



Department for  
Energy Security  
& Net Zero



HM Treasury

# **Addressing carbon leakage risk to support decarbonisation**

**A consultation on strategic  
goals, policy options and  
implementation  
considerations**

Closing date: 22 June 2023

March 2023



Department for  
Energy Security  
& Net Zero



HM Treasury

# **Addressing carbon leakage risk to support decarbonisation**

A consultation on strategic goals, policy options and implementation considerations

Closing date: 22 June 2023



# Foreword

The UK has a track record to be proud of. It was the first major economy to legislate for net zero. It is decarbonising faster than any other G7 country and has committed to ambitious targets to reduce its emissions by at least 68% by 2030 and to net zero by 2050. Along the way we have seized the opportunities of the global green transition for jobs and investment for businesses and communities. Going forward we believe the green transition can lead to a transformation and a renaissance in our industrial base.

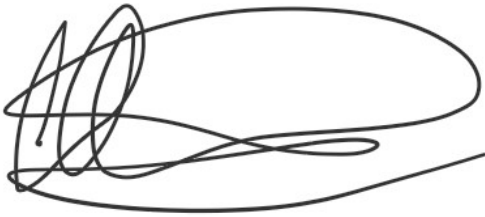
Decarbonising UK industry forms an important part of delivering the energy transformation needed to achieve net zero at home and so contribute to a further reduction in our share of carbon emissions globally. It will reduce our dependence on foreign energy and allow us to make Putin's illegal invasion of Ukraine a turning point as we strengthen Britain's energy security and hasten the transition. If this is to move from aspiration to reality then UK business must be able to invest in decarbonisation in the knowledge that their efforts to drive down global emissions will not be undermined by carbon leakage - the movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation.

The UK is committed to working with international partners to address carbon leakage risk and will build on our recent COP26 and G7 presidencies. This consultation considers whether, alongside seeking multilateral solutions which may take time to develop, we also need domestic measures to create the right conditions to drive decarbonisation at the pace we need. It explores measures which have the potential to form part of the UK's policy portfolio to address the risk of carbon leakage, alongside development of our wider decarbonisation policies, notably the ongoing development of the UK Emissions Trading Scheme. Any measures would need to respect our commitment to free and open trade, our international climate change commitments and the needs of industry and consumers.

This consultation is an opportunity to shape the UK's approach to carbon leakage risk over the course of our pioneering journey towards a net zero economy. We want to understand how businesses expect carbon leakage risk to impact them and what measures might help them to invest in decarbonisation, including any afforded by the

new freedoms now that the UK is no longer bound by EU membership. We welcome views from everyone with an interest in the UK's approach to industrial decarbonisation and addressing carbon leakage, including our partners overseas. Together, we can seize the opportunities of the net zero transition and build a thriving low carbon future.

**RT HON GRAHAM STUART  
MP**

A black ink handwritten signature, appearing to be 'G. Stuart', written in a cursive style.

Minister of State for Energy Security  
and Net Zero

Department for Energy Security  
and Net Zero

**JAMES CARTLIDGE MP**

A black ink handwritten signature, appearing to be 'J. Cartlidge', written in a cursive style.

Exchequer Secretary

His Majesty's Treasury

# Contents

<b>Foreword</b>	<b>5</b>
<b>Contents</b>	<b>7</b>
<b>General information</b>	<b>10</b>
Why we are consulting	10
Consultation details	11
How to respond	12
Confidentiality and data protection	12
Quality assurance	12
<b>Introduction</b>	<b>13</b>
Consultation scope	15
Territorial coverage and devolution	17
Related consultations and publications	18
The structure of this consultation	19
<b>Part One: A policy framework for carbon leakage</b>	<b>21</b>
<b>Chapter 1: Carbon leakage policy measures</b>	<b>22</b>
Defining carbon leakage	22
Factors contributing to risk of carbon leakage	23
Planned changes to existing carbon leakage mitigations: Free Allowances in the UK ETS	24
Possible future carbon leakage policy measures	27
<b>Chapter 2: Carbon border adjustment mechanism</b>	<b>33</b>
Sectoral targeting: to which sectors and products could a CBAM apply?	34
Emissions measurement: how should emissions be measured as part of a UK CBAM?	35
Emissions scope: which emissions should be within scope of a UK CBAM?	37
Price measurement: how should a UK CBAM price be calculated?	39
Implementation: how and when should businesses be required to comply with a UK CBAM?	43
<b>Chapter 3: Mandatory product standards</b>	<b>46</b>

Sectoral Targeting: to which sectors and products could mandatory product standards apply?	47
Which emissions should be in scope?	50
To which part of the manufacturing chain should MPS apply?	52
Should any MPS apply to imports?	56
Setting emissions thresholds for standards and increasing their stringency	56
Implementation: when should any mandatory product standards be introduced?	58
<b>Chapter 4: Cross cutting policy issues for CBAM and MPS</b>	<b>59</b>
International context and trade implications	59
Simplification of carbon intensity measurement	61
Risk of circumvention and resource shuffling	62
Possible downstream impacts	63
Exports	65
Carbon Credits and Offsetting	66
<b>Chapter 5: Growing the market for low carbon products</b>	<b>68</b>
Labelling and Voluntary Product Standards	69
Public procurement and the Industrial Deep Decarbonisation Initiative (IDDI)	73
<b>Part Two: Embodied emissions reporting</b>	<b>79</b>
Domestic and international context	79
<b>Chapter 6: Emissions reporting framework</b>	<b>81</b>
Options for embodied emissions reporting	81
Use of Emission Factors	87
The role of default values in emissions reporting	88
<b>Chapter 7: Designing the mechanism for embodied emissions reporting</b>	<b>90</b>
Methodology for measuring embodied emissions of products	90
Reporting metric	92
Emissions Data Collection Period	93
Sectoral coverage of emissions reporting	95
Emissions scope	95
Where should the reporting obligation be targeted in the manufacturing chain?	97
Geographic coverage of embodied emissions reporting	97
<b>Chapter 8: Reporting to government and delivery of the IT system</b>	<b>98</b>
IT System	98
Frequency of reporting	100



Verification of emissions data	101
Disclosure of emissions data	101
<b>Public Sector Equality Duty</b>	<b>103</b>
<b>Annexes</b>	<b>104</b>
Annex A – Glossary	104
Annex C – Industrial Deep Decarbonisation Initiative - Pledge Explanatory Note	120
Annex D – UK Government Reporting Schemes	123

# General information

## Why we are consulting

Carbon leakage refers to the movement of production and associated emissions from one country to another due to different 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 – would be undermined.

The Department for Energy Security and Net Zero and HM Treasury (HMT) are seeking views to help develop proposals for policy measures to mitigate carbon leakage risk in future, and to ensure the government's climate policies support efforts to decarbonise and reduce emissions both globally and in the UK. The intention is to do this in a manner that is consistent with the government's commitment to free and open trade, upholding the World Trade Organisation (WTO) rules as well as respecting international climate change obligations taking into consideration countries' differing levels of development, particularly for least developed and low-income countries. Potential measures being consulted on include a carbon border adjustment mechanism (CBAM), mandatory product standards, and policies which would help grow the market for low emission industrial products, as well as any emissions reporting requirement which might be needed to underpin new policies.

The government recognises that this consultation explores a range of complex policy proposals. The government is committed to fully explaining the issues through this document to enable respondents to give an informed view and has set a consultation period of 12 weeks to ensure stakeholders have sufficient time to develop their responses. The government welcomes views across the document. Responses that only cover a subset of questions will still be considered as part of consultation responses. Respondents are welcome to provide their views on the full document or only on sections they deem relevant to their sector or organisation.

This consultation is designed to gather a wide range of views and evidence from stakeholders to facilitate the policy making process and does not constitute a statement of government policy with respect to carbon leakage mitigation. Following this consultation, further policy development will be needed before new carbon leakage measures, if any, could be implemented. The government intends to engage further with stakeholders as part of that policy development and share more detail before finalising any new policy for carbon leakage measures.

## Consultation details

Issued: 30 March 2023

Respond by: 22 June 2023

Enquiries to:

**Katie Doubleday**

International Group, HM Treasury

2nd Floor, Blue  
1 Horse Guards Road  
London  
SW1A 2HQ

07917267727

**Josh Watts**

International Net Zero, Department for  
Energy Security and Net Zero

2<sup>nd</sup> Floor  
1 Victoria Street  
London  
SW1H 0ET

07741689499

Email: [carbonleakage.consultation@beis.gov.uk](mailto:carbonleakage.consultation@beis.gov.uk)

Consultation reference: Addressing carbon leakage risk to support decarbonisation

### **Audiences:**

The government's aim is to gather evidence from a broad range of stakeholders, both within the UK and internationally. The consultation will be of particular interest to companies and representatives from energy intensive industries and to importers of products potentially subject to measures referenced in this consultation, including small and medium-sized enterprises. The government also welcomes views from companies and representatives in other sectors, including company treasurers and providers of resource planning systems, as well as those with an interest in climate policy including academics, non-governmental organisations and trading partners.

### **Territorial extent:**

This consultation seeks information for consideration by the UK Government.

### **Supporting information:**

Analytical considerations for policy development can be found at Annex B. This annex provides supplementary data and analysis related to carbon leakage risks and potential implications of measures. It does not reflect the full evidence base on which decisions will be taken and is not a formal impact assessment. The government will seek to gain further evidence as part of this consultation and the government's assessment will evolve if and when the policies are developed.

## How to respond

Responses should be provided online at <https://beisgovuk.citizenspace.com/trade/addressing-carbon-leakage-risk> (preferred) or by email to [carbonleakage.consultation@beis.gov.uk](mailto:carbonleakage.consultation@beis.gov.uk)

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).

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: [enquiries@beis.gov.uk](mailto:enquiries@beis.gov.uk)

# Introduction

The UK's leadership has driven a domestic and international transformation in the fight against climate change. It was the first major economy to make an ambitious net zero target to end its contribution to global warming by 2050<sup>1</sup> <sup>2</sup>. This revolutionised the UK's domestic decarbonisation agenda, and the UK continues to spearhead international ambition to reduce global emissions and keep global warming to no more than 1.5°C above pre-industrial temperatures. As set out in the government's Industrial Decarbonisation Strategy (2021), a successful transition to a net zero economy is expected to see UK industrial emissions reduce by at least two-thirds by 2035 and by at least 90% by 2050<sup>3</sup>. These plans set the course for action needed to counter climate change and to transform our economy.

Decarbonising UK industry is a core part of the government's ambitious plan to achieve net zero and goes hand in hand with working collaboratively with global partners to tackle climate change. The government is committed to supporting UK industry to meet this challenge. However, UK efforts could be undermined by carbon leakage: the movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation. As a result, the objective of decarbonisation efforts – to reduce global emissions – would be undermined.

The importance of mitigating carbon leakage is consistent with independent advice – Chris Skidmore MP's Net Zero Review<sup>4</sup>, the UK Climate Change Committee<sup>5</sup> and the

---

<sup>1</sup> The UK is committed by law to achieve net zero by 2050 under the Climate Change Act 2008. (<https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>).

<sup>2</sup> The UK also has legally binding carbon budgets that place a restriction on the total amount of greenhouse gases the UK can emit over a 5-year period. These are currently set up to 2037. The UK has additionally committed to reduce its emissions by at least 68% by 2030 on 1990 levels via its nationally determined contribution under the Paris Agreement.

<sup>3</sup> Industrial Decarbonisation Strategy, 2021 (<https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>)

<sup>4</sup> [Review of Net Zero - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/net-zero-review)

<sup>5</sup> UK Climate Change Committee [2022 Progress Report to Parliament - Climate Change Committee \(theccc.org.uk\)](https://www.theccc.org.uk/2022/02/22/2022-progress-report-to-parliament/)

Parliamentary Environmental Audit Committee<sup>6</sup> all underline the critical role of effective carbon leakage mitigation to delivering net zero in the UK.

The UK is not alone. There is increasing recognition that all countries with high ambition to decarbonise their industry may face carbon leakage risk. As articulated in the G7 statement on a Climate Club (June 2022) ‘...currently neither global climate ambition nor implementation are sufficient to achieve the goals of the Paris Agreement.’ Given the urgency in responding to the threat of climate change, the concern is that carbon leakage risk will dampen international action to reduce industrial emissions and compromise efforts to avoid global warming of more than 1.5°C<sup>7</sup>. In turn, this could curtail private investment to reduce industrial emissions, compromising efforts to avoid global warming.<sup>8</sup>

The government is committed to working with partners to find international solutions to carbon leakage, recognising that this risk could be eliminated if all countries were to move together in reducing emissions globally through carbon pricing and regulation. Progress on carbon leakage means boosting international cooperation, including technical cooperation, on approaches to decarbonisation. Building on its G7 and COP26 presidencies, the UK continues to drive progress through the United Nations Framework Convention on Climate Change; the G7 Industrial Decarbonisation Agenda (IDA)<sup>9</sup>; the Glasgow Breakthroughs<sup>10</sup>; and the Industrial Deep Decarbonisation Initiative (IDDI)<sup>11</sup>, which it co-chairs with India, among other initiatives. The UK also supports the development of open and inclusive spaces for dialogue to compare different approaches to decarbonisation and increase their alignment, including the German initiated Climate Club established by the G7<sup>12</sup>, and the Organisation for Economic Cooperation and Development’s Inclusive Forum on Carbon Mitigation Approaches (IFCMA)<sup>13</sup>. The UK is actively involved in discussions on carbon leakage at the WTO and in the G20.

While international solutions to mitigate carbon leakage would be best, it will take time to build consensus. Meanwhile, some jurisdictions are developing or considering their own

---

<sup>6</sup> [EAC calls for work on a unilateral CBAM to commence immediately - Committees - UK Parliament.](#)

<sup>7</sup> The Paris Agreement (Article 2(1)(a)) establishes the goals of "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels..."<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

<sup>8</sup> The Paris Agreement (Article 2(1)(a)) establishes the goals of "Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels..."<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

<sup>9</sup> The Industrial Decarbonisation Initiative (IDA) was founded to amplify ambition on action on public procurement, standards and industrial efforts to define and stimulate demand for green products.

<sup>10</sup> At COP26, the UK launched the Breakthrough Agenda<sup>13</sup>, supported by over 40 world leaders – representing more than 70% of the world’s economy and every region. The Glasgow Breakthroughs collectively cover more than 50% of global emissions and include the steel sector.  
<https://ukcop26.org/the-breakthrough-agenda>.

<sup>11</sup> The UK co-leads the IDDI with India, advocating for public procurement commitments to stimulate demand for green products and harmonising systems for carbon reporting and benchmarking of products such as steel and cement.

<sup>12</sup> In June 2022, the UK along with G7 leaders endorsed the G7 Statement on Climate Club<sup>15</sup>, to support the effective implementation of the Paris Agreement by accelerating climate action and increasing ambition, with a particular focus on the industrial sector.  
<https://www.g7germany.de/resource/blob/974430/2057926/2a7cd9f10213a481924492942dd660a1/2022-06-28-g7-climate-club-data.pdf?download=1>

<sup>13</sup> IFCMA used multilateral dialogue to and data sharing to advance common understanding of approaches to decarbonisation.

measures to mitigate carbon leakage risk. The EU, for example, intends to pilot a carbon border adjustment mechanism later this year, with full implementation in 2026, and other countries, such as Canada, are exploring their domestic options.

The main domestic carbon leakage policy measure in the UK is free allocation under the UK Emissions Trading Scheme (ETS). The UK ETS Authority<sup>14</sup> has committed to review the free allocation approach and to maintain overall levels of free allocation for stationary installations within the scheme until 2026<sup>15</sup>. From 2026 onwards, the UK ETS Authority will implement options to ensure free allocation is used in the most effective way and is targeted at those sectors that are most at risk of carbon leakage in the UK. This approach will be considered in parallel to the additional policy measures explored in this consultation to provide a broader package of carbon leakage mitigation. Whilst the government encourages all countries to bring forward ambitious climate regulation and carbon pricing, there will be a diversity of approaches internationally, and the risk of carbon leakage could increase if gaps in climate ambition between the UK and trading partners grow. The government is committed to putting in place the necessary policies and measures for UK industry to successfully decarbonise. As part of this the government is exploring a wider package of potential carbon leakage policy measures, with the aim of ensuring that carbon leakage risks are mitigated at all stages of the UK's net zero transition.

Free trade and investment are essential to unlocking new ideas and technologies to create a global green market to help reach net zero, and the government is committed to ensuring the UK remains a global leader in this space. The government is clear that any future policy or policies to mitigate carbon leakage risk would need to be consistent with other priorities for the UK. This includes our commitment to free and open trade, as well as respecting international climate change obligations and taking into consideration countries' differing levels of development, particularly for least developed and low-income countries. Any measures, if taken forward, would comply with the government's international commitments, including World Trade Organisation (WTO) obligations, and will look to minimise burdens on business (in the UK and overseas) and consumers.

## Consultation scope

As set out in the Industrial Decarbonisation Strategy, ensuring UK industry has the optimal policy environment to decarbonise in a global market is of vital importance to the government. A clear, long-term framework for addressing the risk of carbon leakage is a key part of supporting successful decarbonisation of industry in the UK and overseas.

The government is consulting on a range of potential domestic carbon leakage policy measures, recognising this is an area of significant stakeholder interest. Responses to this consultation will inform the government's position on the most appropriate tool or tools to mitigate the carbon leakage risk in future for each relevant sector. Any policies, if taken forward, would support efforts to decarbonise the UK economy in line with the UK's legislated emissions reductions targets, as well as supporting efforts to reduce emissions globally. Following this consultation, further policy development would be needed before any new carbon leakage measures could be implemented. The government intends to

---

<sup>14</sup> The UK ETS Authority is made up of UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland.

<sup>15</sup> Subject to activity use changes

engage further with stakeholders as part of policy development and share more detail before implementing any new carbon leakage measures. The government would also consider how any policies could best align with the evolving international landscape.

This consultation covers the following potential policy measures to address carbon leakage from the mid-2020s onwards: a carbon border adjustment mechanism (CBAM); mandatory product standards (MPS); and other demand side measures to grow the market for low carbon industrial products, which would in turn help to mitigate carbon leakage. As part of the consideration of the role of demand side measures, government is seeking views on potential procurement pledges proposed by the IDDI.

These measures could be deployed individually or in combination as part of a policy framework to address carbon leakage and meet broader decarbonisation objectives. This consultation seeks views from industry and others on what measure or combination of measures would be right for different sectors. Where there is a case for applying multiple policies to the same sector, the government will be mindful of the need to minimise burdens for business in the UK and overseas. As an illustrative example, a CBAM could be applied to imports to ensure they are subject to a comparable carbon price but standards might also be beneficial to make targeted interventions in specific areas or progress international agreement on global ambition in that same sector.

The government is also exploring potential options to facilitate embodied emissions reporting that could support new decarbonisation and carbon leakage policy measures. This includes the potential introduction of an obligation for relevant sectors to report the embodied emissions of products. The government is seeking views on how embodied emissions data should be measured and reported to maximise usefulness of the information; utilise existing domestic and international schemes; minimise the demands on businesses (in the UK and overseas), including challenges faced by small and medium-sized enterprises; and support global initiatives led by industry, governments and international organisations. It will consider reporting requirements of trading partners to ensure any burdens on business in the UK and overseas are minimised and domestic policy is compatible with our ultimate goal of building international consensus on carbon leakage mitigation.

This consultation seeks views from a diverse range of stakeholders from within and outside the UK on how measures can be best designed to fulfil these priorities.

When responding to this consultation please specify:

**Question 0.1: Are you responding as / on behalf of (select all that apply):**

- **1) industry/business**
- **2) A small or medium enterprise (SME)**
- **3) overseas industry/ business**
- **4) software houses and customs agents**
- **5) Financial Reporting functions and Enterprise Reporting Systems**
- **6) As a government body**
- **7) An NGO, thinktank, or academia**
- **8) As a private citizen**
- **9) other (please specify)**
- **If relevant, in which sector are you based?**



**Question 0.2: If responding on behalf of a business/organisation, where is your business/organisation based/registered? If your organisation is based overseas, please specify which country you are based in.**

**Question 0.3: If your country of origin is the UK, which region are you based in? [drop down list]**

- Scotland
- Wales
- Northern Ireland
- North East England
- North West England
- Yorkshire and the Humber
- East Midlands
- West Midlands
- East of England
- London
- South East
- South West

**Question 0.4: Are you in receipt of free allowances under the UK ETS?**

- Yes
- No
- Prefer not to say

**Question 0.5: Would you consider your business as part of an industrial cluster (an area where related industries have co-located)<sup>16</sup>? If 'yes', which one?**

- Yes
- No

[open text]

## Territorial coverage and devolution

The policies under consideration in this consultation are at an early, exploratory stage, and would not commit the UK Government or devolved administrations of Scotland, Wales, and Northern Ireland to taking any particular path. The UK Government is committed to ensuring that the UK as a whole has a coherent and comprehensive set of policy measures to mitigate carbon leakage risk in future. This will be crucial for ensuring that the UK's climate policies as a whole support efforts to decarbonise and reduce global emissions, and for providing businesses the certainty and security to invest in low carbon solutions.

---

<sup>16</sup> The government has previously recognised seven "industrial clusters" where related industries have co-located. These are: Black Country, Merseyside, Grangemouth, Humberside, Teesside, South Wales, Southampton. (Source IDS)

Any new measure or measures will have to work cohesively with our existing carbon leakage policy measures, especially the allocation of UK ETS free allowances. Regardless of the policy mix taken forward, the UK Government would therefore engage extensively with the devolved administrations at every stage to ensure the coherence of the wider policy framework.

## Related consultations and publications

This consultation builds on and sits as part of wider government work to engage on, develop, and communicate the UK's approach to decarbonisation and carbon leakage risk.

This includes the Net Zero Strategy<sup>17</sup>, which in 2021 set out policies and proposals for decarbonising all sectors of the UK economy. Along with the 2021 Industrial Decarbonisation Strategy<sup>18</sup>, this describes the wider decarbonisation policy landscape in which future carbon leakage measures would operate. The Net Zero Strategy will leverage an unprecedented £100 billion of private investment as we develop new industries and innovative low carbon technologies which will allow the UK to meet our decarbonisation goals. Strong progress has been made against the Net Zero Strategy so far. In 2021 alone, around £24 billion of new investment was committed in the UK across low carbon sectors, and the government estimates that just over 69,000 green jobs have already been supported in the UK since the launch of the Ten Point Plan for a Green Industrial Revolution in November 2020.

The government's understanding of carbon leakage in this consultation is informed by exploration of the issue in both the interim and final reports of the Treasury-led Net Zero Review<sup>19</sup>. Measures discussed in this consultation to build the market for low carbon goods and strengthen emissions reporting draw on responses to the 2021 BEIS call for evidence 'Towards a market for low emissions industrial products'<sup>20</sup>.

The UK ETS and its system of free allocation – the UK's primary measure to promote decarbonisation and mitigate carbon leakage currently – was the subject of consultation in 2022. The ETS Authority will shortly publish its response to the 2022 'Developing the UK Emissions Trading Scheme' consultation<sup>21</sup>, and bring forward an additional consultation this year on free allocation for stationary installations under the ETS.

Most recently, the government commissioned an independent review of net zero led by Chris Skidmore MP, which reported in January 2023<sup>22</sup>. This recommended that the government should progress this consultation on carbon leakage measures and speed up

<sup>17</sup> Net Zero Strategy: Build Back Greener, 2021 (<https://www.gov.uk/government/publications/net-zero-strategy>)

<sup>18</sup> Industrial Decarbonisation Strategy, 2021 (<https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>)

<sup>19</sup> Net Zero Review: Interim Report, 2020 (<https://www.gov.uk/government/publications/net-zero-review-interim-report>) and Net Zero Review: Final Report, 2021 (<https://www.gov.uk/government/publications/net-zero-review-final-report>).

<sup>20</sup> Towards a market for low emissions industrial products: call for evidence, 2021 (<https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>)

<sup>21</sup> Developing the UK Emissions Trading Scheme (UK ETS) consultation, 2022 (<https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>)

<sup>22</sup> Review of Net Zero, 2023 (<https://www.gov.uk/government/publications/review-of-net-zero>)

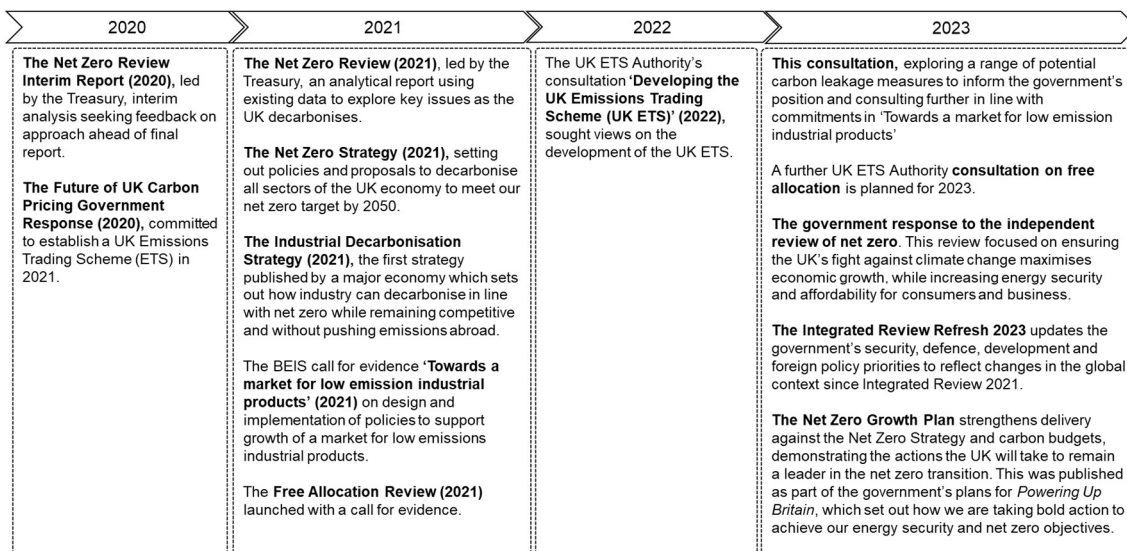
decision-making to enable the government to identify the most appropriate form of carbon leakage mitigation for the UK and implement policy measures from 2026. The government published its response to the report, including the recommendations on carbon leakage, in March 2023.

The UK's overarching national security, defence, development, and foreign policy objectives, including on climate change, were set out in the Integrated Review of Security, Defence, Development and Foreign Policy published in 2021 and refreshed in 2023. The Review set out a vision for Global Britain which included:

- An emphasis on openness as a source of prosperity;
- A more robust position on security and resilience;
- A renewed commitment to the UK as a force for good in the world; and
- An increased determination to seek multilateral solutions to challenges like climate change.

In the 2023 Refresh of the Integrated Review<sup>23</sup> the UK's first thematic priority remains tackling climate change, environmental damage, and biodiversity loss, given the urgency of making progress before 2030.

**Figure 1. Timeline of government publications and engagement related to decarbonisation and carbon leakage.**



## The structure of this consultation

This consultation is set out in two parts. Part 1 sets out potential measures that the government could introduce to mitigate carbon leakage risk in future and consists of five chapters.

**Chapter 1** defines carbon leakage and sets out which sectors the government presently considers to be most at risk of carbon leakage in the future. It outlines the UK's main

<sup>23</sup> <https://www.gov.uk/government/publications/integrated-review-refresh-2023-responding-to-a-more-contested-and-volatile-world>

current policy measure for carbon leakage mitigation: allocation of free allowances under the UK Emissions Trading Scheme. It then summarises potential additional policy measures: a carbon border adjustment mechanism (CBAM), mandatory product standards (MPS), and other policy measures to help grow the market for low carbon products. It outlines certain objectives that would underpin the design of these policy measures, and how they could be implemented as part of a coherent framework.

**Chapter 2** covers a potential CBAM in more detail, including: sectoral targeting, emissions measurement, price measurement, timing and implementation.

**Chapter 3** covers potential MPS in more detail, including: sectoral targeting, emissions measurement, geographic coverage, defining a threshold, and potential timing.

**Chapter 4** considers cross-cutting issues which are common to the policy measures explored in chapters 2 and 3. These include potential impacts on trade and consideration of countries' differing stages of development. This chapter also considers emissions measurement, the risk of measures being circumvented or undermined by 'resource shuffling', potential impacts on downstream sectors, exports, and carbon credits and offsetting.

**Chapter 5** covers measures to grow the market for low carbon products. This includes product labelling and voluntary standards, public procurement through the Industrial Deep Decarbonisation Initiative (IDDI) and green private procurement.

Part 2 sets out proposals on design and delivery features of embodied emissions reporting that could underpin future carbon leakage policy measures. It consists of three chapters.

**Chapter 6** introduces proposals for an emissions reporting framework, including options for the design of embodied emissions reporting and the use of default values.

**Chapter 7** sets out options for the specific methodology for calculating the reported emissions, including the recommended reporting metric, which sectors could be targeted, and the scope of emissions.

**Chapter 8** discusses the design and delivery of the reporting system. This includes proposals on the IT product, frequency of reporting, verification of data, and how the information would be disclosed to the public.

In line with the Public Sector Equality Duty the consultation also seeks information on considerations of any potential impacts on those with protected characteristics.

Annex A - Glossary

Annex B -Analytical considerations for policy development

Annex C - Industrial Deep Decarbonisation Initiative

Annex D -- UK Government Reporting Schemes

# Part One: A policy framework for carbon leakage

# Chapter 1: Carbon leakage policy measures

## Defining carbon leakage

Carbon leakage is the movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation. As a result, the objective of decarbonisation efforts – to reduce global emissions – would be undermined.

