

Addressing Carbon Leakage Risk to Support Decarbonisation

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The Aldersgate Group is an alliance of major businesses, academic institutions, professional institutes, and civil society organisations driving action for a sustainable and competitive economy. Our corporate members, who have a collective turnover in excess of £550bn, believe that ambitious and stable low carbon and environmental policies make clear economic sense for the UK.¹ They have operations across the UK economy and include companies such as Associated British Ports, CEMEX, Johnson Matthey, National Grid, Ørsted, Scottish Power, and Siemens.

We develop independent policy solutions based on research and the expertise and diversity of our members. Through our broad membership, we advocate change that delivers benefits to an ever-growing spectrum of the economy.

EXECUTIVE SUMMARY

In its simplest form, carbon leakage should be understood as the offshoring of emitting activities due to additional costs of carbon pricing that cannot be borne out or recovered on the market.

Over the coming years, the risk of carbon leakage is likely to intensify. While many companies have already achieved significant emissions reductions, a lot of progress on industrial decarbonisation to date has arisen from greater resource and energy efficiency (REEE), and improved process productivity; all of which not only reduce emissions but also costs.

However further emissions reductions – deep decarbonisation – will be more costly. For example, converting a blast furnace steelmaking plant to electric arc furnace technology will cost around £3bn.² Given that companies actively seeking methods to decarbonise their activities in the UK will also face an increasing carbon price via the UK Emissions Trading Scheme (UK ETS), without an equivalent price applied at the border, high carbon imports from companies facing neither a carbon price or the cost of deep decarbonisation will undermine the competitiveness of domestic industries.

Carbon leakage mitigation mechanisms

The Aldersgate Group supports the introduction of measures to combat carbon leakage. Firstly, we recommend government introduce a Carbon Border Adjustment Mechanisms (CBAM) by no later than 2026. This should be applied to as broad a scope of sectors as possible that are both proven to be at risk of carbon leakage, and covered by the UK ETS (potentially growing in time). For more information on how a CBAM should be designed and implemented, see [Chapter 2](#).

Secondly, the Aldersgate Group supports the introduction of MPS policies covering the lifecycle emissions (and potentially factors such as design and recycled material content) of a range of intermediary and end-user products. In 2022, we produce a comprehensive report on [How Mandatory Product Standards Can Grow Demand for Low Carbon Industrial Products](#). This research was supported by extensive engagement with industries across the economy. For more information on how MPS policies should be designed and implemented, see [Chapter 3](#).

Lastly, the Aldersgate Group supports the use of green public procurement (GPP) criteria, harness Government's considerable purchasing power to increase demand for low carbon products. While there may be an interim role for product labelling and voluntary product standards, our research has shown that MPS policies play a far more powerful role in mitigating carbon leakage and creating demand for

¹ Individual recommendations cannot be attributed to any single member and the Aldersgate Group takes full responsibility for the views expressed.

² Financial Times (21 July, 2022), [Tata threatens to close Port Talbot steelworks without £1.5bn of aid](#) [accessed 14/06/2023]

low carbon products.³ As with a CBAM, MPS policies should be applied to imports to create an effective mechanism on high carbon imports into the UK market. For more information on the how additional carbon leakage measures should be designed and implemented, see [Chapter 5](#).

International and multilateral action

Alongside measures to mitigate the risk of carbon leakage, it is important that the UK uses its influence on the global stage to support international cooperation on carbon leakage mitigation. This should include working with other nations to establish common carbon pricing and emissions reporting methodologies, signing up to the most ambitious pledge level in the Industrial Deep Decarbonisation Initiative (IDDI), and establishing ambitious policy support for decarbonisation to empower domestic industries to join the First Movers Coalition.

In addition, the Government should seek to understand the impact of policies such as a CBAM on low income countries, exploring opportunities for exemptions and the use of international climate finance to support low carbon capacity building in Least Developed Countries (LDCs) and Small Island Developing States (SIDS). For more information on international and multilateral action, see [Chapters 4, 5](#) and [7](#).

The role of other policies

It should be noted that on top of the effect of carbon costs, the risk of carbon leakage depends on a country's policy and regulatory landscape, and its ability to give industry the confidence that they will be able to decarbonise (and therefore make large-scale investment in new technologies, plants, and fuels). This includes access to fiscal support packages, such as the US' Inflation Reduction Act (IRA); certainty regarding the future cost and availability of CCS and low carbon hydrogen; confidence in domestic electricity networks; and evidence of demand for low carbon products.

Linking the UK and EU ETS and CBAM

Many of the sectors identified as likely early participants in a UK CBAM and/or MPS regime also participate in or export to other countries with carbon pricing regimes of their own, particularly the EU. Conversely, many companies exporting goods to the UK reside in countries with carbon pricing regimes of their own. By linking the UK's carbon market and carbon pricing mechanisms with those of others around the world, the Government can help to ease the burden of complying with several schemes. In particular, should the UK and EU ETS be linked, British companies will not be obliged to submit documentation regarding emissions to export to the EU.

Furthermore, without linkage, should the UK carbon price be lower than the EU's, domestic industries exporting to the EU will be obliged to pay a top-up, with this revenue going to the EU, not the UK.

Beyond this, linkage of carbon markets, particularly the UK and EU ETS, can produce other benefits. Upon its departure from the EU ETS, the UK ETS has suffered from poor liquidity due to a relatively low number of participants. A larger carbon market, achieved by linking the UK and EU ETS, includes a larger number of participants, creating more opportunities for the trading of emissions allowances, thereby improving overall liquidity. In the context of the Government's proposed CBAM, linkage with the EU CBAM would also help to lower the burden of administrative costs and the cost of compliance.

By linking to other international measures, the UK can ensure that its chosen carbon leakage mitigation measures and carbon pricing regime are applied to a much wider market, helping other jurisdictions to reach a level playing field in terms of carbon pricing. It also creates the opportunity to remove trade barriers (including at between Northern Ireland and the Republic of Ireland), improve cooperation on pricing emissions across borders, and accelerating progress on emissions reductions.

For more information on linking the UK and EU ETS, please see [Chapter 2](#), and the Aldersgate Group's briefing on [Developing the UK ETS](#).

