

Carbon Leakage Mitigation for UK Cement and Concrete

Summary: Carbon Leakage Mitigation Measures Required

- The UK Cement sector requires a carbon leakage mitigation measure that levels the carbon cost between domestic production and imports. As long as there is carbon in cement products, and the UK carbon price is higher than that paid by competitors, the UK cement sector is at risk of carbon leakage. MPA is therefore strongly in favour of a CBAM on cement.
- Introduction of an EU CBAM, with no comparable scheme in the UK, increases the threat that cheaper cement imports from outside the EU will land in the UK and put domestic production at risk. Once plants close, they will not reopen, threatening a secure supply of essential construction materials.
- MPA is strongly against a mandatory product standard (MPS) on cement and/or concrete to mitigate carbon leakage. At the current time, meeting an MPS would require the removal of certain cement and concrete products from the market. This removes material choice from designers and specifiers to design low carbon buildings. The aim must be to fully decarbonise all concrete products rather than diminishing product choice.
- Decarbonisation in the short-term requires increased use of secondary cementitious materials (SCMs). If SCMs can't be obtained, the MPS could drive shortages of cement and concrete. Longer term, Carbon Capture Use or Storage (CCUS) is required. An MPS will not accelerate the deployment of CCUS which requires access to transport and storage infrastructure, but if plants can't deploy CCUS to meet the MPS, UK plants will close. An MPS could therefore have significant unintended consequences, including increasing carbon leakage.
- Increasing the demand for low carbon products should be encouraged through procurement policies. The concrete sector has introduced a voluntary initiative through the Green Construction Board Low Carbon Concrete Group (LCCG) which helps low carbon procurement. The LCCG routemap provides information on the lowest carbon concrete for the performance required and is updated annually.

Cement vs Concrete

Cement is produced by heating calcium carbonate (limestone/chalk) and clay raw materials to volcanic temperatures (1450oC). This produces an intermediate product known as clinker, which is finely ground with gypsum to produce Portland cement. In the production of cement, carbon dioxide (CO₂) is emitted from the combustion of fuels to generate high temperatures and from the breakdown of raw materials at high temperatures, known as process emissions.

Significant investment has already been made to reduce emissions from cement manufacture. Remaining emissions reductions are more challenging and require access to low and zero carbon fuels and to CO₂ transport and storage infrastructure. Many plants are dispersed i.e., located outside of the key industrial clusters, and it may be some time before access to such infrastructure is possible.

There are 10 installations producing clinker in the UK and they must comply with the UK Emissions Trading System (UK ETS). Cement is vulnerable to carbon leakage and therefore receives a portion of allowances for free to reduce the cost of compliance and mitigate carbon leakage. However, despite this, imports of cement have steadily grown over the last two decades and in 2021 made up 26.6% of the UK cement market. The growth of cheaper imports to the UK is a threat to the sector and to a secure supply of essential materials.

Concrete is produced at hundreds of smaller plants across the UK. These plants take Portland cement, add other by-products or materials such as ground granulated blastfurnace slag (GGBS) from steel manufacture, fly ash from coal fired power generation or limestone fines, to produce Portland based combination cements. These cements are concurrently mixed with aggregates and water to produce concrete. Around 54% of concrete produced in the UK is ready mixed concrete which travels on average only 8 miles from plant to customer. The remaining 46% are other concrete products including precast concrete. Although cement is carbon intensive, concrete is a much lower carbon material and is a great

example of a responsibly sourced, domestically produced construction material. MPA do not consider concrete to be vulnerable to carbon leakage.

Carbon Leakage Mitigation Measures

Cement imports have gradually increased market share as UK carbon policy costs (direct and indirect) have increased above and beyond that paid by competitors overseas. A method of levelling these costs is required while domestic production transitions to net zero. A CBAM can achieve this aim and ensure cement from outside the EU isn't diverted to the UK to avoid the EU CBAM when charges are introduced in 2026.

An MPS would set a maximum CO₂/t level, and products above this level could not be sold on the UK market. Until CCUS is deployed, and net zero cement is available, an MPS will simply start removing concrete products from the market. The aim must be to decarbonise cement so that the number of concrete products on offer aren't diminished but instead they are all low or zero carbon. This will ensure specifiers can continue to choose from a broad range of products to achieve the ultimate aim of low carbon construction.

For cement and concrete to reach net zero, in the short-term increased use of SCMs is required. However, any issues with accessing SCMs could prevent the MPS being met and potentially resulting in shortages of cement and concrete. Longer term, CCUS must be deployed. An MPS will not accelerate the deployment of CCUS and overcome the challenge of connecting dispersed sites to CO₂ transport infrastructure, but if plants can't deploy CCUS to meet the MPS, they will close. An MPS could drive carbon leakage rather than mitigate it.

Driving demand for low carbon products can be more effectively achieved with fewer unintended consequences through procurement policies and other voluntary measures that are already underway. The concrete sector has introduced a voluntary initiative through the Green Construction Board Low Carbon Concrete Group (LCCG) which can help with low carbon concrete procurement. The LCCG routemap provides information on the lowest carbon concrete for the performance required and is updated annually. It encourages early engagement with concrete manufacturers regarding performance, which allows optimisation of the concrete mix. It is important not to prevent sensible use of high carbon products where they bring an overall emissions benefit to construction.

Support for Investment

Mitigating carbon leakage whilst the sector transitions to net zero is important to enable a competitive and attractive environment for investment. Alongside any carbon leakage mitigation measure, the UK must provide support to accelerate the decarbonisation of industry so that domestically produced low carbon products can compete in international markets. Multinational companies will invest where they can achieve the best returns. If the UK is not viewed as competitive, investments will not be made here. Investment leakage is often a precursor to carbon leakage. Once UK cement and lime plants close, domestic production will be lost forever.

About MPA

The Mineral Products Association (MPA) is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries. It has a growing membership of 520 companies and is the sectoral voice for mineral products. In 2018, the industry supplied £16 billion worth of materials and services to the Economy. It is also the largest supplier to the construction industry, which had annual output valued at £172 billion in 2018. Industry production represents the largest materials flow in the UK economy and is also one of the largest manufacturing sectors.

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