Carbon leakage can take place through three main channels:

- Businesses in countries with ambitious carbon pricing and climate regulation face higher costs, causing a drop in domestic production and associated emissions, and an expansion elsewhere;
- Differences in the strength of carbon pricing and climate regulation influence investment decisions, causing a shift in future production and associated emissions elsewhere; or
- Reduced demand for fossil fuels due to policy measures in some countries could impact international fossil fuel prices, increasing incentives for carbon-intensive production involving the use of fossil fuels elsewhere.

Emissions displacement can be caused by a range of factors beyond climate policy, such as structural economic change, trade and tariff policy, or policies affecting domestic land use. Although, such displacement does not fall under the definition of carbon leakage and is not within the scope of this consultation or intention of the policies the consultation explores, non-climate policies (such as Free Trade Agreements) can affect a country's exposure to carbon leakage risk.

Even carbon pricing or climate regulation can cause displacement of emissions that would not necessarily be considered carbon leakage. For example, if every country applied the same stringent carbon price and climate regulation, we would expect all countries to reduce emissions. Those countries where the residual emissions intensities of products were relatively high would see some degree of contraction in production, with a shift of production to those countries where residual emissions intensities of products were relatively low. But such displacement would not count as carbon leakage, because there are no differences in the carbon price and climate regulation applied.

**Question 1.0: Does government's definition of carbon leakage reflect your understanding of the issue? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree; no, strongly disagree] [Open text]**

## Factors contributing to risk of carbon leakage

A range of factors affect a sector's exposure to carbon leakage risk, as set out in the Treasury's 2021 Net Zero Review<sup>24</sup>. Carbon leakage risk is likely to be greatest for highly traded, carbon intensive sectors which are subject to climate policies that are not implemented consistently internationally. It is likely that the UK sectors at risk of carbon leakage could change in future over the course of the transition to a net zero economy.

Other factors can affect carbon leakage risk, such as the domestic cost and availability of technologies to transition from energy intensive production, the ability of a sector to transition to low emission production processes and the ability of customers to switch to low carbon alternatives.

Therefore, future carbon leakage policy measures will need to be considered in concert with future decarbonisation policies that could reduce or increase carbon leakage risk. Examples of this wider UK decarbonisation policy landscape are shown below.

**Figure 2. The wider decarbonisation policy landscape in the UK (not exhaustive).**

---

<sup>24</sup> Net Zero Review: Final Report, 2021 (<https://www.gov.uk/government/publications/net-zero-review-final-report>).

<b>Key Measures Driving Decarbonisation</b>	
<p><b>Existing measures</b></p> <ul style="list-style-type: none"> <li>• Emissions Trading Scheme (UK ETS)</li> <li>• Carbon Price Support</li> </ul>	
<p><b>Measures in this consultation</b></p> <p>Carbon border adjustment mechanism <i>and/or</i> Mandatory product standards <i>and/or</i> Measures to grow the low carbon market</p>	<p><b>Measures in upcoming UK ETS Free Allocation policy review consultation</b></p> <p>ETS Free Allowances</p>
<b>Wider Decarbonisation Policies</b>	
<b>Existing carbon leakage support</b>	
Energy Intensive Industries Compensation Scheme	
Climate Change Agreements (CCAs)	
Free Allowances (FAs)	
Energy Intensive Industries Exemption Scheme	
<b>Demonstration funding</b>	
Industrial Energy Transformation Fund	
Industrial Decarbonisation Challenge	
Net Zero Innovation Portfolio	
Transforming Foundation Industries Challenge	
<b>Deployment funding</b>	
CCUS Infrastructure Fund (CIF) and Business Model	
Renewable Heat Incentive	
Net Zero Hydrogen Fund	
Industrial Heat Recovery Support	
<b>Infrastructure</b>	
Heat Network Improvement Programme	
<b>Tax</b>	
Climate Change Levy	

## Planned changes to existing carbon leakage mitigations: Free Allowances in the UK ETS

The UK’s main carbon pricing instrument is the UK ETS. Currently, to mitigate the carbon leakage risk for sectors covered by the UK ETS, a proportion of UK ETS allowances (UKAs) are assigned to operators in exposed sectors for free.<sup>25</sup> This reduces exposure to the carbon price for operators receiving free allowances, while preserving the economic incentive for decarbonisation and the emissions cap across the ETS sectors.

<sup>25</sup> This is in accordance with then Greenhouse Gas Emissions Trading Scheme Order 2020



Last year, the UK ETS Authority<sup>26</sup> consulted on proposals to develop the UK ETS<sup>27</sup>. This included proposals to align the cap on traded sector emissions with the UK's net zero obligation, and review free allocation policy in the context of the new cap and a previous call for evidence to avoid any negative impacts on market functioning or reduction in liquidity<sup>28</sup>.

A final position on the overall level of free allocations for stationary installations (the 'industry cap') for the remainder of the 2020s will be agreed by the UK ETS Authority and announced as part of the 'Developing the UK ETS' government response. It will be implemented in 2024 alongside the setting of a net zero consistent cap.

Free allocations for aviation are calculated separately to the industry cap. Following UK Government-commissioned economic research which found minimal risk of carbon leakage for the aviation sector under the current scope of the UK ETS<sup>29</sup>, the UK ETS Authority proposed to phase-out free allocations for the aviation sector. The future trajectory will be confirmed as part of the government response and changes will take effect from 2024. To smooth the transition to net zero and continue to mitigate carbon leakage, the UK ETS Authority has committed to maintain current levels of free allocations for stationary installations until 2026, subject to activity level changes, regardless of the level of industry cap from 2024. Further proposals to better target the remaining free allocations toward sectors considered to be at risk of carbon leakage will be consulted upon by the end of 2023 and implemented to take effect in 2026, to align with the second allocation period of the first phase of the UK ETS. Any potential new policy measures in this consultation and changes to free allocations would be considered to ensure that they work together as a complementary framework, and from the perspective of the UK's other priorities. These include our commitment to free and open trade, upholding WTO rules and taking into consideration countries' differing levels of development, particularly for least developed and low-income countries.

### **The UK Emissions Trading Scheme (UK ETS)**

The UK ETS is the UK's main carbon pricing mechanism. An additional price is paid on the generation of electricity in Great Britain through the Carbon Price Support Mechanism, a tax on fossil fuels used in the generation of electricity, which equates to an additional £18/tCO<sub>2</sub>. This mechanism works in conjunction with the UK ETS to underpin the price of carbon at a level that ensures ongoing low carbon investment.

The UK ETS works on a 'cap and trade' principle, where a cap is set by government on the total amount of certain greenhouse gas emissions that can be emitted by the sectors covered by the scheme. Within this cap, participants receive free allowances and/or buy emission allowances at auction or on the secondary market which they can trade with other participants as needed.

<sup>26</sup> The UK ETS Authority is made up of UK Government, Scottish Government, Welsh Government and the Department of Agriculture, Environment and Rural Affairs for Northern Ireland.

<sup>27</sup> <https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets>

<sup>28</sup> <https://www.gov.uk/government/consultations/uk-emissions-trading-scheme-free-allocation-review-call-for-evidence>

<sup>29</sup> <https://www.gov.uk/government/publications/impacts-of-carbon-pricing-on-the-uk-aviation-sector>

Setting a cap in this way limits the total amount of carbon that can be emitted and, as the cap tightens over time, provides a signal to decarbonise at the pace and scale required to keep emissions at or below the cap. This makes a significant contribution to ensuring the UK reaches its ambitious climate targets, including its net zero by 2050 obligation, in a cost-effective way.

The UK ETS currently applies to energy intensive industries, the power generation sector and aviation. Activities in scope of the UK ETS are listed in Schedule 1 (aviation) and Schedule 2 (stationary installations) of the Greenhouse Gas Emissions Trading Scheme Order 2020. Operators covered by the UK ETS must cover their annual emissions by acquiring UK ETS allowances (UKAs) at auction, through secondary market trading, and/or from their 'free allocation'. The competitive auctions and trading system therefore generate a market-driven carbon price.

In addition to ETS free allocation, businesses with high energy use are also given relief for the indirect costs of the UK ETS and Carbon Price Support Mechanism in their electricity bills.

**Question 1:1 Do you believe that the risk of carbon leakage in the UK is likely to:**

- **1. Increase**
- **2. Decrease**
- **3. Remain unchanged.**
- **4. Carbon leakage is occurring now**

**Please explain your reasoning, including when you think any change to the level of risk might occur.**

**[Open text]**

**Question 1.2: What factors contribute to the risk of future carbon leakage that government should be looking at and that government should address? What evidence can you provide to support your view?**

- **UK carbon price relative to other jurisdictions**
- **Other UK climate policies relative to other countries**
- **Impacts of climate and carbon leakage policy in other countries**
- **The cost and availability of technologies to transition from energy intensive production (as well as abatement technologies)**
- **The ability of a sector to transition to low emission production processes and the ability of customers to substitute to low carbon alternatives**
- **Lack of demand for low carbon products in the UK**
- **Other (please specify)**

**[Open text: What evidence can you provide to support your view?]**

**Question 1.3: How should the government act to mitigate future carbon leakage risk? Please explain your reasoning.**

- **Government should focus on international and multilateral action to address carbon leakage.**
- **Government should focus on domestic carbon leakage measures**
- **Government should act on domestic measures alongside international and multilateral action.**
- **No additional government action on carbon leakage is needed**

## Possible future carbon leakage policy measures

The following policy measures are considered in this consultation:

- **A carbon border adjustment mechanism (CBAM)** would introduce a carbon price on imported products. This would reflect both the carbon emitted in their production together with any gap between the carbon price applied in the country of origin and the carbon price that would have been incurred had they been produced in the UK.
- **Mandatory product standards (MPS)** would set an upper limit on the embodied emissions for individual products placed on the UK market, or produced in the UK, prohibiting products which are more emissions intensive than a defined limit. This could apply to both domestically produced and imported products.
- Additional **demand side policies** would aim to grow the market for low carbon products. Options in this category of measures could include voluntary product standards, product labelling, changing public procurement guidelines to prioritise low carbon products, and encouraging private procurers to do the same. Growing demand for low carbon goods could allow businesses to access a green premium for products produced in a decarbonised way. This would both increase the incentive for businesses in the UK and overseas to decarbonise and help to mitigate carbon leakage by improving the competitiveness of their products.

### Key terms

**Products:** An article or substance that is manufactured or refined for sale. Products can be raw materials, energy (such as electricity or heat), component parts, or finished goods.

**Embodied emissions:** the greenhouse gas emissions related to the manufacture of a product. Depending on the scope of emissions covered (see Chapter 2), this could include emissions related to the extraction and processing of raw materials and fuels, combustion of fuels, process emissions and end-of-life emissions.

## Design considerations

### Design objectives

The objective of potential carbon leakage policy measures would be to support the success of the national emissions reductions targets and support global efforts to meet the temperature goal of the Paris Agreement (2015). Accordingly, the aim of carbon leakage measures is to prevent ambitious climate regulation or carbon pricing in one country simply displacing production and emissions to another country with less ambitious climate regulation or carbon pricing.

To achieve this, any new carbon leakage policy measures would need to operate effectively within the UK's broader framework of decarbonisation policy (outlined above). In addition, any new policies would need to be consistent with a range of other government objectives, including promoting free and open trade, upholding WTO rules, creating a high-growth economy, and providing good value for money for the UK taxpayer.

To ensure any new policies meet these objectives, they should:

- Respond to the carbon leakage risk the UK faces in a proportionate, targeted, evidence-based, and effective way, which aligns with relevant UK decarbonisation policy, including the UK ETS.
- Promote and encourage increased climate action both in the UK and globally, including international action to address carbon leakage and taking into consideration countries' differing levels of development, particularly for least developed and low-income countries.
- Make the most of global trade opportunities and minimise any additional burden on traders.
- Be compatible with, and deliverable alongside, the government's key domestic priorities, such as supporting sustainable and balanced growth, by minimising business compliance costs.
- Any policies will be designed in line with the UK's international obligations and commitments.

### Sectoral targeting

This consultation will inform government's final decisions on which measures, if any, to take forward for individual sectors at risk of carbon leakage in the future. It considers policies for mitigating the carbon leakage risk in the following sectors<sup>30</sup>:

- Cement
- Chemicals
- Glass
- Iron and steel
- Non-ferrous metals
- Non-metallic minerals
- Paper & pulp
- Refining
- Fertiliser

<sup>30</sup> Regulated activities are listed in Table C of the Greenhouse Gas Emissions Trading Scheme Order 2020 <https://www.legislation.gov.uk/uksi/2020/1265/schedule/2/made>

- Power generation

The risk of carbon leakage is not only limited to these sectors. If the profile of sectors at risk of carbon leakage changes over the course of the UK's transition to net zero, the sectoral scope of policy measures may also change. That could include non-industrial sectors or those not currently subject to the UK ETS, such as agriculture or timber. Any expansion would be considered on a case-by-case basis. Government would engage further with stakeholders as part of this and seek to ensure that there are no gaps in the UK's carbon leakage mitigation.

### Emissions scope

This consultation will inform government's understanding of which types of emissions associated with a product should be included in a measurement of its embodied emissions. The scope attributed to embodied emissions reflects the movement of a product, and its associated emissions, down the supply chain.

#### Defining Emissions Scopes

Emissions are categorised by the Greenhouse Gas (GHG) Protocol<sup>31</sup> into different scopes for reporting purposes.

Scope 1 emissions relate to direct activities owned or controlled by an organisation. These emissions are directly controlled by those producing the product, for example as part of a manufacturing process or when fuels are combusted onsite. The UK ETS applies to the Scope 1 emissions associated with regulated activities<sup>32</sup>.

Scope 2 relates to an organisation's consumption of purchased electricity, heat, steam and cooling. Scope 2 represents indirect emissions which are not directly controlled by manufacturers of a product. The UK ETS does not require installations to account for Scope 2 emissions associated with their activities. However, the Scope 1 emissions of much of the fossil fuel power sector are covered by the UK ETS. The ETS also covers emissions from on-site energy generation by participating installations.

Scope 3 relates to other emissions released as a consequence of an organisation's actions that occur at sources not owned or controlled by the organisation. Scope 3 represents indirect emissions created upstream or downstream, for example, the transportation by air of finished products by subsequent entities. The UK ETS does not price Scope 3 emissions. However, the Scope 3 emissions for some products are covered indirectly, for example in the instance of air transport of products, downstream aviation operators in the UK comply with the UK ETS for their Scope 1 emissions.

<sup>31</sup> <https://ghgprotocol.org/about-us>

<sup>32</sup> <https://www.legislation.gov.uk/ukxi/2020/1265/schedule/2/made>

## Taking a framework approach

### Characteristics of different measures

To ensure effective carbon leakage mitigation as the UK transitions to net zero, the government will take a framework approach to assessing and mitigating carbon leakage risk. That means considering potential mitigation measures in parallel with other government policies which impact the risk of carbon leakage. It also means considering the benefits and costs of a range of potential measures so that the right policy can be implemented, for the right sectors, at the right time.

Any final decisions on which policies would be most appropriate for each relevant sector will therefore be informed by evidence of their ability to mitigate carbon leakage risk in future whilst operating within this wider framework. This includes their ability to complement the UK ETS and reflect future developments on free allocation as well as wider UK decarbonisation policies, and their ability to be compatible with UK action being taken internationally and the UK's existing international commitments. This is in addition to practical consideration of necessary compliance steps.

The UK ETS provides the most efficient and cost-effective mechanism for achieving overall UK decarbonisation. It works by applying a price to emissions and allowing industry to decide to decarbonise where it is cheaper to do so. In any scenario the UK ETS will remain the key market-based mechanism for domestic emissions reductions.

The policies explored in this consultation have different characteristics which could complement the UK ETS, as well as each other, or make particular policies more or less appropriate for implementation in the UK.

A CBAM would apply to imports to ensure they are subject to a comparable carbon price, with respect to their emissions, to that incurred by UK-based production that is subject to the UK ETS and considered to be at risk of carbon leakage. UK carbon pricing would thus support efforts to reduce global emissions whilst also delivering the most cost-effective decarbonisation of UK industries. Given the focus on price, CBAMs may best be suited to mitigating carbon leakage risk for sectors subject to explicit carbon pricing, and less suitable for sectors outside the UK ETS in the first instance.

MPS could operate in a different way either as a standalone measure or in addition to a CBAM. They would use regulations to prevent carbon intensive industrial products above a certain threshold being placed on the UK market, or produced in the UK. The mechanics of any MPS would differ fundamentally from those of the UK ETS or any CBAM in three key respects:

- First, MPS could be used to make specific and targeted interventions in certain sectors.
- Second, MPS would not use a cost-based incentive to affect changes, instead using product regulations. While this would not provide a direct adjustment for the UK's carbon price, it could help the UK to align with and support international initiatives which are focused on the emissions intensity of individual products, such as the Industrial Deep Decarbonisation Initiative (explored in more detail in Chapter 5).
- Third, again due to not being based on a carbon price, MPS could be introduced to sectors which are not yet in scope of the UK ETS. This would provide an alternative

route to incentivise decarbonisation investments and mitigate against the risk of carbon leakage in these sectors.

Implemented together, MPS and a CBAM could create an environment with a maximum limit for the embodied carbon of certain, highly polluting products, and a carbon price that incentivises further emission reductions.

Additional demand side policies could further help mitigate carbon leakage risk by helping to grow the market for low carbon products. Policies such as product labelling and voluntary standards could enable consumers to distinguish lower carbon products, including imports, from higher carbon equivalents. This could reduce the risk of low carbon manufacturers being undercut and displaced by high carbon alternatives and help ensure that lower carbon manufacturing can grow as needed to support decarbonisation and a reduction in UK and global emissions. Voluntary measures could build on global action that industry, governments, and international organisations are already taking. In addition, procurement policies, whether public or private, could help kick-start the growth of low carbon industries by directly building their order books. Key international initiatives in this area are the IDDI for public procurement, and the First Movers' Coalition for private procurement.

Carbon leakage mitigation and demand-side policies would require information about the embodied emissions of products manufactured in or imported to the UK. An emissions reporting framework to collect these data would ensure that all products entering free circulation in the UK market that are within scope of relevant carbon leakage measures (should these be adopted) have an embodied emissions value associated with them. Adopting a standard methodology for measuring and reporting the embodied emissions of products would improve transparency and the comparability of like products, and data could be utilised across multiple policies and to support the adoption of whole life carbon assessments. The framework must take account of the complexities of measuring cross-border supply chains, minimise burdens on businesses in the UK and overseas and align as far as possible with international reporting frameworks, whilst meeting the needs of domestic policies.

Ultimately, it may not be appropriate or necessary to introduce additional carbon leakage measures for every product or sector when considered against other factors, including the potential for additional administrative and regulatory burdens it could create. The decision to introduce a CBAM, MPS, or other measures for a sector would need to be well-evidenced and proportionate. That is why the government is engaging with the relevant sectors and others to understand views. Through this consultation, the government welcome views on the measure or combination of measures that works best for each sector. Where there are multiple measures, the government will aim to ensure that they work in tandem to promote the UK's decarbonisation objectives in a way that minimises burdens on businesses in the UK and overseas.

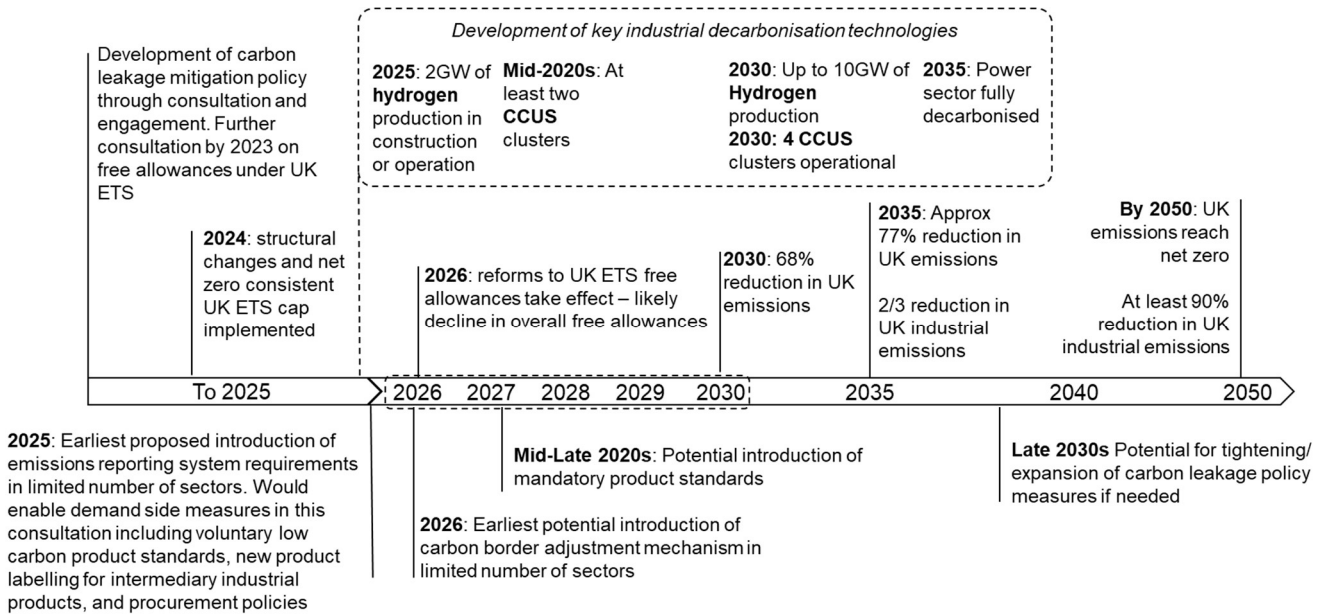
## Timing

For any policies taken forward, the timing of final decisions and of implementation for an individual sector would be informed by changes to the risk profile of different sectors over

time, and evidence of when the new policies would have the greatest potential to mitigate carbon leakage risk and support decarbonisation.

An illustrative timeline for how a framework of carbon leakage and decarbonisation policies could be introduced is set out below. In this scenario, embodied emissions reporting would be introduced in 2025, followed by an initial implementation of a CBAM in 2026 (alongside reforms to the UK ETS allocation of Free Allowances), and product standards in the late 2020s.

**Figure 3. Illustrative timeline for implementation of potential new carbon leakage policy measures.**





## Chapter 2: Carbon border adjustment mechanism

The government is exploring whether a carbon border adjustment mechanism (CBAM) would be an appropriate policy measure to mitigate carbon leakage risk in the future. A CBAM would apply to imported products to ensure they are subject to a comparable carbon price to that incurred by UK-based production. When reviewing the following questions, stakeholders may wish to consider the impact of a potential UK CBAM in the context of the proposed EU CBAM<sup>33</sup> and the potential for parallel impacts on UK traders.

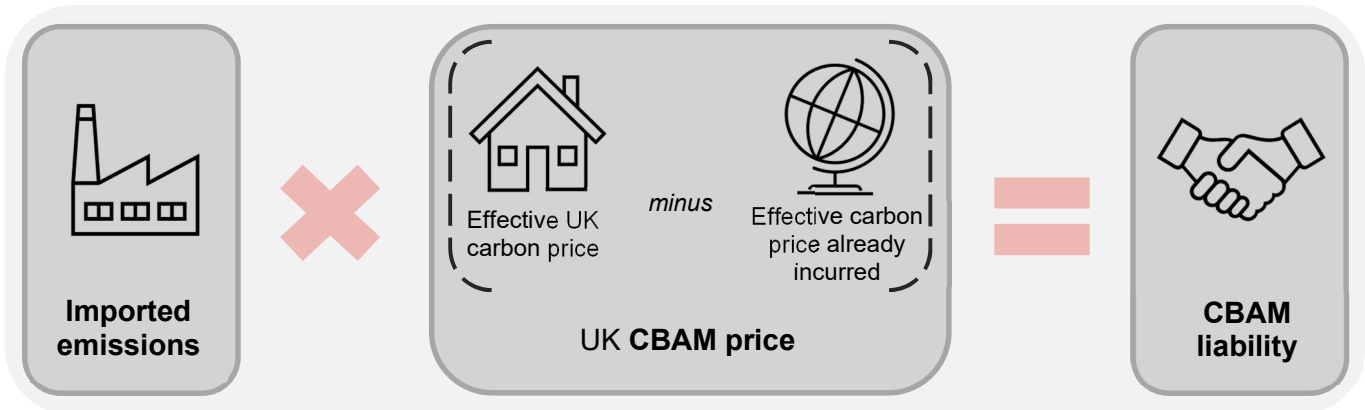
The following sections seek views on six overall questions to shape the design and implementation of a potential UK CBAM. These are:

1. **Sectoral targeting:** to which sectors and products should a UK CBAM apply?
2. **Emissions measurement:** how should emissions be measured as part of a UK CBAM?
3. **Emissions scope:** which emissions should be in scope of a UK CBAM?
4. **Price measurement:** how should a UK CBAM price be calculated?
5. **Implementation:** how and when should businesses be required to comply with a UK CBAM?
6. **Timing:** when should a UK CBAM be introduced?

---

<sup>33</sup> European Parliament, CBAM Legislative Train Schedule [www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-carbon-border-adjustment-mechanism](http://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-carbon-border-adjustment-mechanism)

Figure 4. Determining UK CBAM liability.



## Sectoral targeting: to which sectors and products could a CBAM apply?

The purpose of a CBAM would be to mitigate the risk of carbon leakage resulting from domestic carbon pricing. Therefore, the government is minded to only consider a potential CBAM for products in sectors subject to the UK ETS in the first instance. Within those sectors, any potential CBAM should only apply to sectors deemed at risk of carbon leakage (see list in Chapter 1).

Given CBAMs are complex measures, they may not be deemed suitable for products in all sectors subject to the UK ETS and at risk of carbon leakage. Since any CBAM would involve administrative burdens for business, a CBAM should only be introduced where the evidence of carbon leakage risk and the need for such measures is sufficiently compelling to justify it on environmental grounds. For example, some sectors may be able to provide data on embodied emissions at a product level, whereas this may not be possible for sectors or products with more complex supply chains.

A potential option would be introducing a CBAM for a limited number of sectors and products and expanding to new sectors or products in a phased way. This could also support businesses to build and optimise their compliance processes as their understanding of the measure improves.

This section seeks views on which products it would be effective, fair, practical, and deliverable to apply a CBAM to, in line with those principles.

**Question 2:1: Should a CBAM only apply to products in sectors that are subject to the UK ETS? Please explain your reasoning.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 2.2: Are there products in your sector/sub-sector where the application of a CBAM would not be effective or feasible? Please explain your reasoning.**

**Drop down menu [NACE]:**

**[Open text]**

**Question 2.3: If the scope of a CBAM is initially limited, should it be designed to potentially cover other products in future? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

A CBAM would apply to products in scope which are imported to the UK, to ensure that emissions embodied within products are priced. Because the UK cannot directly place a carbon price or reporting requirements on installations based abroad, any requirements under the CBAM, such as liability for the CBAM or emissions monitoring and reporting, would need to be met by the importer of those products.

**Question 2.4: Should the importer of products covered by a CBAM be responsible for meeting all CBAM requirements? If not the importer, who? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

## **Emissions measurement: how should emissions be measured as part of a UK CBAM?**

A UK CBAM would aim to add a price to the relevant emissions embodied within imported products to reflect any difference between the carbon price paid by the trading partner where the goods were produced, and the carbon price which would be paid for like goods produced in the UK. This section seeks views on which emissions embodied in products produced outside of the UK would be relevant for a UK CBAM, how data on those emissions should be collected and assessed, and who should be responsible for providing this information. The definition of emissions scope is set out in Chapter 1.

Under the UK ETS, operators incur an obligation to surrender allowances (UKAs) when they emit a tonne (t) of CO<sub>2</sub> equivalent (CO<sub>2</sub>e). This is calculated at source on an installation basis. Participants are responsible for complying with the UK ETS for their Scope 1 direct emissions. As covered in Chapter 1, an operator's Scope 2 and 3 embodied emissions for products may have been indirectly subject to the UK ETS as another operator's Scope 1 emissions, for example, due to the ETS applying to the generation of electricity.

To be most effective at mitigating carbon leakage risk, the government is minded to introduce a CBAM that is based on the embodied emissions in a specific imported product. An importer of a product with a low emissions content would face a lower CBAM compared to an importer of the same product but with higher levels of embodied emissions.

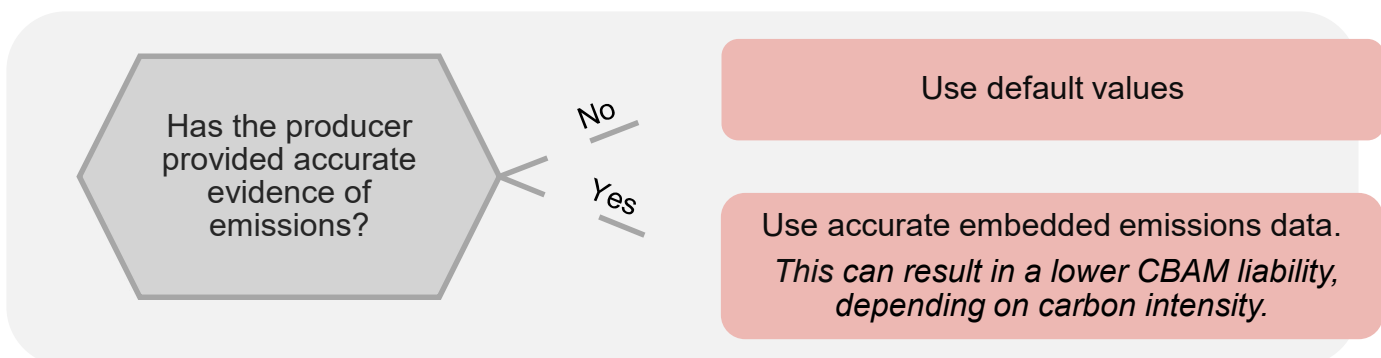
Through this consultation, the government would like to explore options to ascertain the emissions content of imported products, including the use of independently verified emissions data by a recognised body and the use of default values.