³ Frontier Economics, commissioned by the Aldersgate Group (2022), *How Mandatory Product Standards Can Grow the Market for Low Carbon Industrial Products*

CHAPTER 1: CARBON LEAKAGE POLICY MEASURES

Defining carbon leakage (Question 1.0)

The Aldersgate Group partially agrees with the Government's definition of carbon leakage, with slight disagreement regarding some aspects, and some additional considerations we believe necessary when defining carbon leakage and its causes.

In its simplest form, carbon leakage should be understood as the offshoring of emitting activities due to additional costs of carbon pricing that cannot be borne out or recovered on the market – resulting in a concomitant increase in the UK's consumption emissions due to increased imports. This is captured by this consultation's reference to 'higher costs causing a drop in domestic production'.

The Aldersgate Group does not agree that reduced fossil demand increases carbon leakage risk. As globally traded commodities, fossil fuel price differentials largely arise from policy costs (such as carbon prices). This means fluctuations in commodity prices tend to be felt relatively equally wherever fossil fuels are traded, and that the impacts of cost differentials relate to policy costs rather than demand. Therefore carbon leakage risk remains with factors such as carbon costs rather than fossil fuel demand.

The increasing risk of carbon leakage (Questions 1.1 and 1.2)

The Aldersgate Group believe that the risk of carbon leakage is likely to increase over time. While many companies have already achieved significant emissions reductions, a lot of progress on industrial decarbonisation to date has arisen from greater resource and energy efficiency (REEE), and improved process productivity; all of which not only reduce emissions but also costs.

Further emissions reductions will therefore be more costly. For example, converting a blast furnace (BF) steelmaking site to electric arc furnace (EAF) technology will cost around £bn.⁴ Similarly, abating the remaining emissions from cement production will depend largely on a combination of low carbon hydrogen and carbon capture and storage (CCS), both of which are currently limited and expensive. With physical barriers to hydrogen and CCS infrastructure in some parts of the UK, even as these technologies come down in price, they may not be accessible to all industries.⁵

In the absence of support for decarbonisation, this will damage these businesses' competitiveness, as they will face greater exposure to carbon prices than domestic peers (though it is crucial that as abatement opportunities become available, the carbon price should be applied more harshly over time).

Without a Carbon Border Adjustment Mechanism (CBAM) and Mandatory Product Standards (MPS), companies seeking to decarbonise will also face an unequal playing field with companies that are not paying an equivalent carbon price or making efforts to reduce emissions, damaging their competitiveness and increasing the risk of carbon leakage.

Existing carbon leakage

Alongside the pressure of carbon costs, the risk of carbon leakage relates to a country's policy and regulatory landscape, and its ability to give industry the confidence that they will be able to decarbonise (and therefore make large-scale investments in new technologies, plants, and fuels). This includes access to fiscal support packages, such as the US' Inflation Reduction Act (IRA); certainty regarding the future cost and availability of CCS and low carbon hydrogen; confidence in domestic electricity networks; and evidence of demand for low carbon products.

For multi-national corporations (MNCs), this is particularly important, as they will evaluate the attractiveness of the UK as a place to invest against other locations across a global portfolio. On top of the above, these decisions will also consider the availability of skilled workers, and whether the planning regime is conducive to fast-paced infrastructure roll out.

⁴ Financial Times (21 July, 2022), [Tata threatens to close Port Talbot steelworks without £1.5bn of aid](#) [accessed 14/06/2023]

⁵ Frontier Economics, commissioned by the Aldersgate Group (2021), *Accelerating the Decarbonisation of Industrial Clusters and Dispersed Sites*

Without these policies in place, the UK is losing its footing as a destination in which to invest in energy and industry. For example, in 2021, the UK saw a 16% drop in investment in clean energy, while the US saw a 25% increase, and Germany a 17% increase.⁶ Figures released in June 2023 by EY, show that despite having once led the charge for offshore wind and solar, the UK now ranks 4th, behind the US, Germany and China, for renewable energy attractiveness.⁷

In 2021, the Aldersgate Group published a [policy framework](#) for industrial decarbonisation that provided the basic tenets for an industrial strategy. This work was updated in a 2023 [report with UCL](#), on the policy needs for power sector decarbonisation and industrial electrification.

CHAPTER 2: CARBON BORDER ADJUSTMENT MECHANISM

Summary

The Aldersgate Group recommends that the Government implement a CBAM, taking effect in 2026, at the same time as or before the EU CBAM comes into force. This should be applied to UK ETS participants at risk of carbon leakage, with a view to expanding covered sectors as ETS scope expansion takes place.

While the UK's industries decarbonise, it is important that they are not undermined by cheaper high carbon products, the import of which could lead to them losing market share and/or being forced to relocate to cheaper jurisdictions. A CBAM would be able to create a level playing field between high and low carbon producers, on the basis of carbon costs, by placing an equivalent price on the carbon intensity of all goods sold on the UK market.

A UK CBAM should aim to align as closely with the UK ETS as possible, meaning that it should follow the same model for emissions reporting and verification, and should seek to align as closely as possible on pricing (meaning that as a CBAM is phased in, free allowances should be phased out).

To ease trade barriers and minimise compliance costs and administrative costs for those exporting to the EU or participating in both the UK and EU ETS, the carbon pricing regime (both domestically and at the border) should be linked to their EU counterparts. As mentioned in the [Executive Summary](#), linking the UK and EU ETS and CBAM can also help to reduce trade barriers, improve the liquidity of carbon markets for UK participants, and accelerate decarbonisation internationally.

Sectoral targeting (Questions 2.1-2.4)

The Aldersgate Group recommends that, initially, a CBAM be targeted to as broad a scope of sectors as possible that are both proven to be at risk of carbon leakage and required to participate in the UK ETS. Should the UK ETS be expanded to other sectors, such as energy from waste and maritime shipping, so too should the sectoral scope of a CBAM (given sectors face a proven risk of carbon leakage). Aligning a CBAM as closely as possible with the UK ETS will enable smoother implementation and administration of the scheme in its early years, and will also minimise the cost of compliance for industry, which already has a good understanding of how to comply with schemes like the UK ETS.

