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# Industrial Decarbonization Strategies

Theory and Practice of Border Carbon  
Adjustments: Learning from the EU  
CBAM

June 28, 2022



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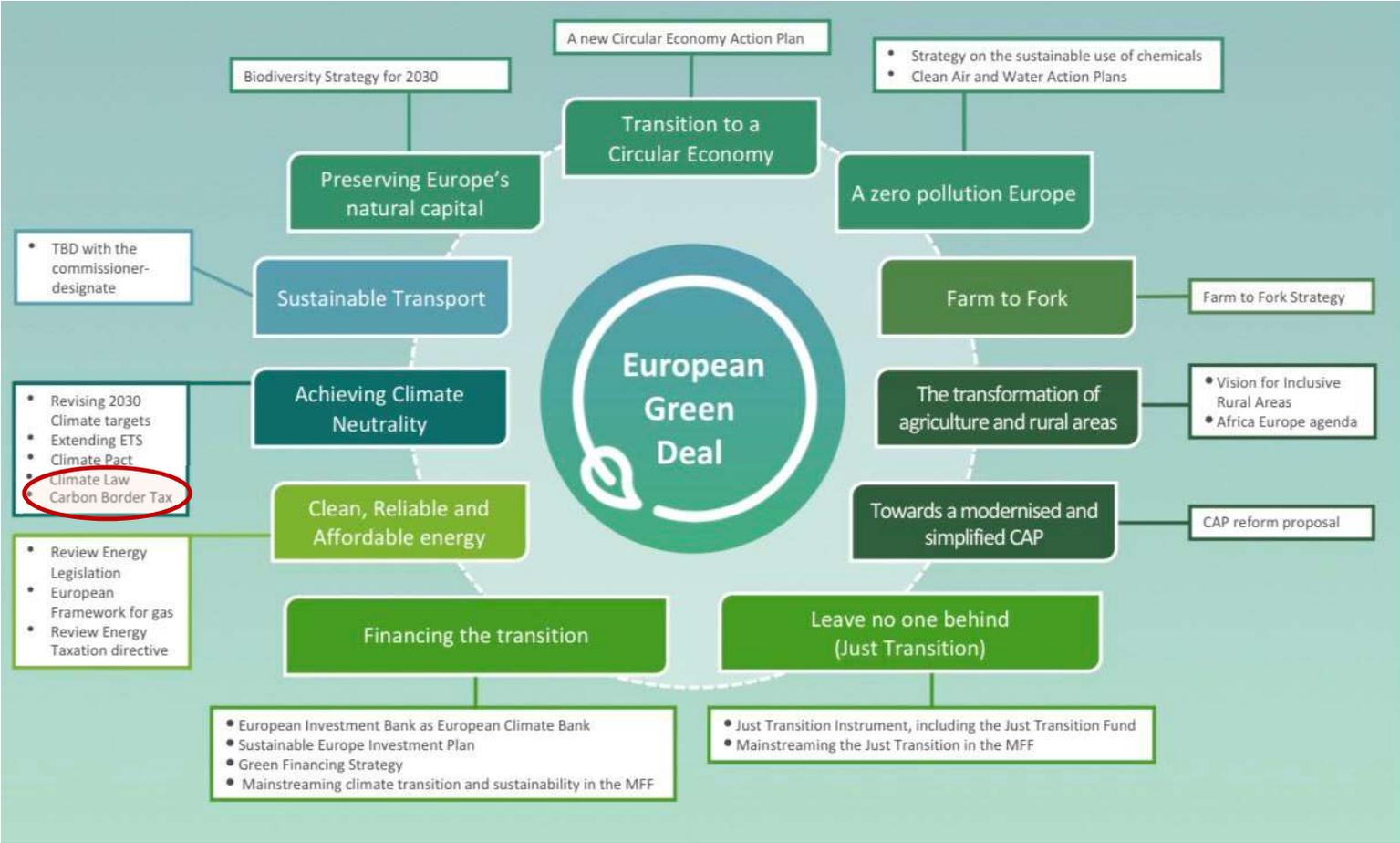
# Europe's Border Carbon Adjustment: State of Play (1)

