

What Do European CBAMs Leave Unpriced? Value-Chain Coverage Gaps in Global and Chinese Imports

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EU and UK carbon border adjustment mechanisms (CBAMs) leave most of the quantified emissions embodied in imports outside their present boundaries. Our central estimates put current statutory coverage at 31.0% of the EU Global product account and 26.9% of the UK Global product account. For imports from China, the shares fall to 17.6% and 14.1%. We obtain these estimates by applying the EU and UK statutory schedules to observed 2025 imports, with Global covering all origins and China examined as a subset.

CBAM reduces the initial price advantage of Chinese steel and aluminium in our illustrations, while both products remain cheaper than the domestic reference prices. The payment depends on emissions intensity, the destination carbon price, free allocation and eligible carbon costs paid at origin. The calculations use 2030 free-allocation assumptions informed by published EU benchmarks and UK sectoral data.

Extending CBAM to covered materials and production electricity in downstream products would reach approximately half of the quantified production emissions in the example of a passenger car. Steel, cast iron and aluminium, together with production electricity, account for 49.8%; the remaining 50.2% comes from other materials and production activities. The finished car falls outside current statutory schedules, and the border charge on a listed material does not bring CBAM charges the imported vehicle.

Wider product coverage accounts for most of this increase beyond current coverage. Adding electricity within goods already listed closes an additional part of the gap. Motor vehicles and parts, machinery and appliances, electrical, electronic and precision equipment, and solar photovoltaic products make large contributions to the EU downstream emissions account. The UK downstream account is led by motor vehicles and parts.

Effective carbon pricing in an origin emissions trading system (ETS) can carry a carbon cost into downstream exports through domestic materials and electricity. A selective climate-club arrangement could recognise effective carbon costs paid on materials, reducing the need to directly extend CBAM to complex products.

Residual industries outside current carbon pricing require an increase in ETS coverage both inside and outside Europe. Chemicals and polymer products and fossil fuels and petroleum products dominate the Global unpriced residual, while textiles, apparel, leather and footwear lead the China subsets. These industries should be considered in the expansion of origin-country carbon pricing and CBAM. This is because a climate club without origin-ETS expansion won't help price these emissions.

EU and UK authorities should set out a longer-term CBAM expansion roadmap identifying sectors, the sequence of expansion and how carbon costs paid at origin would be recognised. This could encourage trading partners to strengthen and broaden their domestic carbon pricing while the technical requirements for future CBAM expansion are being developed.

We identify routes to improving carbon accounting which improve origin ETS verification and CBAM attribution. These would allow material quantities, suppliers, production locations and emissions to be linked to the product being exported and monitored under CBAM and other import regulations.

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