Applying a CBAM to sectors that do not face a carbon price in the UK would provide them with an unfair advantage against foreign competitors, who would face an additional cost while domestic industry faces no financial incentive to decarbonise. Similarly, applying a CBAM to a sector that cannot be proven to be at risk of carbon leakage (such as the aviation sector), but does participate in the UK ETS, would undermine the carbon cost itself, as price protection would be offered against a carbon cost that is not creating pressure for a business to relocate.

To ensure that a CBAM is as effective at creating a level-playing field as possible, importers of products should face the same requirements and liabilities required to meet the conditions of the UK's CBAM as UK producers face in the UK ETS, such as the costs incurred to monitor, report and verify emissions.

⁶ The Guardian (2023) [UK Investment in Clean Energy Transition Falls 10%, Bucking Global Trend](#) [accessed 16/06/2023]

⁷ EY (2023), [Renewable Energy Country Attractiveness Index, June 2023](#) [accessed 14/06/2023]

Emissions scope and measurement of a CBAM (Questions 2.5-2.19)

The Aldersgate Group suggests that emissions scope and measurement under a CBAM be as closely aligned with the methodology used in the UK ETS as possible. This means all scope 1, 2, and 3 emissions that face a carbon price under the UK ETS should be included in the UK's CBAM. This is particularly important when accounting for the fact that the UK's electricity grid has a lower carbon intensity than most. Therefore, if two steel producers using EAFs were to use the same inputs and technology, their outputs would still have a different climate impact due to the energy mix of the country within which they are situated. To accelerate global decarbonisation, this must be accounted for.

A CBAM must reflect the compensation provided for indirect costs in the UK ETS. For example, some Energy Intensive Industries (EIIs) receive compensation for the indirect impact of the UK ETS on their electricity prices.⁸ To ensure they do not receive unequal insulation from these costs, a CBAM must account for this differential in the carbon price paid if including all scope 2 emissions.

To ensure that a CBAM is able to operate as accurately as possible, importers should therefore be required to provide accurate, independently verified emissions data for the products they import. Should this data not be available, a default value should be applied.

However, when calculating default values, it is crucial that Government work with industry to create an appropriate methodology to ensure that high carbon producers in other countries don't unduly benefit from a default value far below their own emissions. This would provide an advantage for those doing the least to abate the emissions of their products. Conversely, in countries where data collection isn't possible, lower carbon producers could be placed at a disadvantage if the country default value is higher than their own emissions intensity. Government should seek to understand the extent of this negative impact so that any adverse impacts on low income countries – who would be worst effected by this – are limited (more is also needed to understand if there would be a risk of this actually taking place).

It is worth noting that strict default values closer to the higher polluting end of the scale in a given country could be a powerful way of incentivising better emissions monitoring, reporting and verification (MRV) in other jurisdictions. Again, to avoid adverse impacts on low income nations, the UK should understand where and how to deploy support to improve MRV capabilities.

Price measurement (Questions 2.20-2.21)

In keeping with the above, the Aldersgate Group agrees that the price applied by a CBAM should track the prevailing UK ETS price throughout the year, as opposed to being set at a fixed annual rate. It should be acknowledged that UK ETS participants trade emissions allowances at different times of the year, thereby either making a financial gain or loss next to the average price of allowances over a given year based on whether they sold the majority while the price was high or not. However, as emissions allowances both fluctuate in price and are traded throughout the year, it is likely that the most effective way of pricing the CBAM as closely and comparably to the effective domestic carbon price (accounting for any discounts or compensation) will come from measuring prices against the UK ETS at frequent intervals .

As stated above, it is crucial that compensation (such as that received by EIIs for indirect ETS costs) is accounted for and subtracted from the CBAM price where appropriate. Similarly, free allowances must also be phased out as a CBAM is introduced. Were domestic producers to receive free allowances while their competitors were also subject to a carbon price at the border, they would face double compensation and a weakened incentive to decarbonise. It is likely that a CBAM would be incompatible with WTO trading rules were free allowances still distributed to domestic producers.⁹

Timing of a CBAM (Questions 2.22-2.29)

The Aldersgate Group suggests that the Government implement a CBAM by 2026. Firstly, this would align with the existing plans for UK ETS reform. Not only would this limit the period of change to the

⁸ DESNZ (2022) [Compensation for the indirect costs of the UK ETS and the CPS mechanism: guidance for applicants](#) [accessed 14/06/2023]

⁹ Norton Rose Fulbright (2023), [Potential conflicts between the European CBAM and the WTO rules](#) [accessed 14/06/2023]

UK's carbon price regime, it would also mean that as the UK ETS becomes more ambitious the impact on UK producers would be less severe, as increased carbon costs and fewer allowances would be reflected in the carbon price paid by importing competitors.

Most importantly, in 2026, the EU is due to implement its own CBAM. This means that high carbon products destined for the EU from abroad will become subject to a carbon price. It is reasonable to assume that, based on the lower carbon price of the UK, were it to not implement a CBAM of its own, these exporters may redirect their high carbon imports to the UK, severely undermining the competitiveness of domestic producers.

Introducing a CBAM at the same time as the EU could also aid the linking of the two jurisdictions' carbon pricing regimes, which would significantly reduce compliance costs for UK producers, lower the administrative burden of participating in two schemes, and expand the size of the carbon market (thereby increasing liquidity) for UK producers. For more information on linking the UK and EU carbon pricing regimes, see the [Aldersgate Group's response to *Developing the UK ETS*](#).

Lastly, it is vital that the UK pursue rapid implementation of a CBAM to accelerate climate action around the world. If importing producers face a carbon price on their goods being sold into the UK, it becomes in their interest to decarbonise and mitigate this cost. Not only can a CBAM provide a level playing field for domestic producers, it can also accelerate global efforts to decarbonise, especially if, after decarbonising, they maintain a competitive edge in UK markets.

CHAPTER 3: MANDATORY PRODUCT STANDARDS

Summary

The Aldersgate Group recommends that Government introduces a range of MPS policies applied to a broad set of sectors across manufacturing value chains, covering both end-consumer and intermediate products. This can drive demand for low carbon goods, prevent high carbon imports undercutting domestic industry, and create a 'floor' on the climate impact of a given product sold on the UK market.

