Addressing Climate Change in Trade Negotiations (and vice-versa)

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VU VRIJE UNIVERSITEIT AMSTERDAM

RESOURCES FOR THE FUTURE

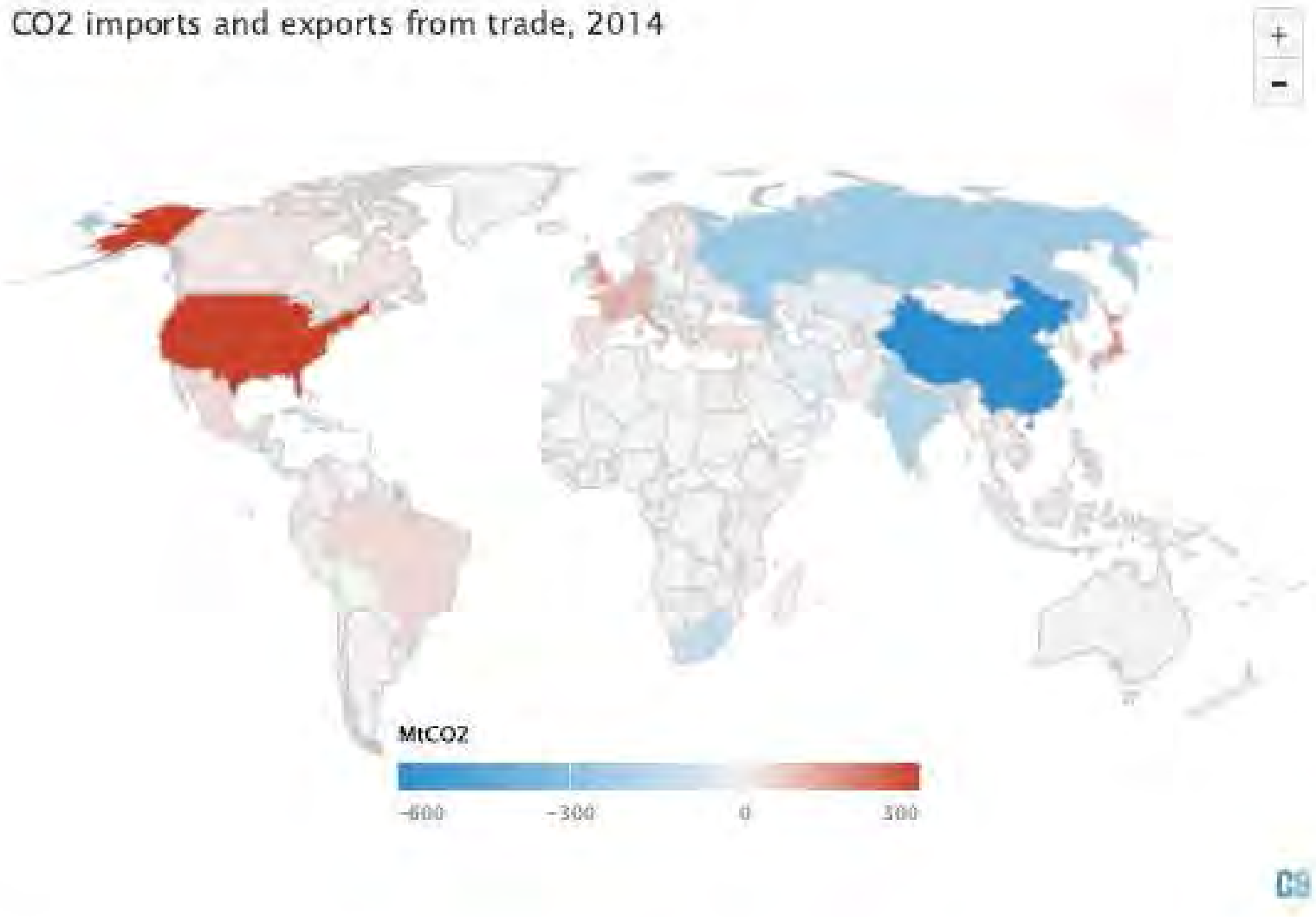
uOttawa

CEIP Summer School 2021: Climate Policy and International Trade

- May-June 2021, hosted by U. of Ottawa (virtual)
- For graduate students and professional development
- Featuring leading experts in environmental, climate, and international economics as guest speakers
- Topics: carbon pricing, trade, competitiveness and leakage, international environmental agreements, technological change and trade in green goods
- Capstone international workshop on the theme
- info@c150c-ceip.ca

Growing mutual recognition

National Policies to Mitigate, and Adapt to, Climate Change, and their Trade Implications



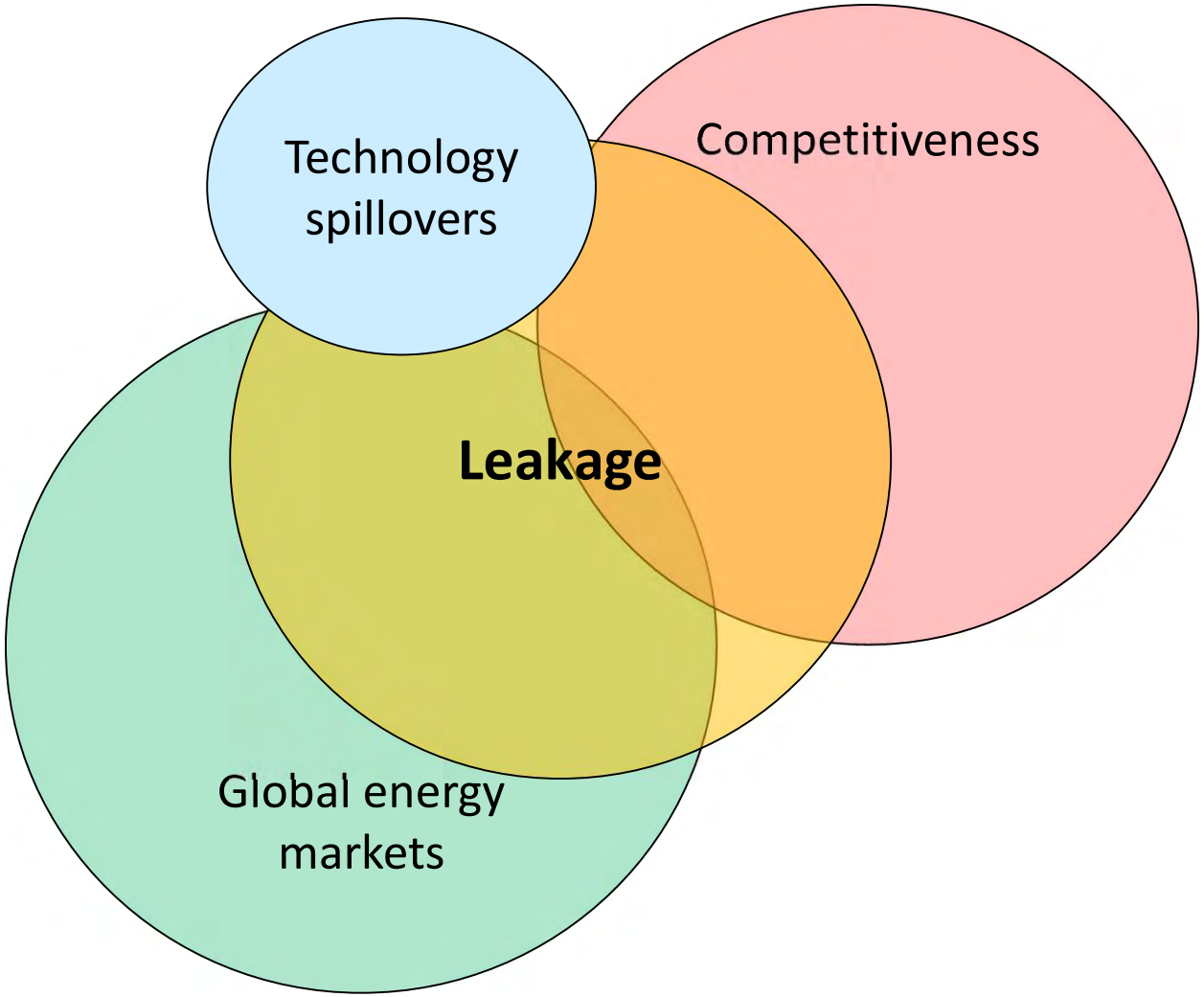
Global CO2 imports and exports from trade in 2014. Based on data from the Global Carbon Project (http://www.globalcarbonproject.org/carbonbudget/17/data.htm). Note that 2014 is the latest year where CO2 import/export data is available. Also note that the scale goes from -600 to 300MtCO2. Chart by Carbon Brief using Highcharts (https://www.highcharts.com/).