**Independently verified emissions data by a recognised body:** under this model, importers would be required to submit accurate emissions data to be used as the basis for a CBAM. This would ensure the equitable treatment of products produced in the UK and abroad. To preserve the integrity of this system, emissions data could only be accepted where they have been subject to a rigorous system of monitoring, reporting and verification, similar to that faced by domestic producers complying with domestic carbon pricing.

**Default values:** whilst independently verified data are preferable where available, relying on verified data in all instances could have unintended consequences, particularly for importers of products with complex supply chains or from territories where robust monitoring, reporting and verification for emissions are not available. To ensure all importers could comply with a CBAM, and therefore maintain trade openness, the government is also considering the use of ‘default’ values for the carbon content of imported products where independently verified data cannot be supplied. As a guiding principle, default values should aim to estimate the carbon content of products as accurately as practicable. This could include the use of product- and country-level values; internationally recognised datasets; and/or values derived from UK emissions data. Any methodology for default carbon content values would be designed to not significantly over- or under-estimate carbon content.

Further consideration would be given to the monitoring, reporting, and verification under any system if a CBAM is implemented. Further detail can be found in Part 2 of the consultation.

**Figure 5. how the provision of verified emissions data could impact the final CBAM liability.**



**Question 2.5: Should importers be required to provide accurate, independently verified emissions data for the products they import where available? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**  
**[Open text]**

**Question 2.6: Should there also be an option for importers to use default values, where they do not or cannot provide accurate emissions data are? Please explain your reasoning. (See Chapter 6 for further discussion of default values).**

- Agree, in all cases. There should be no requirement to provide data.
- Agree. However, there should be a requirement to provide all available data.
- Disagree. Importers must provide accurate emissions data.

[Open Text]

**Question 2.7: Are there any factors not presented in this chapter which government should consider for the calculation of default values? Please explain your reasoning.**

[Open text]

**Question 2.8: Are there any additional challenges or opportunities around the monitoring, reporting and verification of emissions that have not been considered? Please explain your reasoning.**

[Open text]

## Emissions scope: which emissions should be within scope of a UK CBAM?

As set out earlier in this section, emissions embodied in imported products come from different sources, parts of the supply chain and production processes. On this basis, emissions embodied in imports can be categorised into Scopes 1, 2 and 3. The government would like to better understand the value in seeking to account for each of these categories of emissions in UK imports, and how evidence of these could be gathered on a product level basis for use in the determination of CBAM liability. The government is seeking broad input from a variety of points of view as part of undertaking internal technical analysis of each of the policy options under consideration.

**Scope 1:** At a minimum, the government is minded to apply any CBAM to Scope 1 emissions embedded within imported products to replicate the type of emissions directly covered by the UK ETS. Please refer to Chapter 1 for a definition of Scope 1 emissions.

**Question 2.9: What data could UK importers provide for Scope 1 emissions embodied within imported products on a product basis? Please explain your reasoning.**

[Open text]

**Question 2.10: What alternative data sources would government need to consider when determining Scope 1 imported emissions on a product basis if these data cannot be provided by an importer? Please explain your reasoning**

**[Open text]**

**Scope 2:** Rather than pricing a manufacturer's Scope 2 emissions, the UK ETS applies to these emissions at source as electricity generators comply with the UK ETS for their Scope 1 emissions. For example, an electricity generator is responsible for complying with the UK ETS for emissions produced as part of the generation of electricity. It is likely that the cost of UK ETS compliance will be passed on as an indirect carbon price in the price of electricity when it is sold to a manufacturer. Some energy intensive industries are compensated by the government for this indirect carbon cost through the EII Compensation Scheme. Please refer to Chapter 1 for a definition of Scope 2 emissions.

The carbon intensity of electricity in different countries can vary dependent on the power sources supplying their grid. Applying a CBAM to Scope 2 emissions could ensure that if manufacturers in other jurisdictions produce products using more energy intensive processes, or more carbon intensive energy, this is reflected in the CBAM liability for imported products. This would replicate the impact for domestic producers of the UK ETS applying to UK electricity generation.

To apply a CBAM to Scope 2 emissions in an imported product, government could ask UK importers to provide verified data on the emissions associated with electricity generation embodied in imported products. The government could also explore the use of product level electricity 'content' benchmarks alongside the average emissions intensity of the country of origin's electricity grid. Importers could also provide evidence of cleaner energy content if they purchase electricity directly from a cleaner source, taking into account the risk of resource shuffling, which is discussed in Chapter 4.

**Question 2.11: Do you agree or disagree a CBAM should be applied to Scope 2 emissions embodied within imported products? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

**Question 2.12: What data could UK importers provide for Scope 2 emissions embodied within imported products on a product basis? Please explain your reasoning.**

**[Open text]**

**Question 2.13: What alternative data sources would government need to consider to determine Scope 2 imported emissions on a product basis if these data cannot be provided by an importer? Please explain your reasoning.**

**[Open text]**

**Question 2.14: Should the government consider the use of product level electricity 'content' benchmarks and country level averages to calculate Scope 2 emissions from purchased electricity?**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**Question 2.15: If yes, how should country level Scope 2 average emissions be calculated? Please explain your reasoning.**

**[Open text]**

**Scope 3:** Rather than pricing Scope 3 emissions, the UK ETS applies to some of these emissions at source. For example, downstream aviation operators in the UK comply with the UK ETS for their Scope 1 emissions, while upstream UK manufacturers of some input products also comply with the UK ETS for their Scope 1 emissions. In both cases, the manufacturer of the product may pay an indirect carbon price through the cost of the good or service they purchase from another installation. Please refer to Chapter 1 for a definition of Scope 3 emissions.

A CBAM could apply to Scope 3 emissions to replicate the type of emissions that are indirectly covered as a result of the UK ETS when products are made in the UK. Where equivalent emissions are covered under the UK ETS, government could ask UK importers to provide evidence of Scope 3 emissions associated with an imported product for the application of a CBAM.

**Question 2.16: Should a CBAM be applied to the Scope 3 emissions embodied within imported products that are also indirectly covered by the UK ETS? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

**Question 2.17: What data could UK importers provide for Scope 3 emissions embodied within imported products on a product basis? Please explain your reasoning.**

**[Open text]**

**Question 2.18: What alternative data sources would government need to consider to determine Scope 3 imported emissions on a product basis if these data cannot be provided by an importer? Please explain your reasoning.**

**[Open text]**

**Question 2.19: Do you have further comments on the inclusion and measurement of emissions embodied in imported products as part of a CBAM?**

**[Open text]**

## Price measurement: how should a UK CBAM price be calculated?

In the UK, the carbon price is paid on the final emissions of production regardless of the wider regulatory or non-pricing carbon reduction measures implemented to reduce those

emissions. These remaining emissions are known as residual emissions. This is in line with the polluter pays principle where liability is determined according to the emissions intensity associated with an activity or product. A CBAM would ensure that imports are treated in an equivalent manner to products produced domestically by applying a CBAM price only to residual emissions.

An explicit carbon price puts a £/tCO<sub>2</sub>e price directly on greenhouse gas emissions produced during a given process, such as manufacturing. These usually take the form of either an emissions trading scheme with a market-based price or a carbon tax with a fixed price. The price applied by a CBAM would therefore be set on the basis of the explicit carbon price differential between the UK and the country where the products were produced. The efforts of other countries to decarbonise through regulation and other non-pricing policies would be reflected in any CBAM liability related to imported products where these policies result in products being produced with lower embodied emissions. As a CBAM would only apply to those residual embodied emissions, the CBAM liability relating to those products (with evidenced low emissions) would be lower compared to the CBAM liability relating to products with higher embodied emissions.

### Calculating the UK's effective carbon price

In the UK, the carbon price is set primarily by the UK ETS market which is complemented by the Carbon Price Support mechanism for energy generation in Great Britain (see Chapter 1 for details). Determining the effective UK carbon price would need to account for policies that provide a discount on these costs, such as the provision of free allowances for Scope 1 emissions and the provision of Energy Intensive Industry (EII) Compensation for the indirect costs of carbon pricing on Scope 2 emissions. The government is minded to use the UK's effective carbon price to calculate the price applied by a CBAM on imported products to ensure it is comparable to the carbon price paid on the domestic production of like-products.

**Question 2.20: Should the price applied by a CBAM be comparable to the effective domestic carbon price paid, including accounting for any discounts available through free allowances or compensation? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

The government is exploring ways in which a CBAM could be designed to closely reflect the prevailing UK ETS market price. The below sets out a proposal for how this price could be kept distinct from, but aligned with, the UK ETS:

- A link would be established between the UK ETS price and the price applied by a CBAM when determining CBAM liability related to imported goods.
- The price applied by a CBAM would be calculated by reference to the domestic carbon price on a regular basis. Options could include:
  - Regular averages of the ETS secondary market price
  - Using the fortnightly UK ETS auction clearing price



This proposal would mean the price applied by a CBAM could change during the course of a year, in response to changes in the UK ETS price. The alternative would be a fixed annual price. While regular changes to a CBAM price could decrease certainty over expected costs for importers, it would support treatment of imported products that is no less favourable than treatment of like domestic products under the UK ETS. Due consideration will need to be given to the treatment of products imported into the UK and then reexported before the end of the relevant CBAM compliance period.

**Question 2.21: Should the price applied by a CBAM track the prevailing UK ETS price throughout the year, as opposed to being set at a fixed annual rate? Please explain your reasoning and any preference between the different options outlined above.**

**[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]**

**[Open text]**

### **Measuring the carbon price differential between jurisdictions**

Any UK CBAM would take into account any explicit carbon prices already paid in the country where that good was produced. This would ensure that importers are not disadvantaged by a CBAM and that emissions are not paid for twice. The government is minded to calculate the effective carbon price paid in the country of origin as the explicit carbon price minus any discounts provided for those costs. This reflects the government's minded to approach to calculate the UK's effective carbon price.

If the effective price already paid per tonne of CO<sub>2</sub>e is greater than or equal to the effective carbon price due in £GBP per tonne CO<sub>2</sub>e had the good been produced in the UK, then no CBAM liability would arise. The government would consider that the price applied by a CBAM had already been paid on the emissions embodied in these products, supporting global climate objectives.

If no price has been paid at origin, or it is lower than the carbon price paid per tonne of CO<sub>2</sub>e had the good been produced in the UK, a CBAM liability would arise. This would be calculated by reducing the CBAM price by the effective carbon price paid in the other country.

The effective price differential, once calculated, would form the price applied by a CBAM to imported products. The government would apply a methodology for measuring the effective carbon price in other jurisdictions, including taking account any discounts.

Internationally, a wide range of carbon pricing schemes are currently in operation, covering more than 23% of global greenhouse gas emissions in 2022.<sup>34</sup> These systems operate across 68 jurisdictions and vary widely. Some examples of other jurisdictions' carbon pricing schemes are given below.

---

<sup>34</sup> State and Trends of Carbon Pricing 2022, World Bank

### Carbon pricing schemes operating in other jurisdictions

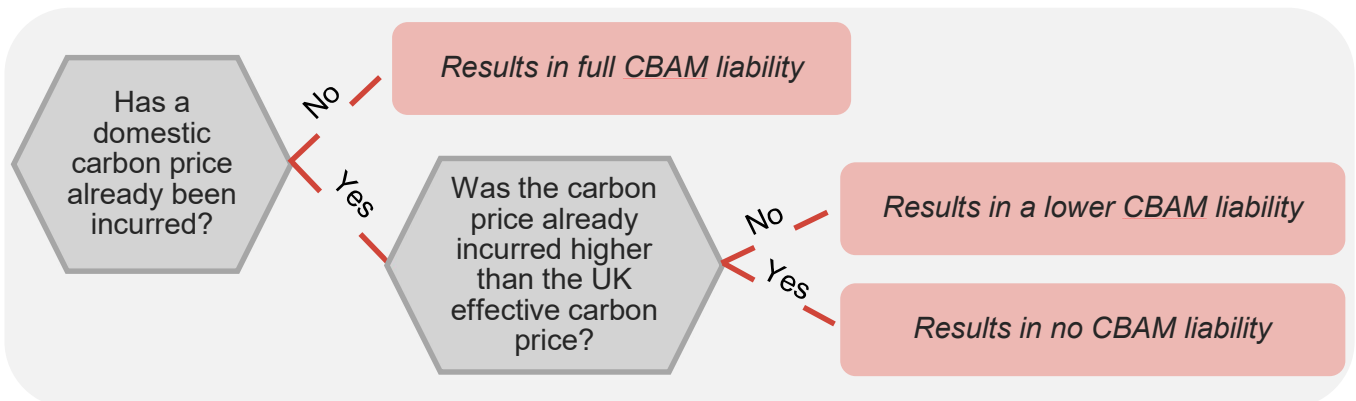
The EU ETS operates in all EU countries, plus EEA-EFTA states. It covers around 40% of the EU's emissions across power generation, industry and aviation, and is currently the world's largest ETS market.

The New Zealand ETS launched in 2008, and began operating in 2015. It is a central policy for New Zealand to achieve net zero and has broad sectoral coverage across sectors including energy, industry, waste and forestry.

Under the Canadian Carbon Pricing Regime, which was established in 2019, each province has been obliged to implement some form of carbon pricing regime. These regimes are implemented either as a carbon tax, a cap-and-trade emissions trading scheme, and/or the federal backstop. Sectoral coverage and price vary by regime.

China's National Emissions Trading Scheme began in 2020, initially covering coal and gas fired power plants. It is set to expand to seven other sectors, becoming the world's largest ETS, covering one-seventh of global CO<sub>2</sub> emissions from fossil-fuel combustion.

**Figure 6. how carbon prices incurred in different jurisdictions could impact CBAM liability.**



**Question 2.22: Should the price applied by a CBAM to imported products be based on the value of the effective carbon price differential between the UK and the country where that good was produced? Please explain your reasoning.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 2.23: Would it be practicable for importers to provide information on the effective carbon price already paid on products in the originating country? Please provide details.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 2.24: What issues might arise in taking into account a carbon price already paid in another country when calculating the price applied by a CBAM? Please explain your reasoning.**

[Open text]

## Implementation: how and when should businesses be required to comply with a UK CBAM?

Were the government to implement a CBAM, it would need to consider its other domestic priorities at the border and how a CBAM would fit with existing UK customs and border objectives. The 2025 UK Border Strategy<sup>35</sup> laid out the government's vision for the UK border: a border which simplifies processes for traders, improves the security and biosecurity of the UK and embraces innovation. As such, the government would need to ensure a CBAM is designed in a way that facilitates the smooth flow of trade and is simple to understand, to minimise impacts on businesses.

As set out earlier in this chapter, the government is exploring ways in which a CBAM could be designed to closely reflect the prevailing UK ETS market price. Any UK CBAM would be a closely related but distinct mechanism to the UK ETS. Allowances within the ETS market are capped and this could not be expanded to cover imported products. The UK ETS market mechanism is designed to provide domestic producers with flexibility over when they pay, and due to the market-based price, how much they pay, for their emissions, to support them to decarbonise in the most effective way. The auction, or secondary market process, through which a price is secured is separated from the point at which the emissions are produced, and the point at which participants are required to submit their accounting to the government.

The government is exploring ways of re-creating the degree of flexibility provided by the UK ETS in a CBAM. In the UK ETS, domestic producers are able to choose when to purchase any allowances required for future surrender. The market processes which set the price are separated from the point of emissions production, as well as from the point where participants are required to surrender allowances. To re-create this separation and flexibility in a CBAM, the process for the settlement of CBAM liability would need to be split into three separate stages as outlined below. Further work would be needed to understand how this could work in practice in the CBAM context.

- **The point of emitting:** in the case of a CBAM this is when the embodied emissions would 'enter' the UK at the point of import
- **The point of payment:** this is when the importer would pay the UK effective carbon price per tonne of CO<sub>2</sub>e. This would not be associated with specific imported emissions at this stage.

<sup>35</sup> Cabinet Office, 2025 UK Border Strategy: //www.gov.uk/government/publications/2025-uk-border-strategy

- **The point of compliance:** this is when the importer would reconcile the embodied emissions they have brought into the UK, against the emissions they have paid for, and the carbon price paid in the country of origin.

In existing customs policy, there are already processes for duty deferment and special procedures that delay when an importer must pay customs charges and tariffs. However, these rates are static (so do not fluctuate in the way that a carbon price would) and there are specific requirements for information at the points of arrival, declaration and release into free circulation. For example, excise duties are usually set on an annual basis and are due when the products enter free circulation. A CBAM implemented in a flexible way, with a changing price, could create new reporting and compliance requirements that importers would need to engage with when importing products covered by a CBAM.

The government would need to explore how existing customs systems and processes could be used to collect the necessary information, where processes could be automated and/or streamlined and whether any new requirements for traders or government might be necessary if a flexible model were to be pursued. The government would also need to explore potential impacts on customs agents and software houses.

**Question 2.25: Do you have any views on how a CBAM could be designed to ensure maximum simplicity? For example, by following the mechanism for other border charges such as tariffs and excise duties. Please explain your reasoning.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 2.26: Should government prioritise reflecting the flexibility offered by the UK ETS in a CBAM? For example, by allowing emissions to be paid for at a separate point to the release of products into free circulation. Please explain your reasoning.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 2.27: Are there further actions government could take to design a CBAM in a way that facilitates the smooth flow of trade? Please explain your reasoning.**

[Open text]

**Question 2.28: Are there further interactions with the customs and/ or border systems which government should take into account for the development of a CBAM? Please explain your reasoning.**

[Open text]

## Timing: when should a UK CBAM be introduced?

As set out in Chapter 1, the timeline for introducing policy measures to mitigate carbon leakage risk in future is not yet confirmed. In the government's 2022 consultation 'Developing the UK Emissions Trading Scheme'<sup>36</sup>, the UK ETS Authority noted that structural changes to the ETS would be implemented by 2024, and proposed that free allowances allocated to industry would not be reduced before 2026. In line with that, 2026 would be the earliest that the government would consider the introduction of a CBAM to ensure carbon leakage policies are appropriately targeted. Were the government to pursue a CBAM, implementation timelines and lead in times required would depend, in part, on the responses to this consultation, which would be used to shape the design of potential implementation models.

Free allowances are the responsibility of the UK ETS Authority.

Please refer to Chapter 1 for further detail on potential timelines for the introduction of future carbon leakage policy measures.

**Question 2.29: Are there further policy interactions that government should consider regarding potential implementation timelines for a CBAM? Please explain your reasoning.**

**[Open text]**

---

<sup>36</sup> UK ETS Authority, Developing the UK Emissions Trading Scheme  
[//www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets](https://www.gov.uk/government/consultations/developing-the-uk-emissions-trading-scheme-uk-ets)

## Chapter 3: Mandatory product standards

The government is exploring whether mandatory product standards (MPS) for embodied emissions of industrial products would be an appropriate policy measure in the future to mitigate carbon leakage risk and support decarbonisation. MPS would create a form of product regulations that would set upper limits on the embodied emissions of industrial products either produced in the UK or placed on its market, potentially including imports.

These MPS would relate to the way products are made, rather than their characteristics. In this way these MPS would differ from other standards, for example minimum energy performance standards (MEPS), a separate existing set of standards which focus on the operational emissions associated with the use of a product.

The overarching aims of any MPS policy would be to:

- Set a minimum expectation on the pace of decarbonisation of manufacturing operations in targeted sectors, supporting efforts in the UK and internationally to reduce global greenhouse gas emissions.
- Mitigate the carbon leakage risk in future by preventing the highest carbon products from being placed on the UK market, which could undercut lower carbon alternatives.

If introduced, MPS could be part of a broader system of demand-side policies, including voluntary product standards and product labelling (see Chapter 5). Together, demand-side policies could enable manufacturers to distinguish their products as lower carbon, reach new markets and potentially attract 'green premiums'. This could strengthen the case for investment in low carbon technologies, helping the UK to reach net zero while supporting new jobs and positioning UK industry to access new low carbon export markets.

Questions about product standards formed part of BEIS's 2021 Call for Evidence 'Towards a market for low emissions industrial products'.<sup>37</sup> The government has reflected responses to this in developing the proposals in this consultation. For this reason, this chapter explores MPS in greater depth than a carbon border adjustment mechanism (CBAM) was explored in the previous chapter. Before deciding whether to introduce MPS for specific sectors, in the following section the government is seeking further input on:

- The relevant industrial sectors to which standards should apply
- The stage in the manufacturing value chain to which they are applied

---

<sup>37</sup> <https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>

- The emissions scope (in terms of Scopes 1, 2, and 3, as set out in Chapter 1)
- When it would be most effective to implement standards
- The geographic coverage of standards
- How emissions thresholds for standards should be set, including how the stringency of the mandatory standards could increase over time

The government has evaluated proposals in each of these areas based on their ability to support climate ambition and mitigate the carbon leakage risk in future, and the ease of deliverability for industry.

Were MPS taken forward, they could be facilitated by the introduction of product-level embodied emissions reporting, discussed in Part 2 of this consultation.

There would also be potential for future international alignment based on product standards, which could amplify the intended benefits of the policy across a greater number of jurisdictions. International coordination and agreements on product standards, including their scope, thresholds, and methodology, would streamline the experience of complying with product standards for businesses. This in turn could pave the way towards more ambitious actions in terms of global industrial decarbonisation and the mitigation of carbon leakage risks.

A theoretical advantage of MPS is that its adoption would not depend on a carbon pricing mechanism, and so could be implemented in countries which do not have one. As the UK considers potential domestic measures, the government will continue to actively support international initiatives and could later explore the possibility of international product standards.

### **International Precedents**

The US Clean Air Act (CAA) requires the Environmental Protection Agency (EPA) to regulate emissions in the form of toxic or hazardous air pollutants (as opposed to GHG emissions) from large industrial facilities. These regulations are introduced on a 'technology-based' basis, where the EPA develops standards for controlling the toxic emissions based on the 'maximum achievable control technology' (MACT); the emissions levels that are already being achieved by low-emitting sources in an industry. Every 8 years after setting the standards, the EPA is required to review and revise the standards, if necessary, to account for improvements in air pollution controls and prevention. These standards apply to industrial sectors such as cement, steel, and chemicals.

## **Sectoral Targeting: to which sectors and products could mandatory product standards apply?**

As set out in BEIS's Call for Evidence in 2021, if introduced, MPS would first be piloted with a single sector or a small number of sectors. During the pilot, the government would

work closely with the piloted sectors to assess the benefits of the policy, in advance of determining when and how to introduce MPS for products from other sectors.

### **Proposed criteria for the sectoral targeting of a mandatory product standard**

The government would need clear criteria to guide decisions about which sectors may be suitable for MPS, and within these how their introduction should be prioritised. Expanding on the design objectives for sectoral scope discussed in Chapter 1, the government is minded to base final decisions on a balance of a sector's exposure to carbon leakage risk, climate ambition, ease of deliverability of standards in that sector, and what actions are being taken internationally, with specific considerations as set out below.

- **Exposure to carbon leakage risk:** as set out in Chapter 1, this would consider the sector's relative carbon leakage risk in terms of whether its products are easily traded, how carbon intensive the sector is, how subject it is to different levels of carbon pricing or climate regulations across jurisdictions, and how other carbon leakage mitigations may be applied.
- **Impact on industrial decarbonisation and net zero:** this would consider inputs such as the overall emissions produced by the sector, the theoretical potential for abatement, and its decarbonisation pathway. This consideration would include how to take advantage of opportunities to align with existing or forthcoming decarbonisation initiatives, such as the Industrial Deep Decarbonisation Initiative (IDDI details set out in Chapter 5). It would also need to consider interactions with other decarbonisation policies, such as the UK ETS.
- **Deliverability:** this would take practical considerations into account, such as the sector's ability to collect and report product-level emissions data, and the relative cost of doing so. In terms of the sector itself, this could include considering how homogeneous the sector's product line is,<sup>38</sup> how accessible emissions abatement options are,<sup>39</sup> how much existing demand there is for the sector's low carbon products, and whether there are existing or forthcoming sector-led initiatives in this area.
- **International alignment:** this would consider working towards shared definitions and possible alignment of methodologies, standards, sectoral strategies and milestones with other jurisdictions and entities. This could be achieved through initiatives such as the IDDI, the First Movers' Coalition, the Climate Club, and ongoing international work under the Breakthrough Agenda.

If the sector is within scope of existing policies such as the UK ETS or allocation of free allowances, the anticipated interactions with these policies, both in terms of opportunities for desirable additionality<sup>40</sup> and the risk of unintended consequences, would need to be taken into account.

---

<sup>38</sup> Products are considered to be homogenous when they are perfect substitutes and buyers perceive no actual or real differences between the products offered by different firms. Products are selected by consumers for other reasons, for example price. Targeting sectors with homogenous products creates an opportunity for low carbon products to become differentiated, potentially attracting 'green premiums'.

<sup>39</sup> Geographic distribution of a sector can affect access to low carbon technologies (such as hydrogen and CCUS). However, early product standards would most likely be met through a combination of energy and resource efficiency measures.

<sup>40</sup> Multiple policies applying to the same sector may be beneficial for its own sake if they strengthen the intended effects. It may also be desirable to introduce an MPS to help achieve specific policy goals, for



If new carbon leakage mitigations were also being introduced to a sector in addition to an MPS, such as a CBAM, the design and anticipated impacts of these would also need to be accounted for to ensure that they work together as a complementary framework.

**Question 3.1: Were mandatory product standards introduced, should the above criteria be used to decide on its initial sectoral scope? Are there other criteria that should be considered? Please explain your reasoning, including any alternative criteria.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

### **Options for the initial sector targeting of mandatory product standards**

Based on the criteria set out above, government considers the most suitable sectors for piloting MPS would be steel, cement, concrete, and chemicals. These sectors combined represent 42% of UK industrial emissions. In particular for steel, cement, and concrete there are significant ongoing initiatives which could provide foundations for future action. The chemicals sector, explored as an additional option, does not have comparable ongoing activity, but is a major emitter and could still be suitable in terms of this and other criteria.

- Option 1: Targeting the steel sector only
- Option 2: Targeting the steel, cement, and concrete sectors
- Option 3: Targeting steel, cement, concrete, and chemicals sectors

Option 1 and 2 rank high on deliverability as sector-led reporting and initiatives for these sectors already exist, such as the Responsible Steel standard and certification programme, the International Energy Agency (IEA)'s proposal to define low emissions, and the Low Carbon Concrete Group's Routemap.<sup>41</sup>

In terms of climate ambition, Option 1 (targeting the steel sector) would help to deliver the government's commitment in the Industrial Decarbonisation Strategy to reducing steel sector emissions by two-thirds by 2035. However, the cement and concrete sectors' products combined also form a considerable proportion of foundational materials in construction projects, and a significant volume of emissions. This makes Option 2 a more ambitious option in terms of the potential for emissions reductions.<sup>42</sup> Covering two very different sectors would also provide policymakers with a better range of lessons learned that would benefit any future MPS for additional sectors.

---

example to help deliver an international commitment that the existing policies are not designed to achieve by themselves.

<sup>41</sup> <https://www.ice.org.uk/engineering-resources/briefing-sheets/low-carbon-concrete-routemap/> As foundational construction materials, these sectors would also align with initiatives led by the construction sector, such as Future Homes Hub's embodied carbon work, Built Environment Carbon Database, Update to the RICS professional statement for whole life carbon assessment.

<sup>42</sup> These sectors combined represent 27% of UK industry emissions, based on 2019 data. Individually the share of each sector is: <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2020>

Option 2 also aligns well with international momentum; there are existing efforts to decarbonise both sectors, such as the IDDI, which the UK co-leads, and the government is keen to align potential domestic measures with international solutions to the global challenge of carbon leakage. The IDDI seeks to establish a low carbon standard for steel, concrete, and cement and targets limiting the embodied emissions in public construction projects. This contributes to the case for targeting steel, concrete, and cement, and in addition to the policies which already apply to them such as the UK ETS. Targeting both steel and cement with MPS would do the most to help the UK further this initiative.

Option 3, targeting steel, cement, and chemicals, explores a more ambitious scenario, based on expanding the potential to reduce emissions and mitigate the risk of carbon leakage across more of the economy.<sup>43</sup> However, this option would also present significant deliverability challenges. The chemicals sector expressed lower readiness in response to BEIS's Call for Evidence than steel, cement, or concrete, and lacks existing private sector led schemes on lower carbon products. The chemicals sector's product lines are also not as homogenous as those of steel and cement, which could make it considerably harder to develop and apply standards. The lack of international initiatives for this sector also limits the case for targeting chemicals early with an MPS, which is already in scope of existing policies such as the ETS and allocation of free allowances.

It is possible that these options could incentivise the substitution of steel or cement with products from other sectors which are not subject to product standards, such as timber in a construction context. The government would aim to work closely with stakeholders to consider this as part of any further policy development for MPS and explore where substitutable products should also be covered by new regulation.

