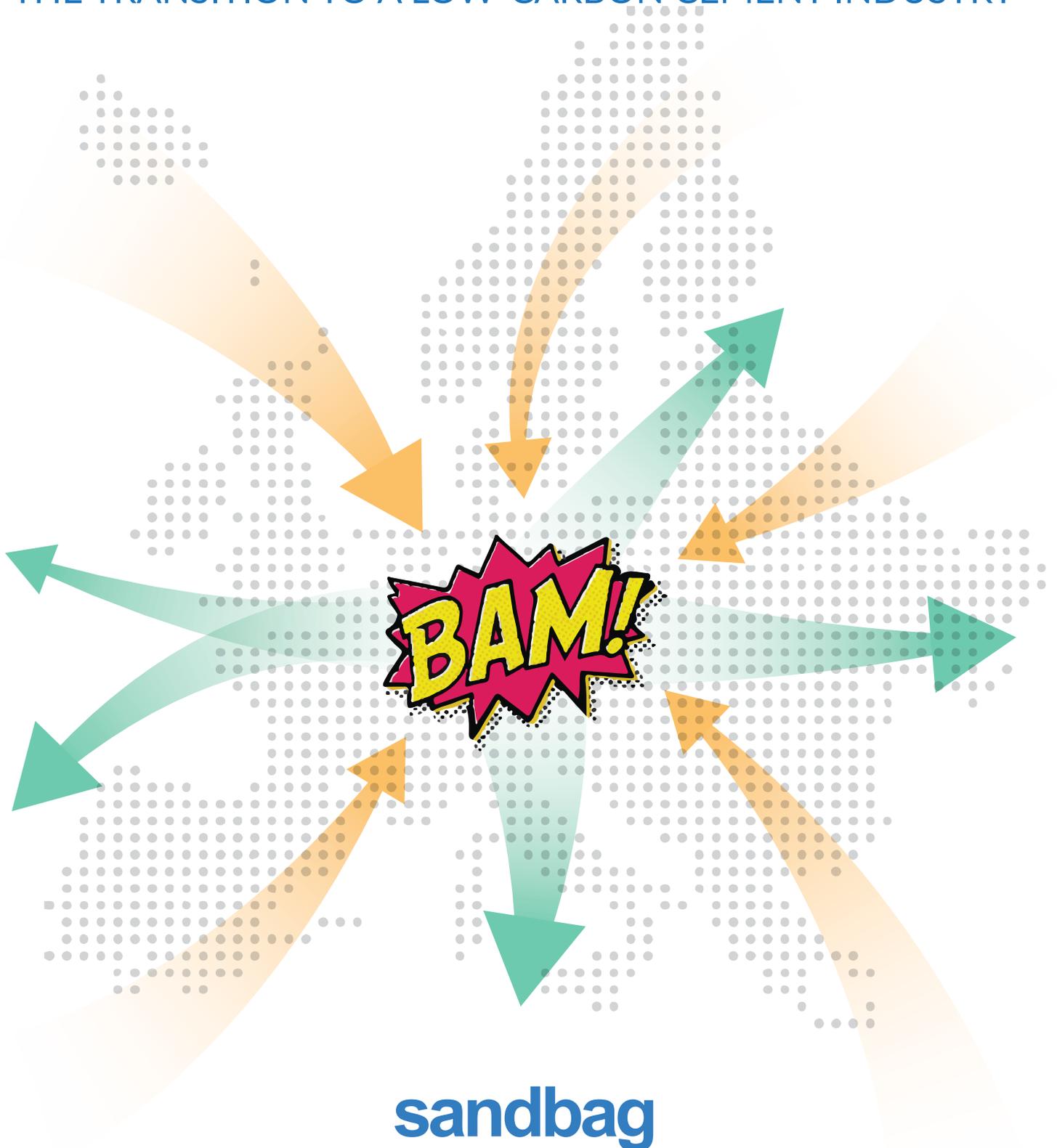


The Cement Industry of the Future

HOW BORDER ADJUSTMENT MEASURES CAN ENABLE THE TRANSITION TO A LOW-CARBON CEMENT INDUSTRY



ABOUT SANDBAG

Sandbag is a London and Brussels-based not-for-profit think tank conducting research and campaigning for environmentally effective climate policies.

Our research focus includes the EU Emissions Trading System and the Effort Sharing Decision; accelerating the phase-out of old coal in Europe; deep decarbonisation of industry through technologies including Carbon Capture & Storage.

