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Department of Agriculture, Environment and Rural Affairs
An Roinn Talmhaíochta, Comhshaoil agus Gnóthaí Tuaithe
Depairtment o' Fairmin, Environment an' Kintra Matthers
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UK Emissions Trading Scheme

Free Allocation Review: Carbon Leakage Consultation

A joint consultation of the UK Government, the Scottish Government, the Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland

Closing date: 10 March 2025

December 2024

Any enquiries regarding this publication should be sent to us at:
ukets.consultationresponses@energysecurity.gov.uk

Contents

General information

Why we are consulting

The UK Emissions Trading Scheme (UK ETS) Authority (UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland, hereinafter 'the Authority') is seeking views on a number of proposals to improve our approach to Free Allocations; specifically, our approach to calculating the Carbon Leakage Indicator (CLI) and setting the Carbon Leakage List, and the approach to adjusting Free Allocations for Carbon Border Adjustment (CBAM) sectors.

We have committed to better target Free Allocations for sectors most at risk of carbon leakage ahead of the next allocation period, and to tailor this to the UK context. The Authority has since announced that the next allocation period will now commence in 2027. This consultation seeks views on proposals to meet commitments to make any changes deemed appropriate to the Free Allocation methodology ahead of the next allocation period.

Consultation details

Issued: 16 December 2024

Respond by: 10 March 2025

Enquiries to:

Emissions Trading,
Department for Energy Security and Net Zero
3rd Floor
3-8 Whitehall Place
London
SW1A 2EG

Email: ukets.consultationresponses@energysecurity.gov.uk

Consultation reference: UK ETS Free Allocation Review

Audiences:

This consultation will be of particular interest to individual companies and representatives of industrial and power sectors with obligations under the UK ETS, and environmental groups. This consultation is not limited to these stakeholders; any organisation or individual is welcome to respond. (To note, this consultation does not apply to NI electricity generators who participate in the EU ETS by virtue of the Windsor Framework.)

Territorial extent:

This consultation relates to proposals to develop the UK ETS, which operates across England, Scotland, Wales and Northern Ireland. This is a joint consultation, published by the UK

Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland.

How to respond

Respond online at: https://energygovuk.citizenspace.com/energy-markets/ukets-far-carbon-leakage

or

Email to: ukets.consultationresponses@energysecurity.gov.uk

Write to:

Emissions Trading

Department for Energy Security and Net Zero

3rd Floor

3-8 Whitehall Place

London

SW1A 2EG

When responding, please state whether you are responding as an individual or representing the views of an organisation.

Your response will be most useful if it is framed in direct response to the questions posed, though further comments and evidence are also welcome.

Confidentiality and data protection

Information you provide in response to this consultation, including personal information, may be disclosed in accordance with UK legislation (the Freedom of Information Act 2000, the Data Protection Act 2018 and the Environmental Information Regulations 2004).

Consultation responses will be shared across the Authority.

If you want the information that you provide to be treated as confidential please tell us, but be aware that we cannot guarantee confidentiality in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not be regarded by us as a confidentiality request.

We will process your personal data in accordance with all applicable data protection laws. See our privacy policy.

We will summarise all responses and publish this summary on GOV.UK. The summary will include a list of names or organisations that responded, but not people's personal names, addresses or other contact details.

Quality assurance

This consultation has been carried out in accordance with the government's consultation principles.

If you have any complaints about the way this consultation has been conducted, please email: bru@energysecurity.gov.uk.

Introduction

Background

Free Allocation of UK ETS allowances is the primary policy instrument through which carbon leakage risk is currently addressed in the UK. The provision of free UK ETS allowances means that an operator needs to buy fewer allowances to cover their emissions; in effect, reducing the carbon price they pay and mitigating the risk of carbon leakage. The incentive to decarbonise is maintained as, in general, recipients of Free Allocation that decarbonise keep any surplus Free Allocations[1]. They can sell these on the secondary market to their benefit.

Free Allocations are calculated using the following equation[2]:

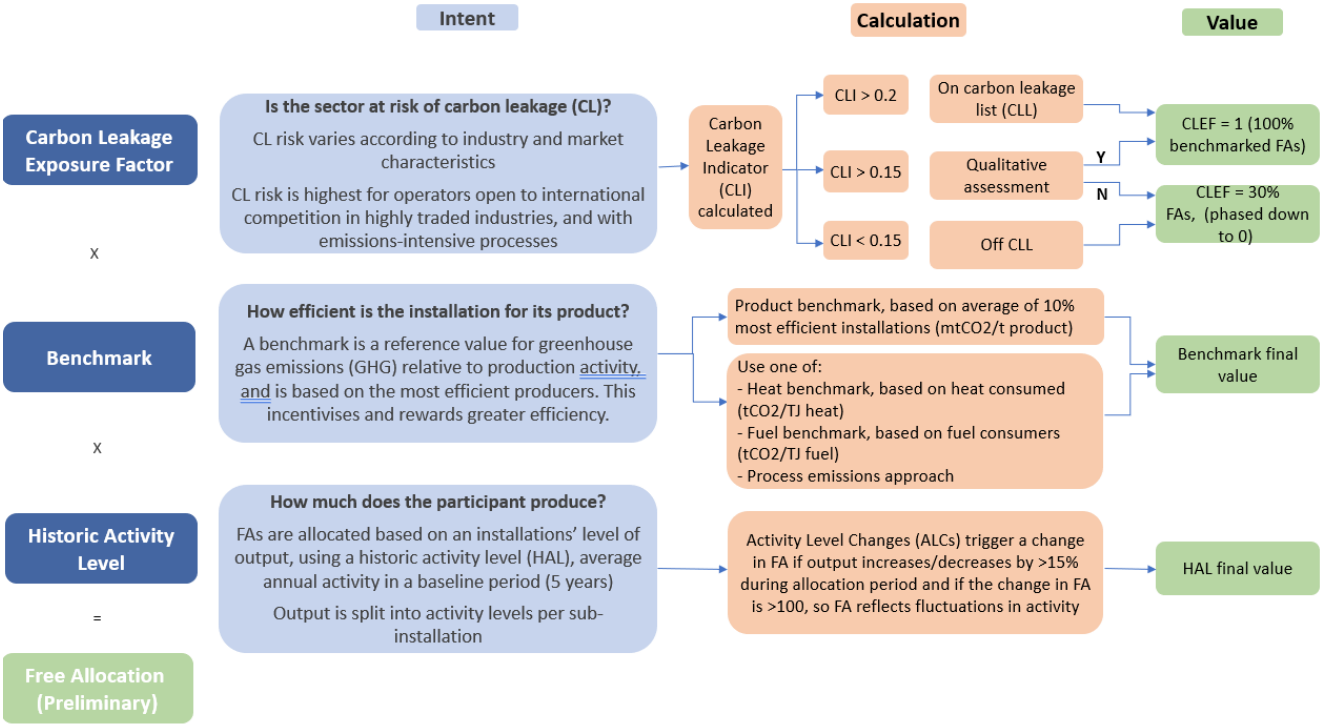

Figure 1: How Free Allocations are calculated

Our current approach to Free Allocations for stationary installations under the UK ETS prioritised continuity for operators and largely carried over methodology from the EU ETS Phase IV. The Authority launched a review into Free Allocation policy in 2021 with a call for evidence[3], with the aim to ensure Free Allocation policy is working effectively in the UK context to both incentivise emissions reduction and protect energy intensive, trade exposed industries from the risk of carbon leakage. We have carried out this review in a phased approach:

[1] This process works differently for sectors who move to a new benchmark.
[2] The Carbon Leakage List is contained in EUR 2019/708 https://www.legislation.gov.uk/eudn/2019/708/contents. Benchmarks are set out in Annex 8 to EUR 2019/331 https://www.legislation.gov.uk/eur/2019/331/contents
[3] https://assets.publishing.service.gov.uk/media/60507ae48fa8f505bfdac4d6/uk-ets-call-for-evidence.pdf

- The first phase focused on the share of Free Allocations under the cap available to be given out for free[4].
- The second phase focused on the methodology for calculating, and distributing, Free Allocations.

This consultation will consider updated Carbon Leakage Indicator (CLI) values based on UK industry carbon leakage risk, building on proposals made in the Free Allocation Review consultation[5] which closed in March 2024. Other proposals from the previous consultation around how activity levels are treated, potential updates to benchmarking, consideration of whether or not to introduce tiering or other additional methodologies to account for access to decarbonisation technologies or conditionality, as well as other technical changes to free allocation rules, are still under consideration by the UK ETS Authority. Further information on the full timeline for the Free Allocation Review can be found in Figure 2 on page 12.

In light of the UK Government's announcement that a Carbon Border Adjustment Mechanism (CBAM) will be introduced in 2027[6], this consultation also covers proposals on how Free Allocations should be adjusted for CBAM sectors. Further information on the UK CBAM can be found in Chapter Two of this consultation.

This consultation

Purpose of this consultation

The Authority previously consulted on the current methodology for distributing Free Allocation. This consultation is seeking stakeholder views on whether to introduce a Carbon Leakage List formulated using UK-specific data, or if retaining the current list would be preferred. If the Authority does decide to amend the Carbon Leakage List, this would be in force from the second allocation period. The second allocation period will begin in 2027, aligned with the introduction of the CBAM, therefore we are also seeking views on how Free Allocations for CBAM covered sectors should be adjusted.

Proposals in this consultation

This consultation includes a preliminary updated Carbon Leakage List for industries across the UK, based on UK-specific data, the draft list can be found on page 25.

This has been based on a proposed method including a number of elements, which we describe throughout this consultation:

- Our approach to the Carbon Leakage Indicator (CLI) equation;
- The data sources used to calculate the CLI;

[4] Developing the UK Emissions Trading Scheme (UK ETS), https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets, published 25 March 2022

[5] UK Emission Trading Scheme: Free Allocation Review, https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review, published 18 December 2023

[6] https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation/outcome/factsheet-uk-carbon-border-adjustment-mechanism

- How to measure trade intensity and emissions intensity; and
- The CLI thresholds determining eligibility for Free Allocations.

For the current Carbon Leakage List[7] the sectoral risk of carbon leakage was assessed in two stages. The first stage was a quantitative assessment that assigned each sector a CLI. This quantitative assessment used the following calculation on a sector-by-sector basis:

CLI = Trade Intensity x Emissions Intensity

The current Carbon Leakage List is assessed on a binary approach primarily based on an industry's CLI score, with indicators above 0.2 automatically joining the List. Sectors on the Carbon Leakage List, deemed at risk of carbon leakage, currently receive a Carbon Leakage Exposure Factor (CLEF) of 1, and so receive 100% of their benchmarked Free Allocations. Those not on the Carbon Leakage List, with a score below 0.2, currently receive a CLEF of 0.3, and so have their benchmarked Free Allocations multiplied by this amount. Under current legislation, industries not on the Carbon Leakage List will have their CLEF value phased out from 0.3 to zero by 2030, although this phase out speed is subject to this consultation[8].

In December 2023 we consulted on proposals to tier the Carbon Leakage List and Cross-Sectoral Correction Factor (CSCF)[9]. Policy development and Authority response for these proposals is continuing in parallel to this consultation. The proportion of Free Allocations that sectors on the Carbon Leakage List are entitled to in the next period remains subject to the Authority response to this consultation, which we expect to publish by the end of 2025. The indicator values presented on page 25 can be used to update the Carbon Leakage List through the existing binary on/off approach or by tiering the list to better target those most at risk of carbon leakage, depending on the outcome of the Free Allocation Review consultation. The Authority is considering responses to the question of ways in which the Carbon Leakage List could be tiered.