**Question 3.2: Which option, if any, would be most appropriate for the initial sectoral targeting of a mandatory product standard? Are there other/additional sectors which should be considered for early targeting, for example to address the risk of substitution? Please explain your reasoning.**

- **Option 1: Targeting steel only**
- **Option 2: Targeting steel, cement, and concrete**
- **Option 3: Targeting steel, cement, concrete, and chemicals**
- **Other**

**[Open text]**

## Which emissions should be in scope?

The government would need to decide the scope of emissions that MPS would cover. The definition of emissions scope is set out in Chapter 1.

In its Call for Evidence, BEIS set out the trade-offs of a broader emissions scope versus a narrower one; a broader emissions scope would support greater policy ambitions but could make delivery more challenging. In response, most stakeholders were in favour of Scope

<sup>43</sup> Based on 2019 data. Iron and Steel 17%, chemicals being 16%, Cement 9.9%, <https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2020>.

1, Scope 2, and at least some upstream Scope 3 emissions being included in an assessment of embodied emissions of industrial products. A smaller number of respondents were in favour of a more comprehensive emissions scope, which may also include at least some downstream Scope 3 emissions. This feedback aligns with the approaches taken by industry, such as ResponsibleSteel<sup>44</sup> and the Low Carbon Concrete Group,<sup>45</sup> as well as international organisations, such as in the recent International Energy Agency (IEA) report *Achieving Net Zero Heavy Industry Sectors in G7 Members*.<sup>46</sup>

The government is considering options that include Scope 1, Scope 2, and upstream Scope 3 emissions data at a minimum. This is because Scope 1 and Scope 2 data are already widely collected and provide useful information for consumer decision making and future emissions reduction policies.

The inclusion of upstream Scope 3 emissions is based on the response to the Call for Evidence, the greater potential for emissions reductions, and alignment with industry and international practice. However, this does not necessarily mean that all upstream Scope 3 emissions would be in scope; upstream Scope 3 activities may not contribute a significant quantity of emissions and the task of collecting and reporting such data may not have proportionate benefits.

The government therefore considers its current options for the emissions scope of a mandatory product standard to be as follows:

- Option 1: Scope 1, 2, and some upstream Scope 3 emissions
- Option 2: Scope 1, 2, and some upstream and downstream Scope 3 emissions

The government is minded to pursue Option 1. In the government's view, this option could provide the best balance between deliverability for industry and ambition, covering a significant majority of industrial emissions, without requiring reporting of a product's entire life cycle emissions. This option also aligns with international activity and makes it more likely that companies will not need to collect and report on different sets of data in domestic and international markets.

The government does not currently consider Option 2 to be deliverable, since downstream Scope 3 emissions could be too difficult for manufacturers to calculate or too vague if estimated. For example, intermediate steel could be used in anything from automobiles and white goods to buildings, and it could be very difficult to predict the whole life implications of how the steel could be used.

Depending on design, if MPS were introduced for midstream industrial products (as discussed in the following section), manufacturers would be obliged to provide estimates of in-use and end-of-life scenarios for their products, which are unlikely to be accurate due to the high number of possible end-uses and challenges in tracking materials.

However, the government recognises that the exclusion of all downstream Scope 3 emissions may mean that consumers and producers do not make decisions optimally to reduce the overall impact of their material, design, technology, and product choices. This could have the unintended consequence of incentivising the manufacture and use of

<sup>44</sup> <https://www.responsiblesteel.org/>

<sup>45</sup> <https://www.ice.org.uk/engineering-resources/briefing-sheets/low-carbon-concrete-routemap/>

<sup>46</sup> <https://www.iea.org/reports/achieving-net-zero-heavy-industry-sectors-in-g7-members>

products which may be less emissions intensive to manufacture, but which have a greater environmental impact over their whole lifespan.

There may be a case for including some downstream emissions in future if the benefits start to outweigh the additional costs, and if this is complementary to wider initiatives (such as minimum embodied emissions reporting in the construction sector).

The government recognises that providing data for all sources of emissions may not be possible for all domestic producers or importers. In these cases, the government is exploring the use of default values, which could enable businesses to apply a form of pre-set emissions data to their product's calculations. This is discussed further in Chapter 6.

**Question 3.3: Which option, if any, would be most appropriate for emissions scope of a mandatory product standard? Please explain your reasoning, and details of any alternative options.**

- **Option 1: Scope 1, 2, and some upstream Scope 3 emissions**
- **Option 2: Scope 1, 2, and some upstream and downstream Scope 3 emissions**
- **Other**
- **[Open text]**

## To which part of the manufacturing chain should MPS apply?

The effect of MPS would vary depending on the stage in the manufacturing chain where it is applied. This is considered in terms of the manufacturing processes that add value to a product, the stages of which are broadly categorised as follows:

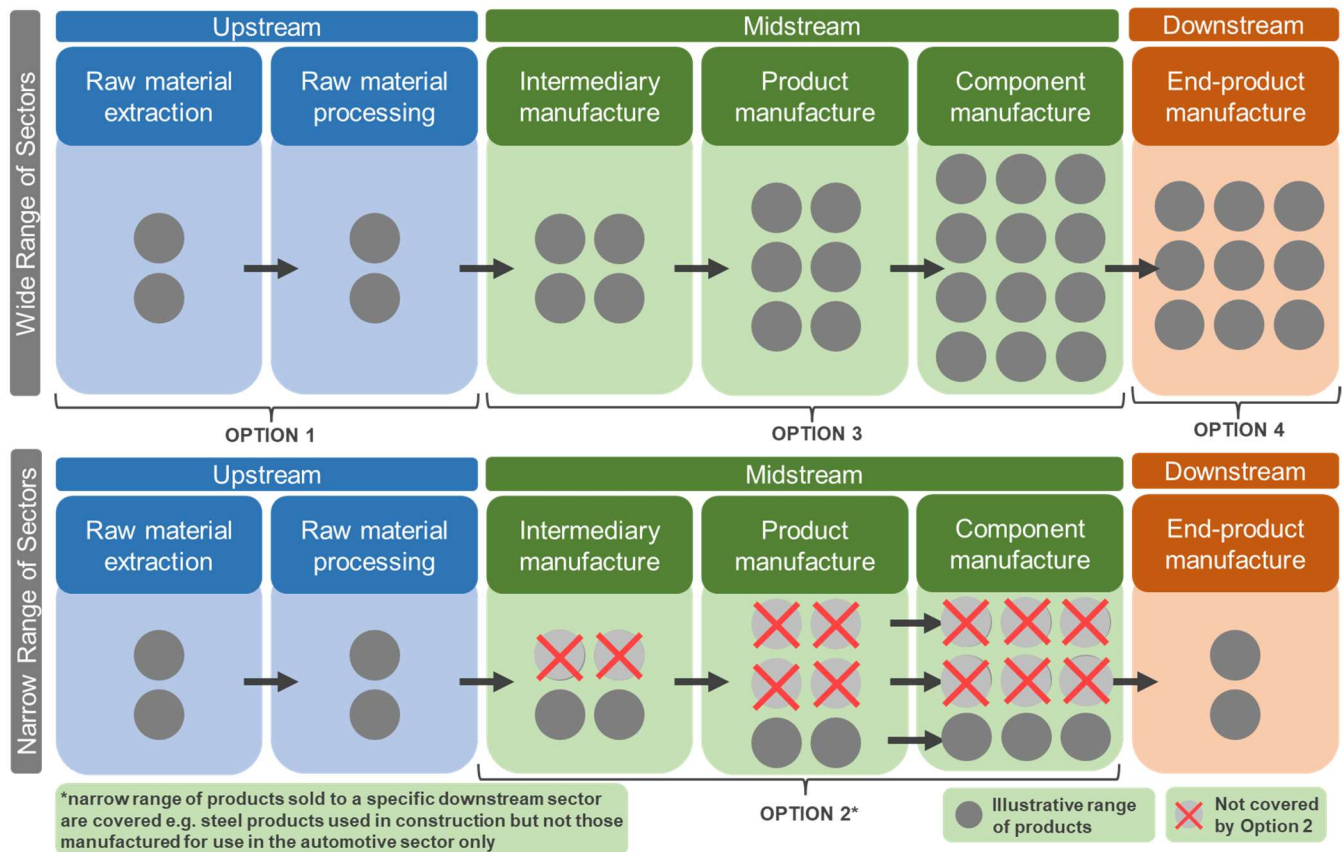
- Upstream: which includes the extraction and processing of raw materials (such as iron ore);
- Midstream: which includes processing of raw materials into a relatively simple intermediate product (such as a bar of steel), and;
- Downstream: where intermediate products are assembled into a final good that would be purchased by a consumer (such as a car).

The government recognises that the optimal part of the manufacturing chain to apply an MPS may vary between sectors, and policy design would need to reflect this.

The government is exploring the following options, based on an emissions scope of 1, 2, and some upstream 3, as discussed in the preceding section. These options are represented visually in Figure 7.

- Option 1: MPS are applied to upstream products, such as processed raw materials or other early intermediary products
- Option 2: MPS are applied to a narrow range of midstream intermediary products, such as those sold to a specific type of downstream manufacturer or sector, for example, steel products manufactured for the automotive sector
- Option 3: MPS are applied to a broad range of midstream intermediary products, such as those sold to downstream manufacturers
- Option 4: MPS are applied to downstream consumer products, such as a car

**Figure 7. Diagram to illustrate where MPS could be implemented in the manufacturing value chain. Circles in the diagram are an illustrative representation of the number or variety of different types of products in the manufacturing chain.**



The government is minded, at least as an initial approach, to target a narrow range of midstream products that are used by a specific sector or group of sectors (Option 2). This option would achieve a good balance between climate ambition, effective mitigation of carbon leakage risk, and deliverability for industry; as it would cover most manufacturing emissions, and align with existing government reporting such as the UK ETS and Streamlined Energy and Carbon Reporting (SECR).

An MPS applied to a midstream product would capture emissions that arise from raw material extraction and processing, and energy intensive manufacturing processes. Benefits may also be realised elsewhere in the economy, as unregulated products that share common inputs with regulated products could also see emission reductions.<sup>47</sup> While downstream products would not be in scope, improvements to the quality of emissions data could benefit manufacturers that wish to carry out lifecycle assessments of their products, and, once established, there may be potential to extend the policy scope downstream to cover downstream, end-use products.

<sup>47</sup> For example, the emissions of automotive steel may fall because of the decarbonisation of the crude steel used, due to policies on construction steel.

However, targeting midstream products would not directly incentivise other forms of carbon reductions, such as eco-design or repairability of consumer products, which would be associated with downstream manufacturing processes (Option 4). There is also an associated risk that applying the MPS at midstream production processes could distort markets and supply chains, including the possible offshoring of midstream processes to jurisdictions without MPS. This risk would need to be monitored closely, and were it assessed to be high this could strengthen the case for pursuing Option 4 instead. Further discussion of the potential impacts of this and other new measures on downstream sectors is explored further in Chapter 4.

Further considerations on each of the options are set out below:

- Option 1 would be the simplest to deliver, but targeting upstream products has the significant drawback that it could increase the risk of carbon leakage for UK industry, as a wide range of high carbon midstream and downstream products could still be imported.
- Meanwhile, Option 3 would share many of the advantages of Option 2, and may also influence the procurement decisions of major buyers. However, the breadth of this option would decrease the deliverability of the policy, possibly delaying implementation. Nonetheless, Option 2 could still be expanded to become Option 3 were the initial implementation to be successful.
- As set out in the Industrial Decarbonisation Strategy, if MPS for midstream industrial products are introduced these could later be extended to downstream products.
- Option 4 would mitigate the risk of carbon leakage more comprehensively by targeting these downstream products, and could encourage end-product manufacturers to consider how to minimise carbon intensive materials and processes across the full value chain of a product. However, Option 4 would be much less deliverable than upstream or midstream options, as end-use consumer products are typically more complicated products due to the range of materials which constitute them, for example wiring, cables and pipes, which could be challenging for producers to collect information from a broad range of different buyers. This could delay the overall implementation of any MPS.

**Question 3.4: Which value chain option, if any, would be most appropriate to target with a mandatory product standard? Please explain your reasoning, with reference to specific sectors if possible, and details of any alternative options.**

- **Option 1: Upstream products**
- **Option 2: Midstream products (broad scope)**
- **Option 3: Midstream products (narrow scope)**
- **Option 4: Downstream or end-user products**
- **None of the above**
- **[Open text]**

### **What should be the point of obligation for compliance?**

The government will also need to consider where in the value chain to target the point of obligation for demonstrating compliance with any new regulations. The government broadly considers that it has two options for doing so, as set out below. These options also

need to be considered in terms of how they would apply to goods produced domestically in the UK, and goods that are imported.

- Option 1: The point of sale, in other words when the good is being placed on the UK market.
- Option 2: The point of production, in other words before the good leaves the factory gates.

A 'point of sale' approach for UK-produced goods could align the point of obligation for compliance with how products subject to standards are generally regulated in the UK, such as for product safety standards. Building on existing regulatory systems and processes, could minimise complexities for industry. For imported products, the government could apply this 'point of sale' approach when customs authorities clear the goods to be released into free circulation. The importer would be required to demonstrate that the products they have brought into the country comply with UK regulations so they can be placed on the UK market.

If MPS were to apply to UK manufacturers at the point of sale as described above, the standards would not necessarily apply to UK exports. A UK manufacturer could in theory still produce a good which is not compliant with an MPS if it was destined for another jurisdiction. The question of exports is discussed in more detail in a separate section in Chapter 4. Any regulations would need to be designed in such a way that supports the fair treatment of imports and exports.

The alternative approach, for domestically produced goods, would be to apply the point of obligation at the point of production, in other words before the product leaves the factory gates. This would remove the need for any form of export control, and arguably be more appropriate in terms of the nature of the product standards themselves; unlike safety standards, the interest of this regulation would be more how the product is made than its final in-use characteristics. However, this approach would still require import controls, and could also require new regulatory mechanisms which may not be proportionate given the alternative, existing regulatory frameworks.

**Question 3.5: Which option, if any, would be most appropriate for targeting the point of obligation for a mandatory product standard for domestically produced goods? Please explain your reasoning, with reference to specific sectors if possible, and details of any alternative options.**

- **Point of Sale**
- **Point of Production**
- **Other**
- **[Open text]**

**Question 3.6: What considerations should government consider when targeting the point of obligation for imported goods? Please explain your reasoning, with reference to specific sectors if possible.**

**[Open text]**

## Should any MPS apply to imports?

In its Call for Evidence, BEIS asked stakeholders whether a ‘mandatory for UK products only’ approach would be a reasonable first step in rolling out new mandatory standards or labelling policies. Respondents generally opposed this, noting the additional administrative and technical costs of UK manufacturers would distort the market in favour of “higher carbon” industrial imports, increasing the risk of carbon leakage. Considering this feedback, the potential risk of carbon leakage, and the net-zero related benefits of taking a broader approach to product coverage, the government’s view is that any MPS introduced should also apply to imports.

The government is committed to promoting the smooth flow of trade and is exploring options to ensure the final policy design for any MPS and labelling is consistent with this principle, complies with trade obligations, and minimises burdens on business in the UK and overseas.

**Question 3.7: Do you agree or disagree that any mandatory product standard should apply to imports? Please explain your reasoning, including any details of the possible impacts for your sector.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

## Setting emissions thresholds for standards and increasing their stringency

A key step to create a mandatory low carbon product standard would be to set the level, or ‘threshold’, of embodied emissions that determine whether a product is compliant.

In setting a threshold, there would be a trade-off between climate ambition and deliverability. The threshold for early MPS would need to be set at an ambitious but achievable level for manufacturers, which could be met through improving energy and resource efficiency while deep decarbonisation options are not yet widely deployable. Any effective threshold would nonetheless need to be set in such a way that is consistent with the UK’s climate and other international commitments.

MPS would need to gradually become more stringent over time to ensure they continue to support progress towards net zero as more low carbon technologies become available. Thresholds could also quickly become outdated, for example, if there were drastic reductions of a sector’s emissions through the widespread adoption of decarbonisation technologies. Similar to the US Clean Air Act (CAA), an MPS could be reviewed on a regular basis and revised, if necessary, to broaden the scope and adjust its thresholds.

BEIS asked several questions in relation to thresholds and stringency of standards in its Call for Evidence. Stakeholder feedback included that thresholds should be set at levels tailored for each sector, that industry should be consulted on how thresholds are set, and



be given an appropriate notice ahead of any planned changes.<sup>48</sup> Some respondents also suggested that a rapid review mechanism would be needed to adjust thresholds in exceptional circumstances.

There would also be the option to set a range of thresholds for a single product, to create a system of both mandatory and voluntary product standards. The highest emissions threshold of the range would be the mandatory product standard. Meanwhile, progressively lower thresholds would determine the benchmarks for voluntary standards which manufacturers could also meet to differentiate their products as greener. Some respondents to the Call for Evidence suggested that the range of voluntary thresholds could be introduced with the lowest threshold already being net zero or near zero, and therefore these would not need to be re-baselined before 2050. Any range of thresholds could be represented through a graded labelling system as set out in Chapter 5.

### Principles for setting thresholds and increasing their stringency

The government is looking for views on the following guiding principles, based on stakeholder feedback, for how any thresholds of MPS could be set, and how their stringency could be increased over time.

- Thresholds should be set at a level tailored for each sector. Exceptions may be made for some sectors where a heterogeneity of products makes this approach impractical.
- Thresholds for MPS should be set at an ambitious but achievable level reflecting engagement with industry experts.
- Industry should be provided with advance notice of any planned increase in stringency and consulted as appropriate.
- Thresholds for voluntary standards should be set at a range of more ambitious levels, up to net zero or near zero.
- The increasing stringency of MPS thresholds should be linked to the UK's net zero target and carbon budgets to ensure that emissions reductions levels in line with government targets (as a minimum) will be incentivised.
- The increasing stringency of thresholds would need to account for the step-change nature of industrial decarbonisation and may need to be reassessed in response to technological advances. Gradual but frequent increases in stringency could be needed in the short term, with bigger and less frequent increases required once deep decarbonisation technologies have been widely deployed.
- The government should be clear about the review process for a threshold, either specifying the circumstances which would trigger one, or setting a regular review process.

The government is considering methodologies which could be used to set the exact stringency of thresholds. These are at an early stage of development and government would aim to understand stakeholder views prior to final policy design being completed.

**Question 3.8: Do you agree or disagree with the proposed principles for setting thresholds and increasing the stringency of mandatory product standards over time? Please explain your reasoning.**

---

<sup>48</sup> 2 years was the most popular suggestion.

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

## Implementation: when should any mandatory product standards be introduced?

If implemented, the government is minded to introduce MPS in stages over the next decade and beyond. First, the emissions reporting obligation and associated data systems would need to be fully operational. This would provide the data required to inform a final policy design and the exact calculations that would set the scope and threshold of a standard. The government considers that product level emissions reporting could be operational in the mid-2020s.

MPS could then be introduced in the late 2020s with a relatively focussed set of scopes (in terms of sectors, products, and emissions) and a less stringent application (as discussed above). This initial approach would not preclude the option of taking a broader approach to questions of scope in later stages.

The speed at which changes to a broader scope and greater stringency could be made would depend on the following factors: the experience of initial implementation, the availability and rate of adoption of low carbon technologies, the carbon leakage risk at the time, and the trajectory required to meet the UK's emissions reduction targets.

An indicative timeline could see these changes implemented from the end of the 2020s and through the 2030s, until deep decarbonisation has been achieved and industries are operating at either near or net zero.

**Question 3.9: Should mandatory product standards be delivered in stages, broadly moving from a less stringent, relatively focussed application in the late 2020s to a more stringent and potentially broader application during the 2030s? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

## Chapter 4: Cross cutting policy issues for CBAM and MPS

This chapter considers the cross-cutting policy issues for carbon border adjustment mechanism (CBAM) and mandatory product standards (MPS). It covers the international context and trade considerations; the simplification of measurement of carbon intensity; risk of circumvention and resource shuffling; potential downstream impacts; exports and Carbon Credits and offsetting. In addition, the Analytical Annex (Annex B) provides a high-level qualitative assessment of the potential impacts for key environmental and economic considerations. Both a CBAM and MPS would have impacts on carbon leakage, emissions globally and domestically, production, prices and downstream production. The exact impact on these various considerations is complex and could differ between the two measures. It will depend on how the policies are designed, implemented and their overall scope, including their sectoral and emission scope coverage, as well as the point of obligation.

### International context and trade implications

CBAM and MPS measures need to be considered in the context of: the UK's commitment to global climate goals, the government's commitment to free and open trade, and with consideration of countries' differing levels of development, particularly for least developed and low-income countries.

As set already set out, the UK is very active in contributing to ongoing work to international solutions to carbon leakage. Meanwhile, a number of jurisdictions, including the EU and Canada, are developing or considering carbon leakage policy measures, alongside taking meaningful steps to decarbonise. It is not yet clear what overall impact carbon leakage measures deployed by other jurisdictions could have on UK exports; however, unless the UK takes similar steps, they could result in a risk of diversion of higher carbon products to the UK as traders seek to avoid new charges.

It is essential that in the process of achieving global climate ambition, international partners continue to work together on solutions. These will take time to develop. Divergent

approaches to decarbonisation, where trade partners rely on regulatory or incentive-based approaches rather than carbon pricing mechanisms, raise questions about whether and how non-pricing measures can be compared to explicit pricing measures. Different approaches to standard setting also create challenges.

As the UK considers potential domestic measures, the government will continue to actively support international cooperation on decarbonisation. The UK is firmly committed to working in collaboration to minimise the impact on trade and the necessary compliance steps for affected entities, both in the UK and internationally. That includes with specific regard to countries at differing stages of development, particularly least developed and low income countries. As set out in the International Development Strategy<sup>49</sup>, the government recognises that trade is crucial to lifting countries at different stages of development out of poverty. Accordingly, the UK invites partners, including major emitters and developing and emerging economies, to engage with this consultation.

As already noted, any UK measures taken forward would be in compliance with international obligations including World Trade Organisation (WTO) commitments and bilateral or regional trade agreements. Beyond upholding the multilateral trading rules, the government is also determined to make the most of global trade opportunities. The government will therefore aim as far as possible, to minimise burdens on business (in the UK and overseas) and consumers, and the overall impact on trade, by collaborating with trading partners, where possible, to reduce unnecessary regulatory divergences.

There are two other important international questions:

- First, how can international partners reach agreement on methodological issues? International coordination and ultimately agreement on a methodology, default values and verification, as well as MPS, would smooth the application of such measures, streamline processes for businesses, and underpin efforts towards more ambitious multilateral agreements on carbon pricing and carbon leakage.
- Second, how can decarbonisation and carbon leakage policy best take into consideration countries' differing levels of development, particularly for least developed and low-income countries? The government understands that countries at different stages of development face specific challenges implementing policies to accelerate the global transition to net zero. Least developed and low income countries in particular may lack the capacity, technological resource and infrastructure to comply with measures.

Financial or technical support can play a role in addressing this challenge. The UK is the largest contributor (£20m) to the World Bank's Partnership for Market Implementation programme, which will help 30 low and middle income countries to model and implement more ambitious carbon pricing approaches by 2030, with the first proposals approved in 2022. In 2022, the UK also became a signatory to Canada's Global Carbon Pricing Challenge, which aspires to triple the proportion of global emissions that are subject to carbon pricing by 2030. Both initiatives can help to limit carbon pricing differentials between the UK and countries at different stages of development. More broadly, as part of the Just Energy Transition Partnership (JETP) the UK, with other partner governments, is mobilising \$8.5bn over 3-5 years from 2021 to deliver a just transition in South Africa, the first country where this approach is being piloted. This will provide a platform by which

<sup>49</sup> [UK Government's strategy for international development - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/uk-government-strategy-for-international-development)

partner countries can work with providers of climate finance support, private sector investors and multilateral development banks (MDBs) to achieve a just energy transition. The government is acting to broaden the JETP model to other high growth economies, working with the G7 and other partners to deliver JETPs in India, Indonesia, Senegal and Vietnam.

Simplifying reporting and providing technical support where needed for emissions reporting can also help, and is considered further below. There is also potential for other flexibilities, although the government would want to avoid these creating loopholes which might undermine the objective of the measures.

The UK is seeking views on these issues and specifically:

**Question 4.1: What specific challenges for countries at differing stages of development to the UK, in particular least developed and low income countries would the government need to consider in the future design of any carbon leakage measures? Please explain your reasoning.**

[Open text]

**Question 4.2: How can the government best support countries at differing stages of development to the UK, in particular least developed and low income countries? Please explain your reasoning.**

[Open text]

## Simplification of carbon intensity measurement

Translating the measurement of emissions at plant level into figures for the emissions intensity of individual products is complicated, including because any comprehensive methodology will likely still involve a degree of discretion in apportioning plant level emissions between products. The greater the complexity, the greater the administrative costs for those generating and checking data on product level carbon intensity.

There is a premium, therefore, on finding ways to simplify this measurement process, both to reduce administrative costs and burdens, but also to ensure sufficient transparency when relying on such data for international comparisons, and for administrative decisions relating to the application of a CBAM or MPS. At the same time, it will be important that any such simplification provides a sufficiently strong proxy, on a consistent basis, for such data to be fit for purpose.

There are a number of potential routes for simplifying the process of estimating product level emissions intensity. One approach, taking the example of a plant producing steel, would be to take the emissions generated by the plant in question, together with appropriate upstream emissions (for example, relating to power consumed by the plant), and assign these to individual products made in the plant pro rata the weight of steel in individual products. This approach is discussed further in Option 1 of the emissions reporting section of this document. For products that are generated from fossil fuels (such as different sorts of chemicals or transport fuels), one approach would be to assign

emissions to individual products made in the plant pro rata the amount of carbon contained in the individual product.

**Question 4.3 What is your view on the importance of finding ways to simplify the process for estimating product level emissions intensities?**

[Open text]

**Question 4.4 What are the different options for simplifying the process for estimating product level emissions intensities without compromising on the integrity of the estimates?**

[Open text]

**Question 4.5 Do you have any views or empirical data on the trade-offs between reductions in administrative costs in the generation of product level data, and the accuracy of such data?**

[Open text]

## Risk of circumvention and resource shuffling

The effectiveness of carbon leakage policy measures could be undermined by 'circumvention' or 'resource shuffling'.

Circumvention of carbon leakage policy measures could take place if products which would otherwise be covered by the measures are modified to fall outside their scope; for example, through moving into product categories that aren't within the limited scope of a measure. This risk would be greater the narrower the application of carbon leakage measures.

Measures could also be made ineffective through resource shuffling, where a business would divert its most carbon-intensive products to markets with less stringent regulation, and its lower emissions goods to the UK market, rather than reducing the overall carbon intensity of its production. Furthermore, where total production makes use of an input that is drawn from a range of sources, with varying carbon intensities (such as electrical power) to avoid paying a border adjustment or meeting a product standard, a company could argue that it is selling its least emissions intensive products (because it deems these to be made from its lowest carbon source of electricity) into markets where carbon leakage policy measures operate.

**Question 4.6: Is circumvention a risk in your sector(s)? Please explain your reasoning, with references to particular sectors where possible.**

- Yes
- No
- Don't know

[Open text]

**Question 4.7: How can carbon leakage measures be best designed to limit risk of circumvention? Please explain your reasoning.**

[Open text]

**Question 4.8: Is resource shuffling a risk in your sector(s)? Please explain your reasoning, with references to particular sectors where possible.**

- Yes
- No
- Don't know

[Open text]

**Question 4.9: How can carbon leakage mitigation measures be best designed to limit risk of resource shuffling? Please explain your reasoning.**

[Open text]

## Possible downstream impacts

In some cases, a CBAM or MPS could be expected to impact prices for goods and sectors beyond those which the measures directly apply to. This includes impacting products further down the supply chain. Where the UK is a structural net importer of a particular good, or set of products, and domestic prices are affected by the price of imports, a CBAM or MPS could raise the price not just of these imported products, but also the price of comparable domestically produced products.

One result would be increased costs for companies purchasing these products as intermediate inputs, which firms may not be able to fully mitigate through actions like sourcing alternative inputs or increasing efficiency. Such cost implications could have knock on impacts which may increase the risk of carbon leakage.

If cost increases in intermediate goods result in an increase in prices of the final products, and if these products compete against imports from countries with less ambitious climate regulations affecting intermediate inputs, this could lead to reduced demand for lower-carbon domestically produced products, and increased demand for imports, with potential for an associated increase in global emissions overall.

Alternatively, cost increases might be absorbed by businesses through reduced profit margins. However, this could ultimately affect future investment decisions, giving rise to a reduction in domestic output and increased imported emissions.

There are at least three options to address this which government could consider if developing a CBAM or MPS for eventual implementation:

- Apply a CBAM, or MPS, to imports, which reflects an 'implied carbon price' or 'implied product standard' where UK production has been indirectly impacted by carbon leakage measures applying to intermediate products;

- Work out the amount of the intermediate inputs, which in the UK would be affected by the CBAM or MPS, that are embedded (either physically, or via the production process) in imported processed products, and apply a CBAM or standards based on the content of those embedded intermediate inputs; or
- Do nothing for final products where the levels of relevant intermediate inputs (whether measured by mass or by a share of the value of the final good) are below a defined threshold.

Addressing potential impacts on downstream sectors could help ensure that, overall, carbon leakage risk is addressed in a more comprehensive way. However, it would likely substantially expand the number of potential products covered by a CBAM or MPS and increase administrative complexity for both government and businesses.

There would also be implications for consumer prices. If CBAMs or MPS are only applied to a limited number of upstream products (such as those produced by the plants covered by the ETS) then we could expect the impact on prices faced by consumers to be relatively modest. However, the more that carbon leakage measures are also applied in respect of downstream sectors, the greater the scope for this to result in higher overall impacts on consumers.