For more information, visit sandbag.org.uk or email us at info@sandbag.org.uk

In early February, the EU Parliament will vote on whether to approve a border adjustment mechanism (BAM) post 2020 for sectors with low trade intensity and high emissions intensity such as the cement and clinker sectors in the EU Emissions Trading System (ETS). A consistently applied BAM would achieve what the ETS has been unable to do for industry in over a decade—to drive low cost decarbonisation. It would also:

- Free up **116m¹ EU allowances** annually from cement clinker production and relieve pressure to reduce the auction share to avoid the cross sectoral correction factor.
- **Place EU cement on a level playing field with international competitors and avoid windfall profits from the ETS.**²
- Establish a price signal that encourages responsible consumption of cement.

AN ETS THAT WORKS FOR INDUSTRY

Sandbag's recent analysis of the EU cement industry's emissions performance highlighted the inability of the ETS to deliver emissions reductions in the sector for over a decade. Using industry data, we showed that the **emissions intensity of EU cement production rose by 3.7% between 2005 and 2014.**³ Others have calculated, based on companies' financial statements, that the **EU cement sector profited from over-allocation by €4.7bn over the period 2008-2014.**²

If European Portland cement producers continue their current emissions trajectory, they risk losing out to competition from importers of low-carbon cement substitutes that are being commercialised outside the EU.

BORDER ADJUSTMENT MECHANISMS

A border adjustment mechanism (BAM) is synonymous with import inclusion scheme. The aim of a BAM is to ensure that EU industries with low trade intensity along with cement and clinker producers that are subject to the ETS are competitive with importers of materials from outside the EU where the costs of environmental compliance are often lower. A BAM would require importers of cement or clinker produced outside the EU to surrender EUAs corresponding the carbon in their product. This gives parity with importers of cement produced outside the EU who would also be exposed to the carbon price.

Awarding 100% of benchmarked free allocation to cement producers as a means of ensuring their competitiveness offers inadequate short and long term incentives to reduce carbon emissions. It is also economically unsustainable and makes investment in low-carbon cement unattractive.

To fulfil its core function, the ETS must provide tangible economic signals for industry to decarbonise. Adjusting free allocation and modifying the Market Stability Reserve for Phase IV of the ETS, as in the previous reforms, have not achieved the intended result and are, on their own, no longer credible options for changing the status quo.⁴

¹ From EUTL data on free allocations to NACE code 23.51 (cement) in 2020.

² Carbon Market Watch. (2016). Industry windfall profits from Europe's carbon market ([link](#))

³ Sandbag. (2016). Cement Exposed. ([link](#))

⁴ Sandbag. (2016). Comparing options for ETS reform ([link](#))

For cement, free allocation is a solution to a problem that does not exist since the sector has experienced no carbon leakage and continues to enjoy a large trade surplus with non-EU markets.³

At a time when governments in Europe and elsewhere are regulating and taxing emissions-intensive products – from energy supply to refrigerators – **free allocation positively discriminates in favour of Europe’s largest emitters.** Given the public sector is also the biggest consumer of cement, it is also entirely inconsistent for governments to apply emissions performance standards and taxes to an array of products while issuing free pollution permits to Portland cement makers.

An alternative policy is needed that supports investment in emissions reductions while maintaining the industry’s competitiveness. A BAM provides economic incentives to cut emissions and affords greater protection to best performers in other sectors whose free allocation is curtailed by the cross sectoral correction factor. In 2013, CEMBUREAU acknowledged that:

Free allowance allocation is a transitory measure to avoid leakage and, as long as emissions do not have the same cost in different countries, a level playing field can be achieved most effectively by equalising measures such as a Border Adjustment Mechanism (BAM) or free allocation.⁵

A border adjustment mechanism balances climate ambition with protection for industry and is the only amendment still under consideration that would incentivise consumption of low-carbon cement without exposing producers to undue costs.

⁵ CEMBUREAU. (2013). CEMBUREAU Responds to Carbon Leakage Consultation. ([link](#))

⁶ Heidelberg Cement. (2016). Cement Industry and Climate Action (slide 5). From a presentation delivered on the 13 Oct 2016 at a Bellona-hosted event ([link](#))

TECHNOLOGICAL OPTIONS TO REDUCE CEMENT EMISSIONS

Improvements in energy efficiency of modern cement production technology are nearing the limits of what is possible. This leaves two technically feasible possibilities for reducing the bulk of Portland cement emissions: carbon capture and storage or usage (CCS/U) and/or replacement of Portland cement with lower-carbon alternatives.