Sectors deemed at risk of carbon leakage based on the Carbon Leakage List will be subject to a further adjustment of their Free Allocations following the introduction of the UK CBAM in 2027, should their sector be covered by the policy. This consultation seeks views on the methodology for the adjustment, including:

- Parameters of the adjustment;
- Extent of the adjustment;
- Technical implementation of the adjustment; and
- Assessment criteria to determine the final adjustment methodology.

The Free Allocation Review timeline in Figure 2 demonstrates our timings for future publications. The Authority will make best endeavours to announce changes to Free Allocations as soon as is practicably possible[10].

[7] https://www.legislation.gov.uk/eu-origin/2019/708
[8] There are some exceptions to these rules. For example, most electricity generators do not receive FA under the UK ETS
[9] https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review
[10] The Baseline Data Reporting Exercise and Free Allocation application window is where industrial participants in the scheme submit their activity and emissions data covering the baseline reporting period (2019-2023 for the second allocation period) and apply for Free Allocations.

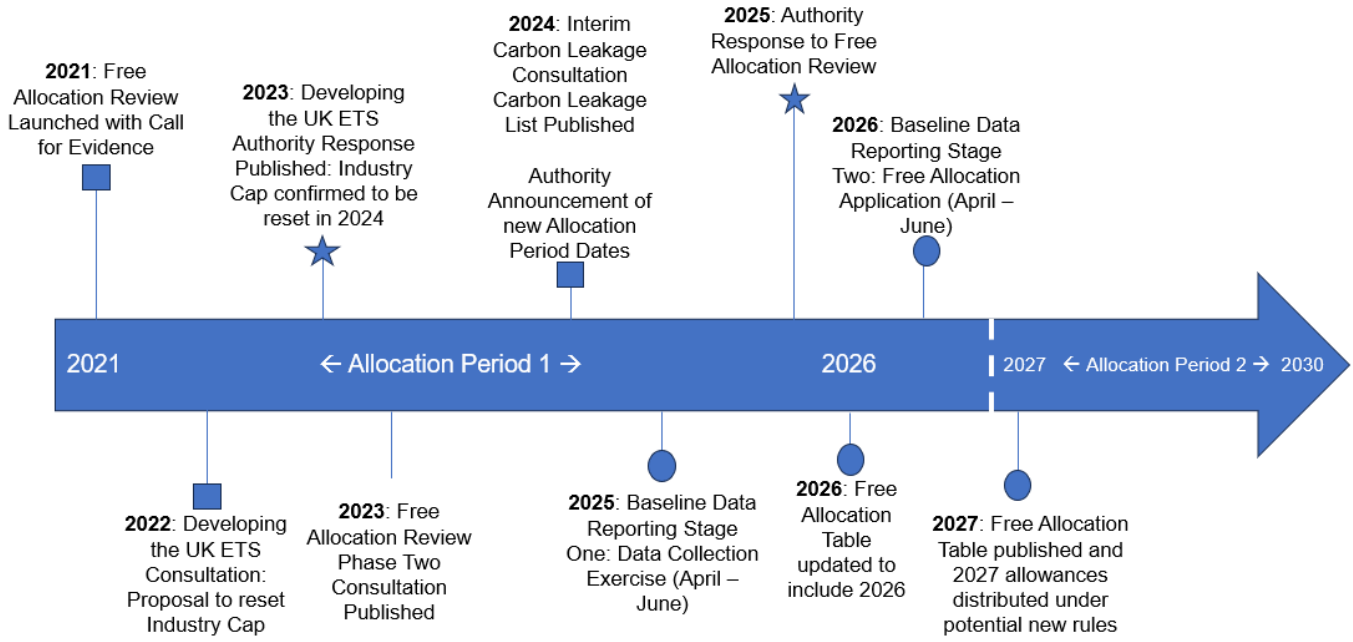

Figure 2: Free Allocation Review timeline

The Authority will consider the compatibility of Free Allocation policy with our net zero ambitions and the development of wider alternative carbon leakage policies as we make any future changes.

Some areas of the consultation may seek evidence to support responses. Where this is requested, we would encourage written evidence to be sent in to support further policy development. Written evidence will help the Authority in its future policy development, ensuring that final decisions take all available information into account.

Chapter 1: Carbon Leakage Indicators

Background

The Carbon Leakage List

The Carbon Leakage List is a list of industry sectors which are deemed to be at risk of carbon leakage. The UK ETS currently uses the EU ETS Phase IV Carbon Leakage List. The list defines the sectors at greatest risk of carbon leakage based on an assessment of both their emissions intensity and trade intensity.

Currently, those UK ETS industry sectors on the Carbon Leakage List receive a provisional allocation of 100% of their benchmarked Free Allocation as part of the preliminary Free Allocation stage (a CLEF of 1). Those industry sectors not on the Carbon Leakage List receive a provisional allocation of 30% of their benchmarked Free Allocation as part of the preliminary Free Allocation stage (a CLEF of 0.3) until the end of this allocation period, after which it will be reduced gradually to 0% by 2030.

The current approach to calculating a CLI, used for EU ETS Phase IV, is to use the following equation (as described on page 11):

CLI = Trade Intensity x Emissions Intensity[11]

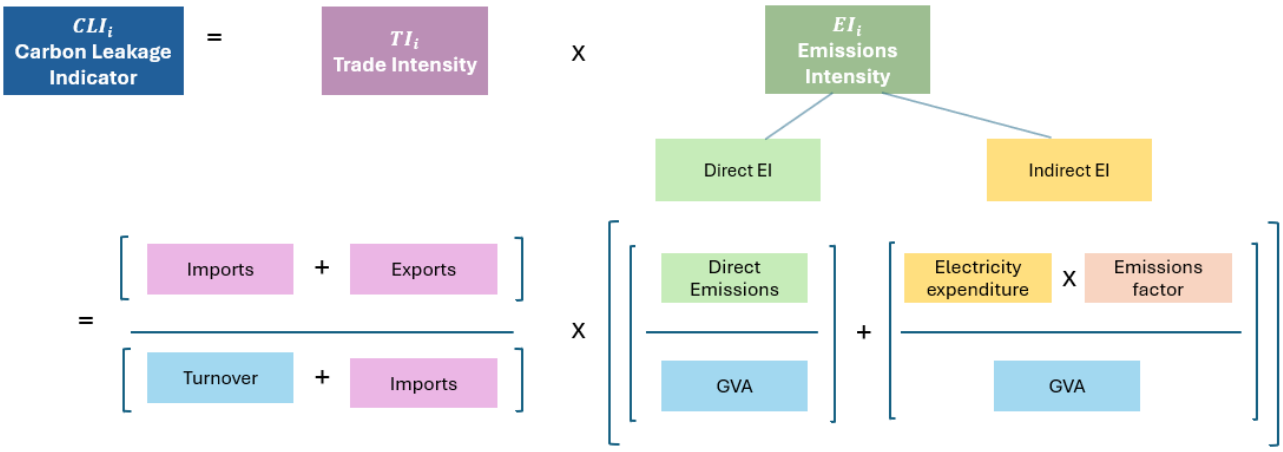

Figure 3: How the CLI is calculated

Summary of Free Allocation Review consultation proposals

This section summarises the consultation proposals on the CLI that were presented in the Free Allocation Review consultation, the questions asked, and the responses we received from

[11] Emissions intensity is the sum of estimated direct (i.e. on-site, combustion or process) emissions intensity and indirect (electricity consumption) emissions, per unit of economic output (here Gross Value Added (GVA)).

stakeholders. This is included here as it has been taken into account in the development of the policy proposals presented in the rest of the consultation.

Methodology

The Authority proposed that this approach and these variables are an accurate assessment of carbon leakage risk for the calculation of an installation's entitlement to Free Allocations, and stated a minded to position to maintain the current methodology for the CLI for the second allocation period.

Use of data

As part of our review into the Carbon Leakage List we also considered whether alternative data sources should be used to calculate the list. We presented several combinations of data sets which were tested against the following criteria:

- Accuracy in reflecting carbon leakage likelihood;
- A defensible methodology;
- Coverage of ETS sectors;
- Degree of UK focus;
- Availability of information; and
- Longevity of data sets.

We stated a minded to position to use UK data based on Office of National Statistics (ONS) supplemented by Annual Business Survey (ABS) and HM Revenue & Customs (HMRC) trade data. The data set compiled based on the sources listed above met all criteria.

Approach to not-at-risk sectors

The Authority stated a minded to position that a phase out date for sectors not at risk of carbon leakage should be brought forward to 2026[12], the date of the second allocation period at the time of consultation. This would remove Free Allocations for those sectors and instead target support at those with a greater risk. Removing Free Allocations for not-at-risk sectors would also help to mitigate the risk of triggering a Cross-Sectoral Correction Factor (CSCF)[13].

2023 Free Allocation Review consultation questions

12. Do you agree that the Carbon Leakage List should be updated to reflect UK industrial sectors' risk of carbon leakage? If you disagree, please explain how you think the Carbon Leakage List should be calculated in the future.

13. Do you agree that carbon leakage risk should continue to be calculated on the basis of emissions intensity and trade intensity, or are there other factors which you think the Authority should consider?

[12] This would now be under consideration for 2027 following the Authority's decision to change the dates of the second allocation period.
[13] If the total free allocations for all industrial operators is above the industry cap, then we reduce stationary installation's free allocation proportionately. This is known as the Cross Sectoral Correction Factor (CSCF).

14. ***Based on the data sets we have explored, do you agree with our approach to explore using UK data based on ONS, ABS and HMRC trade data? And, if this data set is found to be representative, do you agree that the Authority should use this to calculate the Carbon Leakage Indicator?***

15. ***Do you agree with the risks we have set out with the alternative data sets? If not, please provide evidence.***

16. ***Do you agree with our minded to position to bring forward the phase out date of the CLEF for those not on the Carbon Leakage List to 2026?***

Summary of responses

There were 58 responses to question 12, of which 50 (86%) agreed with the proposal to update the Carbon Leakage List to reflect UK industrial sectors' carbon leakage risk, while 8 (14%) disagreed. Of those who agreed with the proposal, across industry, power and NGOs, most stated that they believed in the principle that Free Allocations should be based on carbon leakage risk in the UK. Of those who disagreed, across industry and NGOs, the key themes were that eligibility for Free Allocations should align with the approach to the UK CBAM, which is based on the current Carbon Leakage List, whilst others cited that UK-EU alignment would be preferred over targeting UK carbon leakage risk.

There were 48 responses to question 13, of which 35 (73%) agreed with the proposal that carbon leakage risk should continue to be calculated on the basis of emissions intensity and trade intensity, 12 (25%) disagreed and 1 (2%) did not agree or disagree. Of those who agreed with the proposal, across industry, power and NGOs, the most cited theme was that these were the correct metrics to measure carbon leakage risk. Of those who disagreed, across industry and NGOs, many cited other factors which should be considered, including taking a sector-by-sector approach to assessing carbon leakage risk, aligning with the UK CBAM assessment, or the requirement for a second level qualitative assessment as well as the quantitative assessment. The reason cited by the respondent who did not agree or disagree with the proposal was that not enough information had been provided to give a view.

