

## Department for Energy Security & Net Zero and HM Treasury

Addressing carbon leakage risk to support decarbonisation:  
A consultation on strategic goals, policy options and implementation considerations

### Consultation response

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As the UK leads the rest of the world towards a net zero economy, climate policy needs to be robust to risks around carbon leakage and industrial competitiveness while at the same time providing strong signals for decarbonisation. The UK ETS and other cap-and-trade systems have relied on free allocation of carbon allowances to mitigate risks around competitiveness and leakage. Given that UK carbon prices are now approaching £100t/CO<sub>2</sub>e, the fiscal cost of free allocation is considerably greater than it was during the 2010s, when the UK still participated in the EU ETS and carbon prices were much lower.

A carbon border adjustment mechanism (CBAM) presents a potentially attractive alternative to free allocation that instead raises additional government revenue and also provides incentives to other jurisdictions to accelerate their adoption of carbon pricing. However, it will be important to get the detailed design of the CBAM right—both in terms of economic incentives and legal considerations. There will also be significant opportunities for UK policy to learn from the design of EU's CBAM which is due to be introduced from October 2023.

We are pleased to offer some reflections on the CBAM and the wider UK policy context around industrial decarbonisation, based on our academic research and publications. Our responses focus on selected questions from Chapter 1 (Carbon leakage policy measures) and Chapter 2 (Carbon border adjustment mechanism) of the consultation.

### References

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This consultation response reflects our personal views and not necessarily those of any organisation.

## Part One: A policy framework for carbon leakage

### Chapter 1: Carbon leakage policy measures

**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]**

*Yes, agree.*

The government's definition and understanding of carbon leakage is in line with current thinking in the academic literature and also with thinking we are aware of in other jurisdictions that are grasping with the same set of issues. Our responses below offer additional nuances related to the economics of carbon leakage and the design of a carbon border adjustment mechanism.

**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.**

*Carbon leakage is occurring now.*

(This question is somewhat unclear as there are three distinct issues: (1) the risk of carbon leakage without any policy support; (2) the risk of carbon leakage with current policy support, mainly via free allocation; (3) the risk of carbon leakage under "optimal" policy support, perhaps via a CBAM or other policy instruments.)

It is likely that some degree of carbon leakage has already been happening over the last decade or so, at least in some industrial sectors. This is difficult to establish conclusively from an empirical perspective given that carbon prices were low for most of this period and as it is hard to disentangle the effects of carbon pricing from the many other factors that affect production costs and competitiveness.

From a macroeconomic level, issues around carbon leakage are likely to be quantitatively modest given that only a small number of sectors have significant trade exposure. However, at a microeconomic level, the risk of carbon leakage in these sectors is real; it is potentially compounded by greater UK climate policy ambition, but can be mitigated by policy support.

Importantly, even within sectors at moderate overall risk of carbon leakage may see significant variation between individual producers. In the cement sector, for instance, producers near ports and land borders will be significantly more exposed than producers further inland. Similarly, for the question of leakage related to international markets, some producers in the same sector may export a higher share of their production than others. Aggregated evaluations of leakage risk can conceal significant heterogeneity across producers, and vulnerability of individual installations.

Going forward, the leakage risk will depend both on domestic and international factors. Carbon price levels, availability and cost of low-carbon fuels and feedstocks, production processes, technologies, and relevant infrastructure, as well as the level of climate policy ambition in trade partner countries and related compliance costs imposed on foreign producers are among the most influential factors determining carbon leakage risk. The medium- and long-term trends and interplay of these factors are difficult to predict.

All else equal, declining technology costs due to innovation, learning by doing, and economies of scale should promote diffusion of low-carbon technologies in the longer term, crowding out carbon-intensive technologies and levelling carbon costs. Similarly, commitment to the objectives of the Paris Agreement should favour convergence of climate policy ambition and related compliance costs. In the short and medium term, however, observational evidence suggests that asymmetries in policy ambition will remain persistent and may in some cases expand, while technology cost declines and diffusion of policies may be hampered by fragmentation of the global economy and barriers to low-carbon investment, such as higher interest rates and a broader economic slowdown.