MPS policies should be seen as a part of a package of demand-side and competitiveness policies, including a CBAM and GPP, that work together to influence and incentivise different parts of the supply chain and overall economy. While a CBAM and the UK ETS place a price on carbon, MPS policies work by placing a limit, or lowest level of ambition, on the climate impact of a product. GPP uses Government's purchasing power to further drive demand for low carbon goods.

In 2022, the Aldersgate Group produced a report, [How Mandatory Product Standards Can Grow the Market for Low Carbon Industrial Products](#). This outlines how the introduction of MPS policies can strengthen the UK's industrial sectors and accelerate their decarbonisation.

Our work focused on whether product standards should be mandatory or voluntary. Although there are challenges and benefits involved in both, stakeholders overwhelmingly reported that voluntary standards are unlikely to produce the change needed to establish markets for low carbon industrial products, and that standards need to be set at a mandatory level to be effective in reducing emissions.

For accuracy, the research shows product standards should place a limit on the lifecycle emissions of products sold in the UK market. This can encourage consumers to purchase low carbon products while preventing issues around the different impacts of different products at different stages of their lifecycle.

Product standards must also be based on good quality data. It would therefore be sensible to introduce MPS policies following a period of mandatory data reporting, with a view to have the first MPS policies in place and effective by no later than the mid-late 2020s. As discussed below, voluntary product standards are not without their risks and costs, so the Aldersgate Group suggests that Government introduce MPS policies at a low level, increasing their stringency over time, rather than moving from voluntary to mandatory standards.

The Government should seek as much international alignment as possible, especially as t MPS policies do not require other countries to have a carbon pricing system of their own.

Sectoral targeting (Questions 3.1-3.2)

As MPS policies are not mechanisms with a primary aim of supporting competitiveness, but instead are aimed at driving demand for low carbon products, they should be applied much more broadly than on UK ETS participants alone. This will drive decarbonisation at as wide a scale as possible.

Broad sectoral targeting can also help to ensure that MPS policies do not create market distortions and material substitution. Extensive engagement with industry has shown that one of the biggest concerns businesses have regarding product standards is that if they are applied to a small number of sectors that compete with one another for inclusion in a certain end product, for example steel, concrete, timber, and glass in buildings;¹⁰ or steel, aluminium and glass in cars, then there is an incentive to increase the use of materials that aren't subject to MPS policies – even if they have a higher climate and emissions impact.¹¹

While the Aldersgate Group understands that applying MPS policies to a broad scope of sectors presents deliverability challenges – and some sectors contribute more than others to the UK's process emissions – we would strongly disagree with the decision to choose any of the 3 options for initial sectoral targeting presented in this consultation.

The broadest option, option 3, covers only steel, cement, concrete, and chemicals, meaning material substitution with aluminium, glass, and timber could be highly likely. To ensure the best material, as regards durability and lifetime carbon emissions, is chosen for a given purpose, MPS policies should be applied to a broader range of industrial materials at a minimum. A more appropriate starting point could be the transformation industries identified by the UKRI Transforming Foundation Industries Challenge: cement and concrete, metals (including steel and aluminium), glass, ceramics, chemicals, and paper. While it is unlikely that a lack of MPS policies on paper will lead to material substitution, MPS policies would still be effective at driving decarbonisation in the sector.

Creating an institution to deliver MPS policies (Question 3.1)

Due to the complexity of creating a product standard, government should assign an institution to work closely with industry to develop an efficient set of product standards that drive decarbonisation in the most impactful areas. This institution should also coordinate with international efforts to define low carbon products (for example, initiatives such as ResponsibleSteel), leveraging existing expertise and accelerating the development of low carbon standards for key products. This would allow government to focus on the highest emitting sectors or areas that will be the most challenging to decarbonise, and minimise any unintended consequences (e.g. minimise the cost of new production processes).

This institution should also ensure the necessary measures for the implementation of standards, such as data collection, reporting requirements and mechanisms for enforcement, are in place.

Emissions scope of MPS policies (Question 3.3)

The Aldersgate Group agrees that MPS policies should, at a minimum, include scopes 1, 2, and some upstream scope 3 emissions. We also suggest that downstream scope 3 emissions be included where possible, with a focus on where good quality data on these emissions exists and where compliance is possible. It would be sensible for Government to work with industry to also understand where the inclusion of downstream scope 3 emissions would create a proportional benefit.

This said, to ensure that MPS policies do not unfairly advantage products with large downstream scope 3 emissions, understanding the climate impact of different products is important. Our research shows that LCA is therefore likely the best option for measuring emissions and impact across different products. For more information on the Aldersgate Group's thoughts on the appropriate mechanism for measuring emissions, see [Chapter 7](#).

¹⁰ Frontier Economics and DNV (2021), Improving the Market Benefits for Lower-carbon Industrial Production in Scotland. Prepared for Climatexchange

¹¹¹¹ Frontier Economics, commissioned by the Aldersgate Group (2022), *How Mandatory Product Standards can Grow the Market for Low Carbon Industrial Products*

Application of MPS policies across manufacturing supply chains (Question 3.4)

A primary consideration of our engagement with industry related to whether product standards should be applied directly to specific materials, such as steel and glass, or to finished products, such as cars and buildings. Alone, the former could create demand for specific materials but may be more complex to implement and create the potential for material substitution, while the latter could stimulate demand across multiple parts of the supply chain at once, but may not provide as strong a demand signal.

To stimulate demand across supply chains, several stakeholders spoke of the need to apply standards to both intermediate and finished products, as this would create demand for specific materials while also allowing businesses to distribute emissions reductions to where they are most cost effective.¹²

The benefit of applying standards to a broad range of products is that the liability for emissions reductions is distributed across a wider set of actors. This means that decarbonisation can take place where easiest while also driving change in a broader set of sectors. For example, were Government to place an MPS on an end-user product, such as a car, automobile manufacturers could reduce the embodied emissions of their products through a variety of ways: procuring lower carbon steel and aluminium for component parts and car bodies, choosing batteries with higher recycled content levels, and switching to lower carbon glass for windows. If the standard also included design and durability, it could also lead to increased demand for longer-life or recycled tyres. These positive spill-over effects are similar for other products.