There were 41 respondents to question 14, of which 32 (78%) agreed with the minded to position to explore using UK data based on ONS, ABS and HMRC trade data to calculate carbon leakage risk, 5 (12%) disagreed with the proposal and 4 (10%) did not agree or disagree with the proposal. Of those who agreed, across industry, power and NGOs, most cited that we should continue to have a transparent process, including a further consultation point which included draft CLI values for comment. Those who disagreed with the proposal were the same respondents who opposed the update of the Carbon Leakage List (Q12), citing the same reasoning. Those who did not agree or disagree with the proposal stated that not enough information had been provided to give a view.

There were 30 respondents to question 15, of which 22 (73%) agreed with the risks that the Authority set out with the alternative data sets, 6 (20%) disagreed and 2 (7%) did not agree or disagree. Those who agreed with the risks set out, across a mix of industry, power and NGOs, also all welcomed a further consultation point. The key theme raised by those who disagreed with the risks set out was that alignment of coverage across the UK ETS sectors covered was more important than the coverage itself. Those who did not agree or disagree with the proposal stated that not enough information had been provided to give a view.

There were 48 respondents to question 16, of which 26 (54%) agreed with the minded to position to bring forward the phase out date of the CLEF to 2026 for those not at risk of carbon leakage, 20 (42%) disagreed with the proposal and 2 (4%) did not agree or disagree with the proposal. Those who agreed, across industry, power and NGOs, particularly agreed with the principle of better targeting support at sectors most at risk of carbon leakage. Those who disagreed, across power and industry sectors, stated that some support to mitigate against carbon leakage risk would remain necessary in the transition to net zero, and that they would welcome a further opportunity to provide views on a draft Carbon Leakage List. Those who did not agree or disagree with the proposal stated that not enough information had been provided to give a view.

Updating UK Carbon Leakage Indicators

The UK ETS currently uses the same Carbon Leakage List as the EU ETS (Phase IV Carbon Leakage List), adopted by the EU Commission in 2019. Indicators for emissions intensity and trade intensity are given to each industry, based on EU-wide data relating to the years 2014-2016. There is therefore a risk that the data is not representative of current UK industry.

The proposed changes to the Carbon Leakage List aim to retain the methodological approach of the current CLIs, while updating the data to be more up-to-date and representative of industry across the UK. As outlined in the 2023 Free Allocation Review consultation,[14] updating the CLI using new UK-focused data may have several benefits:

- Indicators may be more specific to, and representative of, UK ETS participants;
- Using more recent data can account for recent changes in trade or emissions; and
- The methodology offers participants continuity while allowing for potential flexibility in the approach if deemed necessary.

Overall, this approach aims to ensure Free Allocation is better targeted at sectors most at risk of carbon leakage, in line with the objective of the Free Allocation Review. However, as presented later in this chapter, the UK Carbon Leakage List has in some instances had to rely on fallback approaches where there have been gaps in data, therefore it may not be a better alternative for targeting Free Allocations.

Alongside the consultation on CLIs, the UK Government's Department for Energy Security and Net Zero also commissioned an external research project from NERA[15] to develop CLIs based on updated UK data. This project focused on developing updated CLIs based on the criteria set out in the December 2023 Free Allocation consultation[16]. This involved gathering and assessing the potential data sets outlined at consultation, building updated CLIs based on the current methodological approach, and evaluating results.[17] The following criteria were used to assess data sets:

[14] See Free Allocation Review (2023) Analytical Annex to the Free Allocation Review p.21
[15] https://www.nera.com/about.html
[16] https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review
[17] A detailed methodology is published alongside this consultation www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-carbon-leakage

a) Data quality and accuracy: Data reflects carbon leakage likelihood and should capture emissions intensity and trade intensity for each industry. Data is produced to robust standards, with high confidence in estimates and limited lag in publication;

b) Data coverage: Data includes all UK ETS-covered industries;

c) UK focused: Data is based on UK firms and is representative of participants;

d) Transparency: Data should be easily accessible, transparent and available for scheme participants, preferably using public data sets; and

e) Longevity: High confidence that data sets will be produced in future phases.

The full Technical Report by NERA which contains details on the approach, methodology and data sets explored can be found on gov.uk[18].

Metrics used in the Carbon Leakage Indicator calculation

As stated in the Free Allocation Review consultation, and supported by consultation responses, the Authority believes that trade intensity and emissions intensity are the most relevant metrics in assessing carbon leakage risk for each industry, and for the purpose of calculating an installation's entitlement to Free Allocations. Further detail around the calculation is included in the 'Further formula considerations' section below.

Data sources

If, following this consultation, the Authority decides to update the Carbon Leakage List, then we would remain minded to use the data sources that were presented in the Free Allocation Review consultation. This is a combination of UK data from the UK ETS compliance reports, ONS data for emissions and expenditure, economic output data from the Annual Business Survey (ABS), and HMRC trade data. This approach was supported by the majority of consultation respondents as described on page 15.

NERA carried out a further assessment of these data sources and, where appropriate, supplemented this with further data. The Authority has explored updating the data sources required to inform the figure below; namely for the trade intensity calculation and the emissions intensity calculation. In all instances where data was not fully available, we have explored the use of 'fallback' data which still produces a net overall improvement in UK specific carbon leakage data.

The full detail behind this methodology can be found in the NERA Technical Report, but the key decisions have been summarised below.

[18] www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-carbon-leakage

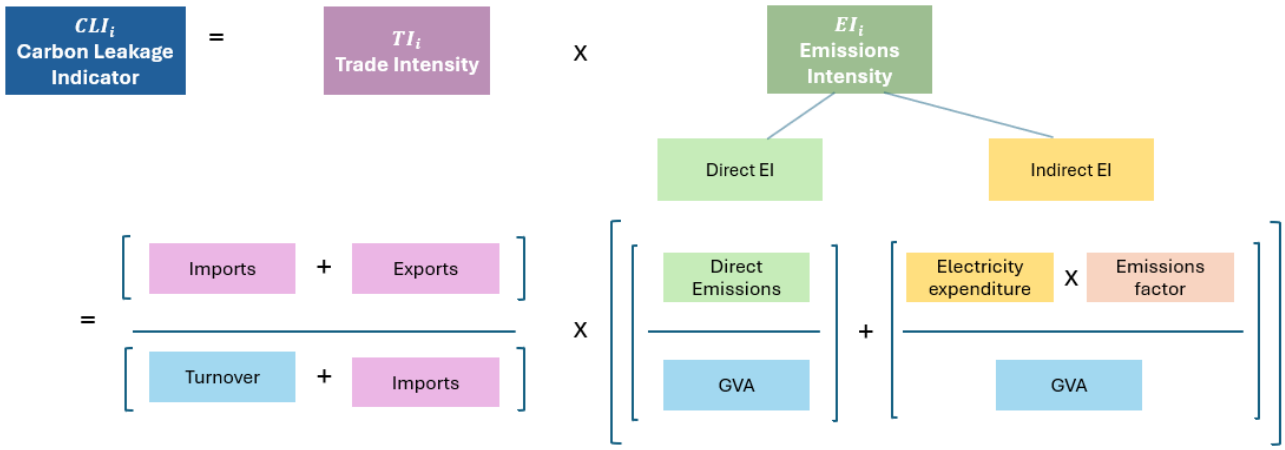

Figure 4: Detail on how the CLI is calculated

Data sources for calculating trade intensity

HMRC trade data is published on a regular, monthly basis, reported by products, and includes a distinction between EU and non-EU trade.

HMRC collects data on the UK's international trade in goods, with monthly publications of accredited, official statistics. The Overseas Trade Statistics (OTS) are published monthly and include import and export trade values by detailed product codes and partner country, including EU and non-EU trade.[19] As trade data, this is reported at product level, rather than the industry (NACE or SIC) code classification (the level and approach used for calculating CLI values in UK ETS sectors).

If changes are made to the Carbon Leakage List, the Authority would be minded to maintain the same approach of 4-digit NACE code classification for the calculation of CLIs, and has mapped the HMRC trade data to this classification for the purpose of updating CLIs using the Eurostat Concordance table[20].

This approach met the test of longevity, transparency, data quality and having a UK focus. In the case of a small number of sectors where no direct mapping was available,[21] fallback approaches were used, as detailed below.

The ONS, as part of its ABS, publishes sector Gross Value Added (GVA) and turnover data, at 4-digit SIC level, equivalent to the NACE codes used in the CLI. Therefore, we have used this data set as the primary source for sector output, used in both the trade and emissions intensity calculations.[22]

[19] See HMRC overseas trade data tables for data access and UK trade in goods statistics for methodological detail
[20] As detailed in the EC Framework for disaggregated quantitative assessments. Variables include trade value or volume - Eurostat Europroms database; sold production - Eurostat Europroms database; and direct C02 emissions per installation
[21] For example, the Finishing Textiles industry
[22] See ONS (2024) Non-financial business economy, UK: Sections A to S

There were a small number (23) of industries[23] where data was not available or reliable within this ABS. In such cases, fallback data or alternative calculation is required. In most cases, turnover is estimated using data from the Inter-Departmental Business Registry (IDBR).[24] For three ETS sectors[25], where there was no representative turnover data available through the ABS even when supplemented by the IDBR, we have used a fallback approach detailed below.

For the three sectors where the preferred option of using HMRC, ABS and IDBR data for all components of the trade intensity calculation was not possible, we have used a fallback of EU ETS trade intensity data. Given the limited data availability, we consider the EU calculated trade intensity to be a reasonable proxy of the trade intensity for firms across the UK within these sectors. For the Extraction of Natural Gas sector, we use the fallback option for the direct emissions and indirect emissions because of the abnormal GVA data as reported in the ONS ABS data set (more detail on this is included in section 3.2 of the NERA Technical Report).

The key risk with this fallback approach is that the EU trade intensity may not be reflective of firms across the UK, and it does not allow the Authority to consider any sensitivities around the inclusion or exclusion of EU trade. We are seeking views on this fallback approach as part of this consultation.

Data sources for calculating emissions intensity

We calculate emissions intensity as the sum of direct and indirect emissions intensity, per unit of economic output (GVA), as calculated in the current CLI.[26]

The primary source for calculating direct emissions intensity is UK ETS compliance data. This consists of reliable, verified and published reports.[27] This data includes the recorded annual emissions (surrendered allowances) of all installations participating in the UK ETS.

While an alternative data set from the ONS on annual greenhouse gas emissions by industry is available, on further examination, this source did not meet the ‘data coverage’ criteria of the assessment. This was due to there being a significant number of missing sectors or aggregations above the level of detail required. In addition, sector coverage for those who only appear at sub-installation activity level within the UK ETS, but not in the published installation-level Emissions and Surrenders Compliance data[28] do not have ETS recorded emissions. Therefore, these sectors, as well as some others, use the ONS fallback estimate for direct emissions intensity. If the Authority decides to update the Carbon Leakage List, we would be minded to use this ONS data as a supplement to fill any data gaps in the direct emissions data provided by UK ETS participants through their annual compliance report.