Clearly, a balance needs to be struck between ensuring that carbon leakage is not facilitated because downstream effects are not properly addressed, and the implications for both administrative complexity and business and consumer impacts.

**Question 4.10: There may be a risk of carbon leakage from increased imports of processed products produced using intermediate inputs that would have been covered by UK carbon leakage measures if imported directly. Is this a significant concern for you? Please explain your reasoning.**

[5 point scale: Yes, strongly agree; yes, agree; don't know; no, disagree; no, strongly disagree]

[Open text]

**Question 4.11: If you answered yes, in which sectors do you foresee material issues, and why?**

[Open text]

**Question 4.12: What are your views on the relative merits of the potential options presented above for addressing potential downstream impacts of carbon leakage measures? Are there alternative options for addressing this issue?**

[Open text]

**Question 4.13: One of the options set out is to take no action where the levels of relevant intermediate inputs are below a set threshold. In your view what would be the appropriate type, and level of such a threshold. Please explain your reasoning.**

[Open text]



**Question 4.14: How should the government strike the right balance between the need to address material downstream effects and the implications for both administrative complexity and consumer impacts? Please explain your reasoning.**

[Open text]

## Exports

UK-based production for export also faces carbon leakage risk in future, with the same risks of undermining reductions in global emissions if UK-produced exports are replaced with alternatives from other countries where production is subject to less onerous emission mitigation policies. Even in sectors where the UK is a significant net importer overall, a high share of UK production may be exported. The extent of this risk would depend primarily on the strength of carbon pricing, climate regulation, and carbon leakage policies in the export destination.

For sectors where the UK is a net exporter of commodity products, and where there is a competitive domestic market, the situation is more complicated. In such sectors, domestic prices of that commodity (and different products which are close substitutes) would be closely related to export parity.<sup>50</sup> If exports currently go to markets where there is no carbon pricing or where carbon leakage policies are insufficient, then for as long as the UK remains a net exporter, this will affect the extent to which domestic prices and not just the prices of UK exports reflect carbon pricing, even if there is a CBAM applied to imports into the UK.

These considerations could also be relevant where use is made of climate regulations, in particular MPS. Applying a mandatory product standard to all UK manufactured products, including those intended for export, would be consistent with government's objective to decarbonise UK industry. However, a disadvantage of applying a mandatory product standard to exports could be to increase the risk of carbon leakage in non-UK markets, for the reasons set out above. The government will consider whether there is a role for existing or future carbon leakage policies to address the risk associated with exports. Any new policies applied to exported products would need to be compliant with the UK's WTO obligations and our commitment to free and open trade and consistent with the design objectives set out in Chapter 1. Views from exporters about potential implications in their sector will help develop government's understanding.

**Question 4.15: Which UK sectors are most likely to face carbon leakage risk in export markets? For each of these sectors please set out your reasoning and any evidence to support this view.**

[Open text]

**Question 4.16: What, if any, is the impact of carbon leakage risk in export markets? For each sector please set out your reasoning and any evidence to support this view.**

---

<sup>50</sup> Export parity is the best price that can be achieved in export markets net of deductions for transport and other transaction costs between the UK and the destination market.

[Open text]

**Question 4.17: For UK sectors affected by carbon leakage risk in export markets described in 4.1 above, what approaches would you propose for the mitigation of carbon leakage risk?**

[Open text]

**Question 4.18: Should mandatory product standards apply to all UK manufactured products intended for export? Please explain your reasoning, and provide details of any impacts this would have on your sector.**

- Yes
- No
- Don't know

[Open text]

## Carbon Credits and Offsetting

Carbon credits each represent a tonne of greenhouse gas (GHG) emissions that has been reduced or avoided, for example through using cleaner technologies, or removed from the atmosphere, such as through technological removal. Voluntary carbon markets can help speed up the transition to a low-carbon future and channel much needed finance, if the credits are of high quality and unlock genuinely additional GHG reduction, avoidance, or removal. However, there remain significant risks associated with the use of carbon credits, including inadvertently enabling greenwashing<sup>51</sup>, and disincentivising investment in ambitious, science-aligned decarbonisation within value chains.

As set out in the Green Finance Strategy the government will consult later in 2023 on specific steps to ensure high integrity use of voluntary carbon markets.

In the design of MPS or a CBAM, the government could choose to allow companies to use the purchase of carbon credits to count towards meeting an MPS or a CBAM obligation. However, reducing the risks identified above could add significantly to the complexity of any reporting framework and impact the overall deliverability of either policy.

Therefore, at this stage the government is minded to not consider the use of carbon credits to contribute towards an industrial product meeting an MPS, or payment of a CBAM charge. This position would be subject to review over the transition to net zero, and as policy towards voluntary carbon markets and Greenhouse Gas Removals (GGRs) progresses.

**Question 4.19: Should the use of carbon credits to offset emissions be considered within the assessment of a product? Please explain your reasoning.**

- Yes

---

<sup>51</sup> "Greenwashing" refers to businesses making false or deceptive environmental claims about their organisation and/or products, for example where the offsets they have used as a substitute for decarbonisation do not deliver the emissions reductions they promise.

- No
- Don't know

[Open text]

## Chapter 5: Growing the market for low carbon products

In addition to mandatory product standards (MPS), the government could support a growing market for low carbon products directly through public procurement policies, and indirectly through policies such as product labelling and voluntary standards or benchmarks. These policies could give consumers greater transparency about the embodied emissions of products, giving them simple ways to recognise low carbon products, and a better understanding of how they can use their purchasing power to support the transition to net zero. These policies could enable low carbon products to potentially attract a green premium from consumers who want to buy cleaner products. This would both increase the incentive for businesses to decarbonise and help to mitigate carbon leakage.

Governments and businesses are already developing international partnerships to progress the development of a global market for low carbon products, for example, the UK/India led Industrial Deep Decarbonisation Initiative (IDDI) and the US-Led First Movers Coalition (FMC).

Measures to grow the market for low carbon products would aim to:

- Reduce the emissions of industrial products whilst mitigating carbon leakage risk.
- Support the ability of businesses and governments to differentiate between low and high carbon products.
- Support the business case for companies to invest in decarbonisation by increasing opportunities for producers who invest in decarbonisation to sell their products in the UK and abroad.
- Boost the competitive position of low carbon products, helping to mitigate carbon leakage risk.

In the following sections, government is seeking input on:

- A system for labelling in public procurement and the Industrial Deep Decarbonisation Initiative – where the government is looking to test the appropriate level of public procurement pledge that the UK should sign up to.

- Private procurement and the First Movers Coalition – where the government wishes to test how we can encourage greater participation in buyers’ alliances such as the First Movers Coalition.

All the policy options in this chapter would be facilitated by the introduction of embodied emissions reporting discussed in Part 2.

## Labelling and Voluntary Product Standards

Voluntary product standards, if introduced, would be designed in much the same way as has been set out for MPS in Chapter 3. This would enable both policies to work together as part of a single system of product standards, with the mandatory product standard setting the minimum threshold for embodied emissions that would be allowed on the market, and voluntary product standards sitting in a ranking system above that. This would enable manufacturers that have gone beyond the minimum level of decarbonisation required by the mandatory standards to distinguish their products as lower carbon.

This shared framework would enable procurers in the private sector and individual consumers to compare products based on their climate impact and inform purchasing choices. A labelling system could be used to publicise voluntary product standards. Clear and accessible embodied emissions data could enable consumers to distinguish between products with lower and higher embodied emissions, helping them to make informed purchasing decisions and lower carbon choices.

These measures could be complemented by wider policies to support resource-efficient outcomes and growth in the circular economy, for example, through extended producer responsibility schemes, which encourage producers and consumers to maximise the value that can be extracted from a product over its lifetime.

The increased emissions data transparency offered by the monitoring, verification and reporting of emissions data described in Part 2 of this consultation would underpin this policy. However, the voluntary disclosure of emission intensities for many products are already provided by manufacturers through the practice of Environmental Product Declarations (EPDs). EPDs can provide transparency about the environmental impact of products and are especially prevalent in certain sectors such as steel, cement, and insulation.

### Existing eco-labelling schemes

The product labelling scheme proposed in this consultation would, if implemented, work alongside an existing environment of eco-labels. This would include:

**Energy Labelling:** Energy-related products (ErP) are products that have an impact on energy consumption during use, such as washing machines, lighting products and televisions. Energy Labelling encourages consumers to purchase the most efficient products by providing them with information on a product's energy performance rating at the point of purchase. The policy aims to encourage uptake of energy and resource efficient products beyond their minimum energy performance standards. Minimum Efficiency Performance Standard (MEPS) works alongside mandatory labelling requirements, to remove the least efficient versions of products from the market. MEPS for energy-related products are established by Ecodesign legislation. MEPS and energy labels differ from those mandatory and voluntary standards proposed in this consultation in that they are focused on how the product is used, and its operational emissions rather than how it is made. Whilst Ecodesign legislation has mostly been used to establish MEPS for energy-related products, it does allow for other environmental aspects and phases of the life cycle to be regulated as well.

There is an open consultation on amending Ecodesign legislation to update MEPS for lighting products. This closes on 4 April 2023.<sup>52</sup>

**Private sector labelling schemes:** Other labelling schemes exist in the private sector, such as BREEAM (BRE Environmental Assessment Method), which is an international environmental assessment method for buildings, and the Carbon Reduction Label, which is a public commitment that the carbon footprint of a product or service has been measured and certified and the owner of the product or service has committed to reduce that footprint over the following two years.

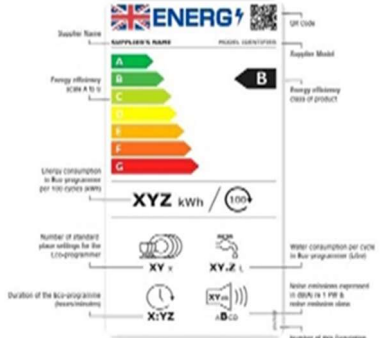


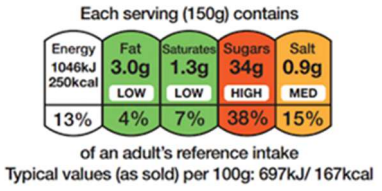
## Options for potential labelling systems


There are several existing product labels that present information to buyers in different ways. Some examples of how labelling could be used to provide buyers with information about the climate impact of a product are set out in the table below.

The labelling system chosen would need to be both easily understood and convey information in the right level of detail that could influence purchasing decisions.

<sup>52</sup> <https://www.gov.uk/government/consultations/new-ecodesign-requirements-for-lighting-products>

**Table 1. Examples of how labelling could be used to provide buyers with information about the climate impact of a product.**

Label Type	Description	Existing examples	Assessment
<b>Lettered grading system</b>	Lettered grades, combined with a traffic light system to show a product's embodied emissions relative to embodied emissions thresholds set by government	 <p>Source: <a href="https://www.energylabel.org.uk/the-new-label/in-a-nutshell/">https://www.energylabel.org.uk/the-new-label/in-a-nutshell/</a></p>	<p>Simple and effective visual communication</p> <p>Familiar to consumers</p> <p>Allows more granularity</p> <p>Future-proof, as the 'A' category could denote a net zero product</p>
<b>Carbon kitemark</b>	A simple label demonstrating that a product is certified as lower carbon than others on the market	 <p>Source: BSI Group</p>	<p>Simple labelling solution</p> <p>Does not enable comparison of labelled products</p>
<b>Embodied emissions figure</b>	Embodied emissions communicated as a kgCO <sub>2</sub> e per unit of product	 <p>Source: Carbon Trust</p>	<p>Simple and would allow comparison</p> <p>The information provided may not be meaningful for consumers</p>
<b>Traffic light system</b>	Uses green, amber, and red to denote a product's embodied emissions relative to embodied emissions thresholds set by government	 <p>Source: British Nutrition Foundation</p>	<p>Communicates information to buyers simply, but effectively</p> <p>Familiar to consumers</p>

<b>QR codes</b>	Enables buyers to access more information via their smartphone. This could be combined with a traffic light system, as QR codes can be displayed in different colours	 <p>Source:  <a href="https://blog.beaconstac.com/2021/03/best-qr-codes-packaging-sustainability/">https://blog.beaconstac.com/2021/03/best-qr-codes-packaging-sustainability/</a></p>	Allows manufacturers to supply further information, for example, data on other social or environmental factors  Requires buyers to engage with the QR code, does not provide any information itself
-----------------	---	--	---

Of the options set out in the above table, the government is considering implementing a lettered grading system (such as for labelling appliances' energy efficiency) to balance the needs of both business and individual consumers. This type of labelling, and the system of voluntary product standards set out in more detail below, would align with the suggestions made by respondents to BEIS's Call for Evidence "*Towards a market for low emissions industrial products*".<sup>53</sup> Respondents noted the need for simplicity to help consumers interpret the information, and others directly suggested using a colour-coded system. This is an early proposal that the government would like to test with stakeholders. Meanwhile, the government will continue working with our international partners in the IDDI, and beyond, with the ambition of designing a labelling scheme that can work alongside schemes emerging in other countries.

In this type of labelling system, products would be labelled with their embodied emissions figure and rated in a lettered system (for example, A-G) based on their embodied emissions. This would be accompanied by 'traffic light' colours to indicate which end of the spectrum represents best performance, versus lowest performance. Each letter above this could reflect a voluntary standard which the manufacturer has chosen to meet. The combination of the embodied emissions figure and lettered system could give both a simple way to compare products to the best in class, as well as the raw data needed to make more detailed comparisons.

If MPS were introduced and made more stringent over time (as proposed in Chapter 3), the lettered bands at the bottom of the labelling system could gradually be removed or reclassified, with products with embodied emissions at those levels no longer permitted on the UK market.

**Question 5.1: Which of the following statements corresponds most with your view?**

- **In order to maximise the effectiveness of a labelling scheme, both in terms of consumer usability and implementation costs, a system of embodied emissions should include:**
- **Embodied emissions data only**
- **Energy efficiency style lettered and coloured ratings only**
- **Both embodied emissions data and energy efficiency style lettered and coloured ratings**

<sup>53</sup> <https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>



- **I do not agree with any of these options**

**[Open text]**

If product level emissions reporting were introduced, the government would consider requiring the data to be publicised through labels. This would increase the level of transparency for consumers, allowing greater comparability between a larger range of products. However, this obligation could create additional administrative and compliance burdens for businesses.

**Question 5.2: Should the government adopt mandatory labelling for products that are required to have their embodied emissions reported? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

## Public procurement and the Industrial Deep Decarbonisation Initiative (IDDI)

The government is a significant buyer of industrial products, particularly in the construction and defence sectors. This means it can directly increase demand for lower carbon products through its specification and use of these products, helping to establish and grow new markets for these products.<sup>54</sup> Some examples of this in other countries are set out below:

The Buy Clean California Act, implemented in full in 2022, requires contractors bidding on state infrastructure and construction projects to disclose the embodied carbon for certain materials, such as concrete and steel, used in those projects, and sets upper limits on the emissions of products procured.

New York state's Low Embodied Carbon Concrete Leadership Act requires contractors to disclose the embodied carbon of concrete in bids for projects over a certain size. Dependent on the embodied carbon of the concrete, a discount is applied to the bid, reducing the cost of greener bids by up to 5%.

Multilateral action with other countries is important for green market growth. Growing the market for low carbon products could help mitigate the carbon leakage risk for industry in the UK and overseas. To address this need, the IDDI was launched by a coalition of governments and organisations in June 2020. The initiative aims to:

<sup>54</sup> For example, the UK Government spent £292 billion on public procurement in 2018/19. Source HM Treasury, Public Expenditure analysis 2018/19

- Standardise carbon assessments throughout the lifecycle of industrial products, starting with steel, cement and concrete.
- Establish a low carbon standard for steel, concrete and cement.
- Establish internationally coordinated targets for embodied emissions in public construction projects and incentivise investment into low carbon industrial product development.

The UK has committed to work towards setting out embodied emissions reduction aspirations in major public construction projects. Building on this, in September 2022, the UK, alongside Germany and Canada, committed to domestically consult on the multi-level IDDI pledge and its implementation. The four pledge levels government is considering are as follows<sup>55</sup>:

- Level One: Starting no later than 2025, require disclosure of the embodied carbon in cement/concrete and steel procured for public construction projects<sup>56</sup>.
- Level Two (in addition to level one): Starting no later than 2030, conduct whole project lifecycle assessments for all public construction projects, and, by 2050, achieve net zero emissions in all public construction projects.
- Level Three (in addition to levels one and two): Starting no later than 2030, require procurement of low emission cement/concrete and steel in public construction projects, applying the highest ambition possible under national circumstances.
- Level Four (in addition to levels one, two and three): Starting in 2030, require procurement of a share of cement and/or crude steel from near zero emission material production for signature projects<sup>57</sup>.

The government will use this consultation and a subsequent feasibility assessment to determine the appropriate pledge level to adopt.

At COP26, in November 2021, the UK pledged to work on the harmonisation of embodied emissions reporting, public construction practices and standard setting, as well as setting a baseline and interim embodied carbon emission reduction aspiration for major public construction projects for 2030.

Under Level One of the pledge, disclosure of embodied carbon in cement/concrete and steel procured for public construction projects would grant the government greater oversight of material carbon emissions to better track and measure progress against reducing emissions within these projects. This commitment would also support the implementation of voluntary product standards and labelling as outlined above. Further information on embodied emissions reporting can be found in Part 2 of the consultation.

Level Two would be supported by the government's wider policy trajectory, which is working towards the introduction of whole life carbon assessments (WLCA) for all

---

<sup>55</sup> The content of the pledge document including the explanatory note is a proposal at this stage and is not representative of a position of any the signatories. Signatories will instead determine the share of near zero materials for their commitment through their internal processes including consultation.

<sup>56</sup> Public construction projects refers to all infrastructure project-types that the signatory has authority for, which may include but is not limited to: new and refurbished buildings, transportation infrastructure (i.e., fixed installations including roads, railways, airways, waterways, canals and pipelines and terminals such as airports, railway stations, bus stations) and energy-utility infrastructure (such as hydro dams, wind turbines).

<sup>57</sup> The definition of large construction projects is to be determined post-consultation by the IPA

government infrastructure and construction projects,<sup>58</sup> and exploring how buildings built to the Future Buildings Standard could be zero carbon ready, with the potential to be carbon neutral over time as electricity and heat sources become decarbonised.<sup>59</sup> Conducting WLCAs contributes to decarbonisation objectives by avoiding possible adverse incentives if material carbon limits are addressed in isolation. WLCAs will help to ensure that carbon emissions from public construction projects are properly accounted for, and further encourage stakeholders to utilise low-carbon materials and more efficient, low-carbon designs.

Level Three reflects the government’s ambition to grow and scale markets for low carbon products, including by using government procurement to create long-term demand. This would strengthen the case for investment in low carbon technologies, supporting new jobs and positioning UK industry to access new low carbon export markets.

Level Four represents a maximalist level of ambition for this policy. It would aim to encourage the rapid decarbonisation needed in steel and cement production via procurement of near-zero emission steel and cement/concrete products. However, the IEA has noted that there are few steel and cement plants currently in operation or under construction that could be classified as “near zero emissions”, and even fewer are operating at a commercial scale required to achieve the Level Four pledge. As with Level Three, Government ambition at this scale could create the required incentive to accelerate the development of commercial scale plants at the necessary pace by increasing material demand. This demand could be immediate, even if the supply is not yet ready, if the products can be ordered in advance.

There are already efforts underway to reduce the emissions intensity of UK facilities, for example:

- British Steel has pledged to invest in a range of technologies to deliver net zero steel by 2050, and to significantly reduce the carbon intensity of its steel by 2030 and 2035.<sup>60</sup> This includes steel product innovation.
- Tata Steel has committed to produce steel that is carbon neutral by 2050, creating high-quality steel that is produced with fewer raw materials. The Climate Action Group has launched SteelZero, which is an initiative to speed up the transition to Net Zero Steel by ensuring that organisations that join pledge to procure 100% net zero steel by 2050 and 50% by 2030.

One of the drawbacks to implementation of any level of the pledge is the potential increased administrative burden placed on procurement teams. However, this could be mitigated by effective training and guidance for procurement teams to ensure potential new processes are designed efficiently and effectively. Additionally, only a limited selection of six primary steel and concrete products fall under the scope of the embodied emissions reporting for Level One of the pledge (see Annex C).”

---

<sup>58</sup> Infrastructure and Projects Authority, Transforming Infrastructure Performance Roadmap to 2030, 2021, Chapter 16.

<sup>59</sup> Department for Levelling Up, Housing and Communities, 2021. The Future Buildings Standard Consultation outcome

<sup>60</sup> Baselined to 2020 emissions, <https://britishsteel.co.uk/news/british-steel-unveils-low-carbon-roadmap-with-net-zero-pledge/>

The UK Government will work with industry and suppliers to establish the implementation details and requirements for these steel and concrete Environmental Product Declarations (EPDs): seeking to minimise duplication of EPDs, utilise existing data and promote data-sharing and interoperability where available, and streamline processes to minimise potential supplier burdens. The government will also work with industry to ensure any proposals are proportionate, and do not create significant burdens for suppliers, especially SMEs.

The government will be conducting an impact assessment to understand cost and time impacts to suppliers for the creation of the required EPDs and how this may impact value for money calculations if costs are passed on to public sector customers.

Through this consultation, the government is seeking views from the sector to understand the sector's capacity to produce, utilise and/or verify EPDs and LCAs that may be required under the IDDI commitment. Implementation of all levels of the pledge would align with proposals in Chapter 5 covering measures to grow the market for low carbon products, and Part 2 covering measures to introduce embodied emissions reporting. Level One implementation would require the reporting of embodied carbon of procured steel, cement and concrete with existing EPDs or other independently verified reports covering the same aspects as the EPD.

At any level, the language of the pledge may be incorporated into award criteria and contract performance clauses, which may require further guidance and support for procurement officials and contracting entities to overcome this potential resource burden. Project teams may also need support and training on the compliance of EPDs to meet the requirements of procurement documents.

The pledge is a political statement and is not intended to create binding international obligations. Following the outcomes of this consultation and further impact analysis, the government will aim to develop policy to support the chosen level of IDDI pledge we are committing to.

The government believes that its current policy trajectory supports a commitment to Levels One and Two, and it is minded to commit to Level Three and potentially Level Four to further support the UK's decarbonisation objectives. The government is seeking views on which level of pledge should be adopted and how it should be implemented.

**Question 5.3: Which level of IDDI pledge would best support the decarbonisation of UK industry? Please explain your reasoning.**

**Drop down options:**

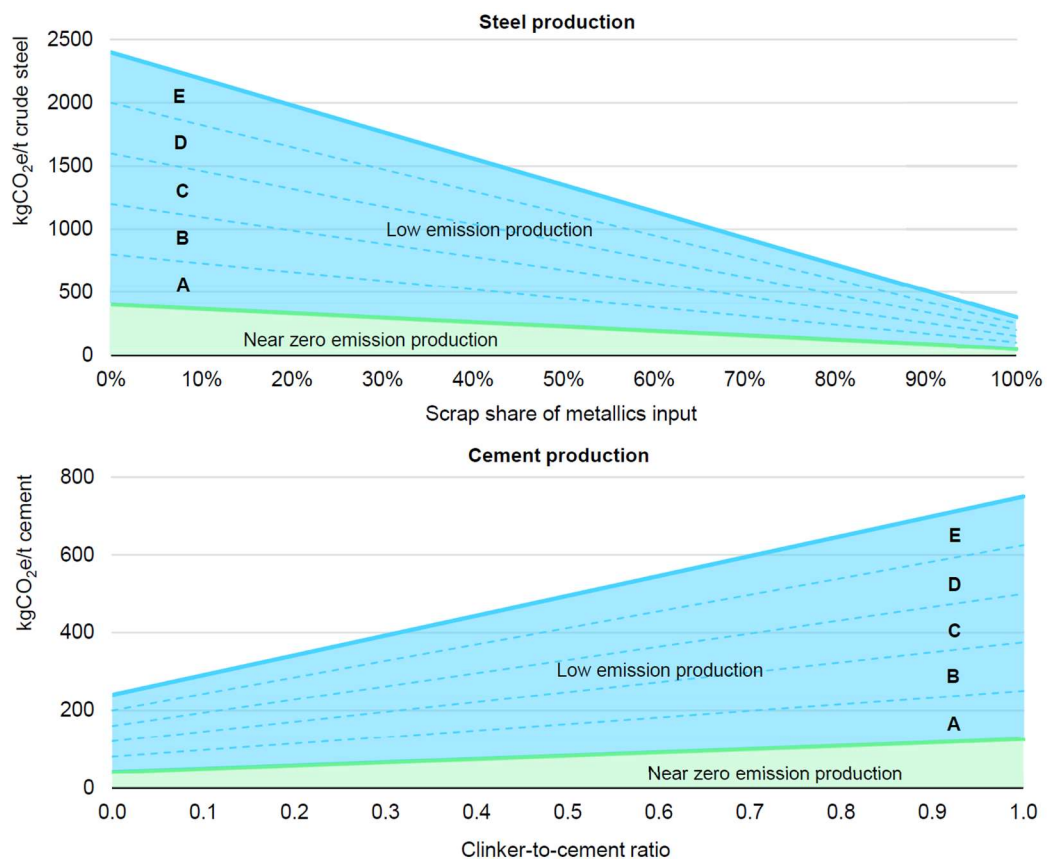
- **Levels One:**
- **[Open text]**
- **Levels One and Two:**
- **[Open text]**
- **Levels One, Two and Three:**
- **[Open Text]**
- **Levels One, Two, Three and Four:**
- **[Open Text]**

**Question 5.4: What would be the likely impact of implementation of each IDDI pledge level to your sector? When answering the question, please consider: if your company/companies in the steel, cement and concrete sectors would be likely to be able to match the rate of decarbonisation required by the different levels of the pledge, and; if the UK signing up to the pledge would incentivise decarbonisation within each sector.**

**[Open text]**

The Level Four pledge requires a definition for 'near zero' emissions in order to be implemented. Figure 8 shows the suggested intensity ranges for near zero and low emission steel and cement production.

**Figure 8. IEA emissions intensity ranges for near zero and low emission steel and cement production.**



Source: International Energy Agency (2022), Achieving Net Zero Heavy Industry Sectors in G7 Members, Page 127.<sup>61</sup>

Thresholds A-E in Figure 8 outline the range of KgCO<sub>2</sub>e of crude steel and cement considered low emission. This provides recognition of interim measures that deliver substantial improvements in emissions intensity that are in line with the temperature goal of the Paris Agreement but do not meet the near zero emissions definition. The near zero

<sup>61</sup> Accessed at <https://iea.blob.core.windows.net/assets/c4d96342-f626-4aea-8dac-df1d1e567135/AchievingNetZeroHeavyIndustrySectorsinG7Members.pdf>

definition for Level Four of the pledge is a stable and absolute definition based on fixed emission intensity.

**Question 5.5: Should the government adopt the low emissions thresholds suggested by the IEA? Please explain your reasoning, including whether there are there any strong alternatives.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**If yes, please explain how this could be achieved.**

**[Open text]**

### **Private Procurement and the First Movers Coalition**

Alongside public procurement, private companies can also use their own procurement strategies to provide a strong market signal that there will be demand for products made from low carbon production methods.

The First Movers Coalition (FMC) is a global initiative harnessing the purchasing power of companies to decarbonise seven “hard to abate” industrial sectors that currently account for 30% of global emissions: aluminium, aviation, chemicals, concrete, shipping, steel, and logistics along with innovative carbon removal technologies<sup>62</sup>.

The coalition seeks to send a powerful market signal to commercialise zero-carbon technologies through purchasing commitments. The first phase of purchasing commitments (in steel, logistics, shipping, and aviation) launched at COP26, with founding member companies each making at least one commitment. The second phase of commitments will focus on other heavy industry sectors where near zero carbon technology is not yet commercially available.

The UK has joined the FMC as a government partner. This will involve engaging in policy dialogue with corporate members on the private procurement of emerging technologies to grow the early market demand signal.

The government encourages all UK businesses to consider joining the FMC; joining will not only boost demand for low carbon products but also could benefit UK companies by giving them access to global connections to help expand into new sectors (such as hydrogen).

**Question 5.6: What can the government do to support firms to join the First Movers Coalition? Please explain your reasoning.**

**[Open text]**

---

<sup>62</sup> <https://www.weforum.org/first-movers-coalition>

## Part Two: Embodied emissions reporting

Part 2 sets out proposals on the design and delivery features of embodied emissions reporting that could underpin future carbon leakage policy measures presented in Part 1.

**Chapter 6** introduces a possible emissions reporting framework; including options for the design of embodied emissions reporting and use of default values.

**Chapter 7** sets out options for the specific methodology for calculating reported emissions, including the recommended reporting metric, which sectors could be targeted, and potential scope of emissions reporting.

**Chapter 8** discusses the design and delivery of the reporting system. This includes proposals on the IT product, frequency of reporting, verification of data, and how the information would be disclosed to the public.

### Domestic and international context

Information about the embodied emissions of products is necessary for carbon leakage policy measures to operate, whether in the form of actual emissions data or estimated values. Currently, government does not have visibility of the emissions intensity of products manufactured in or imported to the UK and therefore cannot yet introduce policies that would need to be based on this data. If carbon leakage policy measures are to be introduced, government needs to decide what methodology businesses should use to calculate these emissions for both UK made and imported products. This framework would need to take account of the complexities of measuring cross-border supply chains, minimise burden on businesses in the UK and overseas, and, where possible, align with reporting frameworks that are being developed internationally. Any data gathering model will be kept under review to consider technological changes and advances in both industrial processes and emissions monitoring capabilities, and developments to regulations and data gathering models of partners.

