

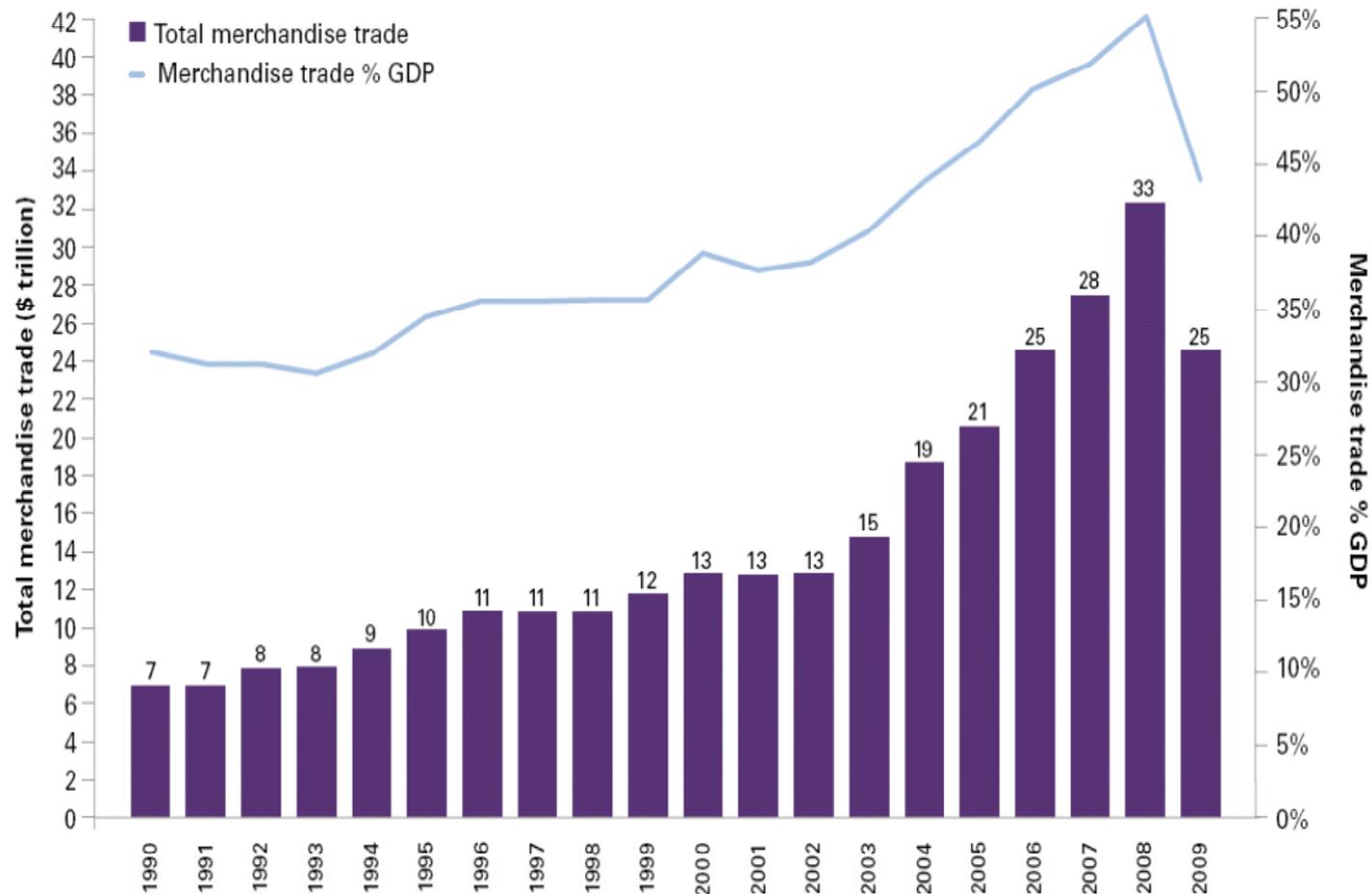
Trade, embodied emissions and border measures

Copenhagen, Denmark

19 January 2012

- Climate Strategies has carried out extensive work in the areas of:
 - International industry competitiveness and carbon leakage
 - Institutional framework for regional carbon pricing systems & linkages
 - Regulatory approaches to Cross-Border Carbon Flows
- At the same time, trade:
 - Reflects differential prices, arising from a wide range of factors
 - Facilitates the flow of embodied emissions between producer and consumer countries/regions
 - Links unequally-priced emissions zones