https://www.carbonbrief.org/mapped-worlds-largest-co2-importers-exporters

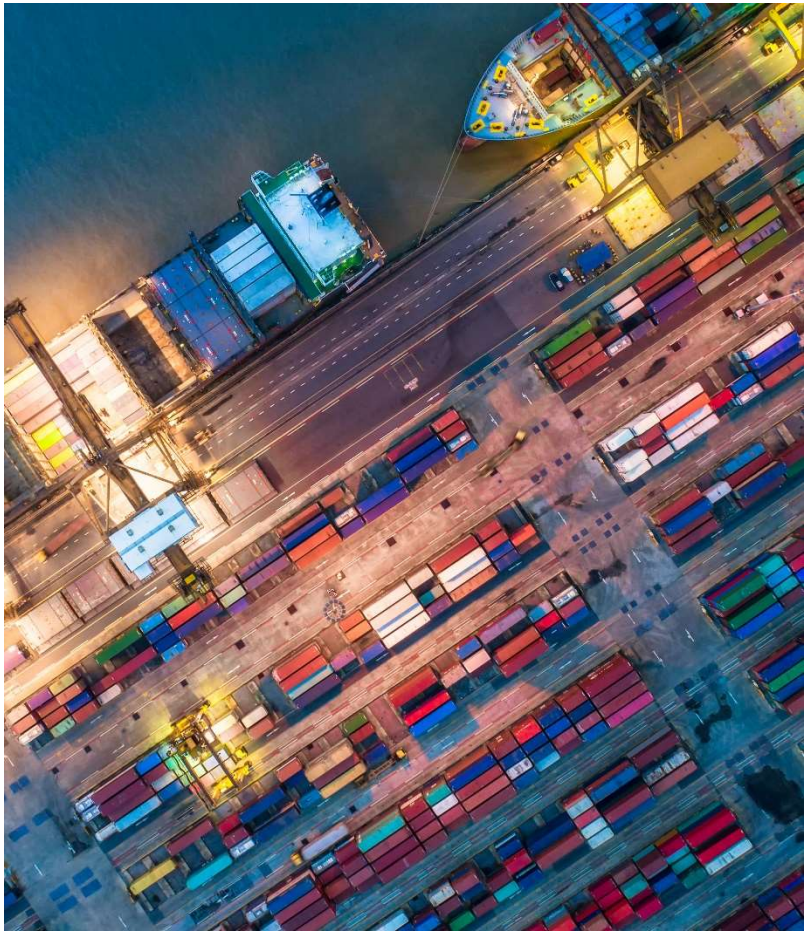
Carbon leakage: not just trade in embodied carbon

- Increase in foreign emissions *as a consequence of domestic regulations*
- Important because GHGs are a *global* pollutant, but policies determined *nationally*