Where turnover data is required for part of the emissions intensity calculation, we have, as in the trade intensity calculation, used the ONS ABS data set which also reports GVA values by

[23] The NERA Technical Report details that 331 sectors have been considered for this, therefore 23 industries make up 7%
[24] See Inter-Departmental Business Register (IDBR). Data can be accessed at Nomis: UK Business Counts - enterprises by industry and employment size band
[25] These are 08.91 Mining of chemical and fertiliser minerals; 10.81 Manufacture of sugar; and 24.46 Processing of nuclear fuel.
[26] Direct emissions are those produced on-site, via combustion of fuels on a site to produce a product, and emissions from sources that are directly controlled by the reporting entity. Indirect emissions are those attributed to the electricity, steam, heat and cooling purchased to produce a product. Each of these are calculated as the industry average amount of direct and indirect emissions for each unit of economic output (GVA).
[27] See UK ETS Public Reports (2024) Compliance Report - Emissions and Surrenders
[28] See UK Emissions Trading Registry (2024) https://reports.view-emissions-trading-registry.service.gov.uk/ets-reports.html

industry. However, where there were data gaps, we have used fallback data, typically parent Sector Industrial Clarification of economic activities (SIC) code. Using this approach, there were three ETS sectors (mining of chemical and fertiliser minerals, manufacture of sugar, and processing of nuclear fuel) where accurate data could not be determined; therefore, we have used a fallback approach which has been detailed in the next three paragraphs.

To calculate indirect emissions intensity, the primary approach involves estimating expenditure on electricity at an industry level, alongside emissions intensity and industry output, to model indirect emissions intensity variables. We have used ONS Annual Purchases Survey data on electricity spending by 4-digit NACE code,[29] and Green Book data on electricity prices.[30] More detail on the exact methodology taken to calculate this can be found in section 4.2.3 of the NERA Technical Report. Using this approach, there remain 12 sectors with values missing where we have instead opted to use a fallback approach.

The fallback approach taken for sectors where accurate data for direct and indirect emissions intensity could not be calculated was to use parent-level sector codes[31]. It is possible that these are not representative of the specific subsectors for which we are calculating carbon leakage risk. However, the Authority believes that, given that the bias could be upward or downward, this is a preferred methodology, and we are seeking views on this fallback approach as part of this consultation.

For Extraction of Natural Gas, a fallback for direct emissions intensity and indirect emissions intensity is used. More information on this fallback can be found in section 5.3.1 of the NERA Technical Report. Both the emissions intensity and the trade intensity variables exceed current values, resulting in the CLI sector above the threshold for joining the List. This occurs if using the primary (bottom-up) or the fallback emissions intensity variable.

1. **Do you agree with the data sets used to calculate emissions intensity and trade intensity? If you do not, please explain why and suggest alternative data sets.**

2. **Do you agree with the fallback approaches which have been used where gaps have remained in the trade and emissions intensity data sets? If you do not, please explain why and suggest alternatives.**

Further formula considerations

Trade intensity calculation

As described above, the Authority is still minded to use trade intensity as a key metric for calculating carbon leakage risk. Under the current CLIs, an industry's trade intensity is based on EU-wide trade data, and therefore only imports from, and exports to, non-EU countries are captured. This means that any UK-EU trade is not captured within trade intensity variables,

[29] ONS (2024) Annual Purchases Survey
[30] See DESNZ (2023) Green Book supplementary guidance: valuation of energy use and greenhouse gas emissions for appraisal
[31] These include: Sector 06.20 Extraction of natural gas; Sector 23.52 Manufacture of lime and plaster; Sector 23.31 Manufacture of ceramic tiles and flags; Sector 10.62 Manufacture of starches and starch products; Sector 23.11 Manufacture of flat glass; Sector 23.13 Manufacture of hollow glass; Sector 23.99 Manufacture of other non-metallic mineral products n.e.c.; Sector 08.91 Mining of chemical and fertiliser minerals; Sector 23.14 Manufacture of glass fibres; Sector 24.46 Processing of nuclear fuel; Sector 10.81 Manufacture of sugar; and Sector 23.32 Manufacture of bricks, tiles and construction products, in baked clay.

though these may be particularly relevant for industry across the UK. Calculating UK-specific CLIs would suggest that we should include trade with all trading partners including the EU.

There is therefore a decision around whether to include all UK trade, or to exclude UK-EU trade from this variable. On one hand, risks of carbon leakage from the UK to the EU may be lower than risks of carbon leakage to non-EU countries, given the presence of comparable carbon pricing and regulation within the EU. However, we also note that part of our reasoning for updating the Carbon Leakage List to be reflective of UK industry carbon leakage risk was to consider trade implications following the withdrawal of the UK from the EU, and that this was a key theme that came up in consultation responses. Inclusion of all trade is also in line with the methodological approach of the current CLIs, and applies a clear, simple approach. Therefore, on balance we have chosen to include all trade (including UK-EU trade) within the trade intensity variable in this preliminary Carbon Leakage List calculation. We are seeking views on this approach as part of this consultation.

Emissions intensity calculation

As described above, the Authority is still minded to use emissions intensity as a key metric for calculating carbon leakage risk. A further consideration that was taken as part of the review conducted by NERA was to determine whether indirect emissions should continue to be included within the CLI formula.

There are other policies across the UK that seek to compensate or exempt firms from carbon pricing, for example the Indirect Cost Compensation Scheme which has been extended to March 2025[32]. However, this scheme only covers a subset of industries and firms, therefore we consider indirect emissions to be a relevant factor in assessing carbon leakage risk. The Authority proposes continuing to include indirect emissions intensity as part of the assessment of emissions intensity in the CLI calculation. We are seeking views on this approach as part of this consultation.

Carbon Leakage Indicator threshold values methodology

As part of the update to the Carbon Leakage List, the Authority must apply an approach to determining threshold values for the Carbon Leakage List (i.e. which CLI values are at risk of carbon leakage and therefore which industrial sectors are included within the Carbon Leakage List). We have explored two main approaches to determining this value:[33]

A) Retaining the same proportion of industries on the Carbon Leakage List as before. In this case, the relative values and ranking determine the threshold value.

B) Using a bottom-up calculation to calculate an expected threshold CLI value (based on trade and emissions intensity per unit of GVA), beyond which an industry is considered a carbon leakage risk. This mirrors the EU's initial approach to determining the threshold for the EU ETS Carbon Leakage List. In this case, the absolute value is calculated independently, and all CLI values which are above the threshold are considered at risk of carbon leakage. This approach may result in a larger or smaller number of industries across the UK on the List.

[32] Compensation for the indirect costs of the UK ETS and the CPS mechanism gov.uk page

[33] To note, this approach concerns the application of a single cut-off value, with those above and below are considered on and off the List. Nonetheless, this does not preclude additional tiering of industries

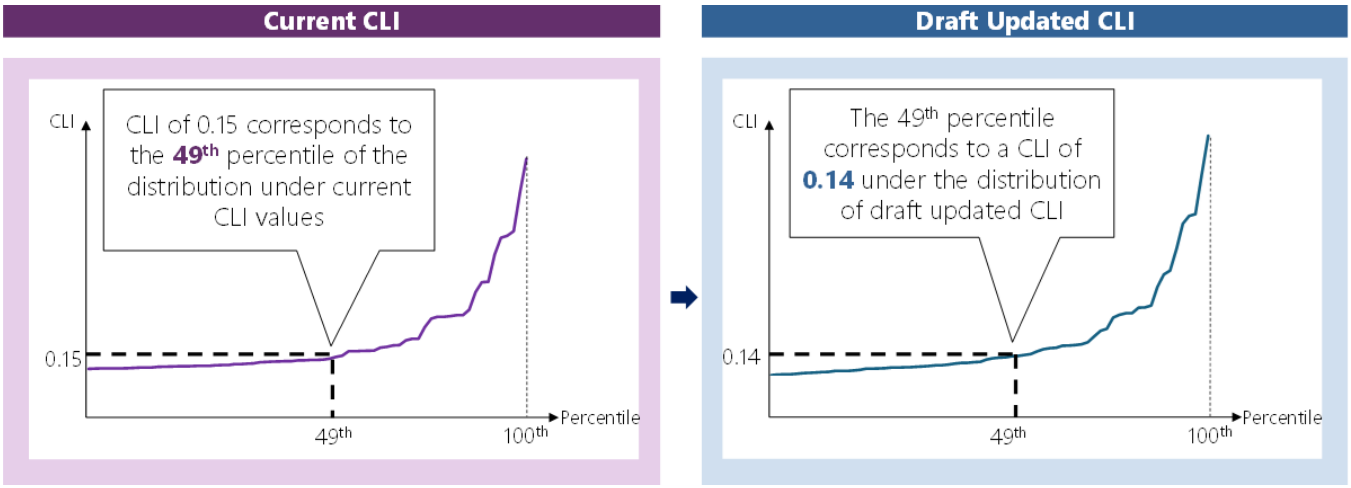

Figure 5: The current CLI and the updated CLI using Approach A (source: NERA Technical Report)

An assessment of these approaches is detailed in the accompanying NERA Technical Report. In practice, both approaches resulted in a very similar threshold, with approach B producing a slightly higher threshold than approach A. The results of the two approaches are broadly consistent with each other. Overall, the primary method for determining the threshold value is option A, which aims to choose the same point (percentile) on the ordered distribution of all CLI values as previously. Option B provides a useful cross-check for the option A value. However, Option B is reliant on several assumptions, such as the market carbon price, and option A may provide a more transparent approach.

This results in a CLI value of 0.14 for sectors using the bottom-up direct emissions intensity. Therefore, if the Authority decides to put in place a new Carbon Leakage List we would be minded to set the threshold for eligibility for Free Allocations at 0.14 for sectors who have had their CLI determined on the basis of a bottom-up direct emissions intensity methodology if the decision is taken to update the Carbon Leakage List.

As noted in the NERA Technical Report, to allow a reasonable margin of error in the application of the threshold, the threshold is set to 0.14 and applied at two decimal places. Therefore, every sector for which a CLI rounded to the second decimal place is equal to or greater than 0.14 will join the Carbon Leakage List. This would result in a Carbon Leakage List in the UK ETS of 35 sectors.

If the Authority decides to update the Carbon Leakage List, we are minded to the previously stated position to not offer a second stage qualitative assessment (described on page 22 in the 2023 Free Allocation Review Consultation) as the approach taken to update the Carbon Leakage List is already based on a much smaller sample size with more reflective data for UK industry than the current Carbon Leakage List.