By also applying standards to specific materials, government can ensure that where it has identified priority sectors for decarbonisation, demand for low carbon alternatives is being driven regardless of where end-product manufacturers seek emissions reductions in their value chain. For example, with a low carbon standard on cars and steel, even if automobile manufacturers meet their obligations through the procurement of low carbon glass, rubber, and aluminium, the steel sector is subject to a baseline maximum on the level of embodied emissions that are permitted in their products, thereby driving the transition to lower carbon production.

The Aldersgate Group therefore suggests that Government take a more ambitious approach than presented in any of the 4 options for the application of MPS policies across manufacturing value chains. To ensure that such standards are deliverable, they could initially be set relatively low, increasing in stringency over time – this would be preferable to changing the methodology of the MPS regime numerous times over the coming years.

Imports (3.6-3.7)

MPS policies should apply equally to both domestic and imported products to avoid putting UK manufacturers at a disadvantage relative to less-regulated competitors abroad, distorting demand in favour of imports to the UK. The role of an MPS is to create a baseline for the climate impact of a given product sold in the UK, thereby creating demand for low carbon production. Subjecting only domestic producers to such a standard would render the policy redundant for its stated purpose, as high carbon imports would be at an advantage. This would drive carbon leakage rather than mitigate it.

Increasing the stringency of MPS policies over time (Question 3.8)

Over time, the Government should increase the ambition of mandatory standards to ensure that they continue to encourage innovation and decarbonisation. Standards should continue to evolve to create an ongoing incentive to reduce the carbon intensity of production and support long-term decarbonisation. If standards remain static over time, they risk anchoring manufacturers to an initial standard and the technologies available today. To encourage continued investment and innovation to support decarbonisation, mandatory standards should be progressive and change over time to incentivise an ongoing shift towards lower carbon production techniques and new solutions.

In addition to being progressive and increasing in ambition over time, standards should also be designed in such a way that they are not overly prescriptive, which can risk limiting innovation. Changes

¹² Ibid

to standards should therefore also be clearly signposted by policymakers to give manufacturers time to adjust and to ensure the right investments are put in place.

For standards to be effective, especially in the short term, it is important that they are achievable for manufacturers. If a standard is not achievable, manufacturers will have no option but to cease production and either close their business or move it abroad. This is a higher risk for some sectors than others. For example, in the steel sector, though it requires immense investment, the technology to decarbonise already exists in places (with EAFs commonplace, but hydrogen DRI in development). Conversely, in the cement sector, decarbonisation rests upon the development and roll out of CCS, or the increase of low carbon hydrogen supplies. If delivery of either of these is delayed, the sector's ability to decarbonise will be too.

With this in mind, one of the guiding principles for setting the stringency of an MPS is the sector it covers, and what its specific decarbonisation pathway looks like. Not all sectors will decarbonise in the same way or at the same rate. This should also involve an analysis of the policy measures available to support decarbonisation, and whether they are on track to deliver technologies such as CCS, or provide enough certainty as regards the future availability of low carbon fuels, such as green hydrogen, as and when it would be needed to reduce emissions to the level required.

Standards should reflect the urgency of the UK's need to reduce emissions, but it is important to acknowledge that if a sector is not able to decarbonise anywhere, then an overly restrictive standard would do little to reduce global emissions, instead shifting production elsewhere.

Timing (Question 3.9)

For product standards to be effective, they must be based on accurate and verified emissions data. A lack of data on the embodied and life-cycle emissions of different materials and products and a lack of transparency on how it is collected and verified are barriers to the development of reliable product standards.

Consistent and robust data on the emissions intensity of production is a critical part of both the design and implementation of low carbon product standards, as it is needed to determine the relevant low carbon product standard and to enable manufacturers to comply with this standard.

As a result, data collection needs to be standardised and start immediately across supply chains. The institution assigned responsibility for developing and implementing MPS should also be responsible for ensuring that data and reporting requirements are put in place to support the collection of this data.

Where possible, Government should try to minimise the complexity and cost of collecting this data to avoid creating barriers to small and medium-sized enterprises (SMEs) and manufacturers in lower income countries, which may have more difficulty in collecting and reporting this data. It may also be necessary to provide specific support to SMEs and manufacturers in lower-income countries to ensure they can comply with these collection and reporting requirements.

Once the adequate reporting and verification regime is in place to support MPS policies, they should be introduced as early as possible. This is likely in keeping with the timeline presented in this consultation of the mid-late 2020s.

CHAPTER 4: CROSS CUTTING POLICY ISSUES FOR CBAM AND MPS

Risk of circumvention and resource shuffling (Questions 4.6-4.9)

Should the UK implement carbon leakage mitigation policies, there is a risk that producers may use intermediate goods, such as steel, from other jurisdictions that are not subject to a carbon price, and then import a finished product within which they are used, such as an automobile. Should other countries adopt carbon pricing regimes, the risk of this phenomenon decreases, however it will not always be impossible to prevent.

However, this is where a CBAM needs to be complimented by MPS policies on end user products, as suggested in our answers in [Chapter 3](#). Combined with a CBAM, product standards on end products

that account for lifecycle emissions can ensure that such products are not able to enter the UK market, regardless of the carbon price paid on their contents. This will prevent the highest carbon products from undermining domestic producers. However, should a product be made in a low carbon way in a jurisdiction without a carbon price, it would still capture an unequal advantage through having paid little or no carbon cost on the embedded carbon that remains.

Possible downstream impacts (Questions 4.10-4.14)

Overall, a CBAM and MPS policies have significant potential to drive emissions reductions and improve overall competitiveness for domestic producers. However, they can be complex to implement and create the risk of higher costs for manufacturers and consumers. They therefore need to be designed carefully in collaboration with industry.

Potential increased costs for manufacturers

MPS policies can be complex for manufacturers to meet, especially for small or medium-sized enterprises (SMEs). Similarly, the increased reporting and data collection required can lead to significant administrative costs for manufacturers, with these costs likely to have a disproportionate impact on smaller companies.¹³ Depending on the standard set, manufacturers may also need to make significant changes to their production techniques or adopt new methods of production, which adds to this complexity. Making changes to production and deploying new technologies will likely include significant capital expenditure, as with the above example of transitioning from blast furnace steelmaking to electric arc furnace production. In the short term, this will lead to significant costs.¹⁴

At least a part of any increase in costs is likely to be passed on to consumers. This risk is higher for less-flexible standards which stipulate that a particular production technique or technology must be used. Given the current cost-of-living crisis, this risk of inflationary pressure from product standards needs to be mitigated through careful design of product standards and CBAMs, as well as through supporting policies such as supply-side subsidies that facilitate large-scale capital investment into plants and processes from industry.¹⁵

For more information on product substitution and other potential impacts of standards, see [Chapter 3](#).