Main carbon leakage channels

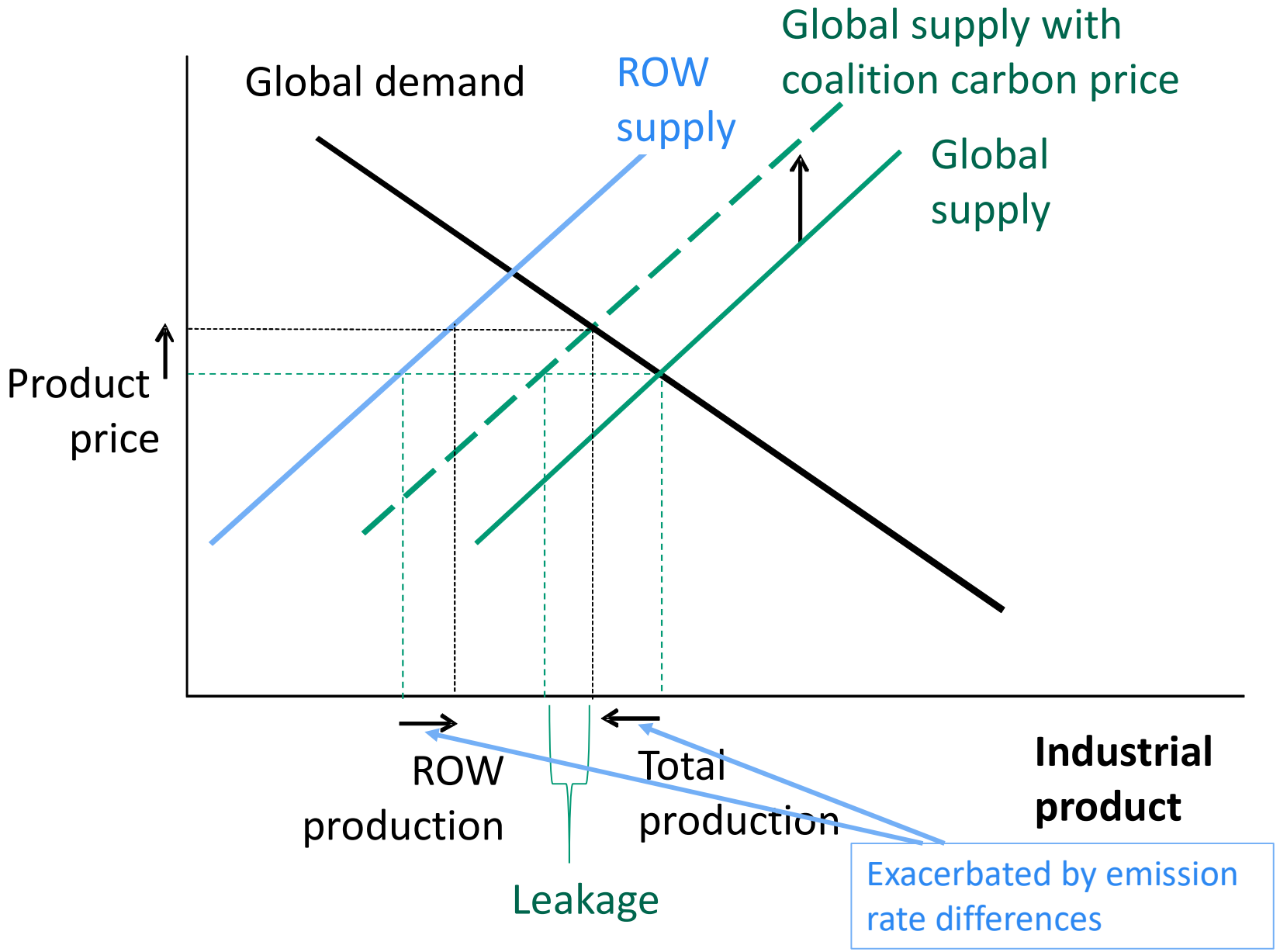


Competitiveness channel

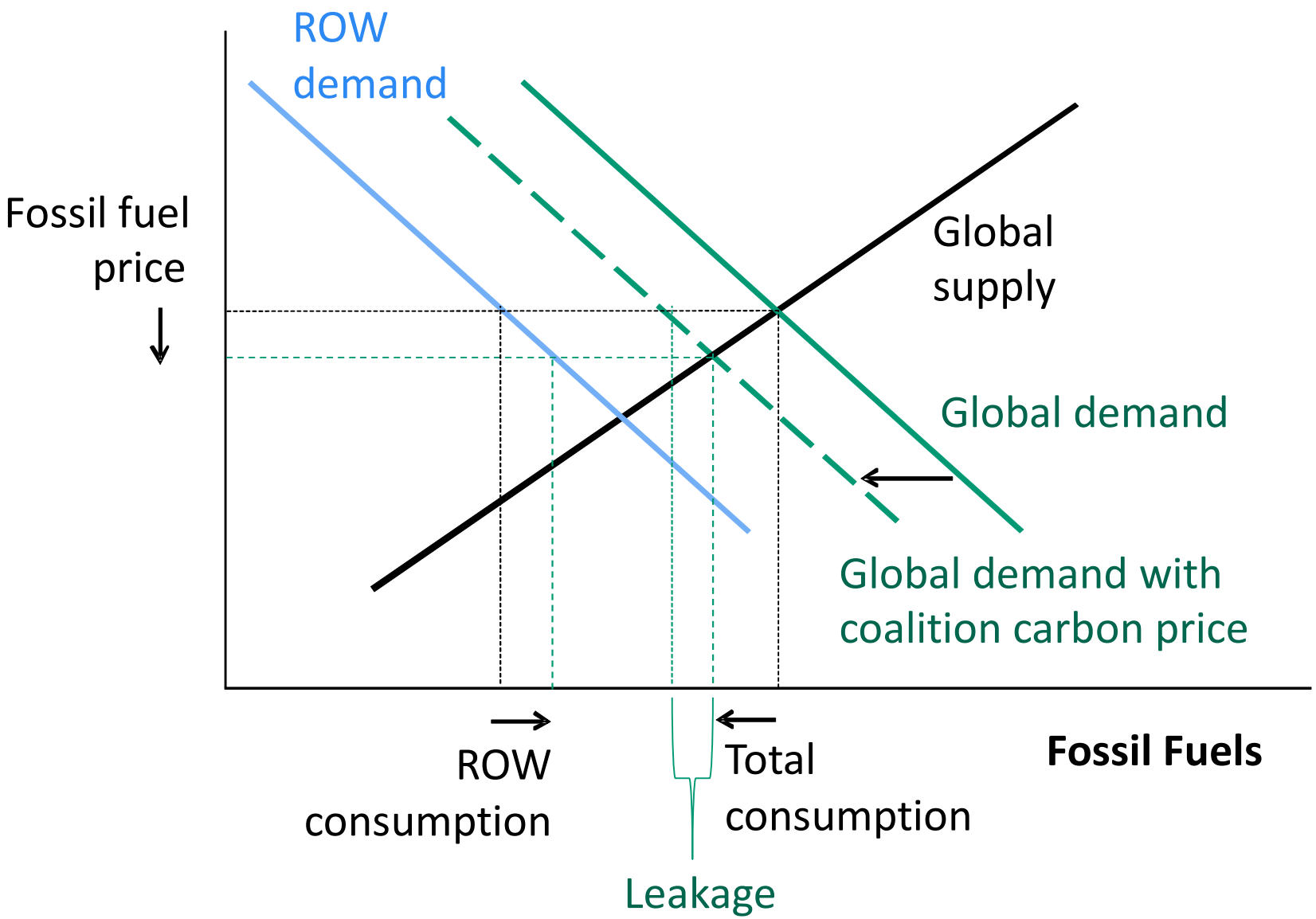


- Pricing carbon raises costs of producing goods at home, causing economic activity to shift abroad
  - Production
  - Investment
  - Jobs
  - Emissions

Competitiveness channel



Energy market channel

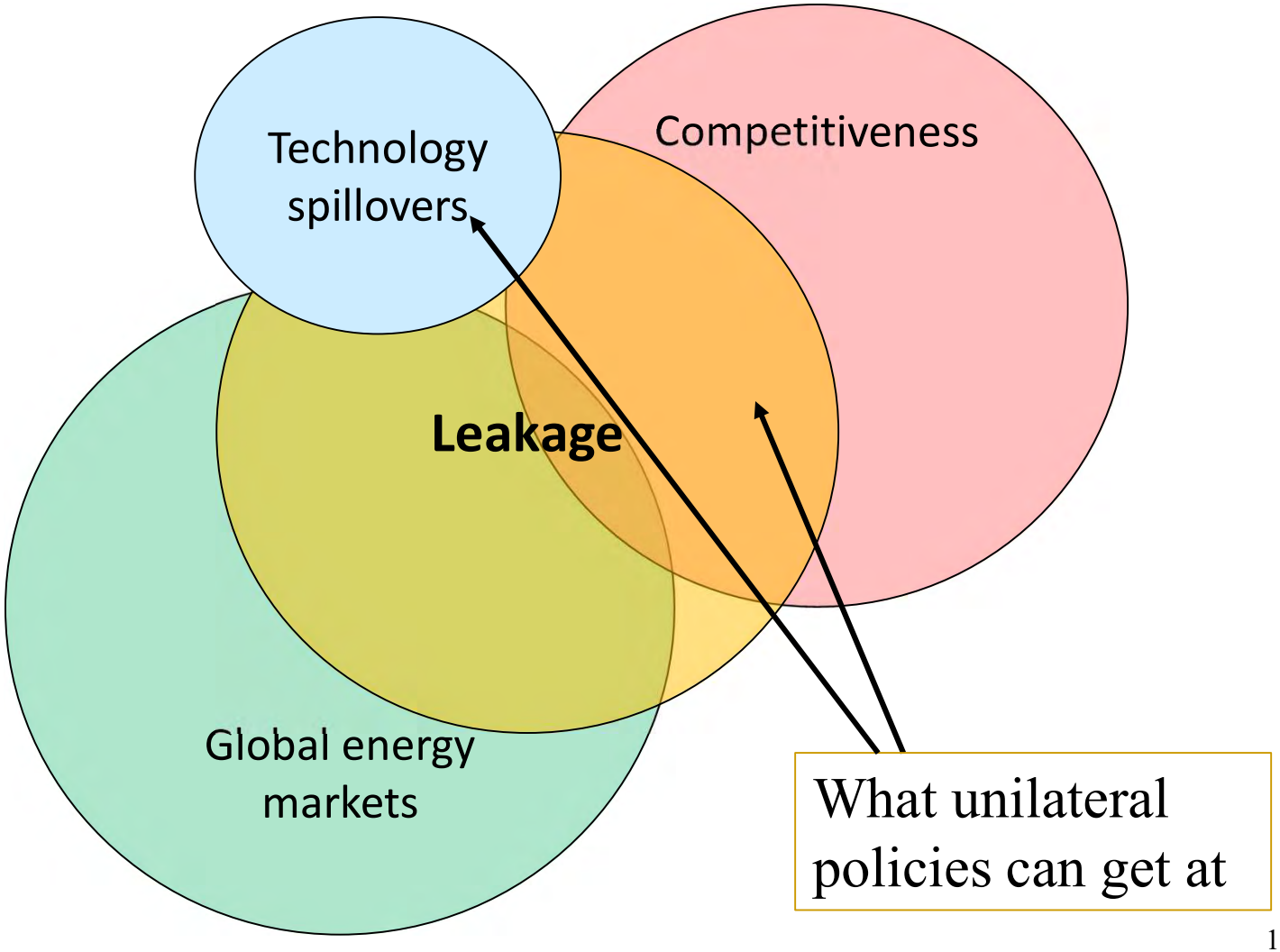


Technology channel

- Innovation induced by domestic climate policies lower costs of clean technology adoption abroad

→ negative leakage!

Main carbon leakage channels



Addressing all channels of leakage

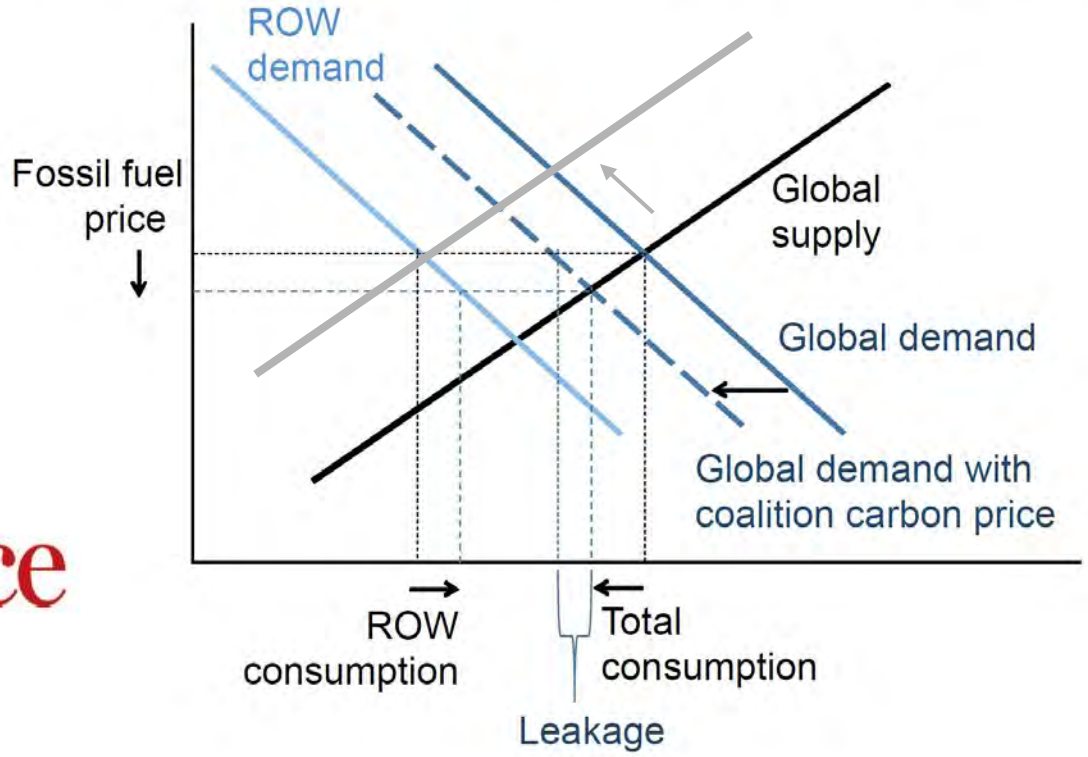
- Global carbon pricing

United Nations
Framework Convention on
Climate Change

- "Common but differentiated responsibilities" raises issues with using trade for leverage on governments to adopt particular policies

Addressing energy market leakage

Carbon leakage from demand and supply responses in energy markets



Remove fossil fuel subsidies!