***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?]***

The magnitude of any carbon leakage will be more pronounced if the UK carbon price is higher and also relatively tighter compared to other jurisdictions. The same statement applies to UK climate policies other than carbon pricing.

The concept of carbon leakage is most useful from an analytical viewpoint if it is either (1) tied to a specific individual unilateral policy like the UK ETS or (2) taken from a macroeconomic perspective that reflects all UK climate-related policies including carbon pricing.

Any induced “abatement” will tend to mitigate carbon leakage as any given reduction in UK production is then accompanied by a stronger reduction in UK emissions. This includes fuel switching, green technologies, low emissions processes, and local UK demand for green products.

Missing from this listing are the criteria around emissions intensity (EI) and trade exposure (TE) which were inherited from the EU ETS to gauge risk of carbon leakage in EITE sectors. These, however, suffer from an issue similar to what econometricians call “omitted variable bias”. While both EI and TE are relevant metrics for carbon leakage, they cannot offer anything close to a complete picture. One example is the intensity of competition in a sector. Suppose that one sector is characterized by very tough price competition, with razor-thin profit margins, alongside an emissions intensity of X and a trade exposure of Y. Another sector has an identical emissions

intensity of X and trade exposure of Y but competition is much softer, perhaps due to product differentiation, capacity constraints or switching costs amongst buyers. It is very likely that the former sector will experience much greater risks around carbon leakage even though the two sectors appear interchangeable on the EITE criteria alone. Policy analysis around carbon leakage therefore needs to draw on a richer picture that incorporates other metrics such as competition, innovative capabilities or financing constraints at the sectoral level.

***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***

*Government should act on domestic measures alongside international and multilateral action.*

International and multilateral action has taken great strides since the 2015 Paris Climate Agreement though countries are still moving at unequal speeds and existing/planned policy initiatives will take time to roll out and take full effect. In the absence of anything close to a global level playing on carbon pricing, there is a strong case for the UK to carefully manage carbon leakage risks around the UK ETS and its climate policies more generally. Indeed, given the presence of other market and policy failures, it is not clear how desirable a single global carbon price really is (Ritz 2022a).

Continued efforts at the multilateral and plurilateral level remain important, yet their ability to secure rapid progress remains in question. Outcomes of recent climate negotiations – including COP27 in Sharm el-Sheikh, Egypt, and the latest intersessional negotiations in Bonn in June 2023 – revealed persistent divisions on central issues in the international climate regime, a verdict that will likely be confirmed as the Global Stocktake under the Paris Agreement concludes at COP28 in Dubai, UAE this coming December. Similarly, attempts to achieve greater progress with more limited participation, for instance with the announcement of the G7 Climate Club, have likewise highlighted divergent views on topics such as carbon pricing even between closely aligned nations. Overall, a continued rift between countries in the global North and the global South, as well as growing tensions between East and West, suggest that achieving convergence of climate policy ambition and cooperation around policies such as carbon pricing will be at best a slow process.

One advantage of the CBAM—provided it is designed in such a way that it credits carbon pricing imposed in the country of origin of covered goods—is that it can help bridge domestic action and international action, by providing a fiscal incentive to other jurisdictions to accelerate their own adoption of carbon pricing. Already, observational evidence suggests that a number of trade partners to the EU have accelerated efforts to introduce carbon pricing, since the EU CBAM changes the incentive structure: covered goods exported to the EU will be subject to a carbon price in any event, reducing any previous competitive advantages from not having a domestic carbon price in the exporting country. The question now becomes which country captures the revenue from carbon pricing: the jurisdiction imposing the CBAM, or the trade partner exporting covered goods to that jurisdiction. As trade partner countries introduce their own carbon prices in response to the CBAM, they in turn will face an incentive to introduce their own CBAM to prevent leakage in relation to third countries, resulting in a continuous and beneficial policy spillover effect.

