Prospects for carbon pricing in the UK, EU and globally

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Views are mine & not necessarily those of any organization

Recent research on carbon markets

Carbon pricing

- Perino, Ritz & van Benthem (2022). Overlapping climate policies. NBER Working Paper 25643, July 2022. R&R at *The Economic Journal*
- Ritz (2022). Global carbon price asymmetry. *Journal of Environmental Economics & Management*
- Neuhoff & Ritz (2020). Carbon cost pass-through in energy-intensive industrial sectors. EPRG Working Paper 1935, R&R at *The Energy Journal*
- Newbery, Reiner & Ritz (2019). The political economy of a carbon price floor for power generation. *The Energy Journal*

Carbon border adjustment mechanism

- Mehling & Ritz (2023). Addressing carbon leakage risk to support decarbonisation: Consultation response. Department of Energy Security & Net Zero and HM Treasury March 2023 Consultation, 22 June 2023
- Mehling & Ritz (2023). From theory to practice: Determining emissions in traded goods under a border carbon adjustment. *Oxford Review of Economic Policy*
- Ritz (2022). Carbon pricing and industrial competitiveness: Border adjustment or free allocation? EPRG Working Paper 2211, May 2022
- Evans, Mehling, Ritz & Sammon (2021). Border carbon adjustments and industrial competitiveness in a European Green Deal. *Climate Policy*

⇒ ***How to design carbon pricing that works…***
…. for consumers, industry & environment?

Plan for this talk

① **Policy sequencing towards carbon pricing**

② EU carbon border adjustment mechanism

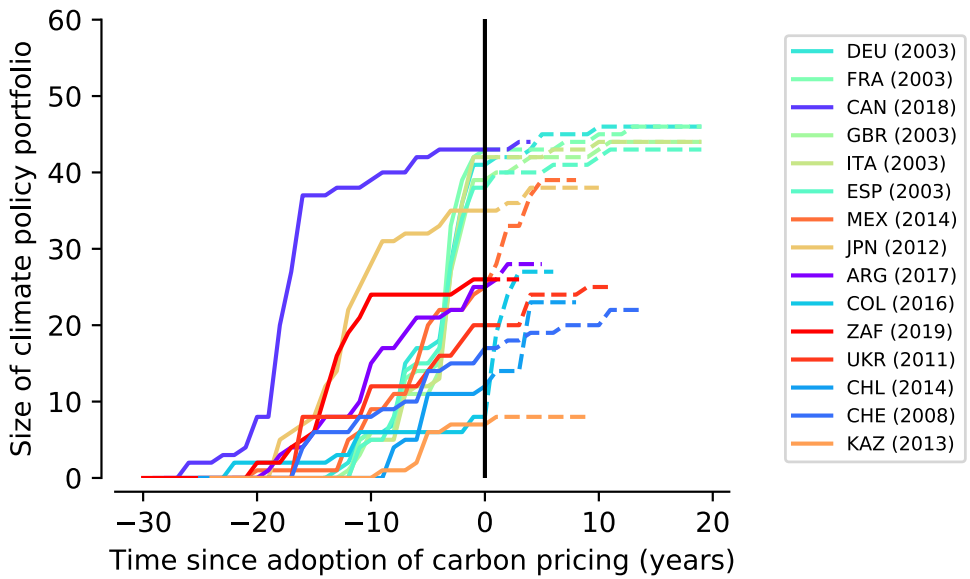
③ The future of the UK ETS

Policy sequencing towards carbon pricing

Proposals to price carbon can face political & social opposition

— More salient than other policies, "revenue recycling" has little traction

⇒ *Using other (non-price) policy instruments can bring down public resistance & unit costs, paving the way for carbon pricing in future*



Climate policy portfolio

Instrument:
- ● Policy Support
- ▼ Grants and subsidies
- ■ Regulatory Instruments
- ✚ Information and Education
- ◆ Procurement and investment
- ✖ Research, Development and Deployment
- ▲ Voluntary Approaches
- ★ Carbon pricing

⇒ ***On average, 5-18 years of other policies before carbon pricing adopted***

Source: Linsenmeier et al. (2022). Policy sequencing towards carbon pricing: Empirical evidence from G20 economies. IMF Working Paper 22/66

Rise of hybrid carbon markets

	Emissions certainty	Price certainty	Political economy	Waterbed effect
Cap-and-trade	✓	✗	✓	✗
Carbon tax	✗	✓	✗	✓

⇒ **Hybrid carbon-market designs**

- EU ETS Market Stability Reserve since 2018 reform
- ETS with price caps & floors (UK ETS, California, RGGI)

⇒ **Complex policy interactions:**

- **Commodities**: Gas price ↑ ⟹ carbon price ↑ ⟹ electricity price ↑↑
- **Complementary policies** affect aggregate emissions as ETS cap no longer fixed ("punctured waterbed effect")
- **Renewables support & energy efficiency** especially powerful in terms of aggregate emissions reductions

Source: Perino, Ritz & van Benthem (2022). Overlapping climate policies

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Is a CBAM innovative?

