

Introduction

The UK is planning to introduce its own Carbon Border Adjustment Mechanism (CBAM) from January 1, 2027, which is set to have a significant impact on the prices of imported goods from specific carbon-intensive sectors currently covered by the UK Emissions Trading System (UK-ETS). While it will have some similarities to the EU's own CBAM, with a phased introduction since the start of 2024, there are set to be some differences in how emissions are set to be calculated between the schemes. Further, the links between the power markets in the EU and the UK are heavily embedded in each country's power supply, meaning that the introduction of different tax mechanisms that impact power imports could have unintended consequences on both the price of power on both the Continent and in the UK, and even – potentially – stability of supply. Unlike the EU, the UK includes an additional Carbon Price Support price for the use of fossil fuel-based power generation. While the UK is not currently planning to include electricity imports from the EU ETS under CBAM – the UK currently imports approximately 12% of its power from EU ETS countries – it is currently expected that this additional cost will be factored into indirect emissions from power generation for specific goods.

In the below analysis, we will explore the specific implications that this could have in both the EU and UK markets once the policy is introduced.

Background

On 21 March 2024, UK HM Treasury and Revenue and Customs jointly issued a technical consultation on the implementation of a UK CBAM policy, following up a previous announcement from 2023 December. In short, the UK government confirmed that it would introduce its own CBAM from 1 January 2027 on the majority of imported carbon intensive goods from the following sectors: aluminium; cement; ceramics; fertilizers; glass; hydrogen; and iron and steel. The goal of the tax would be to address carbon leakage risks and support the UK's broader decarbonization efforts. That said, implementation is likely to be complex, and the new consultation sets out how the government is planning to design the UK CBAM to ensure that it is both effective and deliverable while meeting the UK's international trading and decarbonization obligations. The introduction of a UK CBAM should ensure that frequently traded carbon intensive goods from overseas face a comparable carbon cost to those produced in the UK.

Timeline

- On 18 December 2023, HM Treasury and UK Chancellor Jeremy Hunt released the [‘New UK levy to level carbon pricing’](#) announcement with the intention of introducing a UK CBAM by 2027. This is a full year on from the EU CBAM announcement which began operating in a phased capacity in January 2024. Read more in our previous analysis [‘Unlocking the latest UK ETS reform regulatory updates’](#).
- On 21 March 2024, UK HM Treasury and Revenue and Customs jointly issued a technical UK CBAM consultation – [‘Consultation on the introduction of a UK carbon border adjustment mechanism’](#) (closes on 13 June 2024)

Key Highlights

The consultation aims to address the following three questions:

- Scope of CBAM application, including sectoral and product scope, and exemptions.
- How the UK CBAM liability will be calculated, including principles for the calculation of embedded emissions and the price payable with any adjustments for overseas carbon pricing.
- How the UK CBAM will operate, including administration, payment, and compliance.

The UK government will continue to explore opportunities to streamline carbon emissions and tax reporting where possible and desirable. In making the decision around the initial sectoral scope of the UK CBAM that will be introduced by 2027, the government looked primarily at three factors: existing/planned industry inclusion in the UK ETS; carbon leakage risk; and participation feasibility, and effectiveness. The sectoral scope of the CBAM will be kept under review as new evidence comes to light to reflect changes to carbon leakage risk and advancements in methodological and technological decarbonization efforts as stated in the UK consultation file page 11.

UK CBAM will be a charge on the emissions embodied/embedded in relevant imports into any part of the UK on or after 1 January 2027, although the charge itself will not be payable until after the yet-to-be determined end of each accounting period. Different from the EU CBAM, UK CBAM listed no transitional phase in the current consultation document.

Design

Industry: As announced in December 2023, once UK CBAM is introduced on 1 January 2027, it will apply to imports of specified goods as determined by a list of commodity codes in the following seven sectors: aluminum, cement, ceramics, fertilizer, glass, hydrogen, iron and steel. **However, the sectoral inclusion of the CBAM will be remain under regular review, and there will be exceptions made for specific products within specific industries.** For example, the government has proposed that imported scrap goods under the aluminium, glass and iron & steel sectors would not be within scope of the new CBAM.

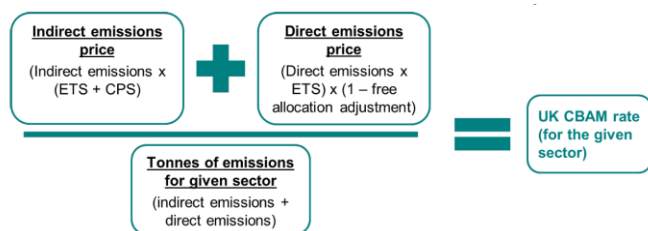
Import embodied/embedded Emissions Scope: The CBAM will apply to both the indirect and direct embodied/embedded emissions of CBAM-covered goods, including those emissions embedded in relevant precursor goods further up the value chain. Only goods whose production would be within scope of the UK ETS if produced domestically, and which would be produced as a result of activities currently deemed at risk of carbon leakage within the UK ETS will be considered for potential inclusion within the UK CBAM. The precise goods within scope of the CBAM to be deemed 'precursor goods' will be specified later and mapped to resulting complex goods, also within scope of the CBAM.