Exports (Questions 4.15-4.18)

To ensure the UK reduces emissions in products sold domestically and those being exported, it is crucial that MPS policies also apply to export manufacturers in the UK. This would also lessen any risk of manufacturers simply shifting to export to avoid standards. This would also be likely to face objections from countries that are being asked to pay a UK carbon price or comply with a standard set by the UK, while taking goods from the UK that haven't faced the same regulatory requirement.

However, should export manufacturers in the UK, subject to carbon prices and product standards, be faced with complying with additional standards and carbon pricing regimes internationally, they will face additional costs. This will be particularly significant if data collection and verification and production methods differ internationally.

The Government must therefore design the UK's own carbon leakage mitigation measures in a way that maximises future interoperability with international schemes, and work with international partners to achieve global cooperation on carbon pricing and product standards.

Working with other countries to create complementary or linked policy frameworks for measuring and pricing the lifecycle emissions of various products will allow for more efficient cooperation on industrial decarbonisation, while also benefitting manufactures across the globe.

Carbon credits and offsetting (Question 4.19)

¹³ BEIS (2022), Towards a Market for Low Emissions Industrial Products: Call for Evidence Summary of Responses.

¹⁴ Frontier Economics, commissioned by the Aldersgate Group (2021), *Accelerating the Decarbonisation and Industrial Clusters and Dispersed Sites*

¹⁵ Climate Change Committee (2020), Briefing Paper: The Potential of Product Standards to Address Industrial Emissions

Due to the significant risks associated with verifying carbon credits (including the risk of greenwashing identified in this consultation), the Aldersgate Group agrees with Government's minded position not to consider the use of carbon credits as a contribution towards meeting MPS policies or a CBAM.

CHAPTER 5: GROWING THE MARKET FOR LOW CARBON PRODUCTS

Labelling and voluntary standards (Questions 5.1-5.2)

Voluntary standards are likely to impose fewer costs on manufacturers and consumers due to their higher degree of flexibility, and can still provide a direct benefit to consumers by improving the information available to them when making purchasing decisions. However, adoption of voluntary standards may be limited, and there is mixed evidence on the impact that increased availability of carbon and sustainability information has on purchasing decisions.¹⁶ This means that the overall impact of voluntary standards is uncertain and potentially limited.

Potential benefits of voluntary standards and product labelling

Voluntary standards, which are often accompanied by product labels, provide a benefit to customers by improving the availability of information regarding the carbon content of products on the market – something that consumers both in the UK¹⁷ and across the world are increasingly calling for.¹⁸ A lack of availability of this information means that consumers are unable to pay the optimal price for the product in question as they cannot assign full value to the carbon intensity of the product.

Voluntary standards are relatively flexible for manufacturers when compared to other demand-side policies: they do not require manufacturers to adjust production methods or data collection and reporting. Instead, manufacturers that provide lower carbon intensity products can communicate this to consumers, potentially enabling them to differentiate themselves from their competitors and allowing them to charge a premium to recover some of the costs of decarbonisation.

Potential risks of voluntary standards and product labelling

However, the impact of voluntary standards on demand is uncertain and will likely be limited. While consumers largely report that they want to purchase low carbon, more-sustainable products, this does not always translate into action. While the literature studying the impact of carbon and sustainability on food purchases indicates that, in general, labels do affect consumer purchases, the impact is often relatively limited.¹⁹ This impact is also highly dependent on the design of the labels and the clarity of the information conveyed.²⁰

To be effective, labels need to clearly convey information that consumers value, and leverage wider behavioural insights to maximise consumer action. Designing labels in a way that maximises their effectiveness requires an upfront investment in understanding consumers of the product in question.

Uptake of voluntary standards may also be low, particularly for less consumer-facing sectors, such as heavy industry and manufacturing. While voluntary standards are low cost in the sense that manufacturers can choose whether to participate in them, cost still represents a barrier to their uptake. Complying with the information requirements of voluntary standards and implementing product labels can increase administrative costs, with these barriers likely to be more significant for SMEs.²¹

In markets where consumer decisions are largely made on price and quality, there is a relatively limited incentive for manufacturers to adopt these voluntary measures. Overall, this creates a risk of an effect

¹⁶ Potter, Bastounis, Hartmann-Boyce, Stewart, Frie, Tudor, Bianchi, Cartwright, Cook, Rayner, & Jebb (2021), The Effects of Environmental Sustainability Labels on Selection, Purchase, and Consumption of Food and Drink Products: A Systematic Review. *Environment and Behavior*, 53.

¹⁷ The Compleatfood Group (2022), *Impact Eating: The Rise of Carbon Labelling*

¹⁸ Carbon Trust (3 April, 2019), [Research reveals consumer demand for climate change labelling](#) [accessed 15/06/2023]

¹⁹ Potter, Bastounis, Hartmann-Boyce, Stewart, Frie, Tudor, Bianchi, Cartwright, Cook, Rayner, & Jebb (2021), The Effects of Environmental Sustainability Labels on Selection, Purchase, and Consumption of Food and Drink Products: A Systematic Review. *Environment and Behavior*, 53

²⁰ Frontier Economics and DNV (2021), *Improving the Market Benefits for Lower-carbon Industrial Production in Scotland*. Prepared for ClimateXChange

²¹ Iraldo, Griesshammer, & Kahlenborn (2020), The Future of Ecolabels. *The International Journal of Life Cycle Assessment*, 25

lag, where the introduction of a voluntary standard takes much longer to have an impact on emissions compared to a mandatory standard.²² The risk of low adoption and limited impact on consumers' actual purchasing decisions means that voluntary standards may have a limited ability to drive reductions in the emissions intensity of production.

Experts from across the economy report that, due to the limited uptake of voluntary standards, they will be unlikely to drive the required improvements in the emissions intensity of production.²³ The government should therefore implement well-designed mandatory standards to deliver the large-scale change needed to create a meaningful market signal for low carbon industrial products.