- 2007-2019: several BCA proposals are circulated in Brussels for discussion, but none ever gain traction
- July 2019: Ursula von der Leyen includes a 'Carbon Border Tax' in her political guidelines and subsequent mission letters to designated Commissioners, file led by Gentiloni
- December 2019: 'European Green Deal Communication' sets out timeline for a formal legislative proposal ('2021'); new name: 'Carbon Border Adjustment Mechanism' (CBAM)
- European Council and European Parliament endorse work program



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# European Green Deal



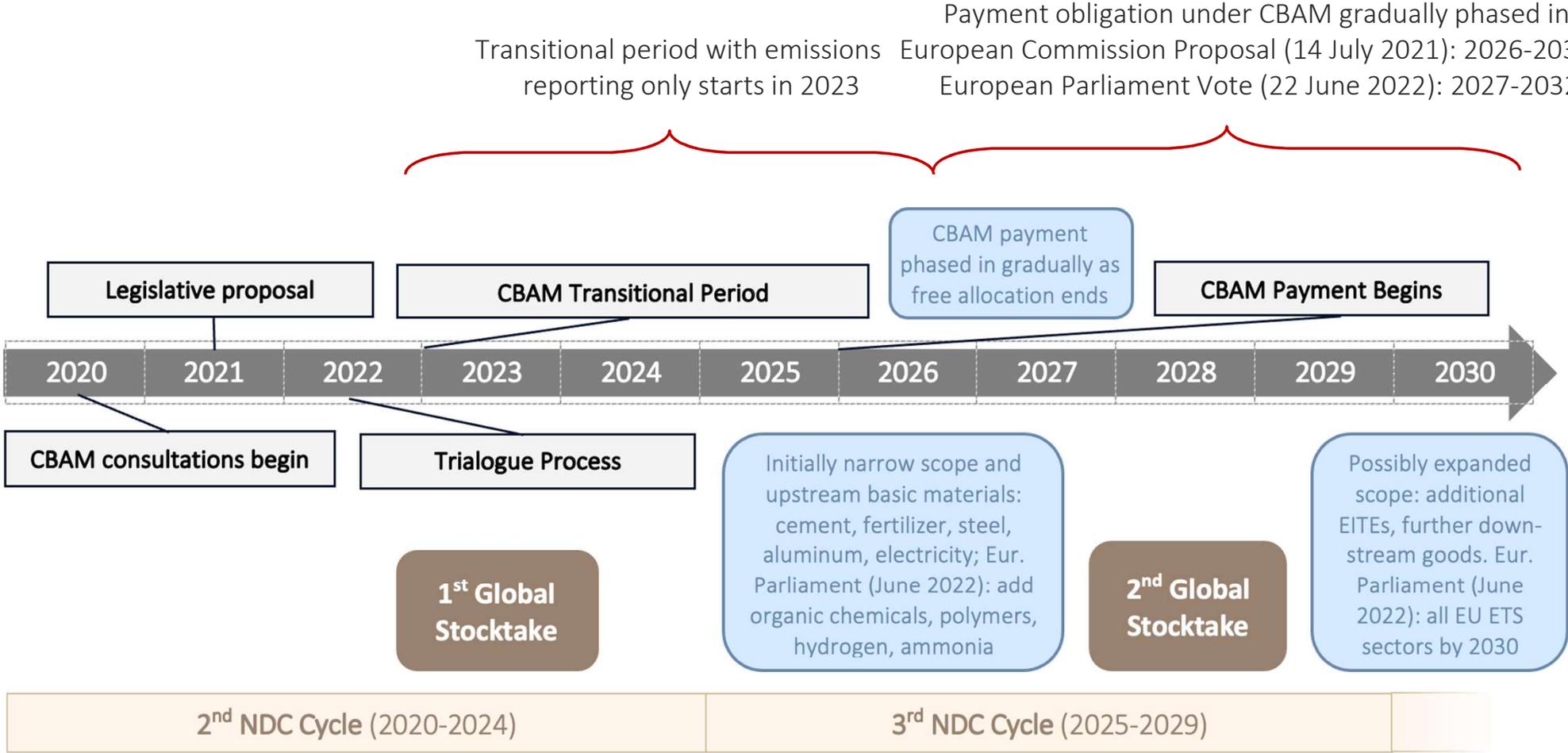
(Source: [Timmermans](#), 2019)

