Economic Consulting Associates

Insights

The impact of CBAM on GB-EU electricity trade: a carbon conundrum?

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The Carbon Border Adjustment Mechanism (CBAM), the world's first carbon border tax created by EU, has received a lot of attention since it was passed by the European parliament. The aim of CBAM is to reduce global carbon emissions by preventing carbon leakage. However, on March 19, Financial Times published an article[1] discussing CBAM's impacts on interconnectors between GB and EU and warning it will become a trade barrier that hinders, not helps, net zero progress on both sides of the channel.

The article warned that "**the CBAM risked reducing EU imports of green electricity from Britain, leading to additional carbon emissions in Europe equivalent to up to 8.3mn a year**", and this is because "a **flat** tax will be imposed on UK electricity based on what critics say are **outdated** calculations of its carbon content". It also reported that "in the short term, the industry wants the CBAM on electricity to be calculated in a way that more accurately reflects its carbon content. Longer term, the industry has called on the UK and EU to open discussions on legally relinking their carbon markets, avoiding the need for CBAM on Britain's exports to the EU."

We think the impact of CBAM on interconnectors between UK and EU and carbon emissions may not be as onerous as the article imagined. The reason is as follows.

Under the CBAM regulation, the default emission factor for electricity is the 5-year average (with a cut-off of two years before the application date) system-wide (with fossil fuel generators included) emission factor in an exporting country. However, it is also stated in the regulation[2] that the **actual emission factor** can be applied to a generator if the following criteria are met:

1. The amount of electricity is covered by a **power purchase agreement** between the authorised CBAM declarant and an electricity producer located in a third country;

2. The installation producing electricity is either directly connected to the Union transmission system or it can be demonstrated that at the time of export there was **no physical network congestion** at any point in the network between the installation and the Union transmission system;

3. The installation producing electricity does not emit more than 550 grammes of CO2 of fossil fuel origin per kilowatt-hour of electricity;

4. The amount of electricity for which the use of actual emissions is claimed has been firmly **nominated to the allocated interconnection capacity** by all responsible transmission system operators in the country of origin, the country of destination and, if relevant, each country of transit, and the nominated capacity and the production of electricity by the installation refer to the same period of time, which shall not be longer than one hour;

5. The fulfilment of the above criteria is certified by an accredited verifier, who shall receive at least monthly interim reports demonstrating how those criteria are fulfilled.

[1] https://on.ft.com/4a0ca3K

[2] Part 5 of Annex IV of the CBAM regulation.

Regarding generators of renewable energy (RE) sources in GB, the key points are 1, 2, and 4.

For the first term, for electricity between GB and EU, there is usually not a single ‘power purchase agreement’ but several agreements among a generator and several traders occurring over several trades. A ‘power purchase agreement’ can be understood as a series of contracts in this case. A **certificate of origin**, showing the amount of electricity generated by a generator in a specific period of time, can be passed in each trade to document the producer of traded electricity. Note that while electricity traded is physically anonymous, i.e. a power off-taker in EU cannot tell if an electron flowing through its system is generated by RE sources, it is feasible to trace electricity back to its producer through a **contractual chain**.

Regarding the second and fourth term, under the current explicit interconnection capacity auction regime, traders are able to use the purchase of interconnection capacity as **proof of capacity nomination**. Proof of capacity nomination, together with the certificate of origin, can evidence that the electricity traded is not curtailed and transported through the system, hence there is no network congestion.

One complication during this process is that traders cannot show the eligibility for CBAM exemption until the electricity is actually generated because the certificate of origin cannot be issued prior to the generation. This will lead to traders paying a CBAM fee upfront. However, such a fee can be ‘clawed back’ once the certificate of origin is registered in the EU system. In this process, traders can still respond to price signals, though a loss may be incurred before the claw-back of CBAM fees.

While a certificate of origin alone is regarded as insufficient evidence of delivery, through the combination with concurrent physical nomination and a contractual chain, the CBAM regulation makes it feasible for a GB producer to demonstrate that it has delivered carbon-free electricity unconstrained into Europe. The economic benefit of this activity should be great enough to cover any transaction cost. Further clarification and assurances from the Commission about the precise interpretation of the rules is desirable but this gives reason to believe the impact may be less critical than feared.