Science

POLICY FORUM

CLIMATE POLICY

The case for a supply-side climate treaty

The Paris Agreement can be strengthened by a treaty limiting global fossil fuel supply

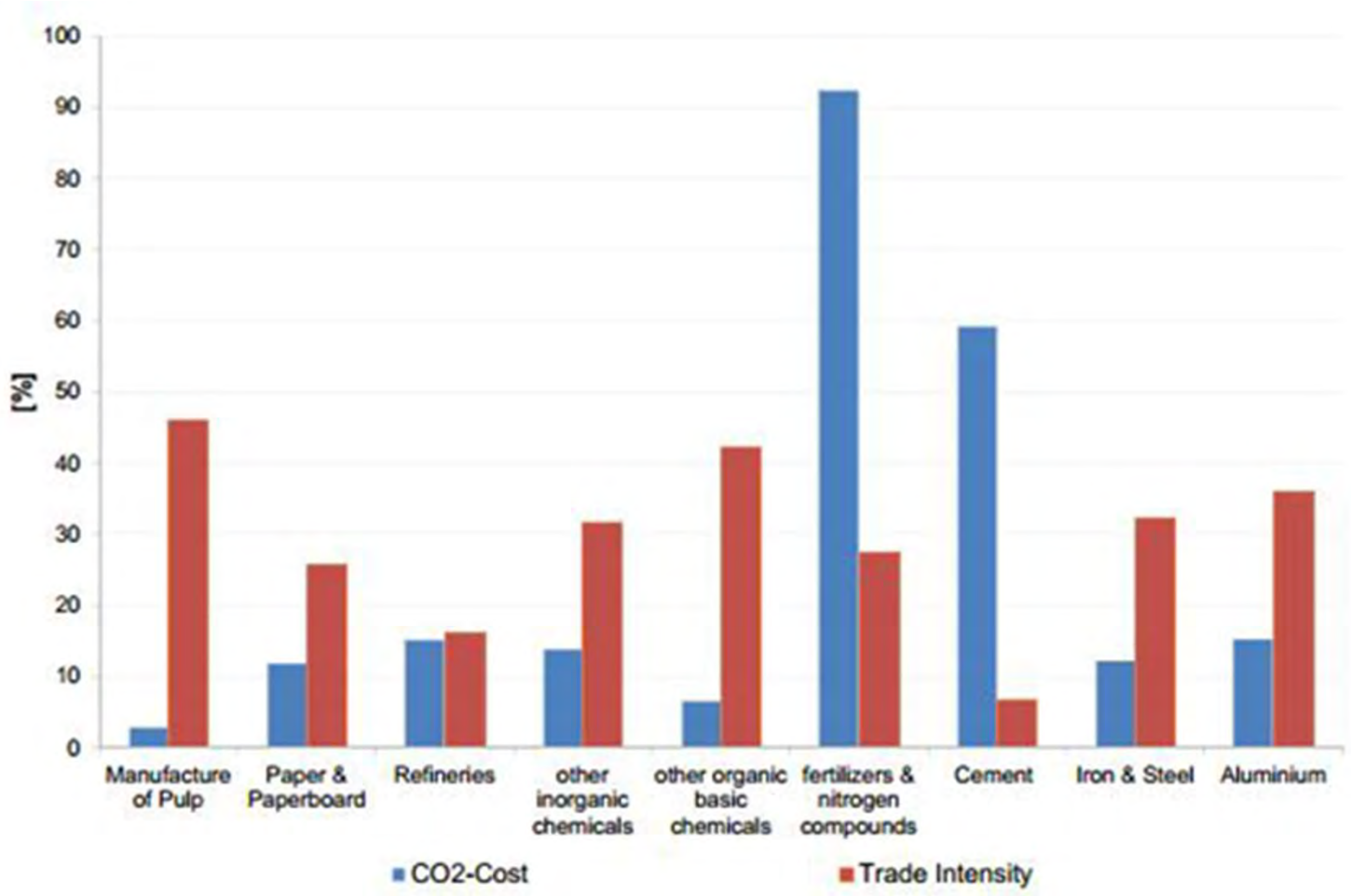
Addressing technology channel

- Support for clean R&D and innovation
- Support for clean technologies
  - Leeway for subsidies?
- Intellectual property protection and diffusion
- Reduce barriers to trade

Addressing Competitiveness

- Politically most important channel
- Leaky industries already the most disputed…

EU EITE (Emissions-Intensive Trade-Exposed) Industry exposure to carbon leakage risk



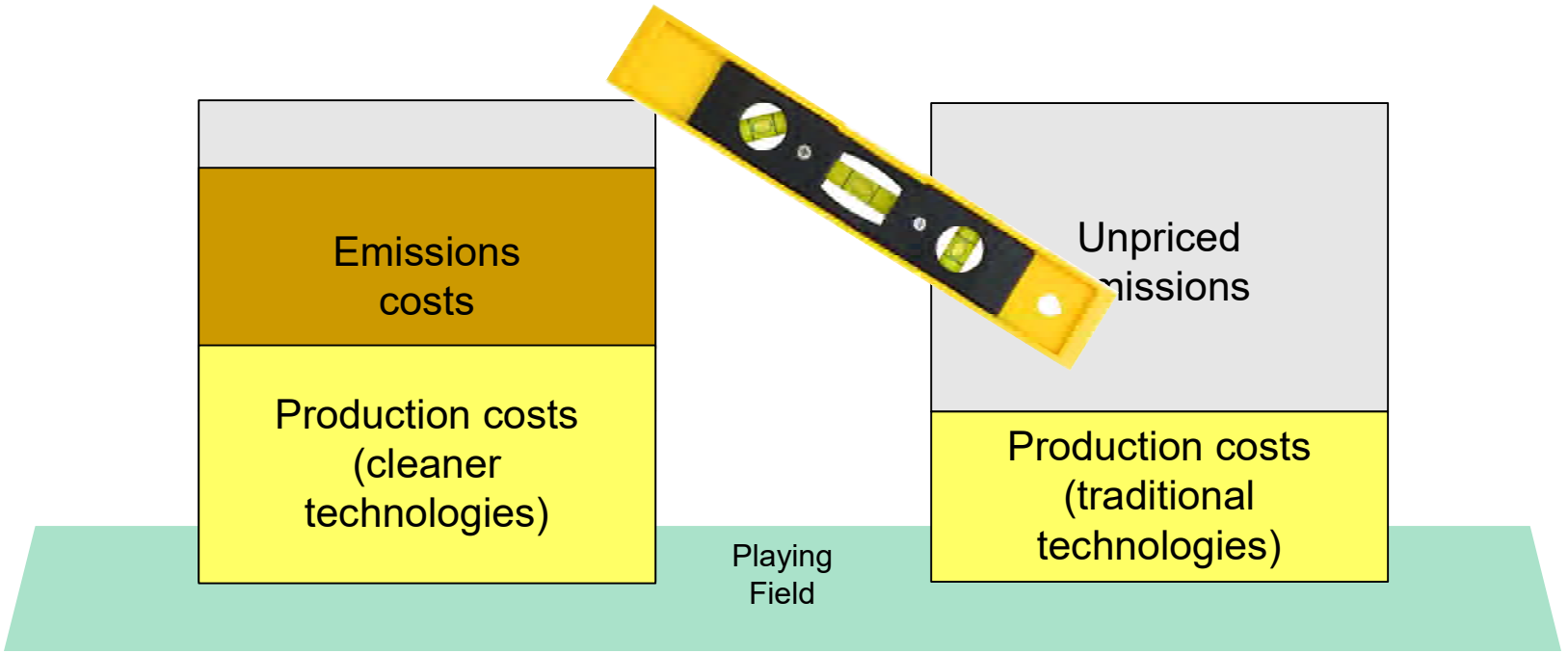
Source: Marcu, A., Egenhofer, C., Roth, S., Stoefs,W. (2013). "Carbon Leakage: An overview", Centre of European Policy Studies (CEPS) Special Report No. 79, December 2013. Based on: Directive 2009/28/EC of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, 5.6.2009, p.16-62.