As set out in the response to BEIS's December 2021 Call for Evidence: Towards a market for low emissions industrial products<sup>63</sup> (hereafter "BEIS's Call for Evidence"), adopting a standard methodology for measuring and reporting embodied emissions could improve the comparability of like products and reduce the administrative burden for businesses in the

---

<sup>63</sup> Call for Evidence: Towards a market for low emissions industrial products  
<https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>

UK and overseas that report against multiple standards.<sup>64</sup> Greater standardisation of emissions reporting and compliance could support comparisons across products, reduce the potential for greenwashing, and support the framework needed to incentivise effective decarbonisation across the economy. Government is therefore exploring options for a product-level emissions reporting methodology and options for a system to manage embodied emissions data. Decisions on whether to take forward and implement any of the policies in this consultation will carefully consider, amongst other things, potential impacts on consumers and businesses. If the development of an emissions reporting framework is progressed, as part of future policy development, the government will consider ways to minimise and consolidate burdens on business (in the UK and overseas) - including by seeking to make relevant emissions and energy reporting requirements for business streamlined and non-duplicative as far as possible.

Any UK system should, as far as is possible, seek alignment with embodied emissions reporting standards in other countries, to prevent duplicative requirements being placed on businesses that import products to the UK and export products to other countries with similar policies. For example, UK exporters are likely to face reporting requirements under the EU carbon border adjustment mechanism (CBAM), and the government intends to engage internationally to help minimise additional administrative burdens. This would also strengthen international action to prevent carbon leakage by enabling cross border collaboration and product comparability.

Emissions reporting is a policy area which may interact with areas of devolved competence. The UK Government would work with the devolved administrations and devolved regulators to develop a consistent approach to emissions reporting for businesses across the UK. The reporting considerations discussed in this consultation are at an early, exploratory stage, and would not commit the UK Government or devolved administrations to taking any particular path. If this work is progressed, the UK Government would engage extensively with the devolved administrations at every stage of design and implementation to ensure coherence with other reporting systems.

---

<sup>64</sup> In response to the Call for Evidence, stakeholders emphasised that the benefits which would be gained from a more consistent and rationalised emissions reporting could outweigh any administrative burden or cost of compliance.



## Chapter 6: Emissions reporting framework

### Options for embodied emissions reporting

The embodied emissions of a product are the greenhouse gas emissions related to its manufacture. Depending on the extent of the policy, this could include emissions related to the extraction and processing of raw materials and fuels, combustion of fuels, process emissions and end-of-life emissions.

Current climate-related reporting is carried out at business or installation level and does not always include Scope 2 or Scope 3 emissions. Scope 1 emissions are regularly reported to the government by large businesses. Current reporting also does not generally apply to imported products, so additional information would be required for the assessment of embodied emissions of imports, should a carbon border adjustment mechanism (CBAM) or mandatory product standards (MPS) be introduced. Table 2 sets out examples of existing UK Government reporting schemes and relevant disclosure requirements. A table containing more detail can be found in Annex D.

#### Emissions Scopes

Scope 1 emissions relate to direct activities owned or controlled by an organisation. These emissions are directly controlled by those producing the good, for example as part of a manufacturing process or when fuels are combusted onsite.

Scope 2 emissions relate to an organisation's consumption of purchased electricity, heat, steam and cooling. Scope 2 represents indirect emissions which are not directly controlled by those manufacturing a product.

Scope 3 emissions relate to other emissions released as a consequence of an organisation's actions that occur at sources not owned or controlled by the organisation, for example, the extraction and processing of raw materials, or use of finished products by subsequent entities.

**Table 2. UK Government reporting schemes and relevant disclosure requirements for businesses.**

Scheme Name	Relevant disclosure requirements	Reporting frequency	Underlying methodology
<b>Energy Saving Opportunity Scheme (ESOS)</b>	No direct emissions disclosure to government. Businesses self-declare compliance.	Every 4 years	No specific requirements on how to collect or present data.
<b>UK Emissions Trading Scheme (UK ETS)</b>	Scope 1 emissions from covered installations.	Annual	Detailed requirements on emissions monitoring and verification.
<b>Streamlined Energy and Carbon Reporting (SECR)</b>	Scope 1 and 2 emissions from covered businesses and a relevant emissions intensity ratio. Scope 3 emissions optional.	Annual	No prescribed methodology, but the methodology used must be explained in the report.
<b>Climate Change Agreements (CCA)</b>	Participants report energy use by fuel type for the facility covered. Under- and overperformance against energy targets is converted to emissions for reporting.	Every 2 years	Energy is reported for the target facilities using units of energy and government published conversion factors.
<b>Carbon Reduction Plan (CRP)</b>	Requires suppliers bidding for major government contracts to publish a 'Carbon Reduction Plan' demonstrating their commitment to achieving net zero by 2050 for their UK operations.	When bidding for major government contracts	Carbon Reduction Plans should be completed in accordance with the latest environmental reporting guidance <sup>65</sup> for Scope 1 and Scope 2 emissions, and the reporting of the required subset of Scope 3 emissions should be in line with best industry practice and technical guidance. <sup>66</sup>

In response to BEIS's Call for Evidence, stakeholders, generally from the construction products sector, including steel, cement, insulation, timber, trade associations and professional institutions:

- Agreed with government's assessment that current climate-related reporting to government is not sufficient to support the introduction of product-level policies.

<sup>65</sup> <https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>

<sup>66</sup> [https://ghgprotocol.org/sites/default/files/standards/Scope3\\_Calculation\\_Guidance\\_0.pdf](https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf)

- Shared that the government should set rules about how businesses measure and report the embodied emissions of products. A robust methodology would reduce greenwashing and, by improving comparability, support the market for low carbon products.
- Shared that the methodology should include a mechanism for independent verification of results and be aligned with international standards, such as those developed by the International Organisation for Standardisation (ISO). International alignment would support the aims of the UK's Better Regulation Framework.

The purpose of an emissions reporting framework would be to ensure that all in-scope products that enter free circulation in the UK market that are within scope of relevant carbon leakage measures (should these be adopted) have an embodied emissions value associated with them. As far as possible, the government would align data collection from domestic producers and importers to ensure no less favourable treatment and enable buyers to sufficiently compare products.

The government is assessing two main options for calculating embodied emissions data and is exploring the extent to which default values could be used where collecting detailed information is not feasible. Following this consultation, further policy development will be needed on proposals for a policy framework to mitigate carbon leakage. As part of this, government intends to engage further with stakeholders on any embodied emissions reporting proposals. If a new emissions reporting scheme is introduced, the government would aim to work with industry to develop the system and provide sufficient notice to prevent undue burden in setting up reporting.

- Option 1: Use installation level emissions data with the option of default values
- Option 2: Use product life cycle assessments with the option of default values

**Default values** would allow an embodied emissions value to be assigned to in-scope goods in free circulation in the UK market. This would enable the coverage of products from domestic producers who do not report under the UK ETS, as well as importers who cannot obtain sufficiently verified data from their trade partners. However, extensive reliance on default values may also limit business' ability to differentiate truly low emissions products in a trusted way, perpetuating the risk of greenwashing by emissions intensive manufacturers. It may also reduce the effectiveness of any carbon leakage policy measures, such as a CBAM or MPS, that relies on these data for enforcement.

### **Option 1: Attribute installation level emissions data to products and default values**

This option would use an agreed methodology to attribute installation-level emissions to individual products. For example, this could be done by deriving product emissions from installation emission using a single factor, such as the volume or value of individual products produced by the installation over a set time period. This could build on the existing UK ETS emissions reporting framework, to utilise emissions data already measured by some UK businesses. Design dependent, this could include additional emissions sources where relevant. For UK businesses, attributing installation-level emissions to individual products may require less administrative resources than engaging

with a separate product-level reporting approach. Importers would be required to submit measured and verified data in a comparable manner to UK businesses.

In practice, the option could have the following features:

- The government could work with the UK ETS Authority to explore whether it may be possible to build on, as needed, the reporting requirements under the UK ETS. Currently this includes Scope 1 emissions. If Scope 2 and Scope 3 emissions data are required, it may be necessary to include additional emissions sources, such as purchased electricity, heat, cooling and steam (Scope 2), and the embodied emissions of fuels and precursor materials (upstream Scope 3). This would be additional to current requirements of the UK ETS.
- Importers could make use of comparable data from other jurisdictions, for example, data collected for the EU ETS or other comparable reporting mechanism.
- UK businesses and importers would be responsible for having emissions data independently verified, in line with rules set out in the methodology.
- Where UK manufacturers and importers are unable to provide data for relevant products, default values published by the government could be used where appropriate.

The government is considering the quality of data that may be derived from this method to ensure that it supports direct comparison of individual products, sufficient to apply to project standards and product labelling. Data quality issues may be compounded where an installation produces a range of products, all of which would need to be accounted for in emissions reporting but not all of which may be covered by new policies. This is a significant challenge of using installation level data. The potential inaccuracies of this form of data collection and its impact on policy need to be balanced against the relative reduced burden that this form of data collection would place on industry in the UK and overseas. The government will decide how to proceed based on responses to this consultation and the suitability of the data to meet policy objectives.

It is also important to note that this option does not currently align with some international activity on carbon accounting, including the Industrial Deep Decarbonisation Initiative (IDDI), EU Product Environmental Footprint (EU PEF), and voluntary activity in the private sector (mostly construction products) where environmental product declarations (EPD) are used. It is, however, likely to align with the reporting methodology being discussed for the EU CBAM.

## Option 2: Product life cycle assessments and default values

**Life Cycle Assessment (LCA)** is a cradle-to-grave technique for assessing the environmental impact of a product over its lifecycle. An LCA covers all stages of a product's life, from raw material extraction through materials processing, manufacture, distribution, use and end of life. Certain elements of a lifecycle assessment, such as use or end of life emissions, could be excluded if they are deemed not relevant or unjustifiably burdensome for carbon leakage policies.

This option would set out a standardised life cycle assessment methodology for eligible products. For domestic producers, reporting LCA results would be mandatory, and importers subject to carbon leakage policy measures would be required to provide comparable information, verified to a comparable standard. Options for the design of LCA reporting are discussed in Chapter 7.

In practice, the option could have the following features:

- UK businesses and importers would be required to submit LCA results for eligible products, using the specified methodology or a comparable one. This LCA methodology would include Scope 1, Scope 2 and some upstream Scope 3 emissions.
- UK businesses and importers would be responsible for having LCA results independently verified, in line with rules set out in the methodology.
- Where UK manufacturers and importers are unable to provide data for relevant products, default values published by the government could be used.
- A standardised LCA methodology could provide accurate and comparable results. However, respondents reported that LCAs can be expensive, in particular when carrying them out for the first time. As such the burden of such a system could be relatively high for businesses, especially small and medium-sized enterprises and those that do not already participate in voluntary disclosure schemes, although once data collection processes are in place costs are likely to fall.

Respondents to BEIS's Call for Evidence, mainly from the construction products sector, suggested that government should choose a methodology already widely adopted in the UK and abroad, highlighting BS EN 15804:A2 as an example.<sup>67</sup> Choosing a methodology already widely adopted in the UK and abroad could minimise disruption for businesses already measuring and disclosing product-level emissions and could make it easier for importers to source data if they are not the manufacturer of the product. However, it is likely that any current standard would have to be tweaked to ensure standardisation. Flexibility within existing standards is discussed in Chapter 7.

A solution based on these principles could provide a strong platform for government to assess the carbon intensity of products manufactured domestically and those imported to the UK. It could be utilised across a range of policies and initiatives related to the climate impact of products, including the Industrial Deep Decarbonisation Initiative, and government and private-sector initiatives that aim to progress the adoption of whole life carbon assessments for buildings, infrastructure, and consumer products.

The issue of verification will be considered closely in terms of any additional burden it might place on businesses in the UK and overseas. This is discussed further in Chapter 8.

---

<sup>67</sup> Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

**Table 3. Comparison of options for embodied emissions reporting.**

Option	Default values available?	Emissions measurement	Alignment with existing reporting	Potential for international alignment
<b>(1) Attribute installation-level emissions data to products (based on UK ETS data)</b>	Yes	Exploring the possibility of building on, as needed, reporting requirements under the UK ETS.	Could align with reporting currently carried out by UK ETS participants	Yes
<b>(2) Product life cycle assessment</b>	Yes	Through a lifecycle assessment at product level	Businesses that voluntarily disclose embodied emissions data, typically in construction products sector	Yes

**Question 6.1: Should the government introduce a new framework to enable the reporting and collection of product level emissions?**

[5 point scale: Yes, Strongly agree; Yes, Agree; Maybe/Undecided; No, Disagree; No, Strongly disagree]

**Question 6.2: If yes, what do you see as the advantages to introducing the framework?**

[Open text]

**Question 6.3: If no, what do you see as the disadvantages that mean a framework should not be introduced, and how do you propose the government introduces the policy proposals considered in the consultation?**

[Open text]

**Question 6.4: If you answered yes above, do you prefer (1) Attributing installation level data to products with default values or (2) Product life cycle assessments with default values, or another option? Please suggest the advantages or disadvantages of each option.**

- Option 1 (prefer Installation level data)
- Option 2 (prefer life cycle assessment data)
- Either
- None

[Open text]

**Question 6.5: Would you prefer a single emissions reporting framework for all carbon leakage policy measures? Please explain your reasoning**

**[5 point scale: Yes, strongly agree; Yes, agree; Maybe/Undecided; No, disagree; No, strongly disagree]**

**[Open text]**

**Question 6.6: What are your views on balancing the administrative burden of product emissions reporting against the accuracy of results? [Open Text]**

## Use of Emission Factors

Developing an international system where product level emissions data can be monitored, reported, verified, and compared across borders is the government's primary objective, but it will be challenging. As set out in Part 1, this is part of the reason the government is considering domestic policy measures alongside efforts with international partners. Ultimately, while in depth emissions data is likely to lead to more effective carbon leakage policy measures, the more complex the emission reporting framework, the less feasible it would be to agree and implement internationally.

The government will consider this trade-off in the context of international schemes if and once they are introduced. This includes but is not limited to reporting methodologies for the EU CBAM, the EU PEF, and the IDDI.

One way to simplify emissions reporting is to use emission factors. The government recognises that measuring and calculating greenhouse gas emissions may be challenging for some businesses and that relatively few businesses use continuous emissions monitoring technology. Businesses could use emissions factors as a proxy to estimate the embodied emissions of products, based on the type, origin, and quantity of fuels and precursors used. Where this is not possible, default values could be used (see Chapter 5).

To ensure comparability between results from different businesses, the government would consider publishing guidance that sets out which emissions factors should be used, how they should be used and when.

The emission factors should include all major greenhouse gasses where substantive, be based on recent data and regularly updated. Several options fit these requirements, including the UK Greenhouse Gas Inventory, UK Government Conversion Factors, National Atmospheric Emissions Inventory (NAEI) and those published by relevant sector organisations, including WorldSteel and the Mineral Products Association.

The government is seeking views on which currently available set of emissions factors should be used if embodied emissions reporting is to be introduced.

**Question 6.7: Which emissions factors should be used for the calculation of embodied emissions of products if emissions reporting requirements were introduced? What are the advantages or disadvantages of the options? If other, please set out your preference in the text box.**

**Drop down list:**

- **UK Greenhouse Gas Inventory**
- **UK Government Conversion Factors**
- **National Atmospheric Emissions Inventory (NAEI)**
- **Trade body datasets**
- **Other**
- **Any**
- **None**

**[Open text]**

## The role of default values in emissions reporting

In BEIS's Call for Evidence, stakeholders shared views on how emissions reporting could be simplified. Two thirds of respondents supported the use of default values, and around half of these respondents reported that default values should be calculated in such a way that they cannot be used to manipulate the system, which is discussed below.

Default values enable any carbon leakage policy framework to function even where sufficiently verified data is not available. This could be important for domestic and international producers who would find it more challenging to report.

There is a case for calculating default values in a way that accurately represents the emissions intensity of a given product, based on production methods and region of origin. However, stakeholders raised concerns that default values calculated to represent the average emissions intensity of a larger group would benefit those businesses with an emissions intensity greater than the average. In this situation, emissions intensive imports could appear to be greener than they are, which in turn could influence the effectiveness of carbon leakage policy measures.

If carbon leakage policies are to work effectively, it would be beneficial for more companies to report actual emissions data. Default values could be calculated in a way that increases the incentive for businesses to report specific data, especially if businesses are able to produce the same product with less associated emissions than is the case for the default value. This would limit the opportunity for carbon intensive businesses to manipulate the system and reward businesses that report actual emissions data.

The government could also calculate default values using UK industry data or opt to include sources from outside the UK. Using UK data only is likely to allow the development of policy that would best reflect the needs of UK businesses. However, this may be problematic where representation for a given sector in the UK is small and values are calculated using data from a small number of businesses. If this option were followed, the government would need to carefully consider how this approach would impact imported products.

Three broad options for policy design of default values are set out below. They are illustrative and are not mutually exclusive, as the appropriate default values for policy objectives may vary.



- Option 1: Default values are calculated to represent the average embodied emissions of a product, considering production method and the region of origin.
- Option 2: Default values are calculated to be stringent, for example representing the 'worst available technology' for the manufacture of a given product, or a penalty (for example, 20%) is added to the industry average.
- Option 3: Default values are calculated using UK industry data, initially using sources such as the UK ETS and other compliance schemes.

Calculating default values to represent production methods and the region of origin (Option 1) could provide some differentiation of products based on factors such as the adoption of green technologies and the carbon intensity of the electricity grid in different countries or regions within countries. However, the use of averages at a national level could also benefit emissions intensive manufacturers, whose products might appear to have lower embodied emissions than they do. Conversely, lower emissions businesses would be disadvantaged by appearing more emissions intensive than they are.

Calculating default values to be stringent (Option 2) would prevent carbon intensive businesses benefitting from averaged data and competitors' green investments, especially in a situation where the use of default values is not restricted to products from businesses of a certain size. Respondents to BEIS's Call for Evidence were strongly supportive of this; however, this option could impact manufacturers and importers that are unable to provide accurate data for legitimate reasons.

Using UK industry data (Option 3) would be relatively simple but given the likely increases in relative emissions between different countries, data for imported products would not remain accurate. If UK industry decarbonises at a faster rate than some other countries, then the default values would become more favourable towards imports over time and readjustment may be necessary.

**Question 6.8: Do you have a preference for how default values could be calculated? What are the advantages or disadvantages of the options?**

- Option 1
- Option 2
- Option 3
- None of the above
- No preference

[Open text]

**Question 6.9: Are there additional possible data sources for calculating default values that have not been mentioned? Please provide details of those data sources.**

[Yes/No/Don't know]

[Open text]

## Chapter 7: Designing the mechanism for embodied emissions reporting

A standardised methodology for calculating the embodied emissions of products could help manufacturers by providing a way to:

- Differentiate low carbon products on the market
- Identify opportunities for low carbon investment in processes and the supply chain

There are already some instances where the disclosure of embodied carbon information is mandatory in certain jurisdictions (see blue box), but there are not currently any in the UK. Complying with multiple standards exacerbates administrative burden for businesses, and introducing a framework that is robust, accessible and internationally compatible would reduce burdens on businesses (in the UK and overseas), facilitating trade in emerging low carbon products.

In California, businesses submitting bids for publicly funded construction projects must disclose the embodied carbon of the structural steel, steel rebar, flat glass, and mineral wool insulation using Environmental Product Declarations (EPD) produced using EN 15804.

In France, businesses must substantiate green claims about products with a publicly accessible EPD.

The EU Product Environmental Footprint (EU PEF) sets out standard methodologies for embodied emissions reporting and encourages businesses across the EU to substantiate green claims about products with a lifecycle assessment.

### Methodology for measuring embodied emissions of products

There was consensus among respondents to BEIS's Call for Evidence that government should set out rules on how businesses should measure and report the embodied emissions of products. Respondents generally agreed that any new system should be based on international standards and be compliant with, or equivalent to, existing disclosures. This would minimise disruption for businesses already disclosing this information voluntarily and it is the government's position that if an existing system meets the needs of the policy, it would be preferable to use it.

As set out in Chapter 6, the government has identified two broad options for how detailed information about the carbon intensity of products could be measured and reported. One option could be to work with other members of the UK ETS Authority to explore whether a supplement to the UK ETS emissions reporting requirements is appropriate. Another option is for government to set out a standardised lifecycle assessment (LCA) methodology for products. The content and questions below relate to the LCA option. If you are not supportive of using a standardised LCA methodology, please use the space below (Question 7.1) to explain your reasoning if you have not already done so for Question 6.2.

The government has identified three types of LCA methodology:

- Option 1: A life cycle assessment methodology that includes Scope 1, 2 and some upstream Scope 3 emissions at a minimum. It would be aligned with internationally recognised standards from the International Organisation for Standardisation (ISO) and would require third-party verification. Ideally, the chosen methodology would already be in use by parts of industry in the UK and other jurisdictions. An example of such a methodology is the European standard BS EN 15804:A2.<sup>68</sup>
- Option 2: Businesses use sector-specific international standards where they exist, and if these do not yet exist, government and industry would develop them collaboratively. An example of such a methodology is ISO 20915.<sup>69</sup> Emissions scope and third-party verification would be the same as Option 1.
- Option 3: Businesses use UK-developed standards where they exist, and if these do not yet exist, government and industry would develop them collaboratively. An example of such a methodology is PAS 2050.<sup>70</sup> Emissions scope and third-party verification would be the same as Option 1.

The adoption of existing LCA standards would support ongoing activity in the UK and abroad (to produce Environmental Product Declarations (EPDs)) and align with respondents' views shared in BEIS's Call for Evidence and with the UK Government's commitments to the Industrial Deep Decarbonisation Initiative (IDDI). Using BS EN 15804:A2 would be compatible with the upcoming EU Product Environmental Footprint (PEF) methodology, preventing duplicative reporting for businesses that trade in both the UK and EU.

Options 2 and 3 are similar to Option 1 but give preference to sector-specific methodologies and UK-developed standards respectively. These options would provide reliable data about the embodied carbon of products, but it is unclear how well adopted these standards are by UK industry and by manufacturers that export to the UK. This means that the administrative burden to implement Options 2 or 3 may be higher than for Option 1, although this would need to be tested. In response to BEIS's Call for Evidence there was little preference for the use of sector-specific or UK-developed methodologies over internationally adopted standards. It is unclear whether using sector-specific methodologies (Option 2) would reduce the comparability of some substitutable products in specific use-cases, such as steel, cement and timber. The government would only

---

<sup>68</sup> Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products

<sup>69</sup> Calculation method of carbon dioxide emission intensity from iron and steel production

<sup>70</sup> Specification for the assessment of the life cycle greenhouse gas emissions of goods and services

endorse a methodology that meets the requirements for accuracy and comparability, reducing the risk of non-compatibility.

**Question 7.1: Should government pursue a Life Cycle Assessment-based approach?**

[Yes/No/Don't know]

**Question 7.2: What is your preference for the type of Life Cycle Assessment methodology framework that should be adopted?**

**What are the advantages or disadvantages of each option?**

- **Option 1**
- **Option 2**
- **Option 3**
- **None / Other**

[Open text]

## Reporting metric

For any of these policies, a single metric would be required so that emissions data can be used as the basis for carbon leakage policy measures. The full list of options under consideration is as follows:

- Option 1: CO<sub>2</sub>e/mass only
- Option 2: CO<sub>2</sub>e/mass, plus performance metrics related to intended use (for example, strength class in the cement sector)
- Option 3: CO<sub>2</sub>e/mass plus additional environmental and social metrics (for example, water use, land use change, equal opportunities, and health and safety)

### **CO<sub>2</sub>e – Carbon dioxide equivalent**

A metric used to compare the emissions from various greenhouse gases based on their global warming potential (GWP), by converting amounts of other gases into the equivalent amount of carbon dioxide with the same global warming potential.

The carbon dioxide equivalent for a gas is derived by multiplying the tonnes of the gas by the associated GWP. For example, the GWP for methane is 25. This means that emissions of 1 metric tonne of methane respectively are equivalent to emissions of 25 metric tonnes of carbon dioxide.

The government's early view, subject to stakeholder views, is that CO<sub>2</sub>e/mass is the most suitable and available metric as it offers the best transparency (particularly if used in combination with the labelling system described in Chapter 4) and least complexity for reporting purposes. Adopting this metric is also likely to best support international

alignment as it is already being used in the IEA's work and aligns with disclosure through EPDs. This represents a 'greenhouse gas emissions-only' approach.

However, the government also recognises that an emissions-only approach may have limitations for some relevant sectors, and there are other factors that might affect the climate impact of a product. In response to BEIS's Call for Evidence, many respondents were in favour of taking other factors into account to avoid unintended consequences. Common environmental factors suggested were direct and indirect land-use change, deforestation, water pollution, air quality, biodiversity, and responsible sourcing of materials.

Social and ethical factors such as employment rights, equal opportunities, and health and safety were also raised. However, other respondents highlighted that their inclusion could add significant complexity to the assessment process of a product and that an emissions-only approach would be simplest and would likely increase the speed of uptake. Separately assessing these metrics would also align with international practices.

An additional metric which may be necessary in some circumstances would be a performance metric. For example, the Low Carbon Concrete Group has designed a system that accounts for both the embodied emissions and the strength class of the concrete, allowing the consumer to choose the product with the lowest embodied emissions within the strength class required for their project.

**Question 7.3: Should CO<sub>2</sub>e/mass (including performance metric where relevant) be used as the metric for embodied emissions reporting and form the basis of any subsequent policy? If you disagree, please explain why and suggest an alternative metric.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

**Question 7.4: Should mass (of product) be the appropriate unit of measurement for your sector? If not, please explain your reasoning and suggest your preferred unit of measurement.**

**[5 point scale: Yes, strongly agree; yes, agree; prefer not to say; no, disagree, no, strongly disagree]**

**[Open text]**

## Emissions Data Collection Period

To inform final policy design, the government could run an initial period of data collection preceding the introduction of potential new policies. Similar strategies have been successful in other jurisdictions.

### **Policies in other jurisdictions with data collection periods**

Under the Buy Clean California Act (2019), a two-year data collection period preceded the introduction of public procurement rules. In year one, businesses tendering for public projects were encouraged to report the embodied carbon of certain products. In year two, this became mandatory and in year three, limits were set on the maximum embodied emissions of steel, glass and insulation that could be included in project bids.

The EU has announced that the EU carbon border adjustment mechanism (CBAM) transition period will begin on 1 October 2023, where the obligation on importers will be limited to reporting the embodied emissions of certain products, with full implementation of the CBAM planned for 2026.

Introducing a reporting obligation prior to implementing carbon leakage policy measures could benefit business and policy makers in several ways. Businesses would have time to put reporting in place and government could correct any issues with the system before policies are introduced. Businesses would also gain an early insight into the emissions intensity of their products, which could help with planning and targeting investments. Data collected during this period could also help policymakers finalise policy design, and without this, there is a risk that policies could need adjustment soon after launch.

A data collection period would however place a burden on businesses and importers without the benefits of the policies. There will also likely be a compromise between the benefits of a data collection period and implementing the full suite of carbon leakage policy measures in a timely manner. If introduced, the length of the data collection period should be proportionate in light of the potential cost to business and should be consistent with other priorities for the UK domestically and internationally, such as ensuring adequate carbon leakage mitigation and consistency with developments in the UK's carbon pricing regime.

**Question 7.5: Should the government introduce a data collection period before the full implementation of carbon leakage policy measures?**

**What are the advantages or disadvantages of the options?**

**[5 point scale: Yes, strongly agree; Yes, agree; Maybe/Undecided; No, disagree; No, strongly disagree]**

**[Open text]**

**Questions 7.6: If Yes or Maybe/Undecided, how long should this data collection period be?**

**[Open text]**

## Sectoral coverage of emissions reporting

If introduced, it is the government's preferred position that emissions reporting should be limited to the relevant sectors in scope of carbon leakage policy measures.

Although it is not the government's preference, there is an argument that a broader disclosure of product level data could be beneficial for both manufacturers and consumers. For example, product level reporting could be rolled out across all sectors in the UK ETS. This would increase the quality and transparency of information about products but would place a burden on some sectors without complementary policies to mitigate the carbon leakage risk.

Depending on the scope of implementation, the government could explore options for voluntary reporting to support transparency across a greater range of relevant sectors.

Businesses in scope that are unable to provide information specific to their products would still be required to register, either on an IT system (discussed in Chapter 8) or with the regulator, and 'tick a box' to use default values. Businesses not in scope of new policies would not need to report new emissions data.

**Question 7.7: Should only those businesses in scope of current or upcoming policies be required report information about the emissions of products? Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; Yes, agree; Maybe/Undecided; No, disagree; No, strongly disagree]**

**[Open text]**

**Question 7.8: If your sector were required to report product emissions, are there other sectors that would also have to report this information to help minimise information asymmetry between substitutable products in the market? For example, where two products composed of different materials and manufactured using different processes can fulfil the same or similar role. Please explain your reasoning.**

**[5 point scale: Yes, strongly agree; Yes, agree; Maybe/Undecided; No, disagree; No, strongly disagree]**

**[Open text]**

## Emissions scope

To jointly serve potential carbon leakage policy measures, the scope of emissions reporting would need to match the data requirements of any new policies. The emissions scope for each policy may differ, and government would like to understand the value in seeking to monitor Scope 1, Scope 2, and Scope 3 emissions in UK manufactured and imported products, and how these data could be gathered on a product level basis. If policies are introduced, the government would need to balance the practicalities of implementation with maximising carbon leakage mitigation potential, and in some cases,

alternative data sources such as national or trade association databases may be an appropriate source.