# Europe's Border Carbon Adjustment: State of Play (2)

- March 2020: Inception Impact Assessment Roadmap and public consultation on the elements of assessment; 219 submissions
- May 2020: European Commission mentions CBAM revenue ('€5 to €14 billion per year') as potential source for EU recovery plan
- October 2020: Public consultation ends; 609 reactions
- March 2021: European Parliament plenary resolution ("Own Initiative")
- July 2021: Legislative Proposal released as part of the "Fit for 55" package
- December 2021: Draft ENVI Committee Report
- March 2022: Council "General Approach"
- June 2022: European Parliament & Council plenary votes

# Proposed CBAM: Timeline

Paris Agreement European Union



(Source: Mehling, 2021)

# Legislative Process: Design Elements

Design Element		European Commission	European Parliament
<b>Timeline</b>		2023-2025: reporting only; from 2026: full implementation	2023-2026: reporting only; from 2027: full implementation
<b>Free Allocation</b>		Decreases by 10% annually 2026-2035	93% in 2027, 84% in 2028, 69% in 2029, 50% in 2030 and 25% in 2031
<b>Adjustment Level</b>		Obligation to buy certificates tracking price of EU ETS allowances (avg. weekly closing price); not fungible	Unchanged
<b>Scope</b>	Countries	All, except countries with linked ETS and territories	Unchanged
	Sectors	Cement, Fertilizer, Steel, Aluminum, Electricity	Commission proposal <i>plus</i> : organic chemicals, plastics, hydrogen and ammonia
	Emissions	Only direct emissions & emissions in input goods	Commission proposal <i>plus</i> : indirect emissions
<b>Trade Flows</b>		Imports only	Most efficient EU installations to receive export adjustment mechanism (free allocation for emissions linked to exports)
<b>Determination of Embedded Emissions</b>		Default: declared emissions data Fallback: average carbon intensity in the country of origin; fallback-fallback: 10% worst-performing EU producers	Default: declared emissions data Fallback: 10% worst-performing producers in the exporting country; fallback-fallback: 5% worst-performing EU producers;
<b>Crediting of Foreign Policies</b>		Explicit carbon pricing only	Unchanged
<b>Revenue Use</b>		EU budget ('own resource')	EU budget, but financial support for decarbonization of least developed countries
<b>Institutional Aspects</b>		Most functions with Member State Competent Authorities and Customs Authorities; coordination and rulemaking at EU level	One centralized EU CBAM authority

Based on European Commission Regulation Proposal of 14 July 2021, available [here](#); European Parliament plenary vote of 22 June 2022, available [here](#)