Practice: Yes!

EU agreement on CBAM introduction in December 2022

"This morning's agreement is a decisive step towards the launch of the world's first carbon border adjustment mechanism and I warmly congratulate the negotiators of the EU institutions on this historic achievement. The CBAM is at the heart of the EU's efforts to reach our ambitious climate goals under the European Green Deal. It sends an important signal to producers all over the world: that the EU is serious about cutting emissions and that we expect the same level of commitment from industrial firms exporting into the EU, wherever they may be located."

Paolo Gentiloni, Commissioner for Economy - 12/12/2022

Theory: No!

2nd-best corrective tariff (Markusen, *J of International Economics* 1975)

Journal of International Economics 5 (1975) 15–29. © North-Holland Publishing Company

INTERNATIONAL EXTERNALITIES AND OPTIMAL TAX STRUCTURES

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Received July 1973, revised version received October 1974

This paper develops a model of two trading countries which are related by a bilateral production externality. Necessary conditions which must characterize an optimal tax structure from the point of view of one country are solved for and interpreted. Second, the model serves as a vehicle to extend the theory of corrective taxation in the case where only one policy instrument is available to deal with several distortions simultaneously. It is pointed out that the ranking of alternate second best tax structures typically depends upon which good is imported and which good is exported.

EU CBAM: Key design elements

Timeline

— Transitional phase from October 2023, financial obligations from January 2026

Scope

— Start: Cement, iron and steel, aluminium, fertilizers, electricity, hydrogen

— 2030: Intention for all EU ETS sectors to be included in CBAM

Free allocation (EITE sectors)

Year	2026	2027	2028	2029	2030	2031	2032	2033	2034
CBAM	2.5%	5%	10%	22.5%	48.5%	61%	73.5%	86%	100%
Free allocation	97.5%	95%	90%	77.5%	51.5%	39%	26.5%	14%	0%

Carbon intensity

— Actual intensity vs default country intensity vs worst-in-class EU intensity

Carbon price

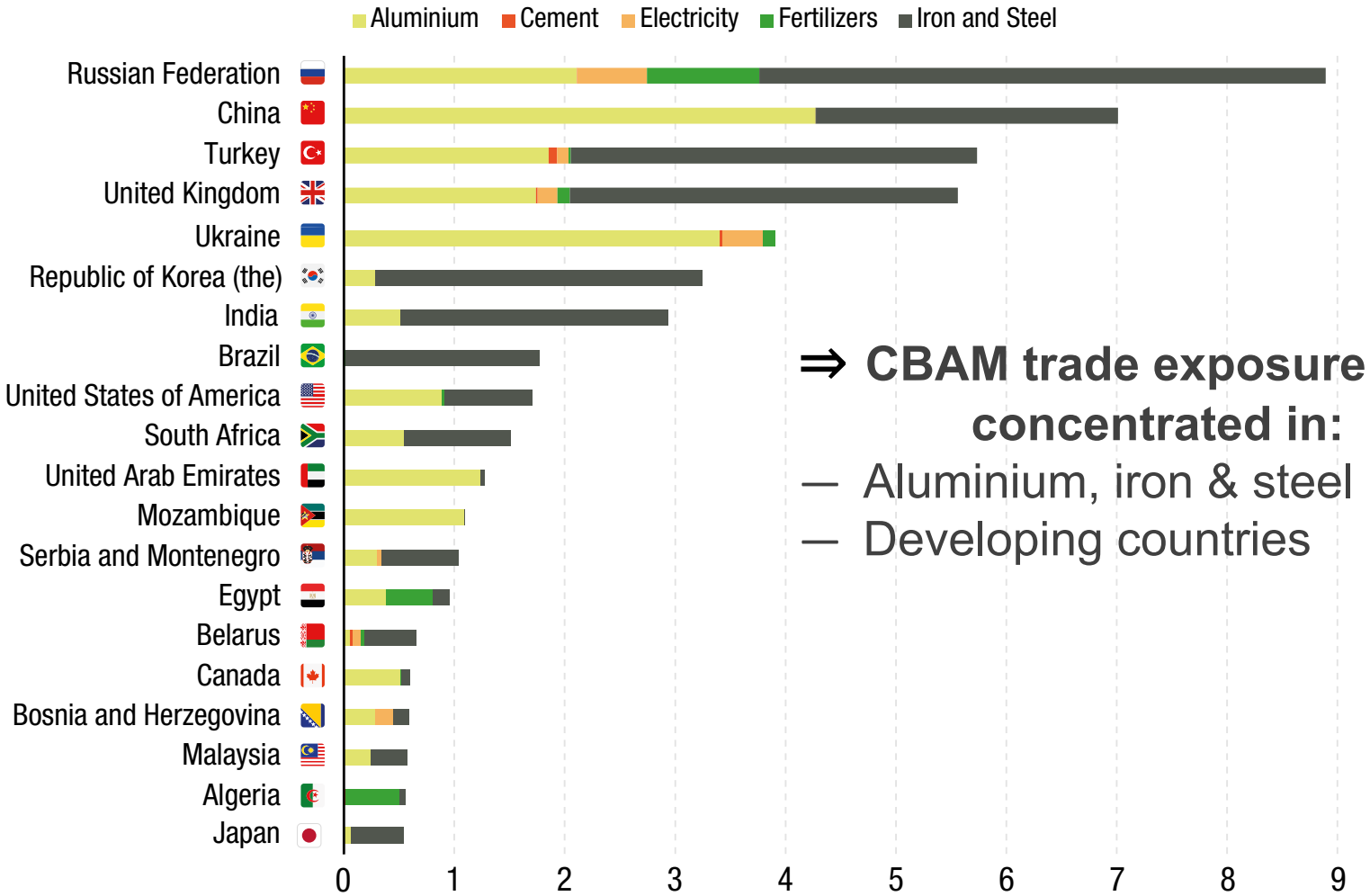
— CBAM certificates at EUA auction price (with "credit" for non-EU carbon pricing)

