



EU CBAM impact study focused on electricity imports from Great Britain

Executive Summary

06 MARCH 2024

INTRODUCTION

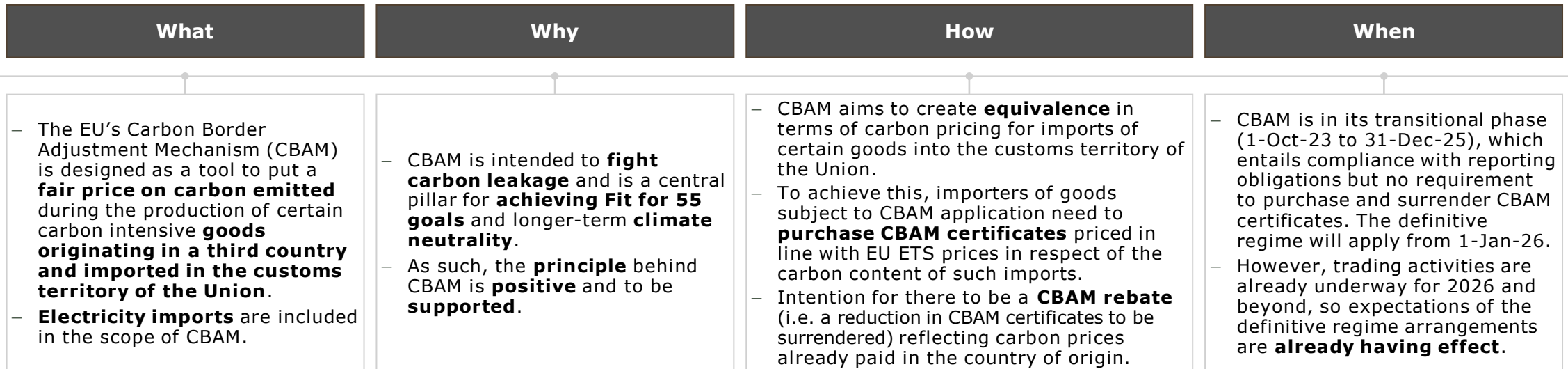
EU CBAM impact study focused on electricity imports from Great Britain

- This report by AFRY Management Consulting summarises our independent assessment of the impact of the EU Carbon Border Adjustment Mechanism (CBAM) on electricity imports into the EU from Great Britain.
- The study was commissioned by the group of interconnector businesses and transmission companies indicated on this slide.



Principles and intentions of EU CBAM, as a tool to mitigate carbon leakage, in pursuit of decarbonisation are positive

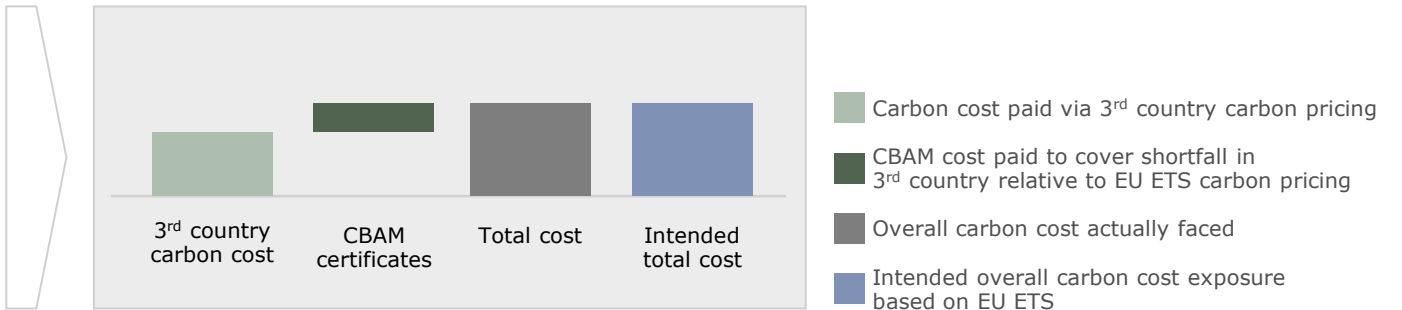
OVERVIEW



POLICY INTENTION

CBAM certificates, priced in line with EU ETS prices, need to be acquired to reflect carbon content of electricity originating in a third country and imported in the customs territory of the Union. The quantity of CBAM certificates to be surrendered is reduced to reflect carbon pricing applied in the country of origin. Therefore, CBAM exposure reflects the difference between country of origin and EU ETS carbon pricing for the carbon content of imports.