# Theory vs. Practice: Some Implementation Challenges

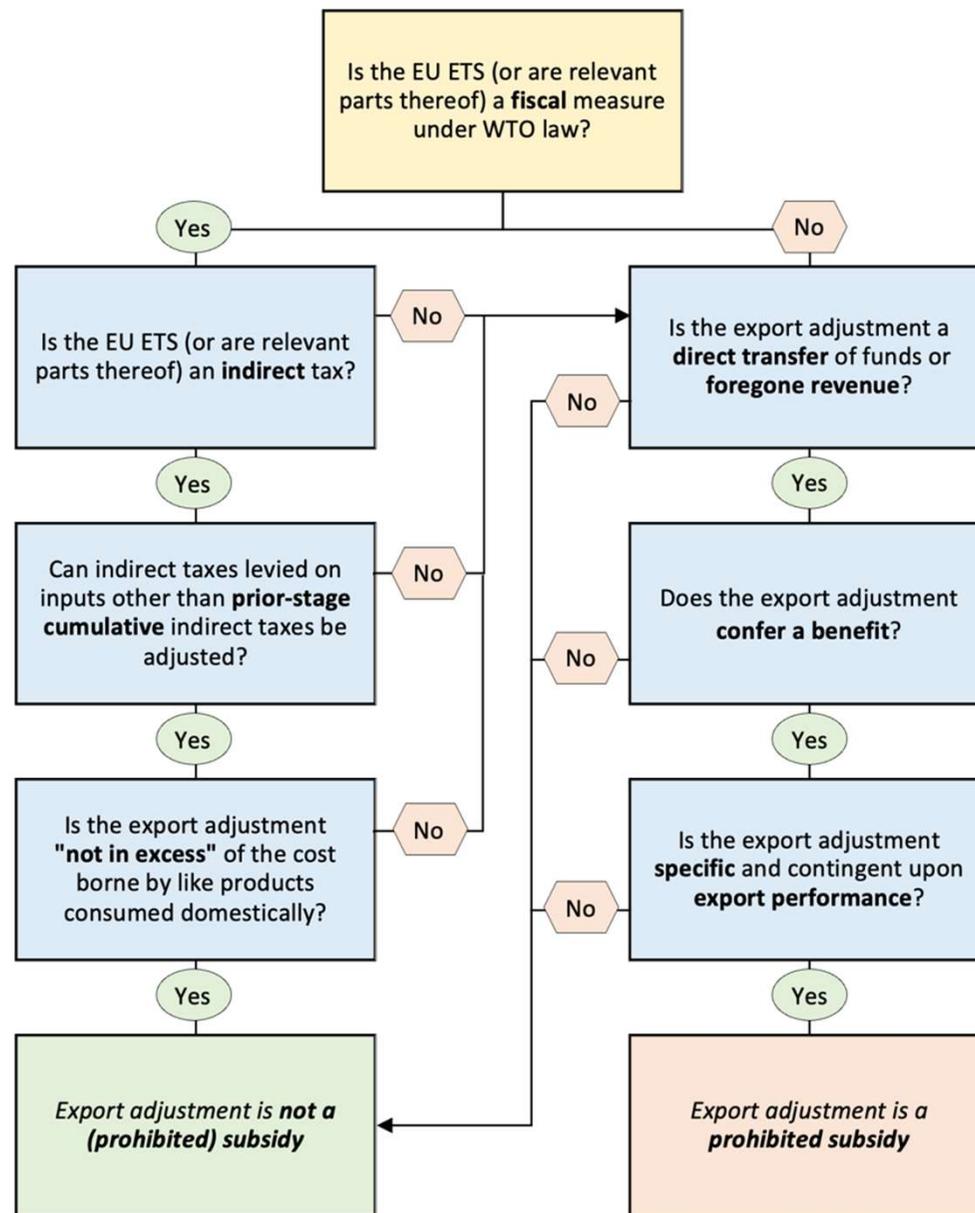
- Adjustment for exported goods
  - Concern about export-related leakage channel, but complex assessment under WTO law
- Consideration of carbon costs borne by imported goods
  - Consideration especially of non-price climate policies contested, but potentially necessary
- Inclusion of indirect emissions from electricity
  - Indirect carbon cost for domestic producers not directly linked to indirect emissions
- Managing circumvention and avoidance strategies
  - resource shuffling, transshipment, symbolic policies & relabeling
  - Fundamental questions about legitimate purpose of BCAs

# Adjusting for Exported Goods (1)

- Art. 3.1(a) of the WTO Agreement on Subsidies and Countervailing Measures (ASCM) prohibits **export subsidies** – is a rebate or credit for exports a **subsidy**?
- Footnote 1 of the ASCM allows for “exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption”
  - Can the EU ETS be interpreted as a **duty** or a **tax**?
  - **Runs counter** to ECJ interpretation in Case C-366/10 (*ATA v. Secretary of State for Energy and Climate Change, 2011*); also raises issues for EU legislative process under Art. 192(2) TFEU
  - If it can be interpreted as a tax, is it sufficiently product- and not producer-related to qualify as an **indirect** rather than a **direct** tax, which would not fall under Footnote 1 of the ASCM?
  - Problem of “**taxes occultes**” applied to inputs not physically incorporated in the final good
  - How do you ensure that the export adjustment does not **exceed** the tax borne by domestically consumed goods in the case of a variable carbon price?
- Otherwise: can classification as a subsidy be prevented by arguing it does not constitute a **financial contribution** or **confer a benefit**?

