



# ERCST CBAM Project Part II - Sectoral Assessment Report

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**ERCST**

Roundtable on  
Climate Change and  
Sustainable Transition

# CBAM Sectoral Report 18 March

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## Border Carbon Adjustments in the EU Sectoral Deep Dive



## Border carbon adjustment ahead

PROCEED WITH CAUTION

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## ERCST CBAM Project Part II

‘Sectoral assessment’ report is the first in a series of four reports that form ERCST’s ‘Carbon Border Adjustments in the EU - Part II’ project:

- **Report I: A sectoral assessment** analyzing the suitability of a CBAM in addressing carbon leakage and the competitiveness of individual industrial sectors, as well as its impacts.
- **Report II: A CBAM proposal** outlining what the ERCST team would see as a combination of the nine BCA dimensions (*identified and assessed during Part I*), providing a balanced and ‘best outcome’ in their view for a CBAM on its own. It will include all instruments that are part of the EC’s Public Consultation document.
- **Report III: An analysis of the EC’s CBAM proposal** after it is put forward, which is expected by June 2021.
- **Report IV: A proposal** for a framework and pathway for introducing different policy measures to address carbon leakage and competitiveness.

## Objectives, scope, approach of sectoral assessment

- Report aims to provide a ‘deep dive’ on what a CBAM would mean for individual sectors. It seeks to assess the impacts and suitability of the likely design of the CBAM on individual sectors.
- It lays the foundation for **subsequent reports**
- **Sectors** considered: cement, chemicals, electricity, ferrous metals, fertilisers, non-ferrous metals, pulp & paper and refined petroleum products.
- The report draws on information gathered through **structured interviews** and consultations with sectoral associations and other stakeholders, as well as desk research, and data analysis.

## Sectoral Assessment report structure

- First, **sectoral profiles** for the individual sectors are provided. These profiles are structured along four dimensions:
  - Market structure, including product types, industrial organisation and investment prospects
  - Environmental consideration, including emissions Intensity, low-carbon pathways, and resource shuffling
  - Trade patterns, including, trade flows, trading arrangements and key trade partners
  - Implications for BCA design
- Second, a **cross-cutting analysis** of the sectoral profiles was carried out, outlining a number of overarching patterns across sectors that have relevance for the design of a CBAM, as well as the particularities that are unique to individual sectors.
- Third, the final chapter provides **conclusions**

## Sectoral characteristics and CBAM design elements: Key linkages

### Market structure and dynamics:

- Sectors with long and complex downstream value chains, containing products of which the upstream GHG-intensive goods constitute a significant part of the value, argue for a broader sectoral coverage, extending down the value chain from basic commodities to cover those processed goods that are at risk of leakage. They may also argue for a scope that includes the emissions embodied in GHG-intensive intermediate goods, and in electricity.
- Sectors with close substitutes argue for coverage of either both competing sectors, or neither, to avoid incentives for basic material substitution – a dynamic that may or may not have climate benefits.
- Sectors that have pressing needs for major capital investments in the near term are not good candidates to wait out a pilot phase for CBAM. They need certainty in which to ground their major investment decisions. Uncertainty might lead either to investment being made in foreign facilities, investment being deferred, or investment being made that locks in carbon-intensive capital stock.

# Sectoral characteristics and CBAM design elements: Key linkages

## Environmental considerations

- Sectors whose trading partners have lower emissions intensity than EU producers will lose competitiveness vis-a-vis those competitors if the CBAM allows foreign producers to challenge any default value for GHG-intensity, and may be at risk of leakage and competitiveness impacts from resource shuffling.
- Sectors with large spreads between clean and dirty plants within the EU, however, are probably at risk of seeing those dirty plants close as a direct result of carbon pricing. In such a case, the risk of competitiveness impacts noted above is not entirely an issue of CBAM design, so the argument against allowing challenges of the defaults is not as strong.
- Sectors with large amounts of indirect emissions attributable to electricity will not be well protected by a CBAM that does not somehow account for the costs of those indirect emissions, for example by covering both scope 1 and scope 2 emissions. Even a CBAM that covers scope 2 emissions may not actually cover indirect carbon costs: costs created by electricity tariffs that don't reflect actual GHG-intensity.
- Sectors with low-carbon pathways that have high cost implications may be in need of instruments to complement a CBAM, such as contracts for difference. Otherwise the protection offered by a CBAM may be insufficient to allow for new investment in such technologies.