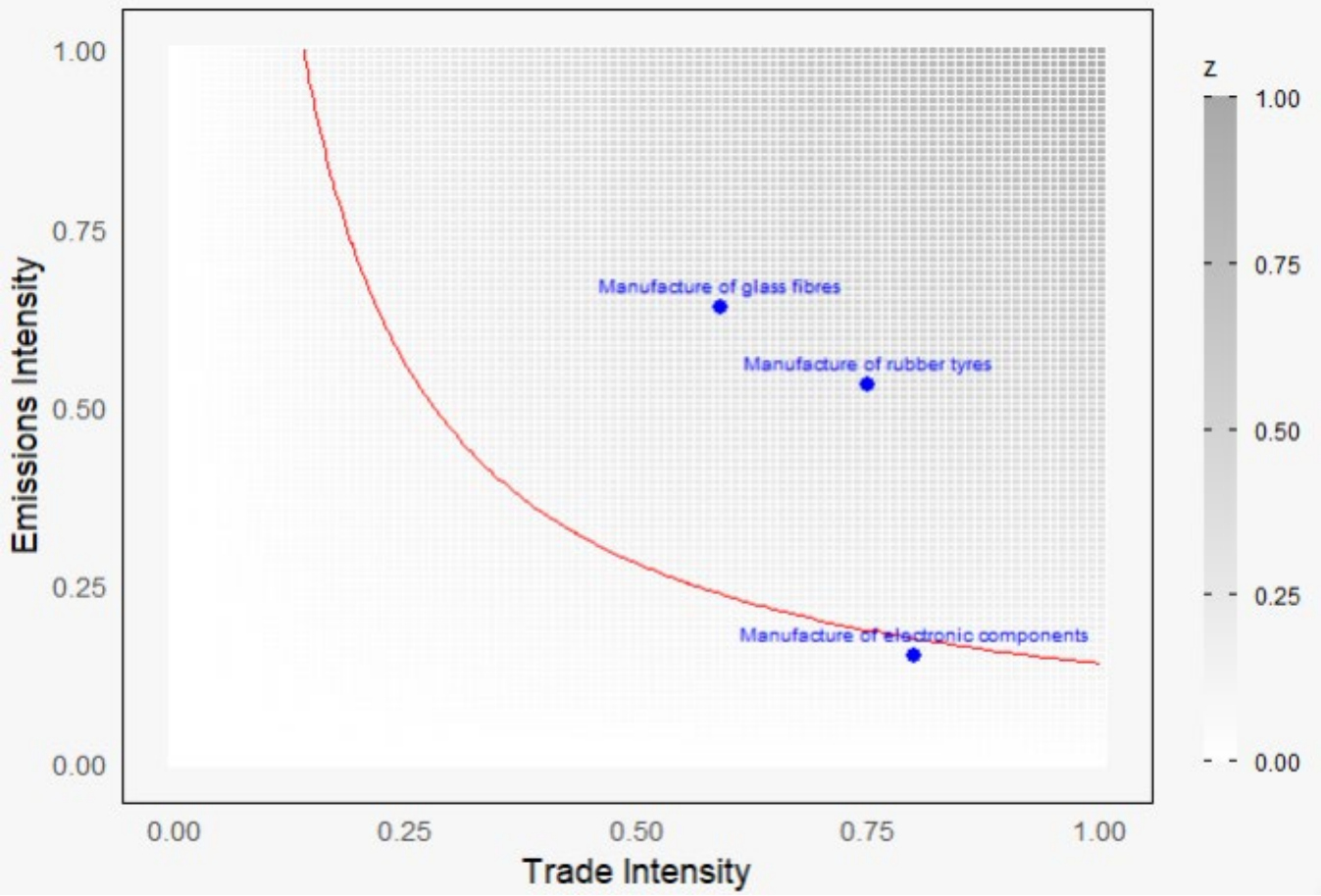

Figure 6: Carbon Leakage List eligibility criteria - threshold value line is set where Trade Intensity * Emissions Intensity ≥ 0.14

The above graph is an illustration of the threshold CLI values which determine the Carbon Leakage List. The plot displays whether an industry is above the Carbon Leakage List threshold (0.14) for a given value of emission intensity (y-axis) and trade intensity (x-axis).

For example, in the case of 'manufacture of rubber tyres', EI multiplied by TI (0.52 * 0.75) equals a CLI of 0.39 (above the threshold) and the industry joining the List. In the case of 'manufacture of electronic components', EI (0.15) multiplied by TI (0.80) equals a CLI of 0.12 (below the threshold) and the sector being off the List.

	Emissions intensity	Trade intensity	CLI
Manufacture of rubber tyres	0.52	0.75	0.39
Manufacture of glass fibres	0.64	0.59	0.38
Manufacture of electronic components	0.15	0.80	0.12

Figure 7: Example data for three industries

For sectors whose CLI has been determined on the basis of a fallback direct emissions intensity, which has on average a higher value, we propose to use a CLI threshold of 0.74.

More information on this approach can be found in section 5.2 of the NERA Technical Report. This has been calculated on the basis of option A presented above and cross-checked against option B.

The preferred option aims to maintain a similar proportion of industries on the Carbon Leakage List, as described in Option A. However, within the analysis, there is a marked difference between sectors which use different methods for calculating their Direct Emissions Intensity. All sectors which only appear at sub-installation level in the UK ETS have no reported emissions data and therefore use the fallback variable. This affects a subset of sectors but is a potential source of bias. Therefore, the Authority proposes to use a separate CLI threshold of 0.74 for sectors using fallback direct emissions intensities.

3. **Do you agree with the methodology used to update the Carbon Leakage List threshold values i.e. 0.14 and 0.74, determined on the basis of Option A described above? If you do not, please explain why and suggest an alternative methodology.**

The Carbon Leakage List

Based on the updated data sources and formula considerations detailed in the sections above, below is a preliminary list of CLI values which the Authority is seeking views on. Noting the data gaps and fallback approaches that have been described in the sections above, the Authority currently has no preferred option on whether to retain the current Carbon Leakage List or to update it to be based on UK data.

If the Authority does decide to update the Carbon Leakage List we would remain minded to bring forward the phase out date for sectors not at risk of carbon leakage, in line with the objective of the Free Allocation Review to better target support to the most at-risk sectors. Therefore, subject to outcomes of this consultation, we propose that any sectors which do not have a CLI of 0.14 or above (for sectors whose direct emissions intensity has used the bottom-up approach) or 0.74 (for sectors using a fallback) will not be eligible to receive Free Allocations for the next allocation period. Entitlement to Free Allocations for sectors with a CLI of 0.14 or 0.74 and above will be determined as part of the decisions on tiering which will be taken at the Authority Response to the Free Allocation Review consultation, which we aim to publish by the end of 2025.

We are seeking views from participants and other interested parties on the preliminary list of CLI values. Specifically, we would like to hear whether we have taken the right approach to calculating CLIs, including the data sets which have been used, and views on our approach to updating the CLI threshold determining eligibility to receive Free Allocations. We would also invite participants to submit any data which we have identified gaps in, both in the sections above and in the technical report as well as any other supporting evidence. Data submitted must reach a high threshold of meeting all requirements outlined in the multi-criteria assessment to be assessed for inclusion in the calculation of CLIs. We would encourage participants to explain how the data submitted meets the criteria, and where other supporting evidence is used it should be explained explicitly why the Authority should take this into consideration.

Where any new data is submitted, resulting in a change in position on the Carbon Leakage List, due to additional sectors being classed as at risk of carbon leakage, the Authority is minded to take an ‘additive’ approach to the number of sectors on the Carbon Leakage List.

The 'additive' approach would result in more sectors coming on to the list if new information is provided and the Authority agrees that these sectors should be deemed at risk of carbon leakage. Sectors included in the preliminary Carbon Leakage List on the basis of being equal to or above the 0.14 or 0.74 thresholds, if these remain the thresholds and they continue to meet it, are unlikely to be removed, provided that only a limited number of additional sectors are included. The list below highlights sectors that are above the threshold in bold. The CLIs currently used are also included in the table for comparison.

SIC code	Industry	Updated UK CLI	EU CLI
23.51	Manufacture of cement	**25.26**	2.46
24.1	Manufacture of basic iron and steel and of ferro-alloys	**8.99**	2.12
20.14	Manufacture of other organic basic chemicals	**5.82**	1.05
19.1	Manufacture of coke oven products*	**4.83**	20.12
23.52	Manufacture of lime and plaster	**4.08**	1.02
24.42	Aluminium production	**3.26**	1.63
10.42	Manufacture of margarine and similar edible fats*	**3.25**	0.03
19.2	Manufacture of refined petroleum products	**2.35**	3.22
17.11	Manufacture of pulp*	**2.08**	0.99
23.31	Manufacture of ceramic tiles and flags	**2.02**	1.05
20.15	Manufacture of fertilisers and nitrogen compounds	**1.83**	2.42
20.6	Manufacture of man-made fibres*	**1.58**	0.41
20.17	Manufacture of synthetic rubber in primary forms*	**1.58**	0.60
10.41	Manufacture of oils and fats	**1.55**	0.42
7.1	Mining of iron ores*	**1.52**	2.54

10.62	Manufacture of starches and starch products	**1.29**	0.52
6.2	Extraction of natural gas*	**1.14**	0.12
6.1	Extraction of crude petroleum	**0.90**	0.24
10.32	Manufacture of fruit and vegetable juice*	**0.89**	0.09
23.12	Shaping and processing of flat glass*	**0.74**	0.07
17.12	Manufacture of paper and paperboard	**0.74**	0.84
23.11	Manufacture of flat glass	**0.70**	1.46
23.13	Manufacture of hollow glass	**0.66**	0.63
8.99	Other mining and quarrying n.e.c.*	0.63	3.82
20.13	Manufacture of other inorganic basic chemicals	**0.55**	1.64
20.12	Manufacture of dyes and pigments	**0.54**	0.52
23.99	Manufacture of other non-metallic mineral products n.e.c.	**0.53**	0.22
8.91	Mining of chemical and fertiliser minerals*	0.53	0.26
21.1	Manufacture of basic pharmaceutical products	**0.48**	0.19
16.1	Sawmilling and planing of wood*	0.41	0.07
22.11	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	**0.39**	0.12
23.14	Manufacture of glass fibres	**0.38**	0.42
24.45	Other non-ferrous metal production	**0.32**	0.28
20.16	Manufacture of plastics in primary forms	**0.29**	0.31
16.21	Manufacture of veneer sheets and wood-based panels	**0.27**	0.26

10.2	Processing and preserving of fish, crustaceans and molluscs*	0.26	0.07
17.29	Manufacture of other articles of paper and paperboard*	0.26	0.02
8.93	Extraction of salt	**0.26**	0.15
20.53	Manufacture of essential oils*	0.26	0.05
24.52	Casting of steel*	0.25	0.02
24.46	Processing of nuclear fuel*	0.24	0.22
11.06	Manufacture of malt	**0.22**	0.33
20.59	Manufacture of other chemical products n.e.c.	**0.20**	0.15
20.2	Manufacture of pesticides and other agrochemical products	**0.20**	0.09
24.2	Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	**0.16**	0.23
17.21	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard*	0.15	0.01
20.42	Manufacture of perfumes and toilet preparations*	0.15	0.04
10.82	Manufacture of cocoa, chocolate and sugar confectionery	**0.14**	0.03
11.01	Distilling, rectifying and blending of spirits	**0.14**	0.07
26.11	Manufacture of electronic components	0.12	0.15
10.39	Other processing and preserving of fruit and vegetables	0.12	0.08
10.61	Manufacture of grain mill products	0.12	0.04
20.11	Manufacture of industrial gases	0.11	1.02

10.51	Operation of dairies and cheese making	0.09	0.04
23.32	Manufacture of bricks, tiles and construction products, in baked clay	0.09	0.14
30.3	Manufacture of air and spacecraft and related machinery	0.09	0.07
10.81	Manufacture of sugar*	0.09	0.63
10.83	Processing of tea and coffee	0.09	0.04
10.13	Production of meat and poultry meat products	0.09	0.01
13.3	Finishing of textiles	0.08	0.18
22.21	Manufacture of plastic plates, sheets, tubes and profiles	0.07	0.08
10.85	Manufacture of prepared meals and dishes*	0.07	0.05
10.84	Manufacture of condiments and seasonings	0.06	0.02
11.05	Manufacture of beer	0.06	0.02
10.89	Manufacture of other food products n.e.c.	0.06	0.04
10.31	Processing and preserving of potatoes	0.05	0.08
10.12	Processing and preserving of poultry meat*	0.05	0.02
23.2	Manufacture of refractory products	0.04	0.41
8.12	Operation of gravel and sand pits; mining of clays and kaolin	0.04	0.01
10.92	Manufacture of prepared pet foods	0.03	0.02
11.03	Manufacture of cider and other fruit wines	0.03	0.01
29.1	Manufacture of motor vehicles	0.02	0.03

21.2	Manufacture of pharmaceutical preparations	0.02	0.05
25.4	Manufacture of weapons and ammunition	0.02	0.07
8.11	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate	0.02	0.14
30.11	Building of ships and floating structures	0.02	0.08
11.07	Manufacture of soft drinks; production of mineral waters and other bottled waters	0.01	0.01
20.41	Manufacture of soap and detergents, cleaning and polishing preparations	0.01	0.03
23.62	Manufacture of plaster products for construction purposes	0.00	0.05
25.5	Forging, pressing, stamping and roll-forming of metal; powder metallurgy*	0.00	0.11
33.16	Repair and maintenance of aircraft and spacecraft	0.00	0.00

Figure 8: Sectors above the proposed carbon leakage threshold (source: NERA Analysis).
***Sectors whose direct emissions intensity are calculated the fallback and therefore would be subject to the 0.74 threshold**

For comparison, the current CLI list can be found here.