Scope 1 emissions relate to direct activities owned or controlled by an organisation. These emissions are directly controlled by those producing the good, for example as part of a manufacturing process or when fuels are combusted onsite. The UK ETS applies to Scope 1 emissions.

Scope emissions are produced by the generation of purchased electricity. In some definitions this can also include emissions related to purchased heating and cooling. Rather than pricing a manufacturer's Scope 2 emissions, the UK ETS applies to these emissions at source as electricity generators comply with the UK ETS for their Scope 1 emissions. Including Scope 2 emissions could incentivise businesses to use the available fuel with the lowest carbon intensity, whether a fossil fuel, electricity or a new low carbon fuel.

To apply carbon leakage policies to Scope 2 emissions, government could ask UK manufacturers and importers to provide verified data on the emissions associated with purchased electricity in products. The government could also explore the use of product level electricity 'content' benchmarks alongside the average emissions intensity of the country of origin's electricity grid. In large countries with diverse and geographically diverse electricity generation capacity, this could be set at a regional level.

Evidence could also be provided of cleaner energy content if a manufacturer purchases electricity directly from a cleaner source, such as through a power purchase agreement or international equivalent.

Scope 3 emissions are created upstream or downstream because of supply chain activity and the use of the end product. Rather than pricing Scope 3 emissions, the UK ETS applies to some of these emissions at source. For example, the downstream UK aviation operators comply with the UK ETS for their Scope 1 emissions, while upstream UK manufacturers of some input products also comply with the UK ETS for their Scope 1 emissions. For the application of carbon leakage policy measures, government could ask for evidence of Scope 3 emissions associated with products.

**Question 7.9: Should the scope of any new embodied emissions reporting be limited to that which is required by carbon leakage policy measures, if introduced?**

**[5 point scale: Yes, strongly agree; Yes, agree; Maybe/Undecided; No, disagree; No, strongly disagree]**

**Please explain your reasoning.**

**[Open Text]**



## Where should the reporting obligation be targeted in the manufacturing chain?

The point of obligation for emissions reporting would need to align with the point of obligation for the policy it supports. This means that, if introduced, businesses would need to report the embodied emissions of the products covered by new policies. This is likely to differ between carbon leakage policy measures and may apply to certain imports and products manufactured in the UK. This is discussed in detail in Chapter 2 and Chapter 3.

If a range of carbon leakage policy measures were adopted, the government would look to design embodied emissions reporting that would support compliance for each policy. For example, reporting at the point of production is unlikely to work for imports where the manufacturer falls outside UK regulation. More work is needed to assess how a reporting system could work for imported products.

## Geographic coverage of embodied emissions reporting

### **Emissions reporting obligation within the UK**

The government's current preferred approach is that any mandatory emissions reporting would be applied on all products placed on the UK market that are within scope of relevant carbon leakage mitigation policies (should these be adopted) including products manufactured in the UK and those imported from other countries. Consideration is needed as to how this approach might impact products produced in the UK for export. This would be carried out in collaboration with the devolved administrations where appropriate, to ensure a consistent framework across the UK. If introduced, management of the system could follow a similar model to the UK ETS or be part of an integrated approach, with a separate regulator in each devolved administration gathering and submitting emissions data into a central UK-wide database.

### **Emissions reporting obligation on imports**

In response to BEIS's Call for Evidence, respondents (UK manufacturers, including some international businesses) were strongly in favour of applying emissions reporting and market policies to imports. Consideration should be given to manufacturers in least developed countries and SMEs worldwide, for which detailed carbon accounting may present a particular challenge. Should a CBAM or mandatory product standards (MPS) be introduced, the government will look at ways to simplify reporting or provide technical support where needed, such as through the use of default values for products in scope of the policies.

## Chapter 8: Reporting to government and delivery of the IT system

This chapter explores the potential features of a system to collect and process embodied emissions data for industrial products manufactured in and imported to the UK. This includes the IT system, how frequently emissions data should be reported, data verification, and disclosure. If introduced, decisions about the design and delivery of an IT solution would be highly dependent on the design of potential new carbon leakage policy measures, as discussed in Part 1, and the design of the emissions reporting obligation, as discussed in Chapters 6 and 7.

### IT System

Product level emissions reporting would require an IT solution to handle the information. Where IT solutions exist for other policies, they would require modification to meet policy needs for this purpose and no ‘off the shelf’ solution is available. The below sets out various options, including updating existing IT services or the development of a new one. Any system would need to be robust and aim to prevent potential avoidance or any attempts at misreporting.

- Option 1: Expand an existing government IT service, such as exploring whether any new functionality could be added to existing systems under the UK ETS. New functionality could be added to; a) enable businesses to report verified product data, b) allow government to assess data, and c) allow consumers to view data.
- Option 2: Develop existing databases operated in the private sector for Environmental Product Declarations (EPDs), such as GreenBookLive.<sup>71</sup> With the willingness of database owners, the government could work with them to improve the accessibility, searchability, and overall user experience of existing platforms. There could also be an option to link these databases to a centrally operated system possibly with a central data repository. This option may support the adoption of a life cycle assessment based emissions reporting framework.
- Option 3: Develop a bespoke IT system. The functionality of this could be similar to either of the two options outlined above but would be built from the ground up to meet policy needs.

<sup>71</sup> <https://www.greenbooklive.com/>

Expanding an existing government IT service, such as those used under the UK ETS, to include product data (Option 1) would have the advantage of using systems that many UK businesses in scope of potential new carbon leakage policies already engage with. Businesses could submit emissions data for their products through existing (but enhanced) systems, with interfaces designed to help users easily navigate different policies. The scope of such a service would however likely need to be expanded to businesses that do not currently engage with this service, including importers to the UK.

Developing existing databases in the private sector (Option 2), with the willingness of the database owners, has the advantage of minimising additional requirements for businesses and sectors that already disclose LCA information using EPDs. Currently, most EPDs and databases relate to construction products, however, more sectors are adopting EPDs, and the government would need to ensure that either; databases are open to a wide range of products, or work with industry associations to stand up new, sector-specific databases where they do not exist. Any system would need to comply with standards set out by Government Digital Service; the design and accessibility of privately managed systems would need to be tested, with a particular focus on data security and handling potentially sensitive information. The usability of the systems would also need to be improved. This approach also assumes the eventual methodology for reporting emissions is compatible with the LCA methodology currently used to create EPDs.

Option 3 may be less favourable due to the resources and development time that would be needed. This route could ensure that the system accommodates the required functionality, however it would also require businesses to engage with a new government IT system, which feedback from BEIS's Call for Evidence shows many producers and manufacturers have concerns about.

**Question 8.1: If you are, or represent, a domestic manufacturer, which option for a reporting IT system would be most appropriate? Would another approach be more suitable? Please explain your reasoning.**

- Option 1
- Option 2
- Option 3
- None of the above / different solution

[Open text]

**Question 8.2: If you are, or represent, an importer or manufacturer outside the UK, which option for a reporting IT system would be most appropriate? Would another approach be more suitable? Please explain your reasoning.**

- Option 1
- Option 2
- Option 3
- None of the above / different solution

[Open text]

## Frequency of reporting

To function effectively, carbon leakage policy measures would require regularly reported emissions data. Current government climate-related reporting, such as the UK ETS, Climate Change Agreements (CCAs) and Streamlined Energy and Carbon Reporting (SECR) require businesses to report at intervals between one to four years, and businesses that publish EPDs (a voluntary, non-governmental scheme) must renew the declarations every five years.

Considering the reporting options set out in Chapter 6, the exploration of the feasibility of Option 1 would require considering an appropriate frequency of reporting. If government chooses to develop an emissions reporting framework around lifecycle assessments of products (Option 2), the reporting frequency may depend on the chosen methodology.

In response to BEIS's Call for Evidence, respondents suggested reporting cycles linked to their preferred reporting methodology<sup>72</sup>. Reporting cycles of one, two and five years were all suggested with a preference for the adoption of a five-year reporting cycle, to align with the use of EPDs for product reporting. It should be noted that BEIS's Call for Evidence did not relate to carbon border adjustment mechanism (CBAM) policy, and therefore, should a CBAM be introduced, consideration would need to be given to what reporting cycle may be appropriate to support the aims of the policy. The government would also prioritise alignment with international policies and initiatives.

As set out in Chapters 6 and 7, the emissions scope and sectoral scope of carbon leakage policy measures may be different, but emissions data could be measured and reported using the same methodology. Where there is divergence in the emissions scope of potential carbon leakage policies, it is possible that the reporting cycle for each policy may also be different, with data reported as they are required. This question is still under consideration by the government, and the broad options available are:

- Option 1: Emissions data relevant to each carbon leakage policy measure are reported at different frequencies, as required
- Option 2: All relevant emissions data are reported annually
- Option 3: All relevant emissions data are reported every five years
- Option 4: All relevant emissions data are reported every two years

### **Question 8.3: Do you have a preference for how frequently emissions data should be reported?**

- **Option 1**
- **Option 2**
- **Option 3**
- **Option 4**
- **None of the above (please provide more detail)**

<sup>72</sup> See responses to question 22. Summary of Responses to the Call for Evidence: Towards a market for low emissions industrial products <https://www.gov.uk/government/consultations/towards-a-market-for-low-emissions-industrial-products-call-for-evidence>

**Question 8.4: What are the advantages or disadvantages of the options? Please explain your reasoning.**

[Open text]

## Verification of emissions data

For carbon leakage mitigation and market growth policies to be effective, manufacturers, consumers and policymakers would need trustworthy information about the embodied emissions of products on the market. Many manufacturers disclose product emissions voluntarily, but studies suggest that voluntary disclosures do not always reflect real world emissions.<sup>73</sup> Therefore, robust verification would be needed to build trust in available data.

Part of the exploration of the feasibility of Option 1 in Chapter 6 would require considering how verification of emissions data could be carried out. If the government decides to implement product emissions reporting through product LCAs, the government will need to assess and codify existing verification processes that exist for that method. In both cases the cost of verification would continue to be borne by businesses.

This could be managed in a variety of ways, for example:

- The government could appoint an independent regulator or accreditation body which would have the power to certify third-party organisations to verify emissions data, as under the UK ETS.
- Manufacturers self-verify emissions data or peer review reports from other firms.

To ensure the effectiveness of carbon leakage policy measures and fairness, importers would be required to demonstrate the same level of rigour and verification as data reported by UK businesses. For this reason, the government would consider verification requirements for policies in development internationally and explore whether equivalency agreements could be appropriate where there is a divergence in the verification processes.

**Question 8.5: What are your views on how product embodied emissions data should be verified? What are the advantages or disadvantages of the different options? Please explain your reasoning.**

[Open text]

## Disclosure of emissions data

Improving the quality of environmental information available for consumers is a key part of the policy package that could encourage the growth of markets for low carbon products. Product emissions reporting would create the opportunity to put information about the environmental impact of products directly in the buyers' hands, which in turn would support informed purchasing decisions.

---

<sup>73</sup> <https://www.bloomberg.com/news/newsletters/2022-01-12/corporate-greenhouse-gas-data-doesn-t-always-add-up>

As set out in the Industrial Decarbonisation Strategy, product labelling could help consumers access this information. Mandatory product labelling would ensure that all products within scope and in free circulation in the UK market have embodied emissions information attached, and labelling could be linked, or separate, from mandatory and voluntary product standards. As set out in Chapter 4, product labelling could also be designed to help consumers understand whether the product has a comparatively high or low embodied emissions, such as A-G lettering or traffic-light colour coding.

Another option would be to make the emissions database publicly accessible, helping consumers find and compare products based on both technical specifications and carbon footprint. If complemented by a rigorous verification system, buyers could put trust in this information. However, this system would likely be too onerous for individual consumers, placing the responsibility on them to seek out the data for themselves as opposed to having emissions labelling directly on products. It may be beneficial to have both options; products labelled with embodied emissions data and a public database. These options could be introduced sequentially, with the database launched initially and labelling introduced later. Within this, the government would propose to work with businesses to understand the limits of these policies and would consider ways to avoid publishing commercially sensitive information.

**Question 8.6: Should embodied emissions data for products be made publicly available through either labelling, a publicly accessible database, both, or neither? Please explain your reasoning.**

- **Agree – through labelling**
- **Agree – through a publicly accessible database**
- **Agree – through both**
- **Disagree – neither option**

**[Open text]**

# Public Sector Equality Duty

When exercising their functions, which would include formulating policy proposals, public authorities must comply with the public sector equality duty in section 149 of the Equality Act 2010<sup>74</sup>. This requires public authorities, when exercising their functions, to have due regard to the need to eliminate discrimination and other conduct prohibited by the Act, advance equality of opportunity between those who share a protected characteristic and those who do not, and foster good relations between people with different protected characteristics<sup>75</sup>. The protected characteristics are age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, and sexual orientation.

The government would like to ensure that we consider the fullest range of evidence to understand any potential impacts on those with protected characteristics, arising out of the policies discussed in this consultation and how any potential negative impacts could be mitigated. Therefore, we invite views and evidence in this regard in response to this consultation.

**Question 9.1: Do you have any views about the implications of the policy measures explored in this consultation on people with protected characteristics and how any potential negative impacts could be mitigated? Please provide any relevant evidence.**

---

<sup>74</sup> <https://www.legislation.gov.uk/ukpga/2010/15/section/149>

<sup>75</sup> <https://www.gov.uk/guidance/equality-act-2010-guidance>

# Annexes

## Annex A – Glossary

<b>Abbreviation</b>	<b>Description</b>
<b>BEIS</b>	Department for Business, Energy, and Industrial Strategy. The BEIS energy and net zero portfolio is now covered by the Department for Energy Security and Net Zero.
<b>BRE</b>	Building Research Establishment
<b>CBAM</b>	Carbon Border Adjustment Mechanism
<b>CCC</b>	Climate Change Committee
<b>CCS</b>	Carbon Capture and Storage
<b>CEM</b>	Clean Energy Ministerial
<b>COP26</b>	26th Conference of the Parties to the United Nations Framework Convention on Climate Change
<b>CPS</b>	Carbon Price Support
<b>DAERA</b>	Department of Agriculture, Environment and Rural Affairs (Northern Ireland)
<b>DESNZ</b>	Department for Energy Security and Net Zero. DESNZ is focused on the energy and net zero portfolio from the former Department for Business, Energy and Industrial Strategy.
<b>EAC</b>	Environmental Audit Committee
<b>EII</b>	Energy Intensive Industries
<b>EPD</b>	Environmental Product Declaration
<b>FA</b>	Free Allowance
<b>GGR</b>	Greenhouse Gas Removal
<b>GHG</b>	Green House Gasses
<b>GWP</b>	Global Warming Potential
<b>HMG</b>	His Majesty's Government
<b>HMT</b>	His Majesty's Treasury
<b>IBU</b>	Institut Bauen und Umwelt
<b>IDDI</b>	Industrial Deep Decarbonisation Initiative
<b>IDS</b>	Industrial Decarbonisation Strategy



<b>IEA</b>	International Energy Agency
<b>IMF</b>	International Monetary Fund
<b>LCA</b>	Life Cycle Assessment
<b>MPS</b>	Mandatory Product Standards
<b>NAEI</b>	National Atmospheric Emissions Inventory
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>ONS</b>	Office for National Statistics
<b>PACT</b>	Partnering for Accelerated Climate Transitions
<b>PCR</b>	Product Category Rules
<b>PMI</b>	Partnership for Market Implementation
<b>PMR</b>	Partnership for Market Readiness
<b>PMRV</b>	Permitting, Monitoring, Reporting and Verification
<b>UK ETS</b>	UK Emissions Trading Scheme
<b>WTO</b>	World Trade Organisation

## Annex B – Analytical considerations for policy development

The government is consulting on a range of carbon leakage policy measures. This is an exploratory consultation of potential policies at an early stage of development and this annex provides stakeholders with supplementary data and analysis related to carbon leakage risks (covered in Section 1), and the implications of the proposed measures (covered in Section 2).

The structure of this annex is as follows. Section 1 summarises the government’s present rationale for intervention and provides information on some of the key factors influencing sectoral carbon leakage risk. Section 2 then sets out an indicative, qualitative assessment of certain potential impacts of the various measures within the consultation. The government’s assessment of their potential impacts will evolve as and when the policies are developed.

### Section 1: Carbon Leakage Risk

Carbon leakage is the movement of production and associated emissions from one country to another due to different levels of decarbonisation effort through carbon pricing and climate regulation. As a result, the objective of national decarbonisation efforts – to reduce global emissions – would be undermined. If all countries applied the same stringent carbon price and climate regulation, observed changes in emissions as a result of that would not be carbon leakage.

The Treasury’s 2021 Net Zero Review<sup>76</sup> provided a summary of data relevant to understanding carbon leakage risks for different sectors in the economy. This section provides an update of that analysis alongside new relevant data. It first compares climate change mitigation policies internationally, then focusses on data related to emission intensities and trade openness.

The government has also considered carbon leakage risks in other publications, including through previously published research procured by BEIS into industrial competitiveness and carbon leakage commissioned from Vivid Economics<sup>77</sup>.

#### International comparisons of climate policy

One source of relevant information is the World Bank’s Carbon Pricing Dashboard, shown in Appendix I. This provides estimates of carbon price rates for emissions trading schemes (ETSs) and tax regimes globally. However, this dataset comes with several caveats. It only covers measures, like carbon taxes and allowance prices in an ETS, which are difficult to compare globally given differences in sectoral scope and policy design. The data shows that, as of April 2022, the UK generally has a higher carbon price (through the UK ETS and Carbon Price Support) than most other jurisdictions.

In the UK, industrial producers and power generators face a carbon price which is set primarily by the UK ETS market, complemented by the Carbon Price Support mechanism for energy generation in Great Britain (see Chapter 1 for details). Globally, industrial

<sup>76</sup> <https://www.gov.uk/government/publications/net-zero-review-final-report>

<sup>77</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/911247/UK\\_Business\\_Competitiveness\\_and\\_the\\_Role\\_of\\_Carbon\\_Pricing\\_report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/911247/UK_Business_Competitiveness_and_the_Role_of_Carbon_Pricing_report.pdf)

emissions contribute to around 30% of total GHG emissions, including cement (around 3%) and energy used for steel (around 7%).<sup>78</sup> Exposure to a higher carbon price under the UK ETS is one example of domestic policy that can affect the risk of carbon leakage in the future, particularly if the UK's price increases faster than other jurisdictions, though this is currently balanced out by the provision of free allowances.

As noted in Chapter 1, these risks are also a function of a range of factors, most notably the emission intensity and trade intensity of sectors which are covered below.

### Carbon intensity of domestic industry

Sectors and businesses with higher carbon intensities are more exposed to risk of carbon leakage, unless, for example, abatement costs are low, trade openness is low, and/or profitability is relatively strong. This is because higher carbon intensities mean higher cost burdens as domestic decarbonisation policies become more stringent and/or the domestic effective carbon price increases. While these provide signals to invest in carbon abatement, the higher costs on residual carbon emissions could result in emissions being displaced to other jurisdictions.

Table 4 below provides an update to Table 2.A in the Net Zero Review final report to reflect more recently released data from the OECD. It is an overview of the emission intensity of manufacturing sectors for the UK and average intensities for OECD and non-OECD countries in 2018. This provides a high-level indication of how the UK intensity compares to other jurisdictions globally. However, the level of aggregation can mask significant variation for sub-sectors and jurisdictions. The data captures CO<sub>2</sub> emissions from fuel combustion and includes estimated emissions through the supply-chain (electricity and inputs).<sup>79</sup> It omits other GHGs and emissions from chemical reactions like those from clinker production required to produce cement. It also omits fugitive emissions, like those that escape during the mining process.

**Table 4: Carbon Intensity for manufacturing sectors.**

Sectors	CO <sub>2</sub> Intensity embodied in exports (tonne/\$ million, 2018)			Relative CO <sub>2</sub> Intensity (UK = 100)	
	UK	OECD	Non-OECD	OECD	Non-OECD
Basic metals	922	946	2332	103	253
Refineries	638	588	766	92	120
Non-metallic minerals	451	800	1576	177	350
Mining & energy extraction	398	466	367	117	92
Rubber and plastics	320	329	1226	103	383
Chemicals	245	435	953	177	388
Fabricated metals	214	343	1135	160	530
Mining of non-energy products	212	406	681	191	320

<sup>78</sup> Hannah Ritchie, Max Roser and Pablo Rosado (2020) - "CO<sub>2</sub> and Greenhouse Gas Emissions". Published online at OurWorldInData.org. Retrieved from: <https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions>

<sup>79</sup> OECD data which provides CO<sub>2</sub> emissions embodied in exports should also be a good reflection of the CO<sub>2</sub> emissions embedded in gross output.

Motor vehicles	208	265	654	127	314
Other manufacturing	208	238	1063	114	511
Electrical equipment	201	305	925	152	460
Other transport equipment	196	212	621	108	317
Machinery and equipment	192	249	834	130	435
Wood products	184	295	528	161	287
Paper	184	364	622	198	339
Foodstuff & Tobacco	176	258	405	147	230
Pharmaceutical products	142	200	550	140	386
Textiles and apparel	134	249	485	185	361
Computers & electronics	122	242	560	199	461
<b>All Agriculture</b>					
All Agriculture	259	351	330	136	128
<b>All Industry</b>					
All Industry	273	368	749	135	274
<b>All Services</b>					
All Services	143	296	447	207	312
<b>All Manufacturing</b>					
All Manufacturing	255	360	823	141	323
<b>Total (Full Economy)</b>	<b>191</b>	<b>340</b>	<b>656</b>	<b>178</b>	<b>343</b>

Source: OECD (2021), HMT calculations. Bolded sectors refer those which may contain UK ETS installations. Sector names have been shortened from original source. Shading represents magnitude within each column with dark red being highest.

For the UK, sectors like basic metals, non-metallic minerals and refineries have the highest emission intensity, and are covered by the UK ETS (bold in Table 4). Mining is also high, even with the exclusion of fugitive emissions.

It is also useful to explore emission intensities across jurisdictions, as displacement of production and associated emissions towards jurisdictions where emission intensity is higher could increase global GHG emissions overall. The UK's carbon intensity shows evidence of being generally lower than OECD and non-OECD averages. For relatively high UK emission intensive sectors, OECD data shows that the largest differentials are within chemicals, non-metallic minerals and also other sectors not covered in the ETS, like rubber and plastics and also downstream sectors like computers and machinery. As the Net Zero Review explained, there are a range of factors that contribute to this, including that the UK's power sector generally has a lower carbon intensity than many other jurisdictions.

This data has a relatively high level of sectoral aggregation given the challenges with developing a consistent granular international dataset, which can mask significant within sector variation that is important to consider when developing carbon leakage policy. ONS Atmospheric Emissions data for the UK provides additional sectoral granularity (see Appendix III). This dataset provides a breakdown of scope 1 emission intensity only, but covers all GHG emissions rather than only CO<sub>2</sub>. It shows that within basic metals, iron & steel have high scope 1 emissions whilst 'other basic metals and casting', containing UK aluminium production, have significantly lower scope 1 emissions. For non-metallic minerals, ONS data shows that cement production has around twice the intensity of scope 1 emissions compared to glass and ceramics. The more disaggregated ONS data also

shows high intensities within industrial gases and fertiliser production, which the OECD chemical sector intensities data masks.

### Trade openness

Sectors with high trade openness are also more likely to be exposed to carbon leakage risk, as this indicates a global market where UK producers are competing directly with global producers. As a result, purchasers of domestic production, either in the UK or abroad, may more easily substitute with alternative international sources, and therefore UK firms have less power to pass climate mitigation policy costs through to consumers.

Table 5 provides an update to the OECD manufacturing sector trade data provided in Table 2.C in the Net Zero Review, and summarises overall trade openness, defined as imports and exports over total UK supply. Measures for imports and exports are also provided. For comparison, the table also includes summary statistics for agri-food, manufacturing, services and the whole economy. Appendix I provides more disaggregated ONS data.

Manufacturing accounts for only around 10% of UK Gross Value Added (GVA)<sup>80</sup> but it is more trade-open than services (which account for 85% of UK GVA)<sup>81</sup>. Manufacturing imports and exports accounted for around 55% of total UK supply in 2018<sup>82</sup>. The UK is a relatively smaller economy than some of our major trade partners (EU, USA, China) which exhibit lower manufacturing trade openness; for example, it is only 33% for the EU and 35% for the US. Therefore, overall carbon leakage risks associated with trade openness could be higher for the UK.

Among sectors covered by the UK ETS (those in bold in Table 5), basic metals, coke and refined petroleum products, and chemicals have relatively high trade openness values close to or above the manufacturing average. Over half of UK demand for coke and refined petroleum products and basic metals was satisfied by imports, whilst chemicals and coke and refined petroleum products have relatively high export proportions of production amongst sectors relevant to the ETS.

A more detailed picture emerges from further disaggregated ONS data in Appendix III.<sup>83</sup> Within basic metals, iron and steel is particularly trade open, with around 40% of production being exported. Within chemicals, industrial gases and fertilisers and petrochemicals are amongst those with higher than the manufacturing average for both import and export openness. This suggests the UK is already satisfying over half of its domestic demand through imports of these products. For example, Cement is one of the least open sectors, given the bulky nature of the product being costly to transport significant distances. However, these patterns may change as the policy environment in the UK and international partners moves towards net zero.

<sup>80</sup> GVA is a measure of the economic activity taking place in an area. It reflects the value of goods and services produced, less the cost of any inputs used up in that production process.

<sup>81</sup> OECD data for 2018

<sup>82</sup> Note that different datasets can provide different values. For example, ONS data in the annex uses a CPA breakdown with slightly different figures to OECD data using ISIC4 ([70%] for manufacturing trade openness vs. 55% in the OECD) and services accounting for around 80% of UK output.

<sup>83</sup> Note that ONS data provides carbon intensities for GVA, rather than gross output as per OECD data.

**Table 5: Trade openness for manufacturing sectors (OECD, 2018)<sup>84</sup>.**

Sectors	Share of total UK GVA (%)	Trade openness measures			% Imports From Non-EU	% Exports to Non-EU
		Imports proportion of demand (%)	Exports proportion of demand (%)	Overall trade openness (%)		
Motor vehicles	1.0%	63%	56%	75%	17%	61%
Other manufacturing	1.0%	32%	20%	42%	50%	58%
Mining & energy extraction	0.9%	88%	85%	93%	99%	52%
Machinery and equipment	0.8%	48%	43%	63%	35%	63%
Fabricated metals	0.8%	29%	17%	38%	40%	57%
Computers & electronics	0.7%	61%	25%	66%	54%	53%
Pharmaceutical products	0.7%	43%	41%	59%	37%	64%
Other transport equipment	0.7%	42%	54%	66%	65%	65%
Chemicals	0.6%	39%	35%	54%	28%	47%
Paper	0.5%	22%	10%	28%	25%	42%
Rubber and plastics	0.4%	40%	32%	53%	33%	43%
Textiles and apparel	0.4%	70%	27%	73%	71%	37%
Non-metallic minerals	0.3%	24%	13%	32%	34%	45%
Electrical equipment	0.3%	55%	27%	61%	51%	60%
Basic metals	0.2%	43%	22%	51%	58%	67%
Refineries	0.2%	52%	46%	66%	51%	49%
Wood products	0.2%	34%	7%	37%	35%	39%
Mining of non-energy products	0.1%	36%	21%	46%	86%	69%
All Services	85.0%	10%	12%	19%	47%	53%
All Manufacturing	10.4%	43%	31%	55%	40%	56%
All Agriculture	0.7%	29%	9%	33%	40%	53%
Total (Full Economy)	100%	16%	15%	27%	46%	54%

Source: OECD (2021), HMT calculations. Bolded sectors refer those which may contain UK ETS installations. Sector names have been shortened from original source for clarity.

Downstream products like aircrafts, vehicles and machinery, tend to have even higher trade openness as seen in both OECD and ONS data. This is relevant when considering the impacts of carbon leakage mitigation policies (see section 2 below). This is in addition to the higher emission intensity differentials that downstream sectors tend to have globally.

<sup>84</sup> For consistency data used here is from 2018, since then the composition of goods trade in these sectors may have changed, particularly in light of the UK's new trading relationship with the EU.

While overall trade openness is important, the UK's current and future trade partners for these products are also crucial to our understanding of carbon leakage. Table 5 provides figures for the proportion of UK imports and exports arriving from or destined for non-EU countries. It is evident that amongst sectors covered by the ETS, UK imports and exports of basic metals and coke and refined petroleum products with non-EU jurisdictions tend to be higher than the manufacturing average. Around half of chemical exports are destined for non-EU jurisdictions. This data likely masks significant variation at more granular levels.

## **Section 2: Preliminary assessment of carbon leakage mitigation measures**

The government is committed to a full impact assessment if any policies explored in this consultation are taken forward. Given the early stage of the development of these policies, a high-level qualitative assessment of some of the potential impacts for the measures within the consultation has been provided in this section. These measures are:

- A carbon border adjustment mechanism (CBAM) would introduce a carbon price on imported products. This would reflect both the carbon emitted in their production together with any gap between the carbon price applied in the country of origin and the carbon price that would have been incurred had they been produced in the UK.
- Mandatory product standards (MPS) would set an upper limit on the embodied emissions for individual products placed on the UK market, or produced in the UK, prohibiting products which are more emissions intensive than a defined limit. This could apply to both domestically produced and imported products.