## Sectoral characteristics and CBAM design elements: Key linkages

### Trade patterns:

- Sectors with a significant share of exports as a share of total production are in need of export coverage in a CBAM or, if that is deemed legally impossible, some complementary instruments to protect competitiveness in foreign markets.
- Sectors with trade patterns involving specific hubs in countries with poor reputations for governance argue for not allowing country-based exemptions to CBAM coverage, or for instilling strong provisions guarding against trans-shipment.



# Sector profile example

Sector Profile					
<b>Annual Production (cement)<sup>1</sup> 2019</b>			<b>Covered Installations<sup>2</sup></b>		<b>Plants in Value Chain</b>
EU	185 Mt	Global	4100 Mt	280	~550
<b>Complexity of Value Chain<sup>3</sup></b>			Low	<b>Level of Integration</b>	
				High	
<b>Trade Patterns<sup>4</sup></b>					
<b>Relative Weight of Imports and Exports (cement, by value)</b>					
Imports as a Share of Domestic Consumption (%)		2,6%		Exports as a Share of Domestic Production (%)	
				7%	
<b>Main Sources of Imports (% of total imports, by value)</b>					
Turkey (34%)		Colombia (8%)		Ukraine (7%)	
Belarus (7%)		Bosnia-H. (4%)			
					
					
<b>Summary</b>					
<p>Production of cement clinker is highly energy intensive. While cement has not been as exposed to international trade as other basic materials, this situation is changing as imports to the EU significantly increase. The sector is highly integrated, and the value chain is relatively less complex. Currently, the EU exports more cement than it imports, although that pattern is set to reverse. Also, trade volumes are significantly higher in a number of EU Member States: cement imports are concentrated in the eastern, south-eastern and southern borders of the EU as well as large seaports. European producers have reduced their carbon intensity below the global average by firing low-carbon fuels, although process emissions from the calcination of lime – which contribute more than half of emissions from the sector – are more difficult to address, and will necessitate breakthrough technologies such as carbon capture and storage or sequestration.</p>					

## Observations Across All Sectors:

- Across virtually all sectors, **competition has become more aggressive** in recent years, both in the European domestic and in foreign markets.
- Many sectors have seen a sharp rise in foreign **production capacity** and in **imports**, often due to strategic government support abroad.
- This context **heightens the challenges** posed by rising ambition and a **steep rise** in the European carbon price, because options for deep decarbonization, while available, are not yet deployed at scale and costly in most sectors.

## Observations Across a Majority of Sectors:

- Many sectors, including chemicals, non-ferrous metals, and pulp and paper, have **complex downstream value chains**; where downstream semi-finished and finished products contain a high percentage of carbon-intensive basic materials, these will be vulnerable to **import substitution** if they are not included in a CBAM.
- A majority of sectors, including chemicals, fertilizers, pulp, non-ferrous metals and fuels, also derive a significant share of revenue from **exports**. Offering no leakage protection for EU products sold in global markets risks **increasing global emissions** where the average carbon intensity of EU production is lower than that of foreign production, and EU producers lose global market share.
- Sectors with high electricity intensity, such as non-ferrous metals, chemicals, and pulp and paper, are experiencing growing impacts from **carbon cost pass-through** in the price of purchased **electricity**, since price setting in the European electricity market is based on the cost of generation at the margin, and the marginal generator in the merit order is typically carbon-intensive.

## Observations Across some Sectors:

- In several sectors, such as fuels and non-ferrous metals, product pricing is determined at the global or regional level through a **transparent reference price**, for instance in the London Metals Exchange or prices quoted at major regional refining hubs. This further narrows the ability of producers to pass through carbon costs – they are price takers.
- In some sectors, such as chemicals or pulp and paper, introduction of a CBAM will result in carbon cost pass-through to **downstream producers** via input (intermediate) goods, potentially requiring measures to safeguard their competitiveness.
- In some sectors, including steel, aluminium and fuels, largely or fully privatized EU producers compete with foreign producers that are often **state-owned** and benefit from **strategic and financial government support**, contributing to excess production capacities and in some cases provoking trade defence proceedings.