Economic research suggests that individual EITE sectors will adopt different positions towards the replacement of free allocation with a CBAM (Ritz 2022b). Sectors that are truly exposed to a high risk of carbon leakage have a strong incentive to support the CBAM. The reason is that foreign competition then offers a closely substitutable product with a relatively high carbon intensity of production; these are precisely the conditions under which a CBAM will have a lot of “bite”. This kind of sector therefore gets a lot competitiveness support from a CBAM and consequently prefers it to a prior regime of free allocation. By contrast, sectors with low risk of carbon leakage will prefer keeping free allocation over switching to a CBAM. Low risk of carbon leakage means that either there is little competitive threat from foreign producers anyway and/or that foreign competition is already very low-carbon. In a sense, therefore a sector’s opposition to the CBAM reveals that its risk of carbon leakage was likely not very high in the first place.

A clearer international picture around carbon pricing will hopefully emerge by 2030 at which point it may be possible to revisit the answer to the question.

## **Chapter 2: Carbon border adjustment mechanism**

***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]***

*No, disagree* (specifically with the “only” phrasing of the question).

On one hand, sectors in the UK ETS are clearly focal for a UK CBAM because they are already subject to an explicit carbon price that can also be the basis for the CBAM.

On the other hand, it would also be possible to levy a CBAM on sectors or products that are not in the UK ETS. One example is that Carbon Price Support that puts an additional carbon tax on electricity generation in the UK ETS, and which should arguably be included in a UK CBAM that includes electricity generation even if this particular additional policy is outside the UK ETS.

Another example is the EU’s CBAM design which includes hydrogen in its product scope even though it is not part of the EU ETS. This raises the question of whether hydrogen should be included in an UK CBAM even it is currently not in the UK ETS.

***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.***

Experience from preparing the EU CBAM and consultations with industrial stakeholders suggest that some sectors and product categories pose significantly higher administrative and methodological challenges to successfully design and implement a CBAM. Sectors in which the climate impact of production is primarily related to the use of electricity or other energy sources (such as heat and steam) produced off-site – that is, that have high indirect emissions – raise challenging questions about the ways to quantify the embedded emissions of relevant goods, since that determination requires data from actors beyond the producing facility only. Using default values – such as average or marginal carbon intensity of foreign electricity grids – as intended by the EU for indirect emissions under the CBAM can address some of the attendant challenges, but incurs tradeoffs. Relevant experience is still scarce. All this has prompted the EU to exclude indirect

emissions from the scope of the most electricity-intensive sectors – such as non-ferrous metals – for the time being (EU CBAM Regulation, Annex II).

Similarly, sectors with complex value chains can raise substantial methodological challenges that will in turn increase administrative and transaction costs from implementation. The chemicals/ petrochemicals sector, with hundreds of products that are both energy-intensive and trade-exposed, is an example. It has also been initially excluded from the scope of the EU CBAM due to the greater difficulty of defining clear and consistent boundaries for producing facilities, and identifying relevant precursor materials whose embedded emissions have to be included in the determination of the carbon intensity of downstream products for the application of the CBAM to make sense.

***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]***

*Yes, strongly agree.*

It may make sense for a CBAM to initially cover only a subset of sectors in the UK ETS. Over time, then, (a) the sectoral coverage of the UK ETS may/should further expand, and (b) CBAM coverage should expand to cover all UK ETS sectors. Also, there may be a case for non-ETS sectors to be or become part of the CBAM (see response to Question 2.1 above).