4. **Do you agree with the Authority's preliminary list of Carbon Leakage Indicator values?**

5. **If you do not agree with the Authority's preliminary list of Carbon Leakage Indicator values, please explain why and suggest any additional data (that meets the assessment criteria). If you do not agree and would like to propose an alternative methodology or data set which does not meet the assessment criteria, please explain why this data should be used.**

6. **Do you agree with the Authority's minded to position to take an 'additive' approach to the Carbon Leakage List, should new data provided through this consultation change the current Carbon Leakage Indicator values? If you do not agree, please explain why and suggest an alternative approach.**

7. **Are there any other facts or matters that you would like the Authority to take into account before making a final decision on the Carbon Leakage List?**

8. **On the basis of the information presented in this Chapter do you think we should update the Carbon Leakage List to be based on UK data or do you have a preference to continue to use the existing Carbon Leakage List? Please explain your answer.**

Chapter 2: Free Allocations for CBAM sectors

Background

In 2023, the UK Government consulted on a range of potential policy mechanisms to mitigate carbon leakage risk and ensure the right environment for UK industry to decarbonise. This included consideration of a Carbon Border Adjustment Mechanism (CBAM) and mandatory product standards, alongside other policy measures to grow the market for low carbon products.

Carbon leakage refers to the movement of production and associated emissions from one country to another due to countries' differing levels of decarbonisation effort through carbon pricing and climate regulation. As a result of carbon leakage, the objective of decarbonisation efforts – to reduce global emissions – can be undermined. One way carbon pricing can cause carbon leakage is that business can face higher costs than producers in other jurisdictions, causing a drop in domestic production and associated emissions, and an expansion elsewhere. If all countries faced the same carbon price, then carbon pricing would not lead to a risk of carbon leakage, because all producers would have the same costs per tonne of carbon associated with their production.

Free Allocation policy under the UK ETS addresses carbon leakage risk by reducing a firm's exposure to the carbon price. Eligibility for Free Allocations is calculated on the basis of a firm's trade intensity and emissions intensity (see Chapter 1). The more intensely traded a product, the more likely it is to face carbon leakage risk, particularly when competing against firms in other jurisdictions that do not need to factor a carbon price in as part of their production process. The more emissions intensive a production process, the higher a firm's exposure to the carbon price, and the more likely that this will factor in to create carbon leakage risk.

In December 2023, the Government announced the introduction of a UK CBAM by 2027. As set out in the consultation on the introduction of a UK CBAM, published in March 2024, a CBAM will ensure highly traded, carbon intensive goods from overseas face a comparable carbon price to those produced in the UK. On October 30th 2024, the government issued a response to the consultation on implementing the UK Carbon Border Adjustment Mechanism (CBAM), confirming which sectors will be covered by a CBAM[34]. The CBAM will apply to emissions embodied in imports for specified goods in the following sectors: aluminium, cement, fertilisers, hydrogen, and iron and steel. The CBAM will mitigate carbon leakage risk by applying a carbon price to products being imported to the UK to ensure they are subject to a similar carbon cost to that incurred by UK-based production. In determining the sectoral scope of the UK CBAM, the Government looked at three key factors:

- Considering a CBAM only for products in sectors subject to the UK ETS, the UK's primary carbon pricing mechanism;
- Considering sectors significantly at risk of carbon leakage; and

[34]https://assets.publishing.service.gov.uk/media/672123813aa14203d06ef447/Consultation_on_the_introduction_of_a_UK_Carbon_Border_Adjustment_Mechanism.pdf

- Considering the feasibility and effectiveness of introducing a CBAM by 2027 for certain sectors.

The consultation included proposals on the detailed design, implementation and administration of a UK CBAM.

Proposals in this Chapter

Now that the UK Government has committed to introducing a CBAM, the Authority is considering how Free Allocation policy could be adjusted to reflect the reduced risk of carbon leakage for given sectors and to increase the effectiveness of the CBAM as a leakage mitigation policy.

This chapter includes proposals to adjust Free Allocations for CBAM sectors and asks questions regarding how the adjustment should take place, including:

- Parameters for the adjustment;
- Extent of the adjustment i.e. adjustment to zero or partial reduction;
- Technical implementation of the adjustment; and
- Assessment criteria the Authority should consider in reaching a final decision on the adjustment.

Any changes to Free Allocations for CBAM sectors will be announced as part of the wider Free Allocation Review response by the end of 2025, and take effect at the start of the next allocation period in 2027.

Summary of Free Allocation Review consultation proposals

This section summarises the proposals on the Free Allocation adjustments for CBAM sectors that were presented in the Free Allocation Review consultation, the questions asked, and the responses we received from stakeholders. This is included here as it has informed the policy proposals presented in the rest of the consultation.

The Free Allocation Review consultation asked for views on which options the UK ETS Authority should explore in light of the UK Government's decision to introduce a CBAM.

2023 Free Allocation Review Consultation Questions

1. Do you have any views on the interactions between other carbon leakage mitigation measures and a CBAM and/or the broad policy scenarios which the UK ETS Authority should explore in the future, in light of the UK Government's decision to introduce a CBAM?

Summary of responses

There were 62 responses to this question which covered a broad range of themes.

In support of phase out:

36 respondents from across industry, energy and NGOs stated that free allocations should be phased out, giving the following detail:

- 11 stated that we should delay Free Allocation phase out until CBAM is proven to be working effectively;
- Seven stated that Free Allocation reintroduction should be automatic if the CBAM is not effective when tested against strict criteria;
- Six said that phase out should be gradual to manage the transition;
- Five respondents from NGOs and energy sectors all said that the phase out of Free Allocations should be rapid to avoid reducing the effectiveness of the UK CBAM;
- Three stated that Free Allocation phase out should align with the EU trajectory (although some of these respondents stated that this should be after delaying the start date of phase out);
- Three stated that this would remove a market distortion; and
- One said that phasing out Free Allocations would support decarbonisation aims.

In support of maintaining Free Allocations:

Nine respondents stated that free allocations must be maintained for sectors where a CBAM is not introduced.

Six respondents cited exports as an important factor, with four stating that the impact on export leakage risk should be considered, and two stating specifically that Free Allocations should be maintained for exports.

Other points raised:

Other key themes included eight respondents citing the need for changes to Free Allocations to be part of a wider carbon leakage assessment or strategy, four citing UK and EU ETS linking as a key consideration, and three flagging concerns over 2026 Free Allocation changes which is not in line with UK CBAM introduction in 2027.

Other points raised by one or two respondents each were the need to consider energy security for sectors not covered by a CBAM, that other government support for hard-to-decarbonise sectors should stay in place, that changes to Free Allocations should not disincentivise sectors that have improved efficiencies, that Free Allocations should be a balance between emissions reductions and competitiveness without distorting market signals, and that there is a need to give clarity on what happens to any phased out Free Allocations and whether these should remain in reserve pots or be added to the auction share.

Specific points raised on the CBAM were the need for more frequent updates to sectors covered by CBAM based on carbon leakage risk, the need to consider how indirect emissions will be treated under the CBAM, a need for verification on CBAM to align with ETS process, and a need for criteria for Free Allocation protection to be consistent with CBAM criteria.

Adjusting Free Allocations for CBAM sectors

In considering the approach to Free Allocations for CBAM sectors, the Authority has considered two options:

Option 1: Do nothing (counterfactual)

The 'do nothing' scenario would not implement any adjustment to Free Allocation for CBAM sectors. Therefore, Free Allocations would be calculated on a comparable basis to the current Free Allocation methodology for installations (including any other separate changes made through the Free Allocation review), but not introducing any additional treatment or adjustment for CBAM covered industries.

The liability of the UK CBAM will lie with the importer of imported products within scope of the UK CBAM on the basis of emissions embodied in imported goods. This system will not involve the purchase or trading of emissions certificates. The liability applied by the CBAM will depend on the greenhouse gas emissions intensity of the imported good and the gap between the carbon price applied in the country of origin (if any) and the carbon price that would have been applied had the good been produced in the UK.

For goods produced in the UK, while operators do face a carbon price, exposure to this cost is reduced through the distribution of Free Allocation. Therefore, in order to reflect the true price on carbon emissions faced by businesses, and ensure consistency across producers in different countries, the UK CBAM will apply an effective carbon price to imports, which will be significantly lower than the headline explicit UK ETS price, to reflect domestic free allowances[35].

The effective UK carbon price would be adjusted by the extent to which Free Allocation covers direct emissions for that industry[36]. This effective price represents the UK CBAM carbon price which would be faced for embodied emissions in imported products.

If no adjustment is made to free allocations for CBAM sectors, effective carbon prices faced by these sectors will likely remain high. Therefore, by making no adjustment to Free Allocations the effectiveness of the ETS would be reduced and would render the CBAM ineffective as a carbon leakage mitigation.

While Free Allocations are an effective carbon leakage mitigation, due to the way they are calculated based on historic activity levels and a benchmark which is not related directly to a firm's direct exposure to carbon a leakage, the support rate for installations may differ significantly from the aggregate rate for the sector. Installation-level Free Allocation fluctuates year-on-year due to the methodology, and individual support rates above 100% are possible. The rationale behind this remains appropriate for Free Allocations, as it gives certainty to an industrial participant over an allocation period allowing them to forecast their exposure to the carbon price and incentivise them to decarbonise, as part of the wider objective of the ETS.

However, this does not mean that it is necessarily the most effective carbon leakage mitigation policy in all circumstances. A CBAM could be a more appropriate carbon leakage mitigation than Free Allocation in these instances.

[35] A more detailed explanation of how this will apply can be found in the Analytical Annex to this consultation.
[36] The exact methodology for this is yet to be determined.

Further analysis would also be required in order to ensure that a policy which would see no adjustment to Free Allocations while a CBAM is in place could be implemented in a manner which is consistent with World Trade Organisation (WTO) rules and other trade related obligations[37].

For these reasons the Authority is minded not to implement the 'do nothing' option on the basis that active adjustment of Free Allocation is required for the UK CBAM and ETS to operate effectively to increase incentives to reduce emissions both in the UK and globally.

9. **Do you agree with the Authority's minded to position to not take forward the 'do nothing' option? If you do not agree, please explain your reasoning.**

Option 2: Adjust Free Allocations for CBAM sectors (minded to)

The alternative would be to adjust Free Allocations for CBAM-covered sectors. This would allow the CBAM to be effective and increase the effectiveness of the decarbonisation incentive set by the UK ETS.

On this basis, the Authority is minded to adjust Free Allocations for CBAM sectors. The remaining options to explore are how this adjustment should take place. These can be considered through the parameters for adjusting Free Allocation, the extent to which the adjustment applies, and how it is technically implemented. The Authority will explore these options through this chapter and is seeking views on which combination of options is preferred, as well as how assessment criteria to assess these options should be weighted.