CEMBUREAU has identified CCS as a key technology for reducing emissions and several cement majors have developed CCS technology demonstrations to explore its potential to capture emissions at scale.⁶ However, a 2016 UNEP report on cement concludes that:

CCS/U is no longer necessarily the most promising technology for the reduction of CO₂ emission related to cement based materials. New material-based solutions, more feasible and cheaper than CCS/U have been developed since the Cement Roadmap was concluded in 2009.⁷

Indeed, many of the low-carbon cement substitutes referenced in the UNEP report, such as calcined clays and natural pozzolans, are not new but have been used in construction for centuries, incur lower production costs and perform better than Portland cement.

A 2002 report funded by the cement industry acknowledged that *radical ways to produce substances with properties like cement use considerably less energy [and] would have other benefits, e.g., better higher [sic] strength.*⁸

⁷ UNEP. (2016). Eco-efficient cements: Potential, economically viable solutions for a low-CO₂, cement-based materials industry. ([link](#))

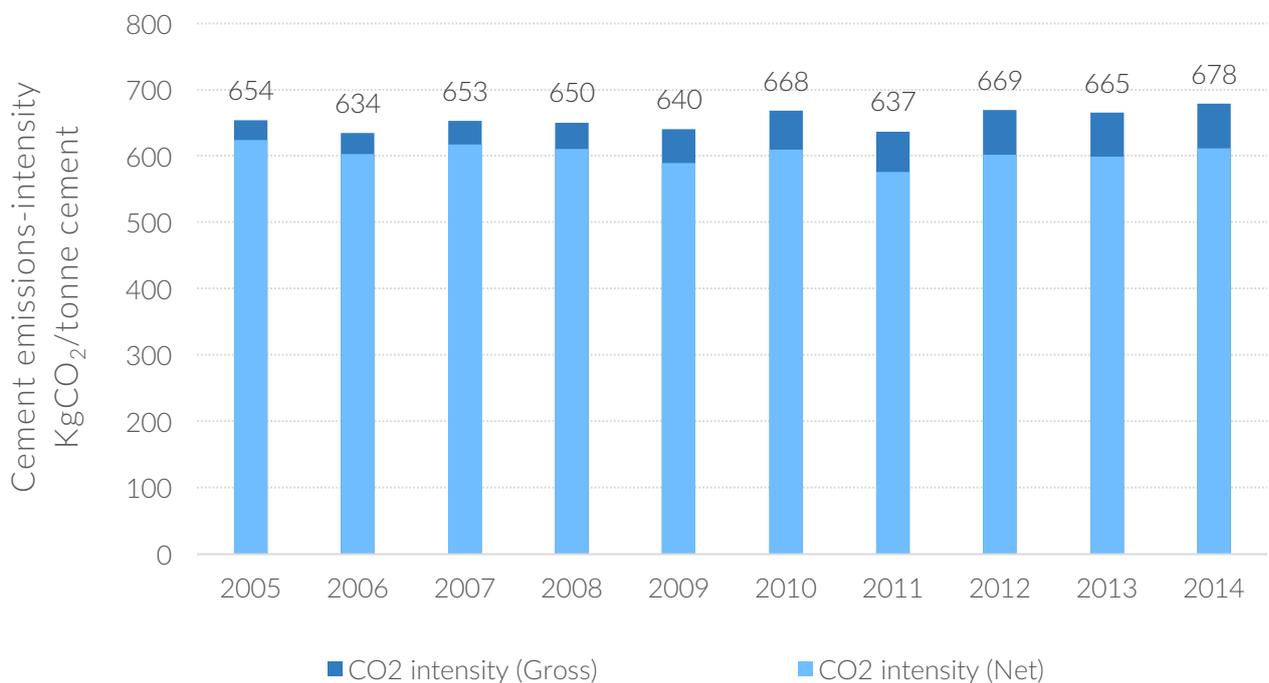
⁸ WBCSD. (2002). Toward A Sustainable Cement Industry. ([link](#))

According to the UNEP report, these cement-like materials are also the lowest cost route to decarbonisation but industry data shows that replacement of Portland cement hasn't occurred to any significant extent⁹ under the ETS even though existing cement standards permit up to 55% replacement of Portland cement with low-carbon substitutes.

