcom code 15421110). The first 4 digits of the codes are 1541 for the crude oils and 1542 for the refined oil. By checking these digits against the carbon leakage list, it is revealed that the 1541 NACE code is on the list whereas the 1542 is not. Furthermore, Prodcom codes under 1542 are not listed under "1.4. BEYOND NACE-4 LEVEL BASED ON THE QUANTITATIVE CRITERIA SET OUT IN PARAGRAPHS 15 AND 16 OF ARTICLE 10a OF DIRECTIVE 2003/87/EC". This means that the products associated with the 1541 code are deemed to be exposed to a significant risk of carbon leakage (these are crude soy bean oil and crude rape seed oil), but not the product associated with code 1542 (refined soy bean oil).

This is summarised in the figure below where products A and B are deemed to be exposed to a significant risk of carbon leakage, and product C is not.

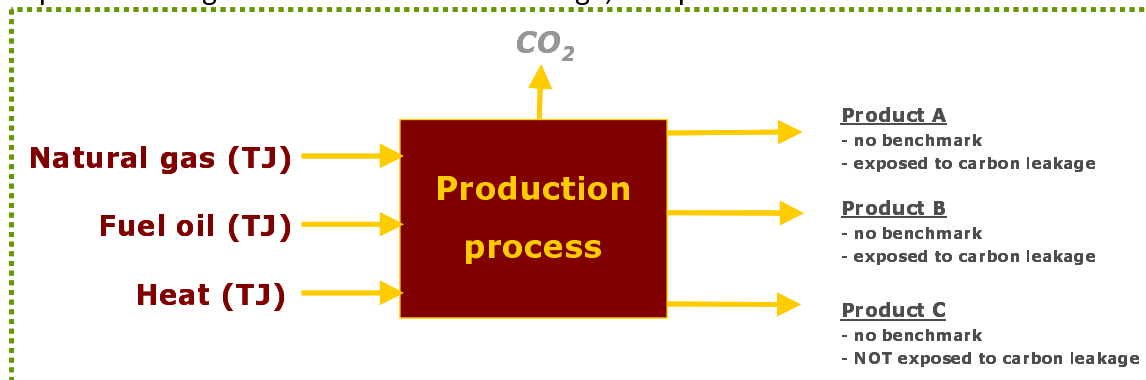


Figure 1 Installation producing both products deemed to be exposed and not exposed to carbon leakage

Since the products A, B, and C do not have a product benchmark applicable, the fall-back approaches are to be used. Since no process emissions arise, only heat and fuel benchmarks are taken into consideration. As the carbon leakage status is not the same for all the products, there will be four sub-installations in total, as listed below:

- Sub-installation 1: Heat benchmark for products deemed exposed to Carbon Leakage (products A and B);

- Sub-installation 2: Heat benchmark for products not deemed exposed to Carbon Leakage (product C);
- Sub- installation 3: Fuel benchmark for products deemed exposed to Carbon Leakage (products A and B);
- Sub-installation 4: Fuel benchmark for products not deemed exposed to Carbon Leakage (product C).

Only fuel which is not used to produce measurable heat will be included in sub-installations 3 and 4.

To determine if all four sub-installations are effectively needed, the 95% rule is applied. The HALs of the heat benchmark sub-installations and the HALs of the fuel benchmark sub-installations are calculated and compared to the total.

Explanatory box:

If the data to determine what proportion of measurable heat, fuel or emissions is attributed to products deemed and not deemed to be exposed is not available, the outputs, inputs and emissions will be proportionally attributed to the relevant product. This means that in case a product is deemed to be at risk of carbon leakage (e.g. Casein) but the manufacturing process for the product includes the manufacture of intermediate products or by-products that are not deemed to be at risk of carbon leakage, relevant data shall be split in order to correctly attribute the carbon leakage status to the relevant process concerned. In case of lack of data, proxy data and estimates (e.g. % values, as allowed by the data collection template) may be used, always supported by evidence provided by the operator.

If the median of the heat consumed to produce products A and B is at least 95% of the total heat consumed in the installation, there will be only one heat sub-installation, including the total heat consumed, which will be deemed exposed to carbon leakage. If it is lower than 5% there will also be only one heat sub-installation including the total heat consumed in the installation, but which will be deemed not exposed to carbon leakage.

Similarly if the median of the fuels combusted to produce products A and B is higher than 95% compared to the fuels combusted in the whole installation, then there will be only one fuel sub-installation, including the total amount of fuel combusted in the installation and deemed at risk of carbon leakage. If, on the contrary it is lower than 5%, there will be only one fuel sub-installation, including the total amount of fuel combusted in the installation and deemed not at risk of carbon leakage.

For the purpose of this exercise it is assumed that in both sub-installations the HALs are lower than 95% and therefore all four subinstallations identified are applicable.

When calculating the allowances the formulae to be used in each sub-installation would be the following:

- Sub-installation 1: Preliminary Allocation = $BM_h \times HAL_h(A+B) \times CLEF(\text{exposed})$
- Sub-installation 2: Preliminary Allocation = $BM_h \times HAL_h(C) \times CLEF(\text{not exposed})$
- Sub-installation 3: Preliminary Allocation = $BM_f \times HAL_f(A+B) \times CLEF(\text{exposed})$
- Sub-installation 4: Preliminary Allocation = $BM_f \times HAL_f(C) \times CLEF(\text{not exposed})$

Where:

BM_h = Benchmark value for heat

$HAL_h(A+B)$ = Historical measurable net heat consumption for the production of A and B

$HAL_h(C)$ = Historical measurable net heat consumption for the production of C

BM_f = Fuel benchmark value

$HAL_f(A+B)$ = Historical consumption of fuel for the production of A and B

$HAL_f(C)$ = Historical consumption of fuel for the production of C

$CLEF$ = Carbon leakage exposure factor (1 for products deemed exposed to carbon leakage; declining factor from 0.8 to 0.3 for products deemed not exposed to carbon leakage).

Therefore the preliminary allocation for sub-installations 1 and 3 will be for all years:

- Sub-installation 1: Preliminary Allocation = $BM_h \times HAL_h(A+B) \times 1$
- Sub-installation 3: Preliminary Allocation = $BM_f \times HAL_f(A+B) \times 1$

And the preliminary allocation for sub-installations 2 and 4 will be:

In 2013:

- Sub-installation 2: Preliminary Allocation = $BM_h \times HAL_h(C) \times 0.8$
- Sub-installation 4: Preliminary Allocation = $BM_f \times HAL_f(C) \times 0.8$

In 2014:

- Sub-installation 2: Preliminary Allocation = $BM_h \times HAL_h(C) \times 0.7286$
- Sub-installation 4: Preliminary Allocation = $BM_f \times HAL_f(C) \times 0.7286$

And so on, until 2020, where it will be:

- Sub-installation 2: Preliminary Allocation = $BM_h \times HAL_h(C) \times 0.3$
- Sub-installation 4: Preliminary Allocation = $BM_f \times HAL_f(C) \times 0.3$