Result: imports are, overall, exposed to EU ETS price levels for carbon content.



Note: A 'third country' means a country or territory outside the customs territory of the Union.

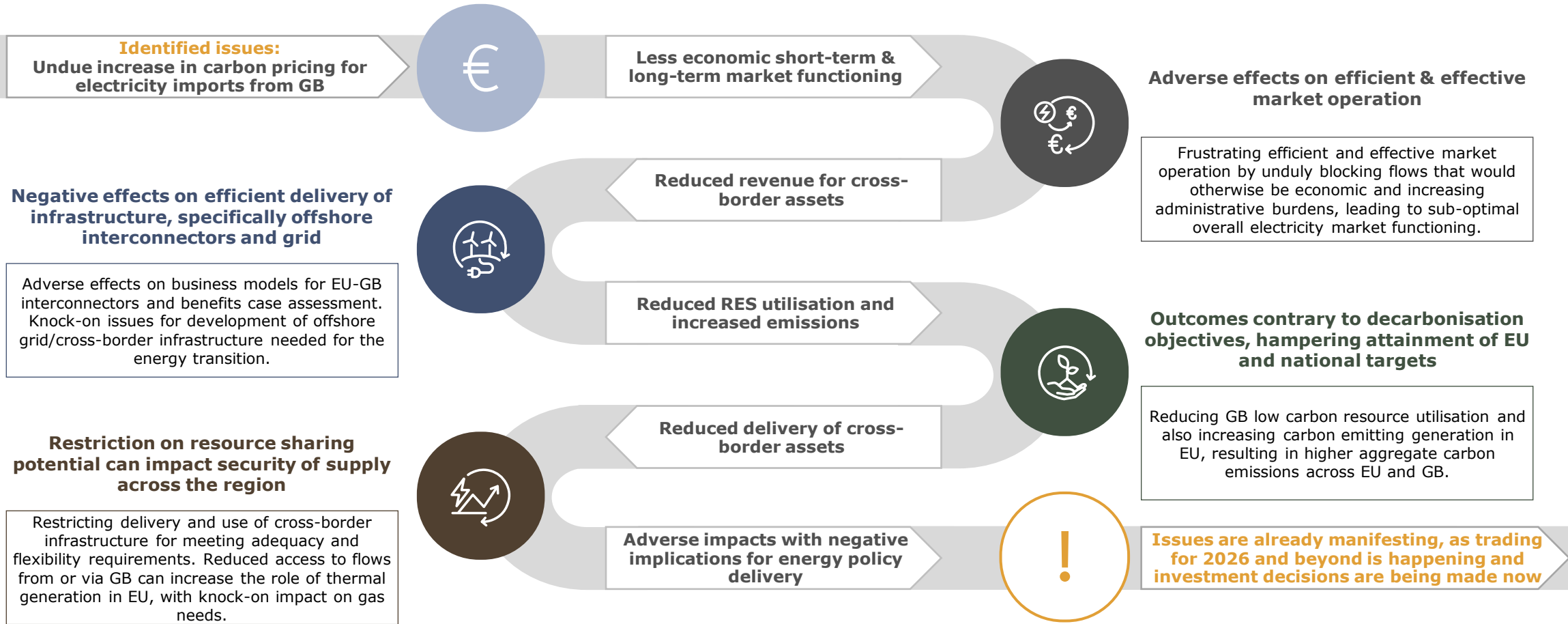
Identified issues for application of CBAM to electricity imports from GB unduly increase carbon price exposure for GB resource and the cost of imports into the EU