Please see the Aldersgate Group's study, *How Mandatory Product Standards Can Grow the Market for Low Carbon Industrial Products*, for more complete analysis of the challenges and benefits of different voluntary standards and labelling schemes from around the world, including lettered grading, the EU Ecodesign Directive, the Buy Clean California Act, the Netherlands Cap on Embodied Building Emissions, the Carbon Trust Carbon Footprint Label, and several other voluntary labelling policies.

Public procurement and the Industrial Deep Decarbonisation Initiative (IDDI) (Question 5.4)

NB: The Aldersgate Group is a member of the IDDI's Advisory Group on GPP.

As discussed above, international collaboration on carbon pricing, carbon leakage mitigation, and measures such as GPP can be helpful to global decarbonisation in several ways. Firstly, cooperation on pricing carbon can help to reduce the risk of carbon leakage while incentivising decarbonisation. Secondly, alignment of international schemes makes it easier (and cheaper) for businesses, especially MNCs, to comply with the requirements of different regulatory jurisdictions. When looking at trade flows, multilateral action can also ease trade friction: applying the same or similar policies and monitoring/reporting frameworks in different zones minimises the impact of one country's carbon pricing regime or carbon leakage mitigation policy on another's economic activity. The knock-on effect is that this can help to create greater buy-in across the world for ambitious policy action on emissions.

The IDDI brings together a range of countries with the aim of stimulating demand for low carbon industrial products. By standardising emissions data reporting and verification methodologies and establishing ambitious policies on product standards and public procurement, the initiative could be a valuable vehicle for accelerating global action via well-designed policy packages from a coalition of governments. This can create greater certainty for investors, confidence in the rising demand for low carbon products, and a more attractive business case for future green industrial export markets.

The IDDI Pledge Level

The Aldersgate Group agrees with the Government's minded position to sign up to Pledge Level Three at the least, and potentially Level Four. As co-Chair it is important that the UK lead by example and sign up to one of the most ambitious Pledge Levels of the IDDI. This would involve a commitment to mandatory data reporting on embodied carbon in cement, concrete and steel in public projects, which, as outlined in [Chapter 3](#), should by then be taking place and at a much wider scale than in these sectors and for the purposes of public projects alone. As outlined above, mandatory data reporting is crucial to an effective MPS. Secondly, this Pledge Level requires, by 2030, procurement of low emissions cement, concrete, and steel (with a share coming from near zero cement and crude steel), whole project LCAs for public construction projects, and by 2050, net zero emissions in public construction projects, in keeping with the minded positions of Government in this consultation, and the level of ambition needed to achieve net zero by 2050.

The most difficult part of this would be the procurement of near zero emissions cement and crude steel (Pledge Level Four). To achieve this, much more ambitious policy support is needed to enable the UK's cement and steel sectors to reach net zero. While the steel sector should be near zero by the mid 2030s,²⁴ the cement sector has a much less certain future with the scale of CCS application by then

²² PA Knowledge (2021), Demand-side Policies for Industrial Decarbonisation

²³ Frontier Economics, commissioned by the Aldersgate Group (2022), *How Mandatory Product Standards Can Grow the Market for Low Carbon Industrial Products*

²⁴ Climate Change Committee (2020), *The Sixth Carbon Budget* 130

still somewhat unknown.²⁵ Faster delivery of the Net Zero Hydrogen Fund, fiscal support and tax relief for investments in net zero industry (to rival IRA and the NZIA), and acceleration of grid expansion across the UK can enable faster progress on these fronts.

By opting for an ambitious pledge level, the UK can encourage other countries to adopt ambitious action. This also shows clear direction for domestic policy, signalling to investors that the UK is committed to public procurement of low carbon materials, and that it is an attractive place to invest in the technology, fuels, and plants that will enable deep industrial decarbonisation.

Measuring low emissions in industrial products (Question 5.5)

More research is needed before the Government can decide on whether to sign up to the IEA's emissions threshold methodology. A sliding scale definition for low carbon steel could see scrap steel diverted to blast furnaces to make them appear lower carbon than they are, thereby minimising the emissions reduction potential of scrap. Although there is a reasonable argument to be made against 'shifting' scrap resources around the world and labelling some parts of the sector lower carbon than others, at current, scrap steel is best used in an EAF that is powered by a low carbon electricity grid.

Instead, it may be better to pursue a definition of greener steel that recognises the technological limits of the sector (and therefore what emissions reductions are possible over time), rewarding those that have made as much progress as possible with a better rating than their peers, even if the emissions intensity remains relatively high. This means recognising that emissions from EAFs are already much lower than those from BF-BOFs, but that the transition to hydrogen DRI in crude steel production in a BF-BOF presents a significant level of progress that should be acknowledged. In this regard it is about rewarding better, while not labelling high emitting activities 'green'.

Similarly, the cement sector has other ways to decarbonise than beyond increasing the ratio of clinker to cement. CCS could in theory reduce a majority share of emissions from cement kilns.

Private procurement and the First Movers Coalition (Question 5.6)

The First Movers Coalition brings together businesses to move faster than international policymaking. In the absence of demand-side policies, the scheme asks businesses to pledge to a certain level of green private procurement to leverage the collective purchasing power of the private sector, thereby creating clear demand for low carbon products in the steel, aluminium, chemicals, and concrete sectors, as well as in heavy transport, aviation, and direct CO₂ air capture and storage (DACs).

The most effective way Government can encourage businesses to sign up to private procurement pledges is to provide early, clear, and ambitious policy support for the decarbonisation of their activities, and for increasing demand for low carbon products. If the trajectory to net zero is clear, they can invest in technologies such as electrification, green hydrogen, CCS, and DACs with much greater certainty.

Similarly, it is easier to pledge to produce and procure low carbon materials if there is greater certainty that they will be taken up in the market. MPS policies are one way of increasing demand. The other is through GPP. Government should make clear intentions to use its considerable purchasing power for the procurement of lower carbon materials at both a product and project level, thereby creating a strong demand signal for several industrial goods and materials.