The government will provide a dual approach for the calculations of emissions embedded within imported goods for the purpose of determining CBAM liability, including both direct and indirect emissions. Direct emissions are related to the production processes of a product, including emissions from heating and cooling whether it was produced on or off-site as stated in the UK consultation document on page 21. Indirect emissions are emissions related to the production of electricity, consumed during the production process of a product irrespective of whether the electricity was produced on or off-site, as well as transportation emissions of both upstream components and the final product.

The government intends to use "default values" for emissions calculations during the initial 2027-2030 phase which will be made public ahead of implementation. Once CBAM actually takes effect in 2027, the government aims to review the use and functionality of default emissions values, with any subsequent changes to be implemented from 2031, at the earliest.

The first accounting period will run for 12 months and cover imports of CBAM goods from 1 January to 31 December 2027. From 2028, the government proposes that accounting periods transition to quarterly.

Tax Rate Calculation or Setting the UK CBAM rates: Separate to the EU ETS CBAM certificates design, the effective UK carbon price applied by CBAM will be known as the “UK CBAM rate”. The UK CBAM rate will be applicable per ton of embodied/embedded emissions attributed to CBAM-covered goods. Unlike in the EU, the UK ETS includes a separate carbon price support rate on electricity generated using fossil fuels in Great Britain as shown in the calculation below.



- i) **UK Emissions Trading Scheme:** the average of the UK ETS auction price over the preceding calendar quarter as ‘UK ETS reference price’
- ii) **Free allocation of UK ETS allowances:** ‘free allocation adjustment’ to the UK ETS reference price, specific to the respective sector
- iii) **Carbon Price Support:** change per year on April 1 (CPS rate), although this has been frozen for some time. **Including the CPS ensures that the current costs of carbon pricing on electricity emissions in Great Britain are captured when setting the UK CBAM rate for imported goods.**

When bringing these elements together to form a UK CBAM rate for each sector, the government proposes that they are applied on a weighted basis to reflect the proportion of emissions that are either direct or indirect in that sector to produce a single rate. But these remain unclear related to the rate calculation based on multiple country origins.

Adjusting for overseas carbon prices: Additionally, the CBAM liability can be reduced if embodied/embedded emissions in imported goods are subject to an “explicit” overseas carbon price with evidence from importing party. Explicit carbon prices are a price/tCO₂e placed directly on the greenhouse gas emissions generated through a process like production or transportation and typically take the form of either an emissions trading scheme with a market-based price or a carbon tax with a fixed price. An overseas CBAM, like the one in the EU, could place a carbon price on goods covered under the UK scheme while en route to the UK, so the government has also proposed that the UK scheme incorporate an overseas CBAM charge into its own calculation to adjust the final UK rate.

Power

Unlike the EU-ETS’ CBAM, the UK CBAM is not currently set to cover the electricity sector directly, but the plan is to address indirect electricity emissions generated through the production of imported UK CBAM-covered goods. Given the UK’s continued use of the CPS (see above), this could have substantial implications for EU produced goods imported into the UK from the start of 2027.

EU CBAM and power imports

In principle, the coverage of the electricity sector in the EU’s CBAM is consistent with the idea of preventing an imported carbon-intensive product from having a competitive advantage over the same product produced within the EU-ETS area due to lower carbon costs. In the case of power imported from the UK, if the total cost of carbon for 1 MWh of UK-generated electricity was lower than 1 MWh of EU-generated electricity, there would be motivation to increase cheaper – i.e. fossil fuel generated – power production in the UK, the product of which would end up in the EU, undermining local, less carbon-intensive production.

Under the current EU CBAM proposal, the carbon surcharge of power imports from the UK will be measured using the UK’s carbon intensity from a historical five-year average. Given that UK power has made strong progress in decarbonizing in the recent past, this historical average is not quite representative of the current and future carbon content in the grid and is instead quite likely to overstate it. **Overstating the carbon intensity of UK power could cause several problems when calculating CBAM liability:** Over the last several years, the UK power grid has decarbonized dramatically through the rise of offshore wind and continued coal plant decommissioning, which has in turn prompted an increase in the UK’s ability to export some of its generated power. Strong wind lowers the British price and allows British power to underprice continental neighbours. In those

situations, a CBAM charge based on the historical carbon intensity average rather than the more up-to-date low carbon intensity measurement in the moment the export flow occurs - would lead to a higher-than-necessary charge and disincentivize the cross-border flow of predominately renewable power. In a worst-case scenario, this imbalance could prompt the curtailment of renewable electricity to the benefit of fossil fuel-generated electricity, undermining one of the main objectives of the EU's CBAM.