# Adjusting for Exported Goods (2)

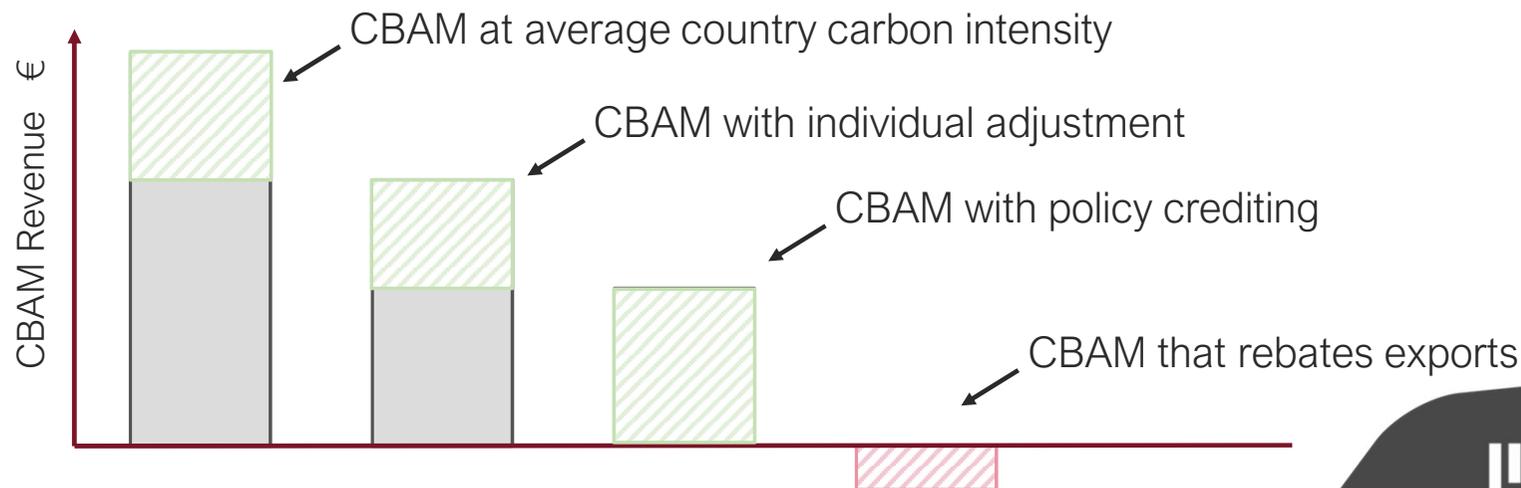
## Legal Decision Tree



(Source: [Mehling et al., 2022](#))