Evolution of trade



- In a world of unequal carbon pricing, trade provides the link between pricing zones
- Trade value has been increasing over time

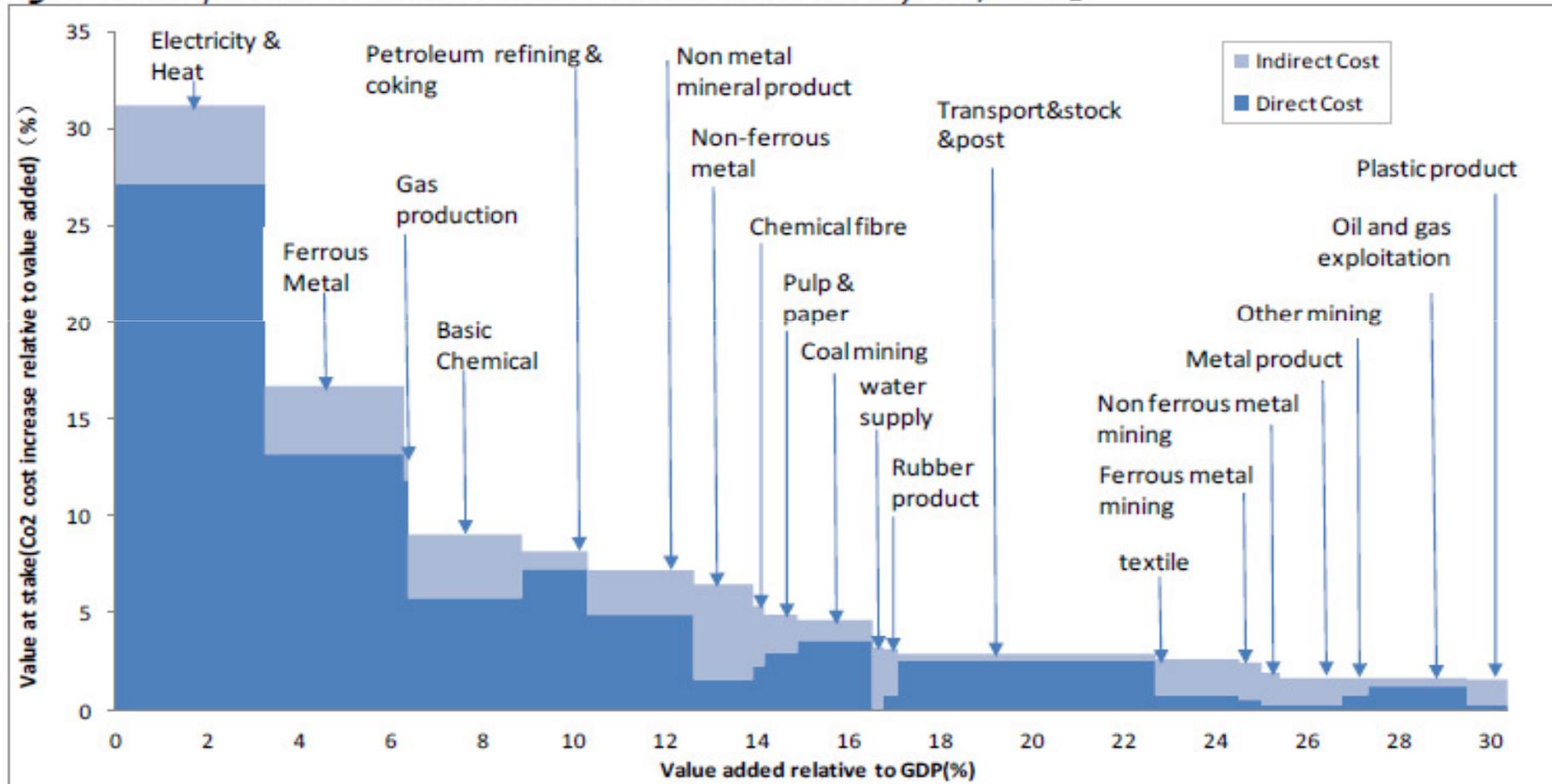
Note 1: Current US\$.