Options for addressing competitiveness-related leakage

- Exempting susceptible sectors
  - Lose all incentives for abatement there
  - Doesn't address costs from indirect emissions
- Sectoral agreements
  - Give trade partners similar incentives
  - Can't do unilaterally
- Output-based rebating
- Border carbon adjustment
  - Trade intervention to "level the playing field"

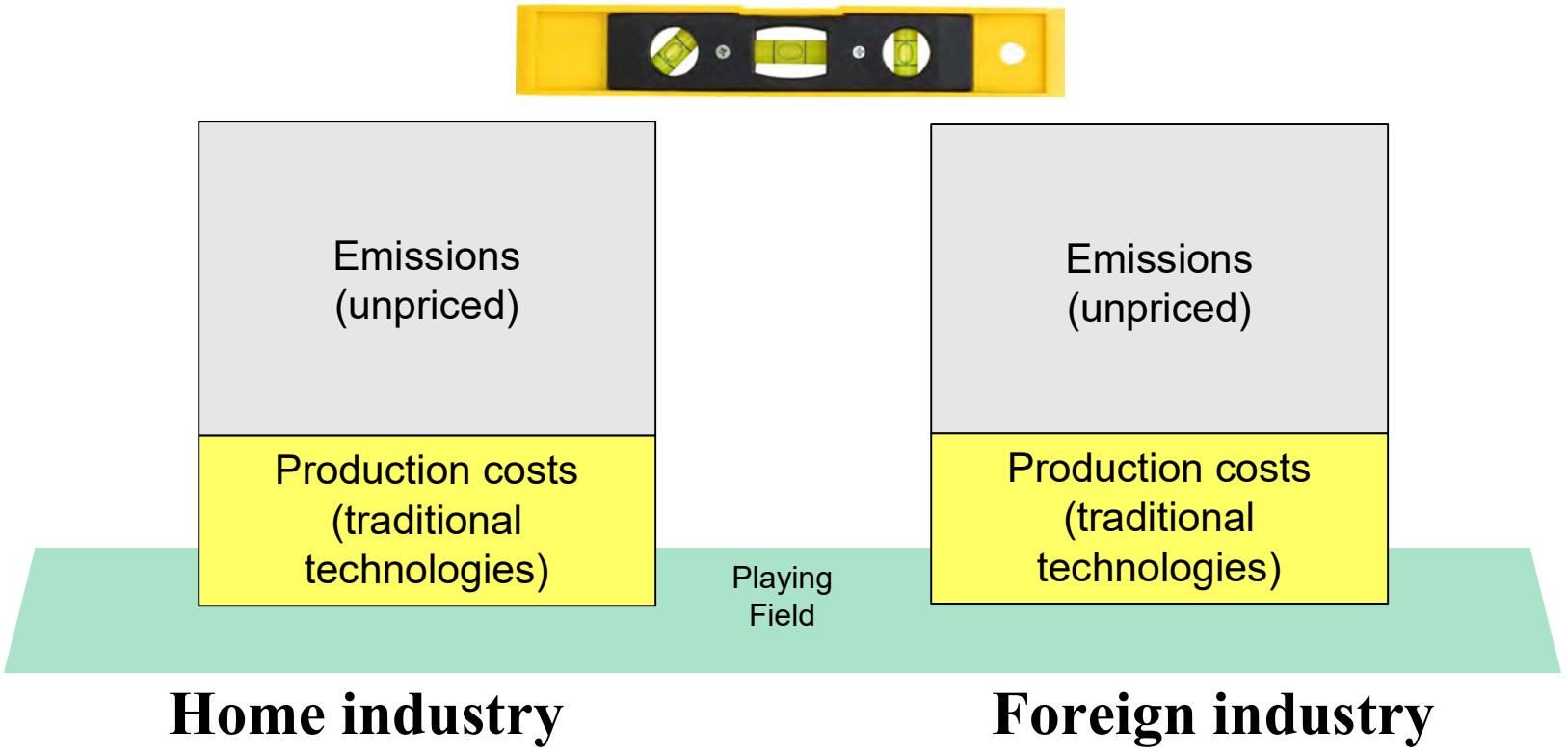
Carbon pricing at Home

- Domestic firms reduce carbon intensity if more cost-effective than paying for carbon
- No (or less) incentive abroad



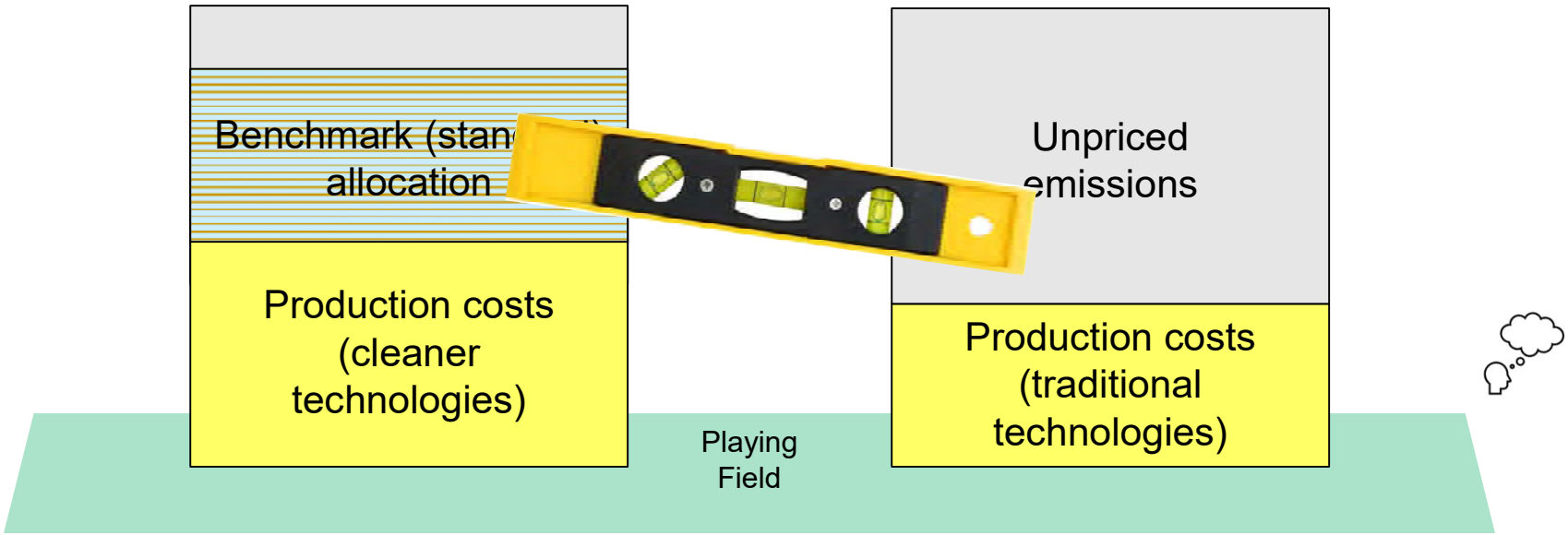
Industry exempted from carbon pricing

- No leakage but no reductions



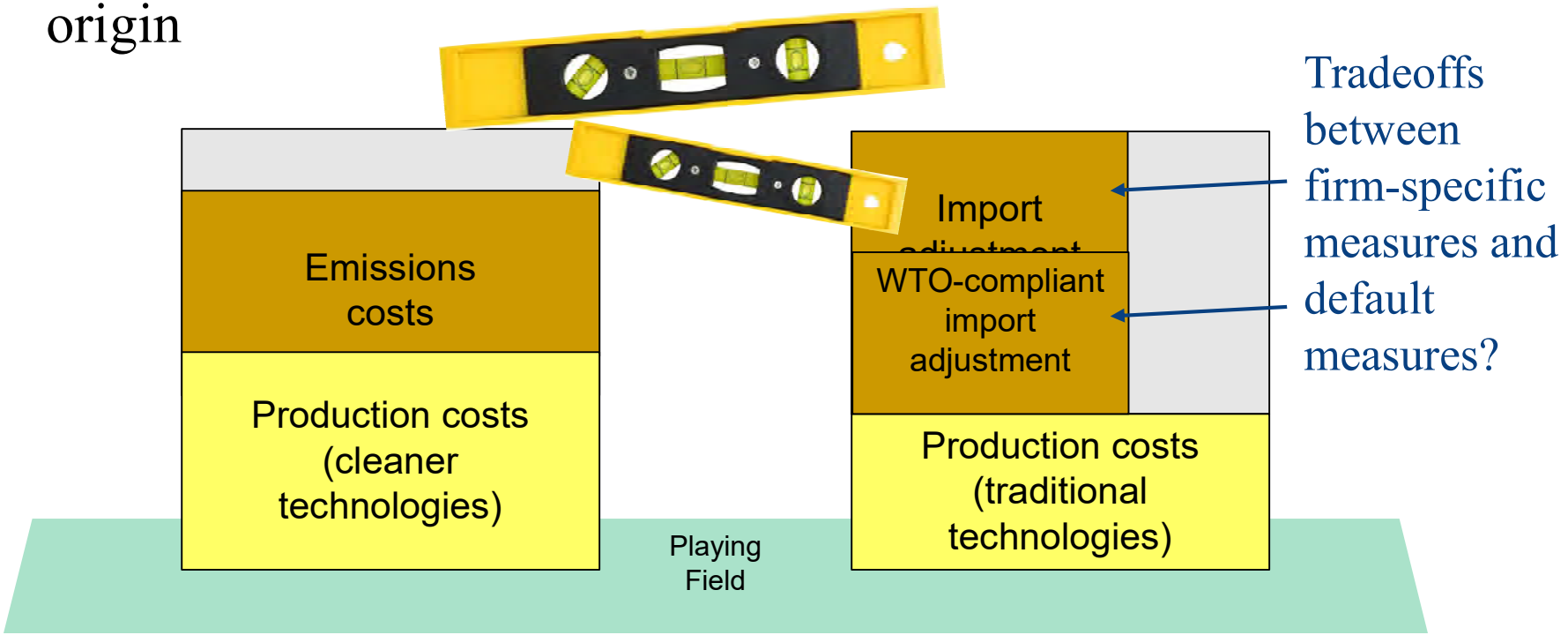
Output-based rebating (OBR)