# Crediting Foreign Carbon Cost

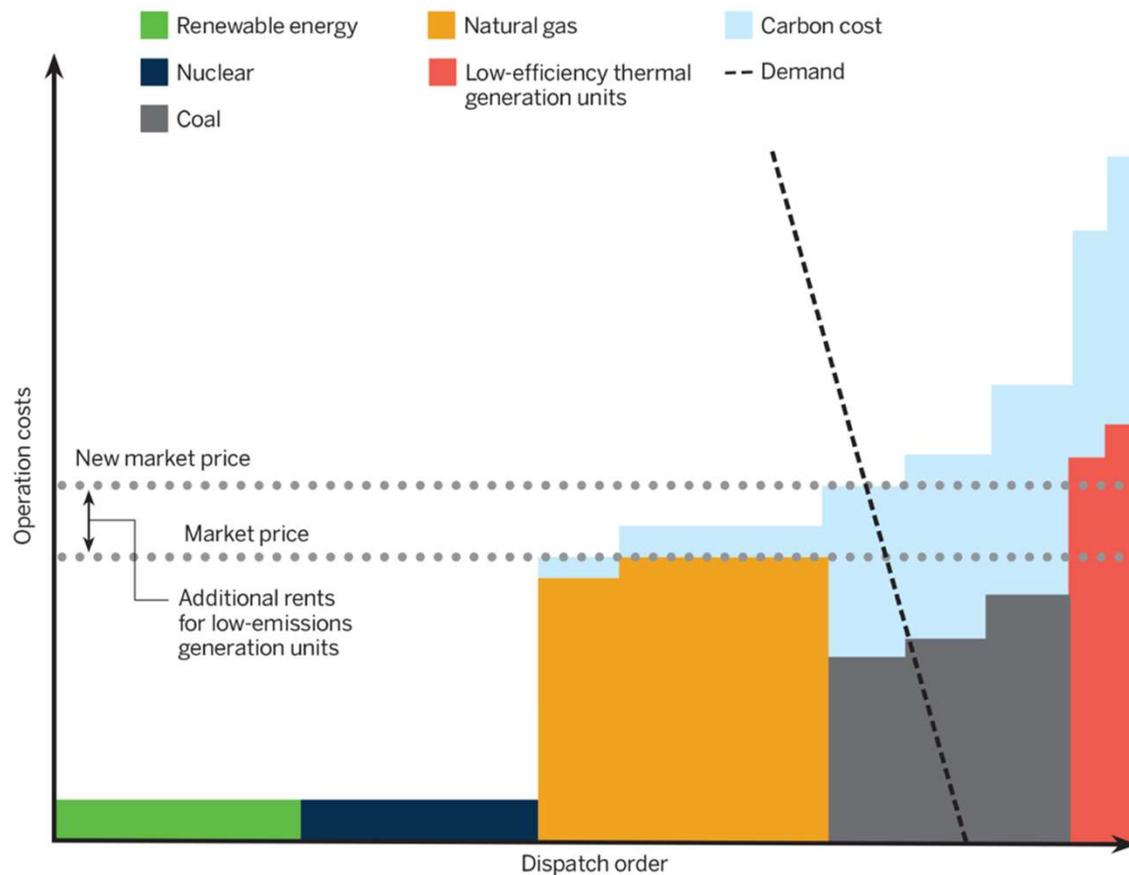
- Avoidance of double burden required for fairness and WTO law compatibility
- Crediting of non-price policies: possible, but contested
  - Article 9 of CBAM proposal limits crediting to demonstrated explicit carbon price paid
  - Many trade partners around the world unlikely to adopt explicit carbon price
  - Different methodologies exist, but normative questions persist, plus relabeling risk



(Source: Mehling, 2021, based on [DSGV 2020](#))

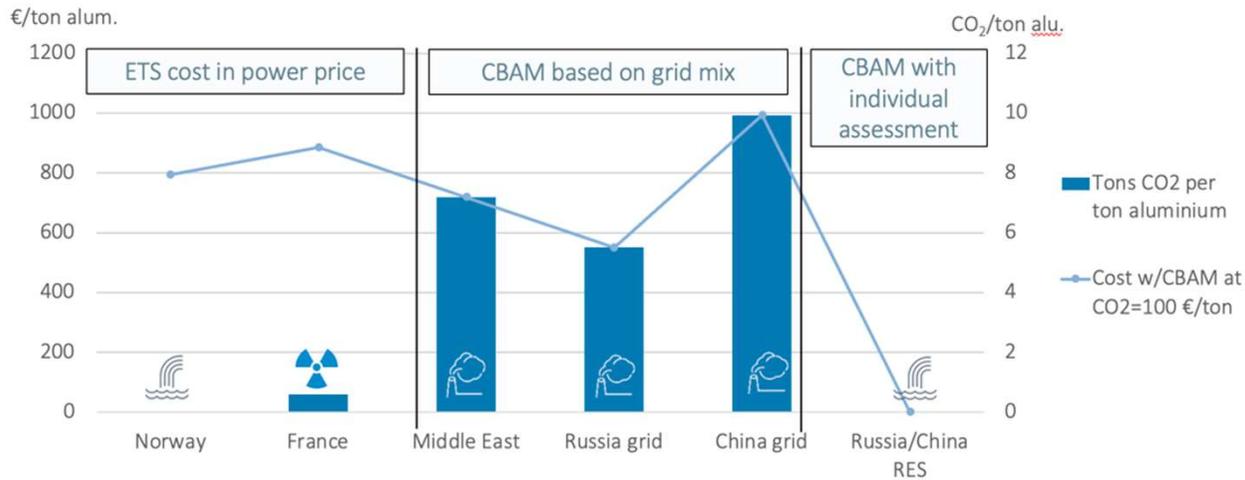
# Inclusion of Indirect Emissions (1)