***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]***

*Yes, agree*

From the perspective of economic incidence, it does not matter where a tax is levied along the supply chain. If a £1 per unit tax is levied on buyers, e.g., UK-based importers, this shifts their cost curve up by £1, this filters through to suppliers, e.g. non-UK exporters, thus shifting their demand curve down by £1 per unit. Equivalently, instead levying the tax on suppliers would shift their cost curve upwards by £1 per unit which is the same as facing a demand curve that is shifted downwards by the same amount. Who then bears the economic cost of this policy is driven by the economics of pass-through, including demand and supply elasticities and market structure. This basic logic also applies to a CBAM, even if it may raise additional complications to do with product differentiation and abatement incentives.

From a legal perspective, assigning the responsibility under the CBAM to importers is justified by the fact that the imposing jurisdiction will have no or limited control over producers located outside its territory. As with the economic incidence of the carbon cost, where payment obligation and incidence fall on different actors, the determination of emissions through measurement and calculation methodologies will have to be performed by the foreign producers of covered goods – only these have access to and thorough knowledge of the necessary data, processes and facilities – whereas the obligation to submit the relevant declarations and pay the CBAM fee is more appropriately assigned to importers. Only the latter are subject to the jurisdiction of the country imposing the CBAM, because they are either located in its territory or in any case due to act of importing goods across the border and carrying out the relevant customs procedures. Foreign producers are, by definition, not located in the territory of the country imposing the CBAM, nor will

they in many cases be the entities that carry out the customs formalities accompanying importation, in which case they are not subject to the jurisdiction of the CBAM-implementing country; yet they will still have a strong incentive to quantify their production emissions and provide the necessary information to importers because failure to do so may make their goods less attractive to importers, who may instead turn to other producers more willing or able to provide the information importers need to comply with their obligations under the CBAM.

***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.***

One of the most challenging aspects of CBAM implementation is the determination of the embedded emissions in covered products. Early experience with the original voluntary UK Emissions Trading Scheme of 2002 and subsequently with the EU ETS showed that facilities often had no or limited information on the emissions intensity of on- and off-site activities, and in many cases had little to no capacity to determine emissions. A period of steep learning had to precede the successful operation of each emissions trading system, and the first compliance deadline for submission of verified emission reports under the EU ETS in Spring 2006 underscored the considerable disparity between the earlier *ex ante* assumptions which informed the definition of the emissions cap and actual *ex post* reported emissions.

In many trade partners that would be affected by a UK CBAM, the situation will not be much different from what it was in Europe two decades ago: foreign producers of goods likely to be covered by a CBAM may not yet be subject to robust monitoring, reporting and verification (MRV) rules, or may be applying one of several voluntary standards that could differ significantly from the MRV rules applied under the CBAM. Hence, one of the main concerns – and factors determining the cost of compliance with the CBAM – among trade partner governments and foreign stakeholders are the procedures and methodologies mandated under the CBAM to determine the carbon intensity of covered goods.

What is more, unlike under a domestic ETS, the entities that have access to the relevant information on energy and raw material inputs as well as production processes are located outside the territorial jurisdiction of the country implementing the CBAM, greatly complicating the application – in terms of facilitation, oversight and enforcement – of complex MRV obligations. All this therefore can make extensive use of default values, that is, standard carbon intensity values defined for covered good categories based on more readily available statistical data, seem an appealing option, as it would obviate the need for each individual producer to apply technically complex MRV methodologies and procedures, and likewise avoid the need for the CBAM-implementing country to monitor MRV activities beyond its jurisdiction.

Furthermore, use of default values helps reduce the possibilities for circumvention through resource shuffling, in which flows of goods from trade partners shift in ways to minimize the CBAM burden – the least carbon-intensive portion of foreign production is sold into the European market, whereas the more carbon-intensive portion serves to satisfy demand in the country of origin and third countries – while overall emissions remain unchanged. Use of national, regional or even global

default values reduces the incentive to shift trade flows because all products within the same category will be assigned the same carbon intensity.