- Carbon price drives abatement
- Free allocation offsets embodied carbon payments
- Consumer prices "too low" (inefficient)
  - playing field not level for low-carbon substitute goods



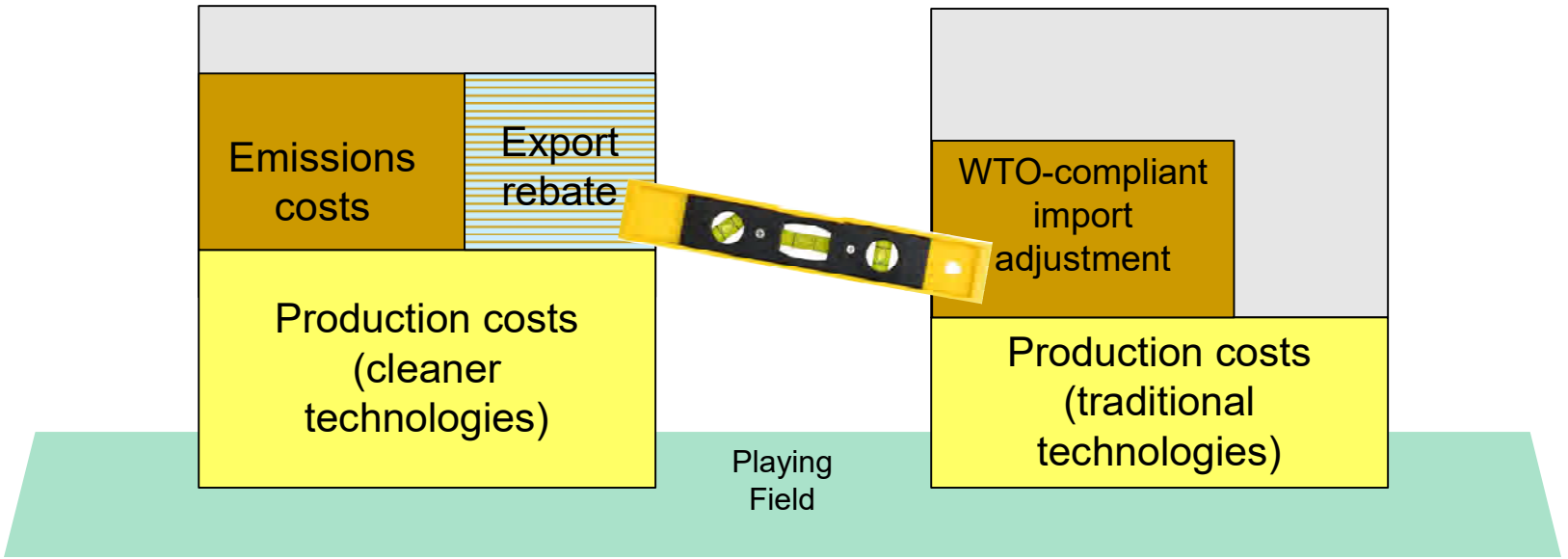
Border carbon adjustment (BCA)
for imports

- Levies a charge on imports
  = (measure of carbon content) x (measure of carbon price)
  (for foreign product) (in implementing country)
- Domestic consumers pay for embodied carbon regardless of origin



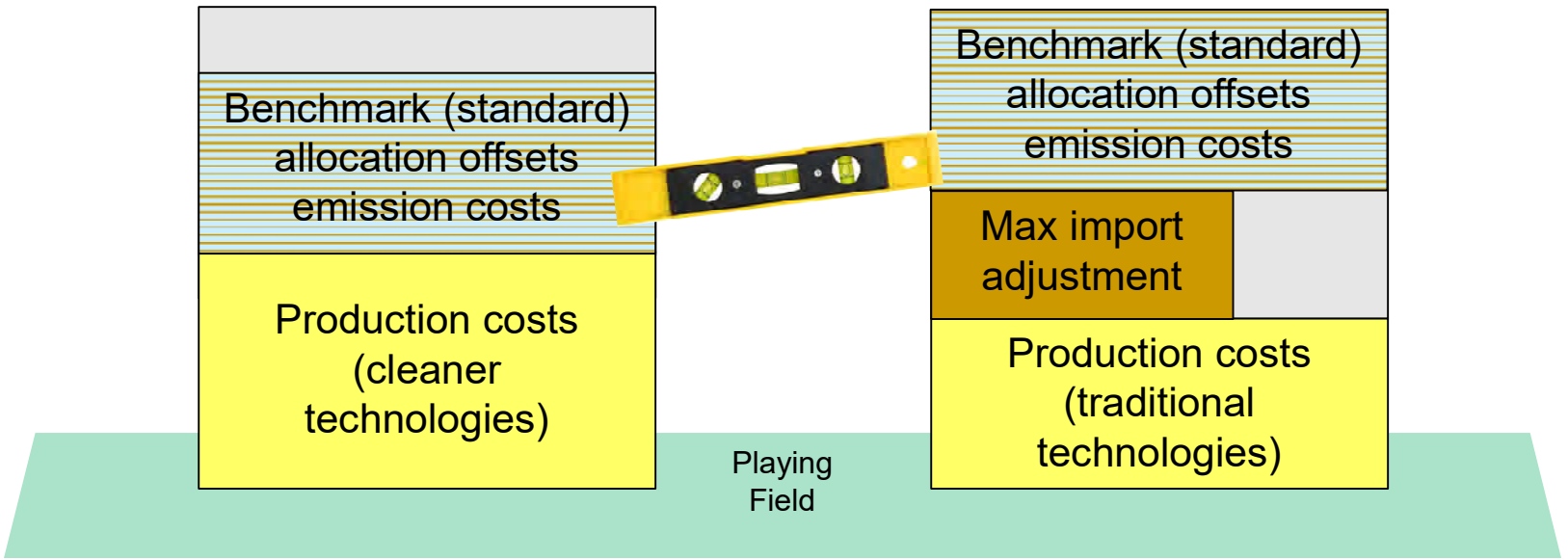
Full BCA

- Domestic consumers pay for embodied carbon regardless of origin, *and* exporters relieved of embodied carbon charges
  - Implements destination-based carbon pricing (like VAT)
- Challenges for WTO compliance, especially with a cap
  - Export subsidies prohibited



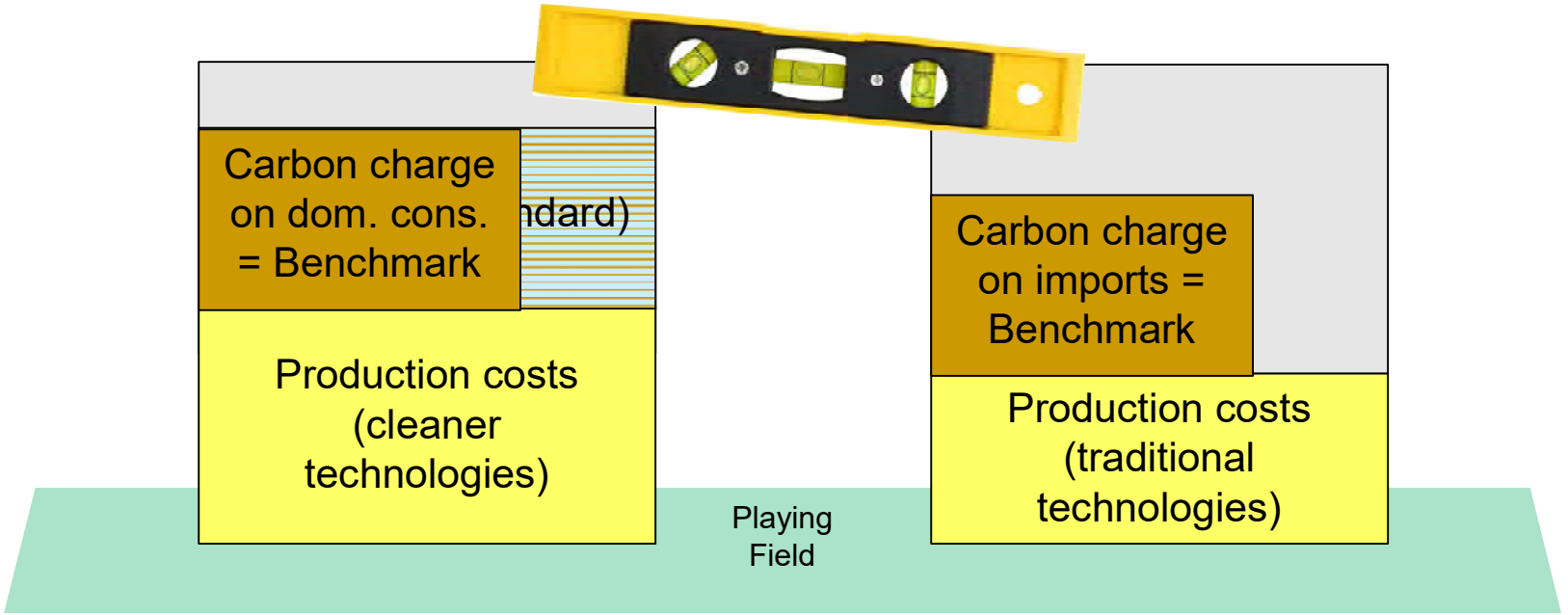
BCA with free allocation / OBR / TPS

- Free allocation means low payments for embodied carbon
- Imports must be offered "like" treatment