CHAPTER 7: DESIGNING THE MECHANISM FOR EMBODIED EMISSIONS REPORTING

Designing the mechanism for embodied emissions reporting (Questions 7.1 and 7.2)

The Aldersgate Group suggests that the Government pursue a life-cycle assessment (LCA) based approach to emissions reporting. In December 2022, our report set out [how product standards can grow the market for low carbon industrial products](#) and reduce the risk of carbon leakage.

²⁵ Ibid

Stakeholders reported that, where possible, the whole life-cycle of emissions should be included in the measure of emissions intensity. Taking a life-cycle approach can avoid distortions and unintended substitution between products.

Use-related emissions are also significant for some products, representing the majority of emissions for carbon-intensive products like buildings.²⁶ A life-cycle approach would allow consumers to distinguish between these products and select the one with the lower-emissions impact, while an embodied carbon standard would not.

Stakeholders also indicated that it is particularly important to consider the potential for reuse, remanufacture and repurposing of some products, as this can have a significant implication for the relative carbon intensity of products such as automotive parts over their lifetime.

Challenges of life-cycle declarations

Full life-cycle declarations are relatively complex, which can create difficulty for implementing life cycle-based standards for some products. The information requirements of complying with LCAs can be significant, particularly for smaller manufacturers with fewer financial resources and a lack of the required expertise. This is a barrier in the food & drink sector, where there is not currently the capacity and capability within the supply chain to get the data required and understand what to do with it.

Due to the depth of analysis required, LCAs may not be scalable to markets with high numbers of differentiated products. Improving the availability and transparency of information over time could help to overcome this. However, in industries with a large number of products, undertaking full LCAs and EPDs for every product may not be practical or scalable. In these cases, a different measure of environmental sustainability may be needed to implement these standards in the necessary timeline.

Creating consistent and unified emissions data collection and product standards

There is a growing number of varied standards being applied across multiple industries for both consumer-facing and intermediary products. This lack of consistency creates confusion around what constitutes low carbon for both consumers and manufacturers and poses a barrier to decarbonisation.

A unified approach should be taken to product standards and data collection to reduce the burden and cost on suppliers as well as the potential of confusion for customers. There is potential for unified standards and methodologies to be based on existing standards and to consolidate multiple existing standards in the market.

Consistent methodologies may also assist some sectors to decarbonise even without mandatory standards. For example, experts in the construction sector report that voluntary steps were already being taken to reduce the emissions intensity of new buildings due to pressure from customers and that availability of an agreed methodology for assessing low carbon products would support them in continuing to do so. Experts in food & drink decarbonisation also report that, with a consistent methodology and improved data availability, businesses were likely to continue investing in decarbonisation in the near future.

More generally, a clear standard that sets out what a good baseline for carbon intensity is can support businesses to procure lower-emissions intermediate products and reduce the emissions intensity of finished products, even if this standard is not mandatory. This can help develop more capability in the supply chain to meet low carbon standards and transition to a mandatory standard in the longer term.

Introducing a data collection period prior to a CBAM and MPS (Question 7.5)

The Aldersgate Group suggests that Government introduce a data collection period before the full implementation of carbon leakage policy measures, particularly product standards. This should not however, delay the implementation of a CBAM beyond 2026.

²⁶ Koezjakov et al. (2018), The Relationship Between Operational Energy Demand and Embodied Energy in Dutch Residential Buildings. *Energy and Buildings* (165).

Data transparency and reporting requirements are a necessary condition for effective product standards and can enable industry action on decarbonisation by improving the market benefits for low carbon products.²⁷

Data collection and reporting requirements are necessary both for creating product standards themselves (as they need to be based on robust industry data to be effective) and for ensuring that manufacturers are able to comply with any voluntary or mandatory standards that are enacted.

Collecting the data required to design and comply with carbon leakage measures will take time, and deploying new production methods will require significant investments. This will partly depend on the rigidity of the measures set and the industry in question, but capital investments in heavy industry are long lived, with assets often lasting for 20 years or more. As a result, manufacturers need notice to respond to major changes and avoid risks of inappropriate long-term investments and stranded assets.

The difficulty of meeting standards without adequate data

Experts consulted in the food & drink retail sector reported that meeting a strict mandatory standard today would be difficult for most products and manufacturers. This is partially due to the fact that there is not currently the capability within the supply chain to be able to get the data and understand what to do with it, let alone then reformulate a product to be able to hit a given standard or target. These manufacturers need to be encouraged to collect this data, meaning that increased transparency and traceability needs to be implemented at all levels of the supply chain.²⁸

Experts in the construction sector indicated that lack of information was a significant barrier to establishing baselines and standards in the industry with respect to how to define low carbon products and which products to purchase. While this information largely exists and manufacturers of products that are used in construction collect the relevant data, this data is not readily available or shared consistently. Experts reported that even without mandatory standards, increased information availability would help encourage the construction sector to build lower-emissions products.

Who should be required to report emissions data? (Questions 7.7 and 7.8)

While a sector may not be initially covered by a CBAM or MPS, should they be a likely candidate for future coverage, they will need to be reporting verifiable emissions data in order for that future standard (or inclusion in the ETS/CBAM) to be effective. Therefore, creating early requirements for data collection and verification would be desirable to limit future costs and maximise compliance down the line.

Difficulties in data collection and verification

The costs associated with emissions reporting are more significant for smaller firms, which may need more support to comply with increased data collection and transparency. They can also be more difficult for manufacturers in developing countries to comply with, with stakeholders reporting concerns that product standards could be discriminatory against small enterprises in low-income countries due to the demands and resource costs of complying with certification processes. As a result, it is important to ensure that data collection requirements are proportionate, to avoid placing too high a burden on SMEs and enterprises in low-income countries.

Limiting the proliferation of different reporting requirements, targeting these requirements carefully, and providing smaller firms with the subsidies, technical support to meet these requirements, and capacity building support to decarbonise could help to limit negative impacts on smaller manufacturers and those in low income countries.

²⁷ Energy Systems Catapult (2022), Carbon Accounting in Industry: Learning from the South Wales Industrial Cluster

²⁸ WWF (2021), Packaging Unwrapped: Exploring the Environmental Impacts of Global Materials Flows Relating to the UK's Packaging Consumption, which outlines issues related to the data transparency in the supply chain of packaging.