Still, there are important reasons to use default values as a temporary and/or fallback approach only. A serious drawback of default values is that they mute the carbon price signal facing foreign producers, who no longer have a meaningful incentive to lower the carbon intensity of their production through operational improvements, fuel switching and/or a wholesale shift to alternative low- and ultra-low carbon production processes. Because the default value underlying the CBAM payment obligation does not reflect the actual carbon emissions associated with the imported goods, it runs counter to the economic logic of carbon pricing by distorting the incentives for emissions abatement (Mehling & Ritz 2023).

What is more, use of default values increases the risk that the CBAM violates international law, and notably non-discrimination obligations of the imposing country under World Trade Organization (WTO) law. Two relevant cases related to the application of border measures – US – Superfund (1987) and US – Reformulated Gasoline (1996) - assessed the use of default values and found them to be problematic under the General Agreement on Tariffs and Trade (GATT). Interpreting the Chapeau of Article XX of the GATT, they indicated that when domestic producers are subject to regulatory compliance obligations based on individually determined performance characteristics, allowing them to lower their compliance burden through demonstration of actual performance, while foreign producers are treated with a blanket approach – akin to default values – that denies them the same possibility to lower their individual compliance burden, the measure will be considered discriminatory and thus WTO-illegal (Mehling & Ritz 2023).

Default values can still be helpful as a transitional approach to afford trade partners and foreign producers more time to build the necessary capabilities for accurate facility- and product-level emissions MRV, and can also serve as a fallback when facility- and product-level data is not available (because it is either being withheld, or producers simply still lack capacity to furnish it), considered unreliable, or potentially because the risk of resource shuffling is considerable. The aforementioned WTO case law suggests that such situations could justify the use of a uniform or blanket approach through application of default values. Still, for the economic reasons described above, and to avoid unnecessary legal risk, their use should be limited to such cases.

***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.***

When determining default values, the jurisdiction implementing the CBAM will usually have to draw on information sources such as statistical databases maintained by international organizations (IEA, OECD), trade associations, research entities, or even the governments of trade partner countries. Information contained in these databases can vary significantly in terms of accuracy and reliability, and support widely divergent default values. Setting out clear criteria and a transparent process for the establishment of the default values will be critical to avoid perceptions of bias or arbitrariness; reliance on an internationally trusted, impartial source probably serves this purpose best, yet can also lead to politicization of that source and its methods of obtaining data.

Care therefore has to be taken when deciding which sources to include in the determination of default values, and the process through which that determination occurs. Extensive stakeholder engagement and potentially allowing an appeal mechanism or some other tool enabling affected



stakeholders and trade partner governments to challenge a default value may be critical for international acceptance of the CBAM and its approach to determination of embedded emissions. All this further underscores that the supposed advantages of default values in terms of easier administration and avoidance of resource shuffling are counterbalanced by significant political, economic and legal tradeoffs, as highlighted in the answer to Question 2.6.

***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.***

Some issues that are emerging in the debate about emissions reporting under the EU CBAM are the complexities of determining of indirect emissions (based on average or marginal carbon intensity of the electricity grid, and the relevant timeframe – hourly, daily, weekly etc.; or individually based on PPAs or some form of environmental attribute, such as Green Certificates or Guarantees of Origin); and the treatment of recycled scrap used as raw material inputs, where assumption of zero emissions could potentially negate the viability of the CBAM in sectors with high levels of scrap recycling as an inherent part of the production process (e.g. aluminium flat 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]***

*Yes, agree.*

The basic idea behind a CBAM is to level the playing field in terms of carbon prices across the UK and other jurisdictions. This needs to take into account the UK ETS (and any additional carbon taxes like the Carbon Price Support on electricity generation) and free allocation that, in effect, waters down the carbon price for industrial sectors.

This is an area where it will be possible to learn from the EU's approach and experience in the design and introduction of its CBAM. The default position on UK implementation of its CBAM should be to copy the EU approach (irrespective of any political divergence).