Parameters for adjustment

When applying an adjustment to Free Allocations for CBAM sectors, we can vary the following parameters:

- Adjustment start year;
- Adjustment length / end year; and
- Trajectory of adjustment.

These can either be applied uniformly to all CBAM sectors or varied by sector.

We propose a phased adjustment to Free Allocation for CBAM sectors over time. The introduction of a UK CBAM is a novel policy and may have significant impacts. A gradual adjustment to Free Allocation for CBAM sectors aims to support policy implementation and minimise risks to industry. The immediate removal of Free Allocation risks introducing a sharp change in incentives and costs to affected business, reducing preparedness and risking adverse impacts. An immediate removal of Free Allocation is therefore not considered here. A phased approach allows adaption for both business and Government and allows for the CBAM effect to increase over time.

Adjustment start year

The start year of any adjustment should not be before 2027 as the CBAM will not be in force before this date, so considering any earlier date would result in a reduction in the extent of carbon leakage mitigation provided for some UK ETS sectors. This is not the intent of adjusting

[37] https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm

Free Allocations, therefore the Authority will not make any adjustments to Free Allocations ahead of the introduction of the UK CBAM.

Through the 2023 Free Allocation review, some respondents called for a delay to the adjustment of Free Allocations to ensure the CBAM is fully operational before any reduction in carbon leakage support. This consideration should be balanced with the impact on effectiveness of the UK ETS and CBAM as any delay to Free Allocation adjustment would dampen this.

The Authority has no minded to position on the timing of adjustment and is seeking views through this consultation on the preferred approach. The Authority will also work with UK Government on CBAM design with a consideration of how the effective carbon price will be calculated. If this is based on historic Free Allocations, then it may be appropriate to introduce a lag to the start date for phase out to account for this.

Adjustment length / end year

The end year of the adjustment will determine its length. The Authority is considering either targeting a 10-year adjustment period or a shorter length, in order to ensure that the reduction to Free Allocation is gradual while the CBAM is introduced, minimising any reduction in carbon leakage mitigation.

Some respondents to the 2023 Free Allocation review called for alignment with the EU's approach to Free Allocation adjustment. Doing this would result in a shorter adjustment period, but could have the benefit of aligning CBAM rates, reducing the risk of UK exporters to the EU facing CBAM charge by aligning approach to carbon leakage mitigation sooner. Adjusting Free Allocations more slowly than the EU could lead to unintended trade diversion or a higher EU CBAM price for UK businesses exporting to the EU, more information on this can be found in the Analytical Annex.

Trajectory of adjustment

The Authority is considering three broad options with regard to the speed of Free Allocation adjustment – linear, accelerated then slowing, or slow then accelerating. These illustrative options are non-exhaustive and the Authority does not rule out other adjustment curves.

All else being equal, a faster (/steeper) phase out increases the price signal to CBAM sectors, thereby increasing both the decarbonisation incentive and UK CBAM effectiveness, as well as being closer aligned to the EU phase out. At the same time, faster phase outs may increase short-term carbon leakage risk, through more rapid removal of the comprehensive support of Free Allocation. A slower (/shallower) phase out entails the opposite: slower effectiveness of the UK CBAM and decarbonisation incentives, but protection for firms through more gradual removal of Free Allocation. The preferred adjustment curve should balance the impacts to affected firms, carbon leakage, impact to the UK ETS and government.

The options presented for each of the parameters can be used in any combination; the Analytical Annex to this consultation document includes illustrative examples on how these options could be grouped and provides a qualitative assessment of them. The graphs below are provided in Section 1 of the Analytical Annex and visualise combinations of these illustrative options for Free Allocation adjustment.

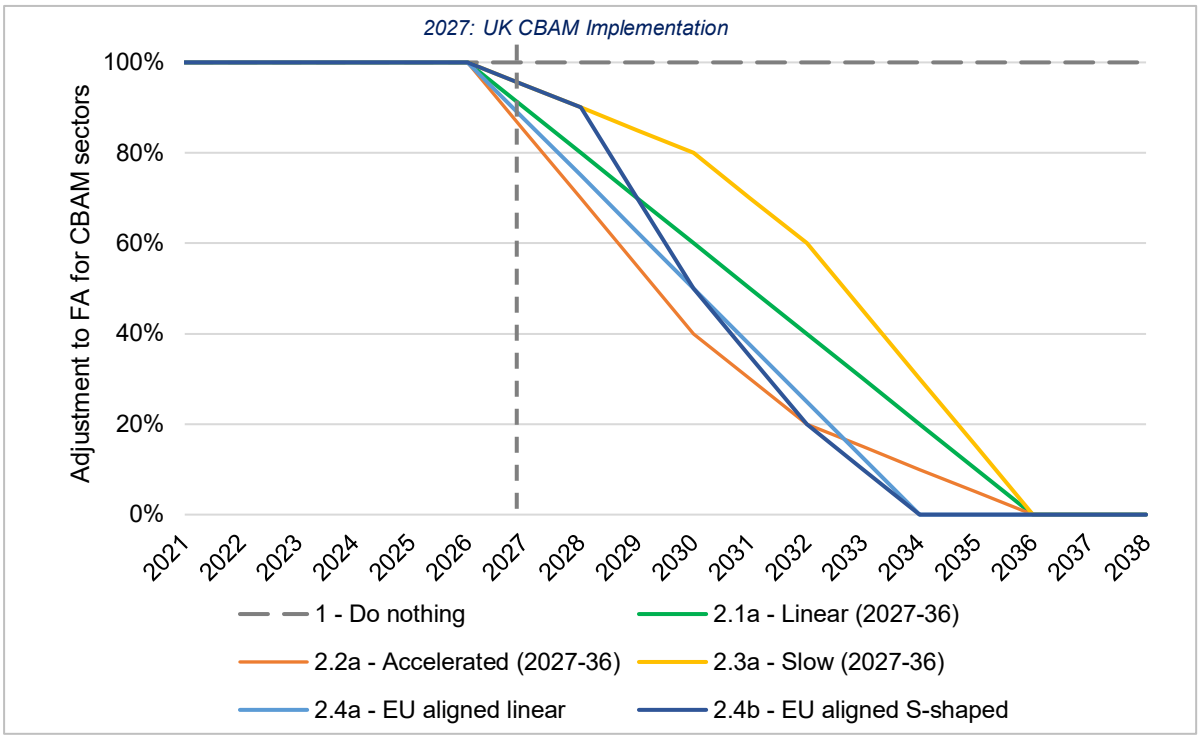

Figure 9: Implementation of FA adjustment in 2027

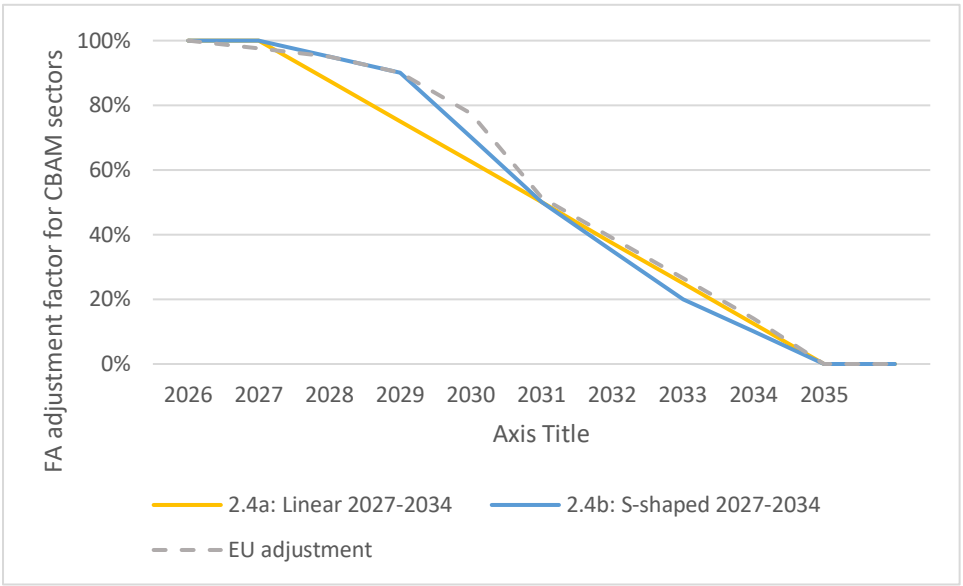

Figure 10: Implementation of FA adjustment options compared to EU adjustment

10. **Do you agree with the parameters of adjustment that have been identified by the Authority? If not, please explain your reasoning and any other parameters which should be considered.**

11. **Do you have a preference for the start year, adjustment length or trajectory? Please explain your reasoning for each preference.**

12. **Do you agree with the rationale that has been presented for consideration within each of the parameters of the adjustment? If not please explain your reasoning and any other considerations the Authority should take into account.**

Extent of adjustment

The extent of the adjustment can be considered in two ways. The first would be an adjustment to zero which would be analogous with a phase out of Free Allocations for CBAM sectors. The second would be a phase down to account for outstanding carbon leakage risk not covered by the CBAM.

As a CBAM will only cover imports, UK exports will continue to have exposure to carbon leakage and may face further consequences to downstream products. The Authority is mindful of the potential risks which have been highlighted for export leakage protection[38] and will only consider changes to free allocations that will be compatible with WTO rules and other relevant trade law obligations. Further analysis, following this consultation, will be required to determine this.

However, if there were a WTO and wider trade law consistent method for maintaining Free Allocations to support UK firms' export and downstream leakage risk, then the Authority has considered where in the methodology this could be accounted for.

The Free Allocation calculation considered historic activity levels, benchmarks and carbon leakage risk (via the Carbon Leakage Exposure Factor, or CLEF). In this calculation, historic activity level is based on an installation's historic outputs over a baseline period, the benchmark is a reference value for emissions relative to production activity and based on the most efficient producers, and the CLEF represents carbon leakage risk.

Free Allocation may exceed emissions and activity in the short run due to the historic basis for Free Allocation calculated for each installation. As Free Allocation lags in response to activity levels, support rates are volatile and can exceed 100%. In order to increase the effectiveness of Free Allocations as a carbon leakage mitigation tool, one approach could be to move to a more dynamic output-based allocation as described in Proposal One of the 2023 Free Allocation Review consultation[39]. However, under current rules we do not have a dynamic allocation approach, and in the instance that we did introduce one, this could result in an increase or decrease of an installations free allocations as a proportion of their emissions. This would not necessarily have the impact of adjusting Free Allocation for CBAM sectors to enable the CBAM to be more effective. Therefore, we do not consider that changes to historic activity level would be an appropriate vehicle for making a Free Allocation methodology adjustment for CBAM sectors.

The benchmarking calculation is not directly related to a firm's direct exposure to carbon leakage, but rather it is used to reward more efficient installations and to incentivise other installations within a sector to decarbonise. Since this is not strictly related to carbon leakage risk, it is also unlikely that changes to the benchmarking methodology would be an appropriate vehicle for making a Free Allocation methodology adjustment for CBAM sectors.

Therefore, the final option to consider would be a change to the carbon leakage exposure element of the Free Allocation methodology. In theory, it would be possible to make an amendment to the CLIs for CBAM sectors to account for the remaining carbon leakage risk

[38] More information about export leakage is included in the Analytical Annex to this consultation.
[39] https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review

which will not be addressed by the UK CBAM, namely export leakage risk. By calculating trade intensity solely on the basis of export intensity it would be possible to calculate a CLI which focused on carbon leakage risk associated with exports.