	GB CONTEXT	CHALLENGES	PROBLEM STATEMENT	
Carbon intensity	<ul style="list-style-type: none"> GB already has a lower carbon intensity¹ than many Member States, has net zero commitments and ambitions similar to the EU, and is actively pursuing stated decarbonisation goals. 	<ul style="list-style-type: none"> Under CBAM rules, carbon content of imports from GB is likely to be based on a CO₂ emission factor that reflects GB fossil fuel generation carbon intensity. 	<p>#1</p> <p>Use of fossil fuel-based CO₂ emission factor overstates carbon intensity. This unduly increases carbon price exposure for electricity exports from GB.</p>	<p>1</p> <p>UK carbon cost CBAM certificates Total cost Intended total cost</p>
Carbon pricing	<ul style="list-style-type: none"> Carbon pricing is already in place for GB generation creating eligibility for CBAM rebates (i.e. reduction in the number of CBAM certificates to be surrendered). 	<ul style="list-style-type: none"> While carbon emitting generation in GB will have paid the domestic carbon price, the nature of trading (i.e. frequently traded anonymously and multiple times) means it is not practicable for a reporting entity to demonstrate this. 	<p>#2a</p> <p>Barriers to demonstration of carbon price paid in country of origin block ability to claim CBAM rebates (i.e. a reduction in CBAM certificates to be surrendered), which increases carbon price exposure of GB electricity exports.²</p>	<p>2a</p> <p>UK carbon cost CBAM certificates Total cost Intended total cost</p>
Trading	<ul style="list-style-type: none"> In line with common practice throughout Europe, electricity is frequently traded anonymously, for example via power exchanges, and the same MWh can be traded multiple times. 	<ul style="list-style-type: none"> Even if proof of carbon price paid was practicable, zero carbon generation does not pay carbon price and so cannot demonstrate payment domestically. 	<p>#2b</p> <p>Non-carbon emitting generation in GB will not pay a domestic carbon price and so will be unable to claim a reduction in CBAM certificates. This means zero carbon GB generation faces an undue carbon price.</p>	<p>2b</p> <p>UK carbon cost CBAM certificates Total cost Intended total cost</p>

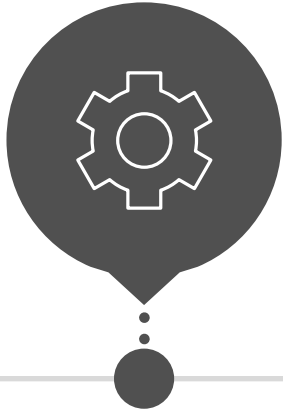
1. In 2023, more than 50% of electricity generation was from zero carbon sources, 32% from gas and 1% from coal. <https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review>

2. To illustrate that payment made under UK ETS cannot be demonstrated and so is duplicated, the UK carbon cost is replicated in the CBAM certificates column.

Goals for building out offshore grid infrastructure in the North Sea are being put at risk, with negative implications for EU and GB energy policy delivery



Offshore grid at risk due to negative implications on market operation and IC/MPI business cases – hurting decarbonisation objectives for both EU & GB



EU IMPORT VOLUMES FROM GB

Reduction of more than **50%** in 2026 increasing to **more than 85%** by 2040

53TWh of green electricity lost by 2040, comparable to the electricity demand foreseen in Denmark or the I-SEM



SEW DISTRIBUTIONAL TRANSFERS IN THE EU

Large distributional transfers from EU consumers to EU producers

Wholesale electricity costs to the EU consumers increase by **€2.3-4.6 billion** annually across the scenarios

Congestion rents in the EU also decrease by as much as **€1.1 billion** annually



BUSINESS CASE FOR IC & MPI

Annual congestion rent reduces by around **50% to 90%** on average across the scenarios

Reduction of between **€75million** and **€170 million** per GW in a single year **undermining** the business cases for future projects



GB RES UTILISATION

RES curtailment in GB increases by **more than 50%** and in certain scenarios almost **doubles** offset by increased thermal generation in the EU

13-34TWh annual increase in RES curtailment by 2040

Equivalent to up to **8GW** offshore wind (1/6 of the 2030 50GW target)



CARBON EMISSIONS

Total carbon emissions in the EU and GB increase by **1.5-2.4 MtCO₂** annually in the initial years following CBAM implementation (2026)