OBR / TPS with carbon consumption charge

- Benchmark allocation addresses leakage
- Carbon charge drives consumer response
- "behind-the-border adjustment" (Neuhoff et al. 2016)



Behind-the-border adjustment

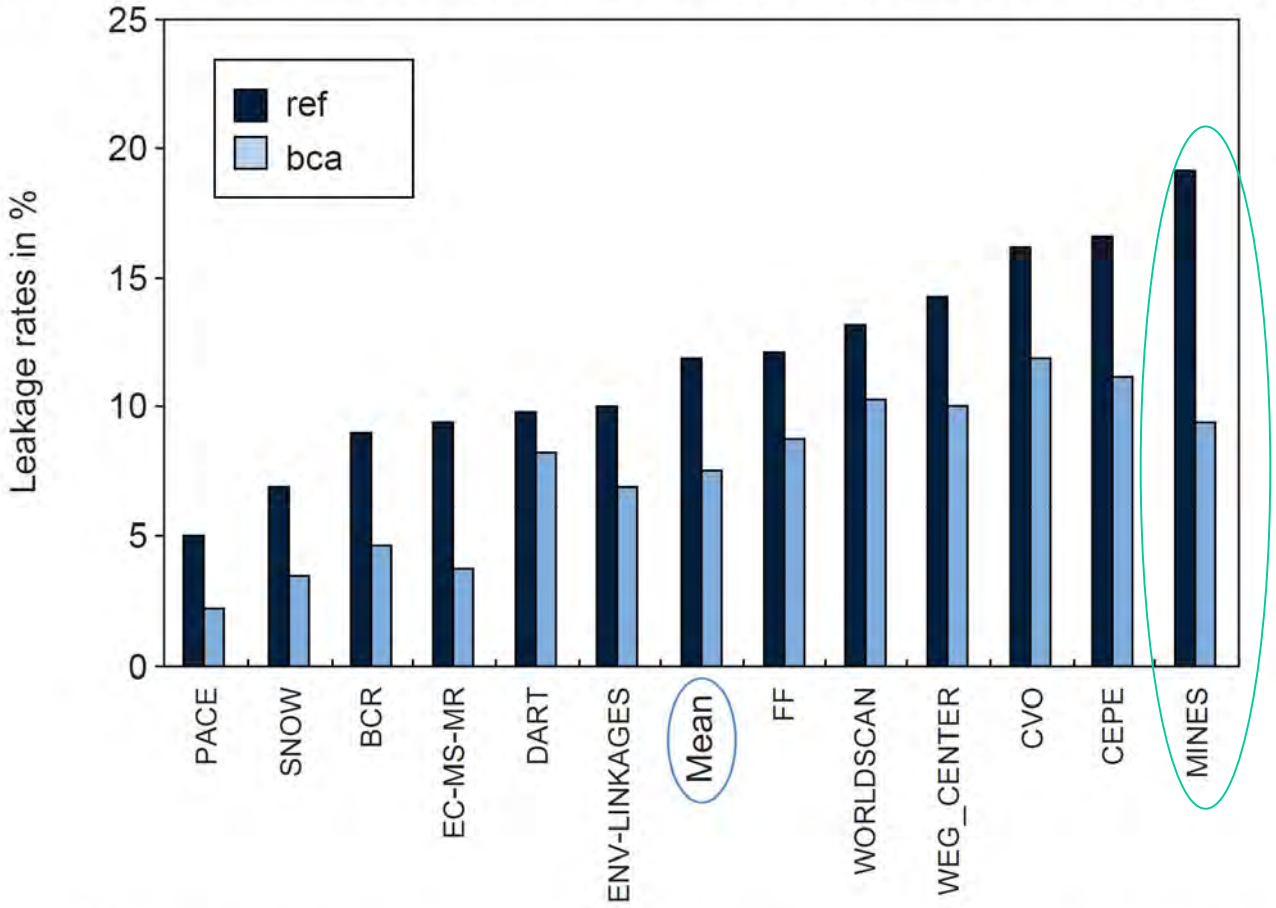
- Use free allocation to deal with competitiveness-related leakage
  - Output-based rebating to support production
- Price embodied carbon in all EITE products consumed domestically (Neuhoff et al. 2016)
  - Levy consumption tax equal to rebate
  - Improves incentives for consumers and levels the playing field for cleaner substitute products
  - No discrimination
- As benchmarks get smaller, may need to phase toward BCA to address asymmetries in ambition

Carbon Leakage Estimates

- Empirical studies haven't found much leakage
  - to date carbon prices have been low
  - Free allocation schemes can cushion effects
- Modeling estimates of leakage mostly 5-30%
  - For economy-wide carbon pricing
    - Energy Modeling Forum (EMF) model comparison study for BCA (*Energy Economics* 34 Supplement 2)
  - But can range from –14 to +130%!
  - Sensitive to energy market assumptions, coalition size
  - Higher for certain sectors
    - Energy-intensive trade-exposed (EITE)
    - See, e.g., Climate Strategies work on steel and cement

Leakage rates before and after BCA

Figure 2 Model estimates of leakage rates from OECD coalition carbon pricing (%)



Note: Vertical axis lists participating models by name. The dark blue bars represent simulated leakage rates in the reference scenario (OECD countries implementing emissions pricing to achieve global reductions equal to 20% of their baseline emissions). The light blue bars represent simulated leakage rates with the addition of BCA for EITE industries.

Source: Böhringer et al. (2012).

- BCA is effective in reducing leakage (by 38% on avg.)
- New trade theory suggests higher leakage rates

Cost savings from OBR and BCA: Coalition size matters

C. Böhringer et al. / Journal of Environmental Economics and Management 67 (2014) 318–339

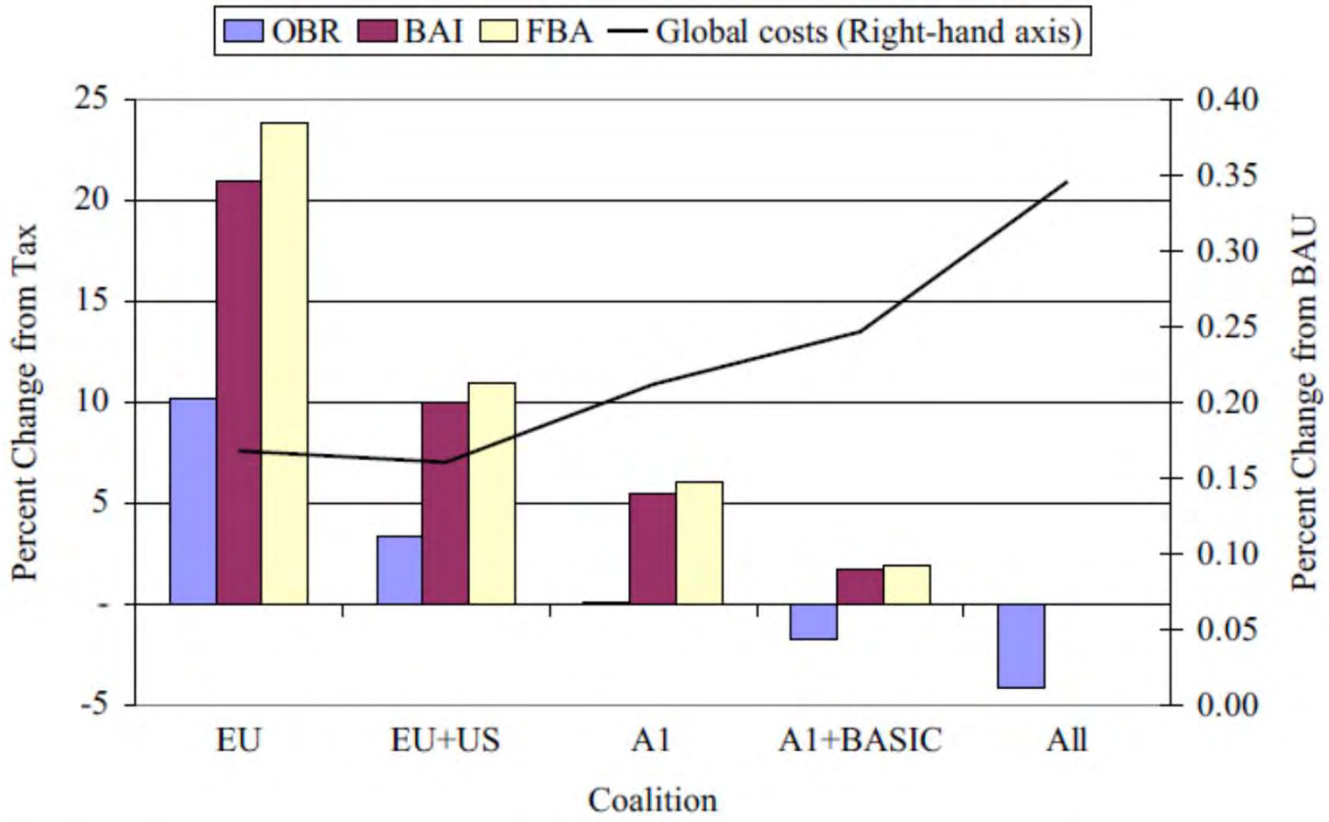


Fig. 3. Global cost savings of antileakage measures, and global costs of tax.