Currently, carbon leakage risk is addressed in the UK ETS by the provision of free allowances to operators in at-risk sectors. The UK ETS Authority consulted in 2022 on reforms to the UK ETS, including the path of the industry cap. The UK ETS Authority is currently proposing changes to the overall level of free allocations available to stationary installations, the trajectory of the industry cap, in the context of aligning the scheme with net zero. Later in 2023 there will be a further review of free allocation methodology, where changes to the way carbon leakage risk is measured may be considered. The government will ensure that an impact assessment on any future carbon leakage mitigations are considered holistically.

The interaction of policy measures being consulted on will require further consideration to ensure that they work as a complementary framework together and with the UK ETS. For example:

- If a CBAM were implemented, the charge would need to reflect the level of free allowances in the relevant sector at the time, to ensure comparability between the effective UK carbon price and the charge paid by importers.
- Equally, introducing an MPS could reduce carbon leakage risk for installations covered by the ETS as a standard which applies to UK producers could lower domestic carbon intensity as well as trade exposure.

## Qualitative impact assessment

Table 6 below provides a high-level qualitative assessment of the potential impacts for key environmental and economic considerations. Both a CBAM and MPS would have impacts on carbon leakage, emissions globally and domestically, production, prices and downstream production<sup>85</sup>. The exact impact on these various considerations are complex and could differ between the two measures. It will depend on how the policies are designed, implemented and their overall scope, including their sectoral and emission scope coverage, as well as the point of obligation.

As discussed in Chapter 5, primary carbon leakage mitigation measures such as a CBAM and MPS could be complemented by additional demand side policies such as labelling or green public procurement policies. These could further reduce the risk of carbon leakage by helping to grow the market for low carbon products.

Administrative burdens related to any additional emissions reporting required for these policies have not been considered in detail in this consultation but further analysis would be undertaken as any policy development progresses. These will also impact upon the cost of the policies. For CBAMs, importers (who could be domestic businesses) will likely face additional costs required to comply with the measure, whilst for MPS this could create burdens for domestic and international producers. Like other impacts, the magnitude of the cost burden will vary depending on policy design and scope, including the emissions that need to be reported and to what extent existing reporting schemes could be utilised. There would also be a cost to the government in order to set up and maintain the systems required for Monitoring, Reporting, and Verification.

---

<sup>85</sup> Appendix II provides information on the top five downstream sectors in terms of value of products purchased from upstream products. This covers only upstream products that are associated with the ETS (may contain installations) and could initially be in scope of mitigation policies. This data shows the sectors like Automotives, Machinery & Equipment, Aerospace and Construction may be amongst those most affected by increased costs if mitigation measures are imposed.



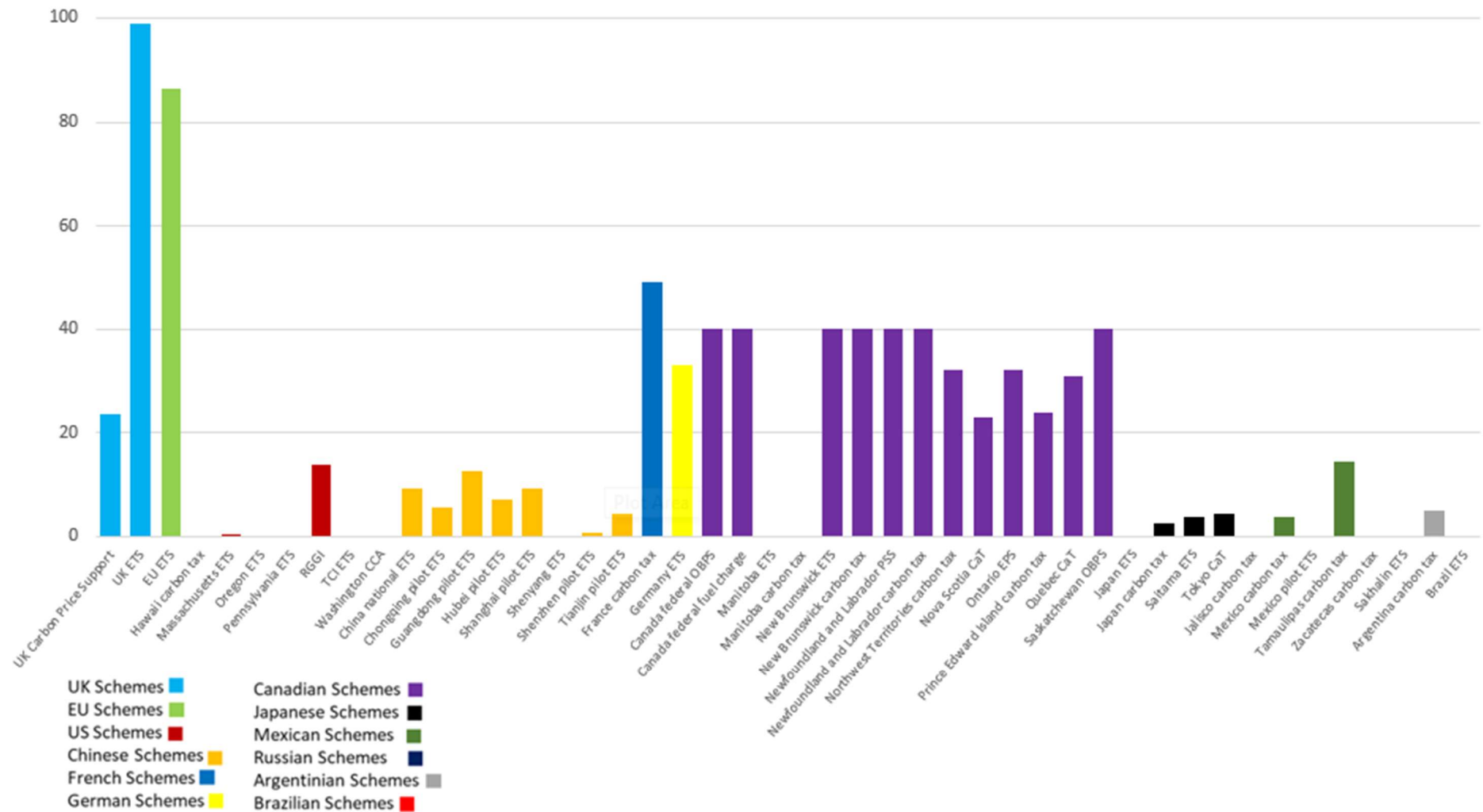
**Table 6: High-level summary of the impacts of carbon leakage mitigation measures**

Considerations	CBAM	MPS
<b>Carbon leakage risk</b>	<p>Risk is mitigated for domestic sales of domestic production, as carbon embodied in imports is priced equally to domestic production.</p> <p>Does not directly mitigate carbon leakage risks faced by exports and downstream sectors.</p>	<p>Risk is mitigated from high-carbon imports which are not compliant with the standard and therefore cannot be sold in the UK. Continue to face a risk from imports that meet or exceed the standard where domestic production is still be exposed to a carbon price under the UK ETS.</p> <p>Does not directly mitigate carbon leakage risks faced by exports and downstream sectors.</p>
<b>Emissions</b>	<p>Global emissions would face downward pressure as incentives to import emissions intensive products reduces and jurisdictions face new incentives to abate emissions for exports to the UK. Overall impacts would, however, depend on changes to global consumption patterns related to UK exports and downstream goods.</p> <p>It will also depend on the emissions and sectoral scope of the CBAM – the more types of embodied emissions that are subject to a CBAM, the great the potential environmental impact.</p> <p>Aggregate domestic production emissions in the traded sector will still be constrained by the UK ETS cap, which the ETS Authority have committed to aligning with net zero.</p>	<p>Global emissions would face downward pressure as UK demand for imports of carbon-intensive products that are not compliant with the standard is removed. Overall impacts would, however, depend on changes to global consumption patterns related to UK exports and downstream goods.</p> <p>It will also depend on the emissions and sectoral scope of the MPS – the more types of embodied emissions that are subject to a MPS, the greater the potential environmental impact.</p> <p>Depending on the stringency of an MPS, domestic production emissions could also decrease to meet stricter standards imposed on the relevant products.</p>

<p><b>Domestic businesses producing products in scope of measure</b></p>	<p>No additional direct costs imposed on domestic production; if imported inputs are captured by CBAM it may raise production costs for downstream products. Appendix II also contains data on key downstream sectors relevant to UK ETS production.</p> <p>Potential to increase demand for domestic production as similar imports face an equivalent carbon price, but this will vary by sector and product. This may also increase domestic prices for these products.</p>	<p>Depending on the stringency of the standard set and existing production process there could be direct costs to businesses to adjust processes; if imported inputs are captured by the MPS it may raise production costs.</p> <p>Impact will depend on the extent to which any additional production costs can be passed through to consumers, the production costs and emissions intensity of (international) competitors, consumers' willingness to pay and the availability of substitutes.</p> <p>Potential to increase demand for domestic production if similar imports face difficulties meeting the MPS, but this will vary by sector and product. This may also increase domestic prices for these products.</p>
<p><b>Domestic businesses out of scope of measure</b></p>	<p>No additional direct costs imposed on domestic production; if imported inputs are captured by CBAM it may raise production costs. Appendix II also contains data on key downstream sectors relevant to UK ETS production.</p>	<p>No additional direct costs imposed on domestic production; if (imported) inputs are captured by the MPS it may raise production costs.</p>
<p><b>Administrative burden</b></p>	<p>International producers will face familiarisation costs associated with the introduction of a CBAM, while importers in the UK will face compliance costs associated with emissions reporting.</p> <p>There will be a resource cost to the government associated with enforcement of a CBAM and any resulting revenue collection.</p>	<p>For both domestic and international producers, there will be familiarisation costs associated with the introduction of an MPS, as well as compliance costs associated with resulting emissions reporting.</p> <p>There will be a resource cost to the government associated with the enforcement of an MPS.</p>

<b>Trade</b>	<p>The composition of UK imports may change. Imports for in-scope products would face downward pressure if they originate from jurisdictions with less ambitious carbon pricing and more carbon intensive production; whereas imports of relatively low emission intensity products in-scope may increase.</p> <p>There may be increased imports of downstream products if domestic production costs increase relative to imports.</p> <p>Exports may face some downward pressure if the cost of inputs rises as a result of a CBAM.</p>	<p>The composition of UK imports may change. Imports that are not compliant with the standard can no longer be sold in the UK, therefore imports from jurisdictions with more carbon-intensive production would likely fall. Imports that meet the standard could increase.</p> <p>There may be increased imports of downstream products if domestic production costs increase relative to imports.</p> <p>Exports may face downward pressure dependent on the stringency of the standard.</p>
<b>Investment</b>	<p>Introducing carbon leakage mitigations could increase investment due to the possibility of higher returns in low carbon production processes domestically and internationally and the regulatory certainty provided by the measures. Depending on the coverage of the measures including emissions scope, the carbon price differential under a CBAM, and the stringency of an MPS, this could affect prices for inputs into downstream sectors. If significant, investment into these sectors could be affected.</p>	
<b>Consumers</b>	<p>Prices could rise in the short term for products in scope, with knock-on price rises for downstream products and consumer goods, though magnitudes are uncertain, as are long term impacts. This will depend on the ability for firms to pass-through cost increases and changes in consumer consumption patterns.</p>	
<b>Employment &amp; Regional</b>	<p>Some sectors can be particularly geographically concentrated. This means any changes in domestic output, and changes in employment from this, would change unequally in the UK. Mitigating leakage may support production, employment and regional output as domestic climate-mitigation policies become more ambitious.</p>	

Appendix I: World Bank Carbon Pricing Dashboard (April 2022, G20 countries only).



## Appendix II: Breakdown of downstream sectors with highest value of inputs from products that are relevant to the UK ETS

Paper & products of...	Coke & refined Petroleum products		All Inorganic chemicals, Industrial gases & Fertilisers		Petrochemicals		Agro-chemicals & Dyestuffs		Cement, lime, plaster & articles of...		Glass, refractory, clay, other porcelain & ceramic, stone & abrasive products		Basic iron & steel		Other basic metals & casting		Fabricated metal products, excl. machinery, equipment, weapons & ammunition		
Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)	Top 5 Industries	Value of products at basic prices (£ millions)
Manufacture Of Paper And Paper Products	2051	Air Transport	4313	Manufacture of industrial gases, inorganics and fertilisers (inorganic chemicals)	1367	Manufacture of petrochemicals	4789	Crop And Animal Production, Hunting And Related Service Activities	1531	Construction	7645	Construction	2746	Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	2351	Manufacture of other basic metals and casting	1921	Construction	8199
Printing And Reproduction Of Recorded Media	1808	Land transport services and transport services via pipelines, excluding rail transport	3279	Manufacture of petrochemicals	766	Manufacture Of Rubber And Plastic Products	4274	Manufacture of dyestuffs, agro-chemicals	247	Manufacture of cement, lime, plaster and articles of concrete, cement and plaster	528	Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	732	Manufacture of fabricated metal products, excluding weapons & ammunition	1978	Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	1609	Manufacture Of Machinery And Equipment N.E.C.	3594
Publishing Activities	1260	Wholesale Trade, Except Of Motor Vehicles And Motorcycles	3020	Crop And Animal Production, Hunting And Related Service Activities	553	Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	876	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	167	Manufacture of glass, refractory, clay, porcelain, ceramic, stone products	246	Manufacture of glass, refractory, clay, porcelain, ceramic, stone products	514	Manufacture of basic iron and steel	1457	Construction	1151	Manufacture of fabricated metal products, excluding weapons & ammunition	3270
Wholesale Trade, Except Of Motor Vehicles And Motorcycles	654	Construction	2189	Electric power generation, transmission and distribution	319	Architectural And Engineering Activities; Technical Testing And Analysis	842	Manufacture of petrochemicals	56	Owner-Occupiers' Housing	134	Manufacture of alcoholic beverages & Tobacco Products	455	Manufacture of air and spacecraft and related machinery	1348	Manufacture of fabricated metal products, excluding weapons & ammunition	1147	Manufacture Of Motor Vehicles, Trailers And Semi-Trailers	2738
Education	634	Manufacture Of Coke And Refined Petroleum Products	1392	Human Health Activities	178	Manufacture of other chemical products	526	Manufacture Of Paper And Paper Products	48	Education	126	Manufacture Of Rubber And Plastic Products	269	Manufacture Of Machinery And Equipment N.E.C.	1337	Manufacture of air and spacecraft and related machinery	1086	Manufacture of air and spacecraft and related machinery	1535

### Appendix III: ONS data for carbon intensities and trade openness

The tables below provide data sourced from the Office for National Statistics (ONS). This only covers UK data but is generally more granular than OECD data contained in the annex. Table 7 covers emissions emitted by broad UK sectors, and their corresponding emission intensity. Table 8 provides emission intensities for manufacturing sectors covered by the UK ETS. Table 9 provides trade openness measures.

**Table 7: Broad UK sector emissions and emission intensity (2020).**

<b>Broad economy sectors</b>	<b>Total GHG emissions (1000's tonnes of CO<sub>2</sub>e)</b>	<b>Emission Intensity (CO<sub>2</sub>e / GVA)</b>
<b>Agriculture, forestry and fishing</b>	46,843	3.76
<b>Mining and quarrying</b>	18,620	1.07
<b>Manufacturing</b>	80,439	0.44
<b>Electricity, gas, steam and air conditioning supply</b>	80,770	2.72
<b>Water supply; sewerage, waste management and remediation</b>	24,857	1.05
<b>Wholesale and retail trade; repair of motor vehicles/cycles</b>	13,801	0.07
<b>Transport and storage</b>	54,264	0.81
<b>Other (excl. consumer expenditure)</b>	33,948	
<b>consumer expenditure</b>	124,767	
<b>Total greenhouse gas emissions</b>	478,310	

Source: ONS, HMT calculations.

**Table 8: Emission intensity for manufacturing sectors covered in the UK ETS (2020).**

<b>Manufacturing sectors covered in the UK ETS</b>	<b>Emission Intensity (CO<sub>2</sub>e / GVA)</b>
<b>Paper and paper products</b>	0.51
<b>Coke and refined petroleum products</b>	4.22
<b>Industrial gases, inorganics and fertilisers (all inorganic chemicals)</b>	4.46
<b>Manufacture of petrochemicals</b>	2.16
<b>Cement, lime, plaster and articles of concrete, cement and plaster</b>	2.68
<b>Manufacture of glass, refractory, clay, other porcelain and ceramic products, Stone, &amp; abrasive products</b>	1.37
<b>Manufacture of basic Iron &amp; Steel</b>	4.54

<b>Other basic metals and casting</b>	0.46
<b>Average Manufacturing (in ETS)</b>	2.55

Source: ONS, HMT calculations.

**Table 9: Trade openness measures (2018, bold reflects sectors covered in UK ETS).**

<b>Product classification</b>	<b>Share of output (%)</b>	<b>Overall trade openness (%)</b>	<b>Exports of production (%)</b>	<b>Imports of domestic demand (%)</b>
Paper and paper products	0.3%	47%	15%	41%
Coke and refined petroleum products	0.8%	60%	31%	51%
Other chemical products	0.1%	<b>93%</b>	<b>86%</b>	<b>89%</b>
Industrial gases, inorganics and fertilisers	0.1%	69%	34%	62%
Petrochemicals	0.3%	71%	40%	64%
Dyestuffs and agro-chemicals	0.1%	57%	32%	47%
Cement, lime, plaster and articles of concrete	0.2%	11%	2%	9%
Glass, clay, ceramics, and stone	0.2%	54%	24%	46%
Basic iron and steel	0.2%	67%	39%	59%
Other basic metals and casting	0.2%	71%	0%	71%
Fabricated metal products	0.8%	43%	17%	35%
Pharmaceuticals	0.6%	63%	22%	58%
Rubber and plastic	0.6%	60%	37%	49%
Textiles	0.2%	63%	31%	56%
Wearing apparel	0.1%	<b>91%</b>	38%	<b>90%</b>
Computer, electronic and optical	0.6%	80%	32%	77%
Electrical equipment	0.3%	71%	24%	69%
Machinery and equipment	0.8%	80%	57%	73%
Motor vehicles, trailers and semi-trailers	<b>1.6%</b>	85%	71%	77%
Ships and boats	0.1%	76%	54%	67%
Air and spacecraft	0.7%	84%	70%	76%
<b>Total manufacturing</b>	<b>14%</b>	<b>65%</b>	<b>33%</b>	<b>57%</b>
<b>Total agri-food</b>	<b>1%</b>	<b>36%</b>	<b>8%</b>	<b>33%</b>
<b>Total services</b>	<b>71%</b>	<b>19%</b>	<b>13%</b>	<b>7%</b>
<b>Total economy-wide</b>	<b>100%</b>	<b>28%</b>	<b>15%</b>	<b>18%</b>

Source: ONS, HMT calculations.

## Annex C – Industrial Deep Decarbonisation Initiative - Pledge Explanatory Note

The following Annex sets out the explanatory note, written by the Industrial Deep Decarbonisation Initiative, to support the understanding of the proposals put forward by the group.

The proposed pledge levels are:

### **Level One:**

Starting no later than 2025, require disclosure of the embodied carbon in cement/concrete and steel(3) procured for public construction projects.

### **Level Two (in addition to Level 1):**

Starting no later than 2030, conduct whole project life cycle assessments for all public construction projects, and, by 2050, achieve net zero emissions in all public construction projects.

### **Level Three (in addition to Levels 1 and 2):**

Starting no later than 2030, require procurement of low emission cement/concrete and steel in public construction projects, applying the highest ambition possible under national circumstances.

### **Level Four (in addition to Levels 1, 2 and 3):**

Starting in 2030, require procurement of a share of cement and/or crude steel from near zero emission material production for signature projects.

## **Pledge Explanatory Note**

Government entities at national or sub-national level may be signatories to the pledge. The pledge including the content of the levels and this explanatory note are not intended to create obligations in international law, and do not create any legal claims of the tenderers in the respective procurement process.

Signatories can commit to one or more of the pledge levels. Signatories, represented by an authorised official, will inform the IDDI Secretariat in writing of their intention to subscribe to the pledge. The Signatories will report to the Secretariat annually on the progress in their goals. The Secretariat will prepare annual statement reports on the progress made towards the pledge.

Disclosure will be for steel, and concrete sub-categories. The reporting will be demonstrated with Type III Environmental Product Declarations (EPD), or other independently verified reports, covering the same aspects as the EPD, and in a machine readable format using an open data standard where available. Requirements for disclosure should be included in procurements for design services starting January 01, 2025 or earlier. Signatories will include requirements for disclosure in procurements for design services as soon as possible in order to collect as many EPDs as possible starting



in 2025. If required, exemptions (for example, based on project cost threshold or total floor area, to be determined by signatory) can be provided for projects typically delivered by small businesses.

Improved disclosure requirements: by 2030 it is expected that disclosure requirements will be based on a Product Category Rule agreed on across IDDI members, which will include a minimum resolution (i.e. product, facility, supply chain) and a requirement for machine readable format using an open data standard.

- Cement, concrete and steel refers to, at a minimum, the following product sub-categories:
  - The cement in ready-mix concrete
  - The cement in prefabricated concrete block
  - Hot rolled structural steel sections
  - Hollow structural steel sections
  - Steel plate
  - Concrete reinforcing steel

Public construction projects refers to all infrastructure project-types that the signatory has authority for, which may include but is not limited to: new and refurbished buildings, transportation infrastructure (i.e., fixed installations including roads, railways, airways, waterways, canals and pipelines and terminals such as airports, railway stations, bus stations) and energy-utility infrastructure (such as hydro dams, wind turbines). If required, exemptions can be provided to support implementation (for example, based on project cost threshold or total floor area, or for reasons related to security or performance, to be determined by signatory).

Whole project life cycle assessments will follow international standards, or already established and used national standards.

The IDDI supports the objective to adopt stable, absolute and ambitious thresholds for near zero material production that takes account of sector-specific nuances. The IDDI employs the IEAs definitions for “near zero” and “low emission” cement and steel production from their report “Achieving Net Zero Heavy Industry Sectors in G7 Members” and its underlying methodology as explained in the Report and the Analytical Annex as a robust starting point and will contribute actively to processes to develop, refine and extend them as needed.

Central elements to the methodology include:

- the definitions and thresholds for near zero and low emission production of steel and cement (Figure 3.7, p. 127-129),
- the formulation of low emission steel and cement production to calculate the quantity of low emission steel and cement production (p. 133),
- the menu of band ranges in Table A.1, (p. 134) setting the ambition level for low emission steel and cement production (p. 133).

The definitions in the IEA Report do not imply a specific production pathway or exclude a specific methodology, denote a specific carbon content or entirely rule out any residual emissions. They are technology neutral and focus on the production processes of the materials. A uniform and clear end-point in these processes that facilitates comparability

has been set: in the case of iron and steel, this is crude steel production, while in the case of cement and concrete, this is cement production.

Near zero emission production definition: A stable and absolute definition based on a fixed emissions intensity has been identified. For the purpose of this pledge, the near zero emissions definition will be applied encompassing both direct and indirect emissions. Direct emissions are defined according to internationally recognised frameworks for energy and emissions accounting, such as the IEA World Energy Balances and the IPCC's Guidelines for Greenhouse Gas Emissions Accounting. Indirect emissions included are limited to those arising from clearly defined steps in the production process. To be truly "near zero", the emission intensity thresholds are set to allow only a limited amount of residual emissions.

The thresholds for near emissions zero steel and cement production take account of the share of scrap use in the case of steel, and the clinker ratio in the case of cement. For the purpose of this pledge, however, governments may choose to apply a static clinker-to-cement ratio, for example based on average values (the global average being 0.7, according to the IEA study, page 121), in order to acknowledge different national circumstances and technology options.

Low emissions production definition<sup>86</sup>: The definition for "low emissions production" provides recognition of interim measures that deliver substantial improvements in emissions intensity, in line with a trajectory to meet the Paris Agreement temperature goal, but which do not meet the near zero emissions definition. Recognition for interim measures are being evaluated on a continuous sliding scale, defined between the near zero threshold and a multiple thereof, with the tonnages of output calculated in proportion to the emissions intensity reduction achieved. Over time, the stringency of the low emissions production definition can be increased, using "band ranges" similar to the energy performance certificates used in the buildings sector.

Signatories acknowledge the central role of concrete in both the procurement process and incentivising additional decarbonisation levers. To allow for coordination and alignment with ongoing efforts, the IDDI will endorse a definition of low and near zero emissions concrete by 2024.

Signatories commit to require procurement of a share of "near zero" cement, concrete and/or crude steel starting no later than 2030 in, for example, individual large scale infrastructure/construction projects such as buildings, transit lines or bridges, or through a procurement programme such as for large vessels, vehicles or equipment. Signatories will determine the share of near zero materials for their commitment through their internal processes including consultation.

---

<sup>86</sup> IEA (2022): Achieving Net Zero Heavy Industry Sectors in G7 Members  
<https://www.iea.org/reports/achieving-net-zero-heavy-industry-sectors-in-g7-members>

## Annex D – UK Government Reporting Schemes

**Table 10 sets out the key energy and climate related reporting schemes operated by the UK Government.**

Scheme	Relevant disclosure requirements	Frequency of reporting	Underlying methodology
<b>Energy Saving Opportunity Scheme (ESOS)</b>	<p>Under current regulations there are no emissions disclosure requirements for ESOS. Participants are only required to report that they have complied with scheme requirements for a compliant energy audit and provide limited data about the organisation</p> <p>Proposed data to be reported/published are set out in the original Strengthening ESOS consultation<sup>87</sup> document and the Government Response published in 2022</p> <p>ESOS Phase 3 (2023) disclosure is expected to include:</p> <ul style="list-style-type: none"> <li>Total energy consumption by the organisation in a continuous 12 month period (including the qualification deadline), including the energy the undertaking is responsible for across buildings, transport and industrial processes, plus:</li> <li>An energy intensity metric that is relevant for each of buildings, transport, and industrial processes</li> <li>Potential savings identified in the Phase 3 ESOS audit</li> </ul> <p>Following, Phase 4 (deadline 2027) will also likely include:</p> <ul style="list-style-type: none"> <li>GHG emissions broken down in the same way as energy reporting</li> <li>Recommendations from the audit, including both energy and emissions</li> </ul>	Every 4 years	No specific requirements on how to collect or present data except that data should be actual and not predicted. This will change for December 2023 compliance data; in terms of the data required for the notification portal.

<sup>87</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1094702/energy-savings-opportunity-scheme-consultation-govt-response.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1094702/energy-savings-opportunity-scheme-consultation-govt-response.pdf)

<b>UK Emissions Trading Scheme (UK ETS)</b>	Discloses carbon emissions associated with activities listed in schedule 1 and 2 of the Greenhouse Gas Emissions Trading Scheme Order 2020 in sectors covered by UK ETS (energy intensive industries, the power generation sector and aviation). Reporting of Scope 1 emissions.	Annual	Government provides detailed guidance on how emissions should be monitored and verified. Monitoring plans are put forward by installations.
<b>Streamlined Energy and Carbon Reporting (SECR)</b>	Varied disclosure on greenhouse gas (GHG) emissions and energy use depending on the type of company. Quoted companies: Annual GHG emissions from activities including the combustion of fuel and operation of any facility, as well as annual emissions from purchase of electricity, heat, steam or cooling that the company is responsible for, Underlying global energy use, Previous year's figure for energy use and GHGs, At least one intensity ratio, Energy efficiency action taken, Methodology used for measuring emissions  Other companies: UK energy use, including at a minimum gas, electricity and transport in UK and offshore area, Associated GHG emissions, Intensity ratio, Energy efficiency action taken, Methodology used for measuring emissions  Reporting of Scope 1 and 2 emissions, reporting of Scope 3 emissions is optional.	Annual	No prescribed methodology however the methodology used must be explained in the report.  Greenhouse gas emissions must be reported using an emission factor, relevant to the operation of the company.  BEIS have also made available a SECR taxonomy that can be used on a voluntary basis for digital reporting
<b>Climate Change Agreements</b>	Scheme is not a mandatory disclosure scheme but does require participants to report the relevant energy by fuel type for the facility (or group of facilities) covered by a voluntary	Every 2 years	Energy is reported for the target facilities which may be based on sub-metering.

	<p>CCA to the scheme administrator (the Environment Agency) to determine if they have met their Target Period target. Vast majority of targets are relative energy targets but any under or overperformance is converted to emissions for the purpose of showing surplus or calculating a buy-out cost to remain certified to receive reduced rates of CCL.</p> <p>Each sector has a negotiated target which is cascaded to individual Target Units which can be single or grouped facilities.</p>		<p>Carbon emitted during target period can be calculated by multiplying the units of energy consumed of each fuel by the relevant carbon emission factor set out in the operations manual for that fuel.</p> <p>There is an excel reporting workbook which contains instructions on how and where data must be entered.</p>
--	--	--	---



© Crown copyright 2023

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit [nationalarchives.gov.uk/doc/open-government-licence/version/3](https://nationalarchives.gov.uk/doc/open-government-licence/version/3)

This publication is also available on our website at [www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation](https://www.gov.uk/government/consultations/addressing-carbon-leakage-risk-to-support-decarbonisation)

Any enquiries regarding this publication should be sent to us at [carbonleakage.consultation@beis.gov.uk](mailto:carbonleakage.consultation@beis.gov.uk) If you need a version of this document in a more accessible format, please tell us what format you need. It will help us if you say what assistive technology you use.