- In a wholesale electricity market design with marginal pricing and “pay-as-clear” model, electricity users face an **indirect cost** attributable to marginal cost pricing in the presence of high-carbon electricity generation at the margin ...
- ... that does not reflect the **actual carbon intensity** of consumed power
- Since pass-through rates differ regionally across Europe, these indirect costs would be **difficult to quantify** for adjustment under CBAM
- Electricity-intensive sectors have therefore shifted from **support** to **opposition** of CBAM

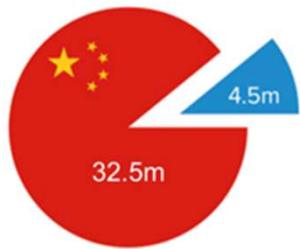


(Source: [Dupuy et al., 2020](#))

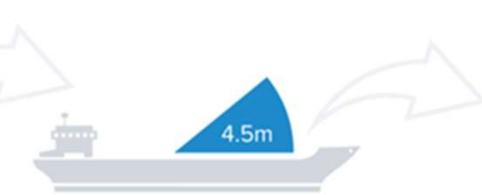
# Inclusion of Indirect Emissions (2)



China's aluminum mix (tonnes):  
Coal vs Hydro



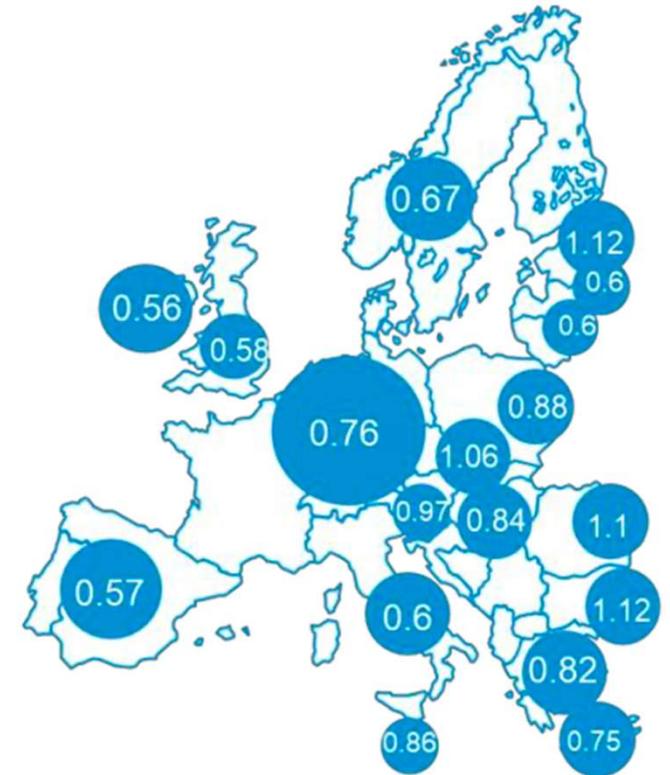
Total Production 37m tonnes Aluminium  
20tCO<sub>2</sub>/t Aluminium  
>60% of the global total



4,5m tonnes of hydro based aluminium in products available for redirecting to Europe, avoiding the CBAM fee and maintaining 32 m tonnes coal-based aluminium products elsewhere.