## Observations Across some Sectors:

- Given current foreign production capacities in important trade partners, imports of some products, such as non-ferrous metals, could be readily substituted with low-carbon production from the same countries, creating a **risk of resource shuffling**.
- Some products **closely compete** in important market segments, for instance metals, paper and plastics in the packaging market, and should therefore be ideally bundled in the coverage of a CBAM to avoid arbitrary **material substitution effects**. Refined fuels compete with electricity, so that a CBAM that includes fuel should also include indirect emissions.

## Observations Across Individual Sectors:

- Determining the emissions intensity of **fuels** is subject to **considerable methodological challenges** even for domestic production, and these will become even more pronounced for imports.
- **Electricity imports** into the EU are expected to continue growing rapidly in the near future due to expanding interconnection capacities, demand growth in the EU and cross-border power generation cost differentials.
- In the case of **ferrous** and, to a lesser extent, **non-ferrous metals**, emissions intensities vary significantly between primary (virgin) and secondary (recycled) metal smelting. Since secondary production cannot meet all demand, these alternative methods should each be reflected in a CBAM.

# Conclusions I

- Competition in the **global market** for commodities has become considerably more aggressive in recent years, where climate change policy nonetheless plays an increasing role (EUA climb from 5 to 41 Euros)
- Need of many billions of Euros of **investment** over the coming decades, and the challenge is to ensure that investment actually creates ambitious reductions in European emissions without simply transferring those emissions abroad - ensuring a decarbonized but industrial Europe
- The specific **challenges** identified at the sectoral level are likely to require specific CBAM design that differentiates between them or, in some cases, may necessitate recourse to other instruments to complement what a CBAM can do:
  - Different CBAM designs for different sectors is one potential approach but the challenges of putting in place such a complex quilt of approaches is not what was envisaged when a BCA was first considered
  - Challenges include the fact that many sectors export their products beyond the EU. Should a CBAM be meant to replace free allocation as a complement to the ETS, then those sectors with significant exports will need some form of protection that ensures that the result is not simply loss of global market share and leakage to other jurisdictions
  - Yet we know there are legal challenges involved with either export coverage by a CBAM or implementing a CBAM while retaining free allocation
  - Challenge to decide at what point in the sectoral value chains that coverage should stop

# Conclusions II

- Several sectors are characterized by high indirect carbon emissions, and for these the ideal CBAM would cover both direct emissions and Scope 2
- Pricing of electricity in the EU is such that some facilities in these sectors experience the costs that the ETS imposes on producers of electricity, even beyond those that would be covered by a CBAM that included their Scope 2 emissions. This implies the need for a mechanism like the existing compensation for indirect costs, either as part of a CBAM or as a complementary instrument
- Some sectors have particularly long and complex downstream value chains, and for these the challenge is to find a CBAM that both covers downstream producers and includes some Scope 3 emissions
- Question of whether the CBAM should be implemented initially as a sort of pilot project with limited sectoral participation, and if so which sectors should be in and which out. We have noted that this question needs to be informed by the potential for substitution across the candidate sectors. And we note further that it is critical for all sectors to know how and when they will participate in a CBAM, not just in the short term
- Ultimately, the needs for coverage and administrative challenges makes this instrument one that needs to be approached with great caution as we move from exploration to implementation, and its relationship with existing approaches to carbon leakage and competitiveness. A CBAM may complement or replace free allocation, depending on the design and political decisions, without running the risk of providing double-protection



## Next Steps

- April: Launch of 'Report II: BCA Proposal'
- The EU CBAM Proposal and Impact Assessment – **June 2021**
- July 2021 ERCST Townhall on CBAM
- Second half of 2021: Proposal for a framework of tools
- Negotiations under the Slovenian Presidency

**Thank you**

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