On the other hand, as occurred in the summer of 2022, power shortages on the Continent – due to a shortfall of thermal power supply, very cold weather, or very dry hydrological situations – could lead to heavy reliance on British imports of predominantly gas-fired power. In 2022, A perfect storm of dry reservoirs in both Nordics and Alps and low French nuclear supply saw a surge in UK exports of power, much of it generated through the combustion of natural gas, turning the country into a net exporter of electricity for the first time, which helped to prevent even stronger price spikes in an already very volatile situation.

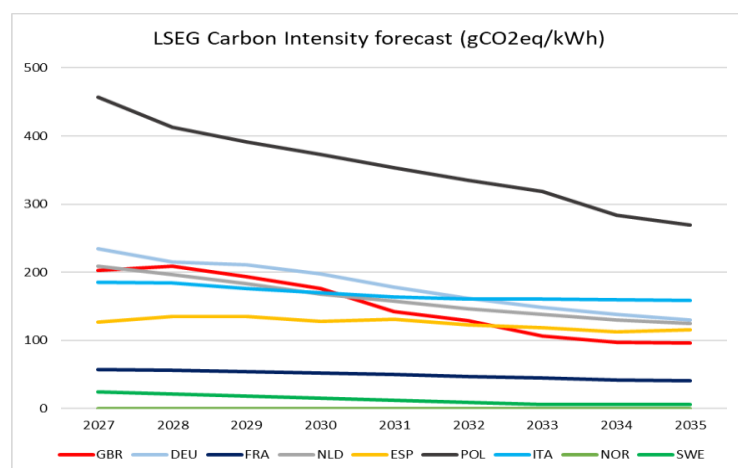
When the Continent is very tight, power flows can reverse, moving instead from the UK to mainland Europe aided by higher power prices in the EU and flexibility from the large British combined cycle gas turbine fleet (CCGTs). In these types of situations, power supply on the Continent is already likely to be heavily driven by fossil generation and emissions intensive, meaning that carbon leakage through UK power imports is less of an immediate concern. In cases such as this, rather than helping to prevent carbon leakage, **an additional CBAM charge on UK power is far more likely to aggravate price volatility, likely the opposite of what is intended by EU policy makers.**

UK CBAM and indirect emissions

While the power imports from the EU will not be covered in the UK CBAM, the emissions generated by the electricity used for producing UK CBAM-covered products like aluminium or steel will be included as “indirect emissions”. This means that the new UK CBAM plan is unlikely to impact imports of power from the EU, but it may otherwise complicate the import of physical goods due to the UK's CPS, which increases the price paid for fossil-fuel generated power and would be included under indirect emissions.

The consultation document does not currently specify how granular the carbon intensity measurement will be, and this is likely a major focus of the consultation itself. The carbon intensity of each unit of electricity is dependent on variable renewable power generation, and is thus highly variable over time, shows seasonal pattern and is different from country to country, and even from region to region. Exact accounting of place & time of consumed electricity will probably not be feasible, making it necessary to rely on average assessments.

Averaging the carbon intensity of power generation over across the entirety of the EU could ultimately lead to a carbon intensity assessment close to that of the UK itself: LSEG's forecast for 2027-2035 shows an expected British carbon intensity is close to the EU average, with potential to move below average over time. Overall, we predict a convergence of the European markets' emission intensity over time. Nevertheless, with an average EU assessment high-intensity countries like Poland would be understated, while low-intensity countries in the Nordics would be unnecessarily overstated.



The inclusion of indirect emissions is likely to have a much more significant impact when looking at markets which have much higher carbon intensity than the UK like India or South Africa where power generation is often much more emissions intensive and carbon costs are significantly lower or non-existent. This is particularly significant when one factors in the additional CPS cost paid by fossil fuel generators in the UK outside of the standard UK carbon cost.

Future trade with the EU presents a somewhat different view: the more carbon intensity is averaged, either over time or across regions, the narrower the resulting carbon intensity differences. To reduce bureaucratic effort, one could consider defining a band around the UK's carbon intensity to include the countries whose emissions are likely to be close to those of the UK or lower. Within that band there would be no significant carbon leakage. Alternatively, it may be possible to embed an activation mechanism for EU imports. CBAM goods imported from the EU should already include the cost of indirect emissions from power generation under the EU ETS, meaning that it would not need to be an additional cost in the UK CBAM calculation. In practice, this would mean that the UK CBAM charge on indirect emissions could be deactivated for as long as the price of the EU Allowance exceeds the costs of the UK Allowance plus the CPS.

Meanwhile, according to the draft [work plan](#) 2024-2025 in informal CBAM working group, in Q3 2025, the Commission will put forward Report on conditions to be exempted from CBAM for electricity, as shown below.



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