Total Production 2.2m tonnes Aluminium  
6.7tCO<sub>2</sub>/t Aluminium



# Circumvention and Avoidance (1)

- Circumvention opportunities under BCAs include (but not limited to):
  - Resource shuffling: low-carbon production substitutes for high-carbon exports
  - Transshipment: covered goods enter indirectly via exempted countries through onward export, or displace goods produced in exempted country that are then sold onward
  - Policy circumvention: trade partners apply climate policies, but these are symbolic (e.g. not enforced, relabeled, only applied to exports, compensated through other measures, etc.)
  - Producer reorganization: high-carbon production capacities spun off to separate legal entity
  - Product modification: goods are processed just enough to fall outside coverage threshold
  - Split shipments: goods shipments are split to fall under de minimis thresholds
- Aggregation can help address some loopholes, but reduces benefits and exacerbates political and legal risks
- Addressing loopholes will take time (cf. EU ETS)

# Circumvention and Avoidance (2)

- Resource shuffling in California: blanket prohibition requiring annual written attestations under penalty of perjury abandoned due to pressure by stakeholders and FERC, replaced with a **whitelist** of 13 so-called “safe harbor” practices
- Research suggests that these safe harbors “are so broad as to completely swallow the prohibition on resource shuffling”, enabling “facility swapping”, “cherry picking” and “laundering/ relabeling” practices, reverse benefits from inclusion of electricity imports (Borenstein et al. 2014; Cullenward and Weiskopf, 2013; Bushnell et al, 2014; Caron et al., 2015)
- Article 27 of proposed CBAM regulation narrows **definition of circumvention to product modification**, leaving uncertainty about conditions and consequences
- Council and European Parliament have proposed **expanding the definition of circumvention to resource shuffling, transshipment, policy circumvention, and split shipments** – but the consequences remain unclear, primarily a mandate for European Commission to react

## Some Takeaways from the CBAM Process so Far

- Political discussion of border carbon adjustments can evolve quickly
  - Perceived balance of **risks vs. benefits** sensitive to evolving priorities and commitments
  - Momentum currently owed to larger debate about **industrial policy** and **strategic interests**
- Straightforward concept in theory reveals deep **implementation challenges**
  - Unpredictable domestic stakeholder politics, diplomatic tensions, legal risks
  - Intractable implementation complexities: indirect emissions, circumvention, policy crediting
- Solutions unlikely to be **easy** or **quick**, addressing them may take **time we lack**
  - Cf.: more than a decade of finetuning the underlying EU ETS, still an unfinished project
- Deeper questions about use of **unilateral trade restrictions** and **industrial policy**
  - Legitimate CBAM objectives vs. slippery slope towards protectionism
  - Short-term **political gains** vs. long-term political and economic cost



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# Thank You

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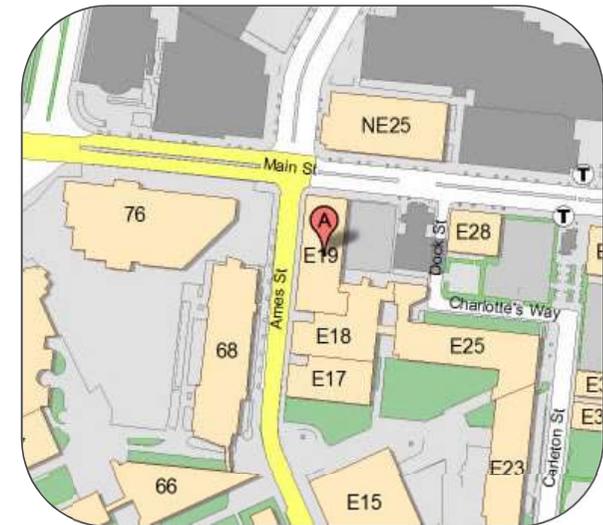
### Center for Energy and Environmental Policy Research

Massachusetts Institute of Technology (MIT)  
MIT Building E19-411  
400 Main Street, 4th Floor  
Cambridge, MA 02142-1017

 <http://ceepr.mit.edu>

 [ceepr@mit.edu](mailto:ceepr@mit.edu)

 617-253-3551



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