⇒ ***CBAM looking increasingly ambitious—and blueprint for non-EU…***

Source: Mehling & Ritz (2023). From theory to practice: Determining emissions in traded goods under a border carbon adjustment. *Oxford Review of Economic Policy*

EU CBAM trade exposure in industrial sectors

Value of exports to EU in selected key CBAM sectors (2019 data)



⇒ **CBAM trade exposure concentrated in:**

— Aluminium, iron & steel

— Developing countries

Source: UNCTAD (2021), A European Union Carbon Border Adjustment Mechanism: Implications for developing countries

Economic impacts of moving to a CBAM

Competitiveness impacts from free allocation to CBAM

- ❑ Marginal cost of foreign producers ↑ (new CBAM)
- ❑ Marginal cost of domestic producers ↑ (lost free allocation)

⇒ **Competitiveness** of domestic producers *might* improve
⇒ **Carbon cost pass-through**: Domestic product prices ↑↑

Carbon leakage under free allocation is high if:

1. Non-EU firms have a large market share
2. Product differentiation between EU & non-EU firms is low
3. Non-EU firms are relatively carbon-intensive

⇒ ***CBAM helps especially sectors with high carbon leakage***

Source: Ritz (2022). Carbon pricing and industrial competitiveness: Border adjustment or free allocation? EPRG Working Paper 2211

Two key challenges for CBAM effectiveness

① **Export competitiveness**

- Free allocation supports EU exports
- Import-only CBAM cannot do this…

② **"Resource shuffling"**

- Non-EU players' incentive to redirect low-C production towards EU to save CBAM costs
- Particular (new) form of carbon leakage…

Source: Evans, Mehling, Ritz & Sammon (2021). Border carbon adjustments and industrial competitiveness in a European Green Deal. *Climate Policy*

Source: Mehling & Ritz (2023). From theory to practice: Determining emissions in traded goods under a border carbon adjustment. *Oxford Review of Economic Policy*

International reactions to the EU CBAM are mixed

Department for Energy Security & Net Zero

HM Treasury

Addressing carbon leakage risk to support decarbonisation

A consultation on strategic goals, policy options and implementation considerations

Closing date: 22 June 2023

FROM POLITICOPRO

EU's looming carbon tax nudged Turkey toward Paris climate accord, envoy says

Ankara's COP26 negotiator says the planned levy was a 'very big threat' and was 'one of the reasons' for the decision.