Innovation in low carbon production requires that less polluting options become more economically attractive both to consumers and producers.

POLICY TO BUILD A COMPETITIVE, LOW-CARBON CEMENT MARKET

The EU ETS was designed to achieve emissions reductions at lowest cost while incentivising innovation to reduce European industry's carbon footprint. Many ETS sectors, particularly Portland cement, have benefitted enormously from free allocation^{2,10} while failing to lower product emissions (see chart below).



Portland cement emissions intensity 2005-2014
(calculations based on WBCSD GNR database, 2016)

For Phase IV, ETS policy must be configured in such a way that it actually delivers emissions reductions, and does so fairly. To encourage responsible consumption, the price of carbon emissions must be reflected in the cost of producing and consuming cement. A border adjustment mechanism which sets a requirement to surrender EUAs corresponding to the amount of carbon in cement and clinker products

regardless of their origin would facilitate cost pass-through and hence create economic incentives for all cement and clinker producers to cut emissions – affording a high level of protection to the sector without the need for free allocation.

The public sector also has an enormous role to play in specifying low-carbon construction

⁹ WBCSD Cement Sustainability Initiative. Getting the Numbers Right (GNR) database. (2016). Dataset 19TGW shows that cement substitution rates were at

2.2% in 2014 with lower values in all previous years. ([link](#))

¹⁰ Sandbag. (2016). The Final Carbon Fat Cat. ([link](#))

materials for taxpayer funded projects. Without such procurement rules, there is limited prospect of stimulating demand for low-carbon cements.

IMPLEMENTING A BORDER ADJUSTMENT MECHANISM

A BAM for cement and clinker that is consistent with WTO rules would entail:

- A regulation that requires importers of these materials to the EU to surrender emissions allowances (EUAs) corresponding to the amount of embedded carbon in their products. (Production-based scheme)

OR

- A regulation that requires vendors of these materials sold for use in the EU to surrender emissions allowances (EUAs) corresponding to the amount of embedded carbon in their products. (Consumption-based scheme)

AND

- Removal of the affected sectors from the carbon leakage list and exemption from free allocation.

The requirement to surrender EUAs on product sales, rather than imports, may increase compatibility of a BAM with WTO rules.¹¹ However, challenges to a BAM under the General Agreement on Tariffs and Trade (GATT) would, in any event, be mitigated through the demonstration of its environmental benefits which qualify the scheme for exemptions under Article 20 of GATT.¹²

A well-functioning BAM will ensure that EU cement producers do not become uncompetitive with non-EU producers. It is the correct approach for the desired outcome – a competitive and sustainable European cement industry with lower emissions.¹³ It avoids over-allocation of EUAs to the Portland cement industry – a problem that has led to windfall profits for the sector of billions of Euros² and made green investment unattractive for the industry.

At the same time, a BAM would afford legislators flexibility to introduce policies that lead to a more meaningful price signal within the EU ETS with no risk of harming the competitiveness of sectors covered by the scheme.

It would ensure that the carbon price is reflected in the cost of purchasing cement such that **companies which reduce the carbon intensity of their cement will benefit to a much greater extent from having competitively-priced products and increased market share than they do at present from selling unused free allocation.**

The future of the cement industry is low-carbon and the ETS must play a greater role in securing that outcome than it has to date. The ENVI Committee's proposed border adjustment mechanism can get Europe there while ensuring competitiveness.

¹¹ Trachtman J. P. (2016). WTO Law Constraints on Border Tax Adjustment and Tax Credit Schemes to Reduce the Competitive Effects of Carbon Taxes. RFF. [\(link\)](#). The author suggests a *product-based tax that does not vary by reference to carbon intensity of production but is set at a fixed rate for specified categories of products, or a national carbon consumption tax that varies by reference to carbon intensity of production as*

schemes that are most likely to be compatible with WTO law.

¹² Adam Whitmore. (2013). Border Carbon Adjustments. Published on On Climate Change Policy. [\(link\)](#); Pauwelyn J. (2012). Carbon Leakage Measures and Border Tax Adjustments Under WTO Law. Available at SSRN [\(link\)](#)

¹³ Carbon Trust. (2010). Tackling Carbon Leakage. [\(link\)](#)

ABOUT THIS BRIEFING

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