One possible option the Authority could consider would be to make an adjustment to CLI values for CBAM sectors and recalculate Free Allocations from 2027 on this new basis, acting as a backstop to the adjustment.

While this would address the carbon leakage risk still faced for high-export installations, in addition to the potential risks around WTO rules there are other risks associated with this approach:

- Free Allocations would not be adjusted beyond a certain point, meaning that the efficacy of the CBAM would always be limited. This could dampen the carbon price signal and the incentive to decarbonise for those sectors receiving Free Allocations.
- Maintaining Free Allocations for CBAM sectors to cover export leakage risk could be problematic towards 2030 and beyond, when the number of allowances available under the cap and industry cap will be very limited, and there would be no long-term solution to the diminishing number of allowances as we move to a net zero ETS.
- In order to maintain the certainty required for ETS operators, we would also still need to calculate Free Allocations based on export leakage on the basis of historic data and set the level over a period of time. This would not address the issues of over- or under-allocation and it would mean that Free Allocations are still not a perfect carbon leakage mitigation measure.

The Authority is seeking views on the best approach regarding the extent of the Free Allocation adjustment to protect against carbon leakage.

UK Government will continue to explore alternative approaches to mitigate export leakage as it develops its carbon leakage and industrial decarbonisation measures. The Authority will engage with UK Government as it develops approaches in this space to ensure the role of Free Allocations are considered.

13. **Do you agree with the considerations the Authority will take into account when determining the extent of the adjustment to free allocations? If not, please explain your answer.**

14. **Do you have a preference on whether the adjustment should be to zero or a non-zero amount? Please explain your answer.**

Technical implementation of adjustment

The Authority is also considering how the adjustment to Free Allocations can be applied. We are minded to apply the adjustment at installation level, following the calculation of preliminary Free Allocations. This will ensure that adjustments can be made after relevant historic activity and performance against the benchmark has been considered at installation level, and before aggregated Free Allocations have been considered in relation to the level of the industry cap to determine whether a cross-sectoral correction factor (CSCF) has been triggered.

Free Allocations will only be adjusted for those sub-installations which will be covered by the CBAM. A mapping for CBAM goods at commodity code level to UK ETS Free Allocation (SIC)

is set out in the Analytical Annex to this consultation. The table below provides a summary of sectors that will see an adjustment to their Free Allocations.

CBAM sector	SIC4 / Industry
Aluminium	24.42 (Aluminium production)
Cement	23.51 (Manufacture of cement)
Fertiliser	20.15 (Manufacture of fertilisers and nitrogen compounds)
Hydrogen	20.11 (Manufacture of industrial gases)
Iron and steel	24.10 (Manufacture of basic iron and steel and of ferro-alloys) 21.20 (Manufacture of tubes, pipes, hollow profiles and related fittings, of steel)

Figure 11: A summary of sectors that will see an adjustment to their Free Allocations if the proposals outlined in this Chapter are implemented

In order to adjust Free Allocations for sub-installations covered by the UK CBAM, the Authority will require sites to disaggregate their data submissions to split sub-installations that are covered by the CBAM from sub-installations that are not. We are exploring options for how this reporting can take place in the least administratively burdensome way, and are currently considering that this requirement could make up part of the second phase of the Baseline Data Collection, as part of the confirmation of Free Allocation applications in 2026[40]. The Authority is seeking views on whether this is the most appropriate method to disaggregate Free Allocations across CBAM and non-CBAM goods. Subject to determining an appropriate methodology to implement this disaggregation, the Authority is minded to ensure that only Free Allocations mapped to CBAM goods are adjusted, ensuring that any non-CBAM goods retain their carbon leakage mitigation through Free Allocation.

15. **Do you agree with the mapping of SICs to CBAM goods provided by the Authority? If not, please explain your answer.**

16. **Do you agree with the Authority's minded to position that free allocations should only be adjusted for goods covered by the UK CBAM? If not, please explain your answer.**

17. **Do you have any other factors that you would like to flag to the Authority for consideration in how CBAM and non-CBAM good free allocations should be disaggregated? Please provide an explanation of how you think this methodology could be implemented.**

Assessment criteria

In order to come to a final decision on the methodology for Free Allocation adjustments, the Authority is considering the following assessment criteria. Alongside consideration of this assessment criteria the Authority will also be conducting a full impact assessment of the final

[40] More information on the first and second stage of the Baseline Data Collection exercise can be found in the Authority Response to Moving the UK ETS Second Allocation Period which can be found here https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review

policy decisions ahead of the publishing an Authority Response. We are seeking your views on how these assessment criteria should be considered by the Authority, and invite respondents to this consultation to rank them in order, as well as providing a rationale for their response.

- Mitigating carbon leakage risk for imports;
- Mitigating carbon leakage risk for exports;
- Impact of a Free Allocation adjustment on ETS effectiveness;
- Technical feasibility of the free allocation adjustment methodology; and
- Affordability to government of the final policy choice.

The first three of these criteria can be mapped against one another, as shown in the graph below. Therefore it is important for the Authority to take into account participants' views on where the priority should lie.

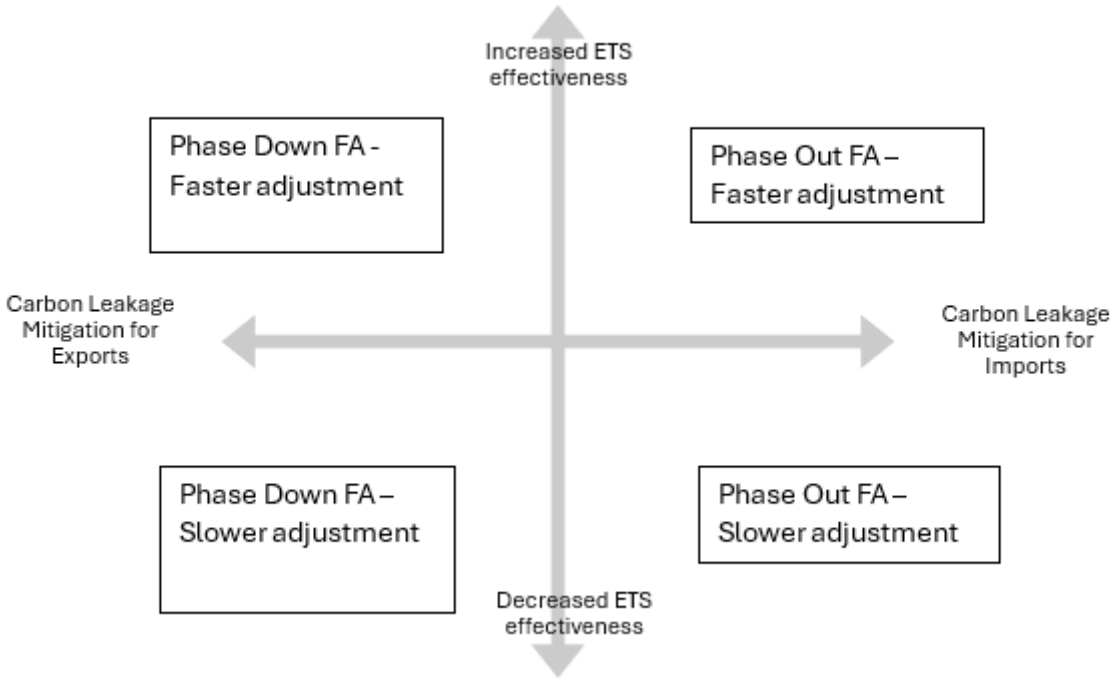

Figure 12: Mapping assessment criteria for the methodology for adjusting Free Allocations

As described in the 'Extent of adjustment' section above, the Authority will ensure any changes are in line with WTO rules[41] and wider trade law related obligations. Therefore, an assessment criteria which falls outside the scope of the above weightings is WTO compatibility. We invite respondents to provide views on how Free Allocations might be adjusted within the scope of WTO rules.

18. **Do you agree with the assessment criteria that has been put forward for consideration by the Authority? If not, please explain your answer and provide other assessment criteria for consideration.**

[41] https://www.wto.org/english/tratop_e/region_e/regrul_e.htm

19. **Please rank the assessment criteria in order of most important to least important.**

Treatment of adjusted Free Allocations

It is likely that any adjustment to Free Allocations for CBAM sectors would result in unallocated allowances under the Industry Cap. The Authority will consider the treatment of any unallocated allowances once decisions on the questions covered in this consultation have been finalised.

Consultation questions

1. **Do you agree with the data sets used to calculate emissions intensity and trade intensity? If you do not, please explain why and suggest alternative data sets.**

2. **Do you agree with the fallback approaches which have been used where gaps have remained in the trade and emissions intensity data sets? If you do not, please explain why and suggest alternatives.**

3. **Do you agree with the methodology used to update the Carbon Leakage List threshold values i.e. 0.14 and 0.74, determined on the basis of Option A described above? If you do not, please explain why and suggest an alternative methodology.**

4. **Do you agree with the Authority's preliminary list of Carbon Leakage Indicator (CLI) values?**

5. **If you do not agree with the Authority's preliminary list of CLI values, please explain why and suggest any additional data (that meets the assessment criteria). If you do not agree and would like to propose an alternative methodology or data set which does not meet the assessment criteria, please explain why this data should be used.**

6. **Do you agree with the Authority's minded to position to take an 'additive' approach to the Carbon Leakage List, should new data provided through this consultation change the current CLI values? If you do not agree, please explain why and suggest an alternative approach.**

7. **Are there any other facts or matters that you would like the Authority to take into account before making a final decision on the Carbon Leakage List?**

8. **On the basis of the information presented in this Chapter do you think we should update the Carbon Leakage List to be based on UK data or do you have a preference to continue to use the existing Carbon Leakage List? Please explain your answer.**

9. **Do you agree with the Authority's minded to position to not take forward the 'do nothing' option? If you do not agree, please explain your reasoning.**

10. **Do you agree with the parameters of adjustment that have been identified by the Authority? If not, please explain your reasoning and any other parameters which should be considered.**

11. **Do you have a preference for the start year, adjustment length or trajectory? Please explain your reasoning for each preference.**

12. **Do you agree with the rationale that has been presented for consideration within each of the parameters of the adjustment? If not please explain your reasoning and any other considerations the Authority should take into account.**

13. **Do you agree with the considerations the Authority will take into account when determining the extent of the adjustment to free allocations? If not, please explain your answer.**

14. **Do you have a preference on whether the adjustment should be to zero or a non-zero amount? Please explain your answer.**

15. **Do you agree with the mapping of SICs to CBAM goods provided by the Authority? If not, please explain your answer.**

16. **Do you agree with the Authority's minded to position that free allocations should only be adjusted for goods covered by the UK CBAM? If not, please explain your answer.**

17. **Do you have any other factors that you would like to flag to the Authority for consideration in how CBAM and non-CBAM good free allocations should be disaggregated? Please provide an explanation of how you think this methodology could be implemented.**

18. **Do you agree with the assessment criteria that has been put forward for consideration by the Authority? If not, please explain your answer and provide other assessment criteria for consideration.**

19. **Please rank the assessment criteria in order of most important to least important.**

Next steps

The Authority intends to respond to this consultation and outstanding decisions as part of the Free Allocation Review consultation no later than the end of 2025.

This consultation is available from: www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-carbon-leakage

If you need a version of this document in a more accessible format, please email alt.formats@energysecurity.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.