In the EU, emissions can increase by as much as **5.3-12.9MtCO₂** in a single year

Equivalent to the annual carbon emissions of **3.4-8.3 million cars**

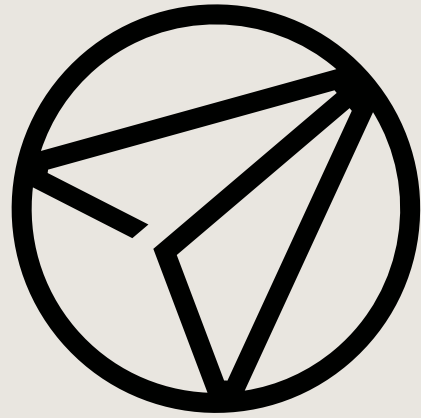
Action is needed now to progress measures to lessen impacts in the short-term and to secure enduring exemption for the longer-term

REVISIONS TO APPLICATION TO BETTER REFLECT GB CONTEXT

EXEMPTION ROUTES

	Demonstrating carbon price paid 	Carbon intensity basis 	Economy wide via ETS linkage 	Electricity specific via market integration 
What	<ul style="list-style-type: none"> Implicit recognition within reporting of UK carbon price having been paid in GB for any electricity imports from GB into the EU. 	<ul style="list-style-type: none"> Base derived carbon intensity for electricity imports on an alternative to a 5-year average fossil-based measure (e.g. system CO₂ factor from Y-1), to better reflect GB decarbonisation. 	<ul style="list-style-type: none"> Agreement fully linking the UK ETS to the EU ETS. 	<ul style="list-style-type: none"> Deliver market coupling arrangements and steps in support of market integration needed to fulfil cumulative conditions for exemption.
Why	<ul style="list-style-type: none"> To overcome reporting requirement impracticalities and support realisation of CBAM rebates, as per the design intent, and lessen risk of undue carbon price exposure. 	<ul style="list-style-type: none"> To avoid unduly over-stating the assumed carbon intensity to be applied to electricity imports from GB and so lessen issue of excess carbon cost exposure and its impacts. 	<ul style="list-style-type: none"> To exempt the UK, as a whole, from the scope of the CBAM. 	<ul style="list-style-type: none"> To exempt GB from the scope of the CBAM with regard to the importation of electricity into the customs territory of the Union.
How	<ul style="list-style-type: none"> Create approach to recognise in reporting UK carbon price paid. Implementing acts, which are under development, are intended to specify reporting requirements for definitive regime. This change could be progressed via this step. 	<ul style="list-style-type: none"> Link between emission factor and fossil-fuel intensity is defined in Regulation, but where objectively justified, there may be scope for implementing acts to advance a change, but this is not clear. 	<ul style="list-style-type: none"> Regulation creates provision for an agreement for full ETS linkage to be concluded between the EU and a third country and an ETS linkage precedent exists¹. 	<ul style="list-style-type: none"> Regulation provides for exemption, reliant on cumulative conditions being fulfilled, although process and full details on requirements are not clear. However, steps being followed by Western Balkans provide guidance².
Need	<ul style="list-style-type: none"> Methodology via implementing acts for implicit recognition of UK carbon price. 	<ul style="list-style-type: none"> Methodology via implementing acts to allow use of recent GB system carbon intensity measure as basis for GB export emissions. 	<ul style="list-style-type: none"> Advance political agreement to create full ETS linkage. 	<ul style="list-style-type: none"> Ensure developing GB-EU implicit coupling model fulfils market integration requirements and political alignment on condition fulfilment.
When	<ul style="list-style-type: none"> Next 6-12 months. 	<ul style="list-style-type: none"> Next 6-12 months. 	<ul style="list-style-type: none"> By 2026. Route via Trade and Cooperation Agreement process. 	<ul style="list-style-type: none"> By 2026. Route via Trade and Cooperation Agreement process.

1. An agreement to link EU and Swiss emissions trading systems has been in operation since 2020. <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2017:322:TOC>
 2. Western Balkans' progress towards CBAM exemption. <https://balkangreenenergynews.com/energy-community-tracker-western-balkans-progress-towards-cbam-exemption/>



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