***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]***

*Yes, agree.*

In principle it would be desirable for the CBAM to track the prevailing UK ETS price in real-time. However, it is also advisable to prevent the CBAM from directly affecting the UK ETS cap and carbon price. This means that CBAM should track the UK ETS carbon, and the question is how closely this is feasible from a practical viewpoint. A fixed annual rate seems to sacrifice too much temporary granularity to be useful. The EU's approach of issuing CBAM certificates that tracks the weekly average EU allowance price seems a reasonable compromise.

***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]***

*Yes, agree.*

The CBAM should take into account any carbon pricing already levied by trading partners and any free allocation provided. Ultimately, the CBAM should be levied based on the net difference in free-allocation-adjusted carbon prices between the UK and the other country.

***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]***

*Yes, agree.*

It is not clear why this should not be possible. This information would anyway typically not be specific to an individual producer/importer but rather depend only on the country of origin and the sector/product in question. Under Article 9 of the EU CBAM Regulation, authorized declarants will be required to submit documentation of carbon prices paid on the product in the country of origin, including any relief (such as exemptions, free allocation etc.) that lower the effective carbon cost faced by the foreign producer. This information will have to be verified by an independent party to ensure accuracy.

***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.***

In certain cases, methodological complexities are likely to arise in attributing the carbon price paid to a unit of shipped goods. For instance, complex goods that contain different precursors (raw material inputs) may require a more sophisticated approach to determining the effective carbon price paid per ton of shipped good based on the relative share and different carbon intensities of these precursors, and the carbon price this already paid on the precursors. Under the EU CBAM, implementing acts and guidance documents yet to be elaborated by the European Commission will provide greater clarity on how to carry out this determination. Also, the EU CBAM Regulation allows the EU to enter into bilateral agreements with trade partners specifying the approach to calculating the carbon price paid for goods imported from the relevant trade partners, streamlining and simplifying the process.

Another issue that may arise is when the other country has a carbon price but this is not determined by a carbon tax or traditional emissions trading system (ETS) that caps the aggregate level of emissions. One example would be an ETS that is instead based on emissions intensity, resembling a tradable performance or baseline-and-credit standard rather than a traditional ETS.

***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.***

The current regime of free allocation supports competitiveness in both domestic and export markets. A CBAM that applies only to imported products would not provide export support. This means that a switch from free allocation to a CBAM could weaken export competitiveness (Evans,

Mehling, Ritz & Sammon 2021). There may therefore be a case for some degree of continued free allocation to support export activities. Other forms of support specifically targeted at sectors that have a high share of exports into global markets, such as de-risking mechanisms (e.g. Carbon Contracts for Difference) or tax credits for deployment of affected products, can also help lower the risk of export-related leakage (Jakob & Mehling 2023). Such support can accelerate the technology learning curve, offering domestic producers a way to lower their compliance burden by shifting to lower-carbon alternative production processes, and also promote the diffusion of these technologies in trade partners, reducing differences in carbon intensity that contribute to competitive distortions. However, these dynamic changes take time, meaning that any such targeted support mechanisms have to begin early, and may still need free allocation for export activities during a transition period.

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

Perhaps the biggest “known unknowns” around the CBAM’s impact lie in the issues of “resource shuffling” and “transshipments”. Reshuffling occurs when a non-UK producer redirects cleaner production to the UK market to reduce CBAM costs while instead selling highly carbon-intensive production in a third market. Reshuffling would be avoided if the CBAM is charged solely based on a default value for carbon intensity but this would also give up on abatement incentives.

Transshipment occurs if the CBAM is levied on imports at a particular stage of the value chain and non-UK producers reduce CBAM costs by instead exporting a more finished product further down the value chain.

In both cases, strategic responses to the CBAM undermine its environmental effectiveness—again resembling variations on the theme of carbon leakage. The likelihood and magnitude of these risks is currently difficult to judge given limited international experience with CBAMs and challenges around causal measurement. The EU’s CBAM will deliver additional information on these risks but this is unlikely to become available to a significant degree before the 2030s by which time the UK should already have reoptimized its own policy around carbon leakage.