Opinion **Global Economy**

Unilateral action on climate change can have unintended consequences

Uncoordinated moves at a national level pose dangers for other countries, particularly poor ones

RAGHURAM RAJAN + Add to myFT

1. **Introduce your own CBAM**
2. **Introduce your own carbon price**
3. **Block CBAM/climate club idea**

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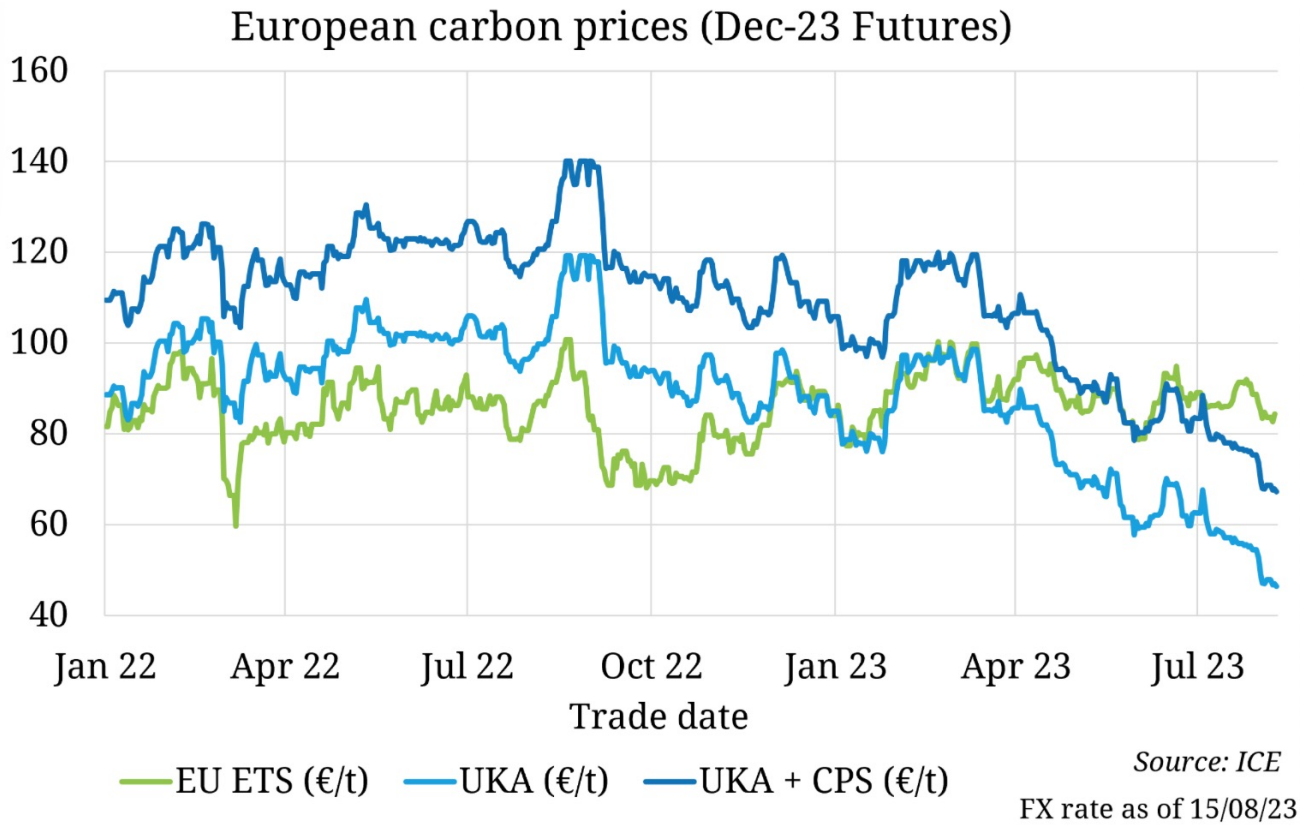
③ **The future of the UK ETS**

UK ETS: Carbon market design

Price floor: £22/tCO_2 ⇒ *case for 2x higher minimum price?*
Price cap: Cost Containment Mechanism ⇒ *unlikely to ever bind?*

⇒ De facto, ETS with fixed emissions cap so 100% waterbed effect
⇒ ***Overlapping policies:*** *no impact on aggregate emissions…*