Role of coalition size in OBR-BCA tradeoff

- BCA decreases coalition costs more than OBR
  - Most effect through import adjustment; little through export rebate
    - EU is net importer of embodied carbon
- Leakage problem declines as coalition grows
- For smaller coalitions, OBR can be helpful, but for larger coalitions, the efficiency loss outweighs the benefits of avoided leakage

What do most jurisdictions do for industry?

- BC: corporate tax reduction
  - Moving toward tax rebate for low emitters: CleanBC Industrial Incentive Program (CIIP)
- AB, Canada Federal Backstop: Output-based pricing system
  - OBPS is a TPS with the carbon levy/tax as a price ceiling
- NZ: OBA
  - all manufacturing considered energy-intensive trade exposed (EITE)
- China: TPS for power sector; industry exempt (for now)
- RGGI: industry exempt
- California: OBA for EITE, BCA for electricity
- EU: free allocation (periodic updating)
  - Moving toward limited CBAM
- US: discussing carbon tax with full BCA

EU Unveils 'Green Deal' Plan to Get Europe Carbon Neutral by 2050

The plan, designed to 'reconcile the economy with our planet,' includes a carbon border tax and money for a just transition for poorer Eastern European countries.

BY MEHREEN KHAN, FINANCIAL TIMES

DEC 11, 2019

European Commission President Ursula von der Leyen unveils Europe's "Green Deal" plan to fight climate change on Dec. 11, 2019, at the European Commission headquarters in Brussels. Credit: Aris Oikonomou/AFP/Getty Images

The European Union unveiled a sweeping set of environmental initiatives on Wednesday aimed at creating the world's first carbon-neutral continent by 2050, touching everything from state aid rules to a green industrial policy and a carbon border tax on imports.

Timeline

11 December 2020

European Green Deal adopted

4 March – 1 April 2020

Inception Impact Assessment
- 224 Contributions
- >140 in support

22 July – 28 October 2020

Open Public Consultation
- 609 contributions
- Collect opinions on opportunities and challenges of CBAM

Ongoing

Impact Assessment
- Studies
- Modelling exercises
- Inter-service consultations

Spring 2021

Green Taxation Event
- Consult with stakeholders

June 2021

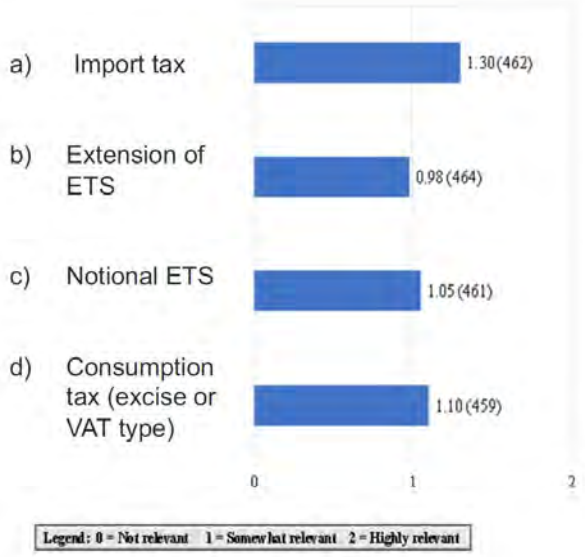
Commission Adoption

European Commission

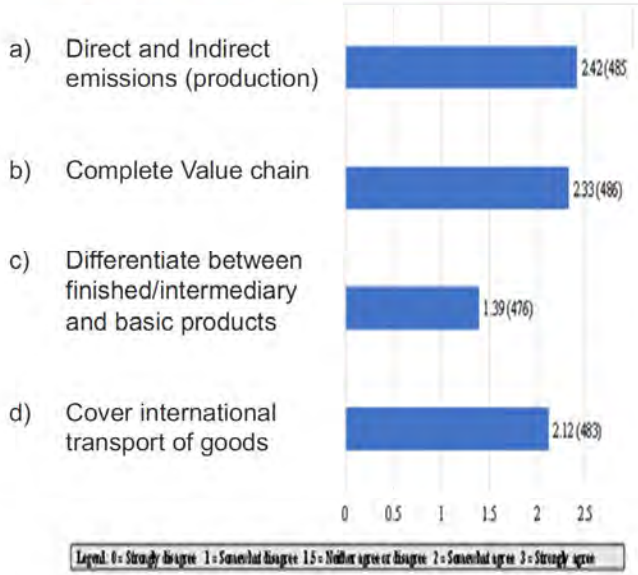
EU consultation results

Design options and coverage

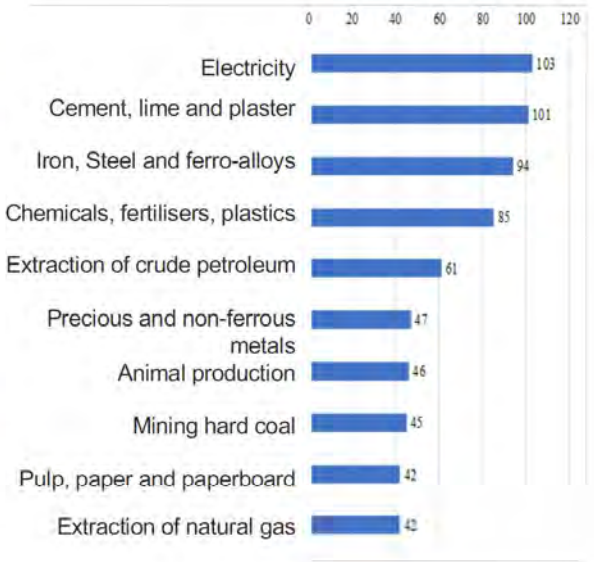
Design Options



Scope of Emissions



Top 10 Sectors



European Commission

Conclusion

- BCAs likely to be used in some form
- Trade folks think BCA will be challenged but upheld in WTO
- Questions on role in climate negotiations
- More likely to be accepted and less likely to be abused if some agreement (at least informal) on international norms

BCA design guidance

Volume 13, Issue 1
Winter 2019

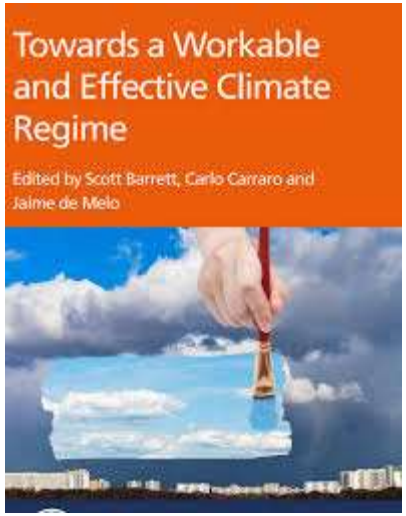
Developing Guidance for Implementing Border Carbon Adjustments: Lessons, Cautions, and Research Needs from the Literature

Aaron Cosbey, Susanne Droege, Carolyn Fischer ✉, Clayton Munnings

Review of Environmental Economics and Policy, Volume 13, Issue 1, Winter 2019, Pages 3–22, https://doi.org/10.1093/reep/rey020
Published: 21 February 2019

Other background reading

• Fischer, C. 2015. Options for avoiding carbon leakage, in S. Barrett, C. Carraro, and J. de Melo, eds., *Towards a Workable and Effective Climate Regime*. Paris: VoxEU.org eBook, CEPR and FERDI. 10 November 2015. http://voxeu.org/content/towards-workable-and-effective-climate-regime; chapter available at http://voxeu.org/sites/default/files/file/fischer.pdf



• Fischer, C. and S. Droege. 2020. Pricing Carbon at the Border: Key Questions for the EU. *Ifo DICE Report* I/2020: 30–34. (4 pages) https://www.ifo.de/en/publikationen/2020/article-journal/pricing-carbon-border-key-questions-eu