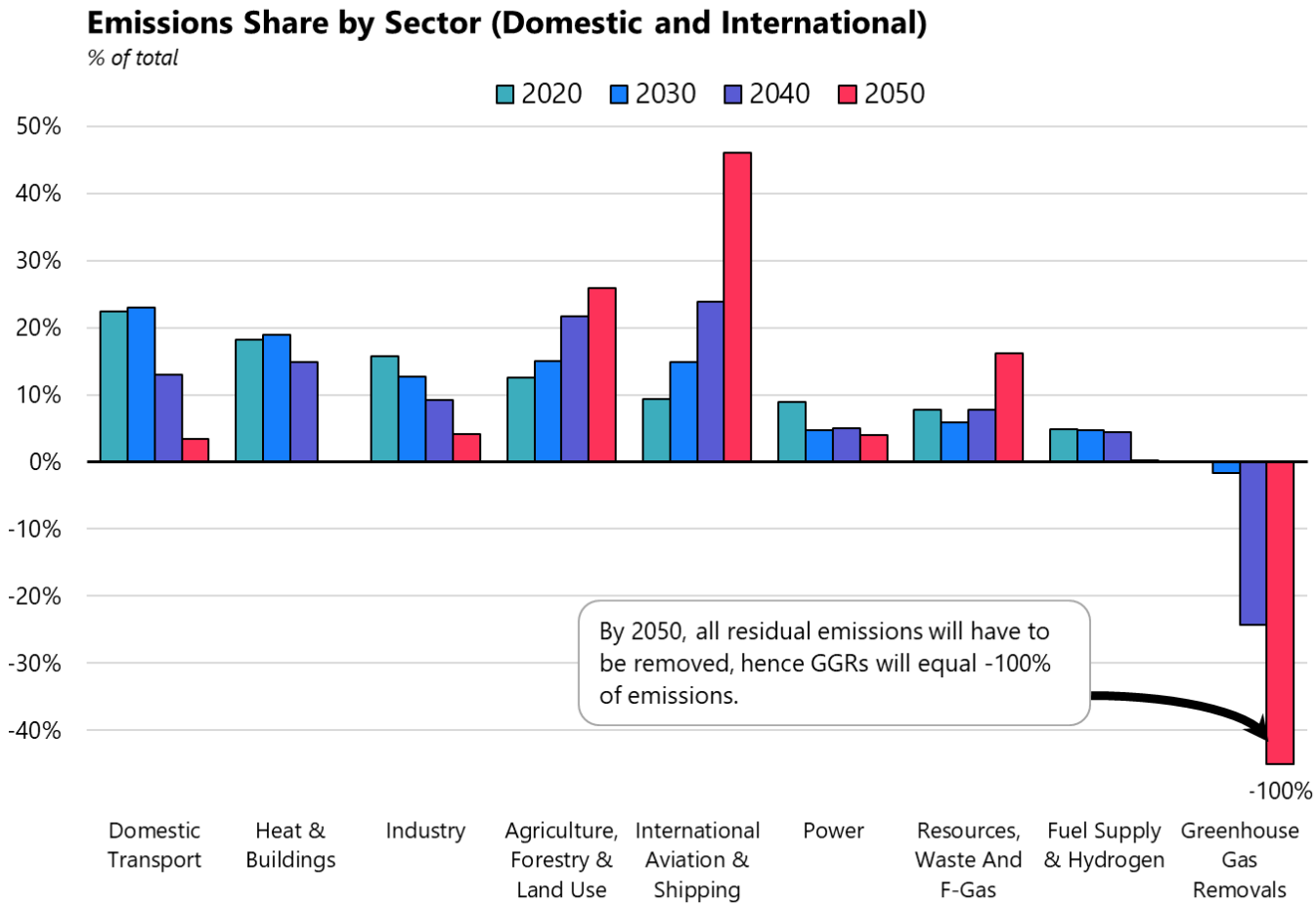
UK industry now at ~50% discount vs EU ETS

⇒ *Financial liability under EU CBAM*

UK ETS: Evolving sectoral composition

Remaining carbon increasingly outside of power & industrial sectors

⇒ ***By 2030, current UK ETS covers 18% of territorial emissions...***



Case for merging compliance & voluntary carbon markets?

Source: Skidmore (2023). Mission Zero: Independent Review of Net Zero

UK ETS: Carbon leakage & CBAM

Combatting carbon leakage

① **Free allocation**
Annual value ~£2.5bn
② **CBAM**: EU piggyback…
③ **Product standards**

CBAM: Competitive impacts

	UK imports from…	UK exports to…
EU	No change	Weaker
RoW	Stronger(?)	Weaker

⇒ ***CBAM requires believing:***

fiscal benefits + "climate club" dynamic + competitiveness impacts > trade tensions + reshuffling incentives

UK to press ahead with carbon border tax in 2026

Programme would mirror scheme launched by EU

A steel market in Shenyang, China © AFP/Getty Images

Jim Pickard, **Sylvia Pfeifer**, **David Sheppard** and **Attracta Mooney** in London
NOVEMBER 13 2023

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Jeremy Hunt, the UK chancellor, is planning to introduce levies on imported carbon-intensive goods from countries with weaker climate regulations from 2026, mirroring measures being introduced by the EU.