Source: World Trade Organisation (total merchandise trade); GDP (World Bank).

Source: Carbon Trust 2011

Carbon pricing and competitiveness in a world of evolving participation

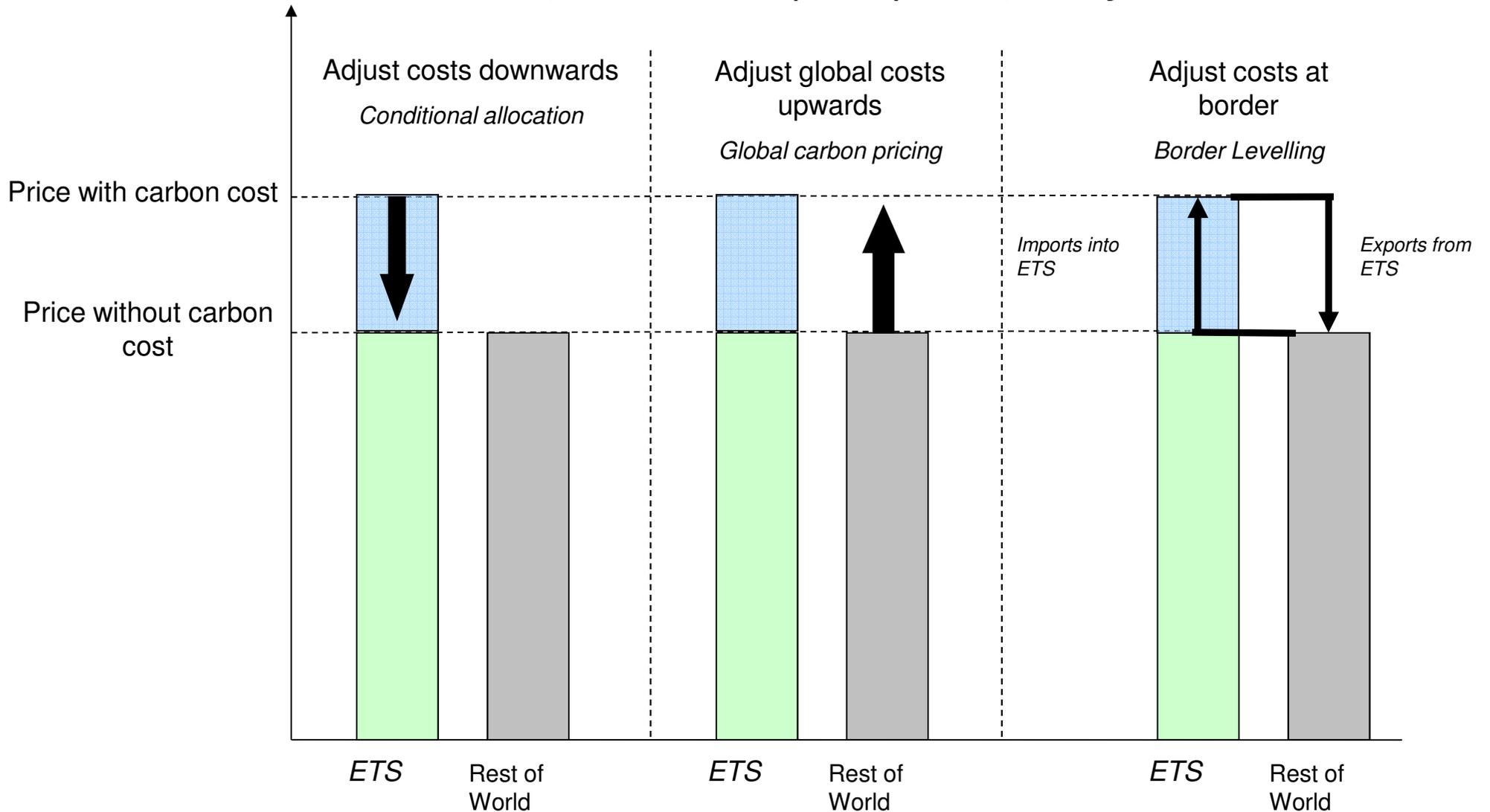
Figure 1. Impact of carbon tax on value-added at 100 yuan/t CO₂



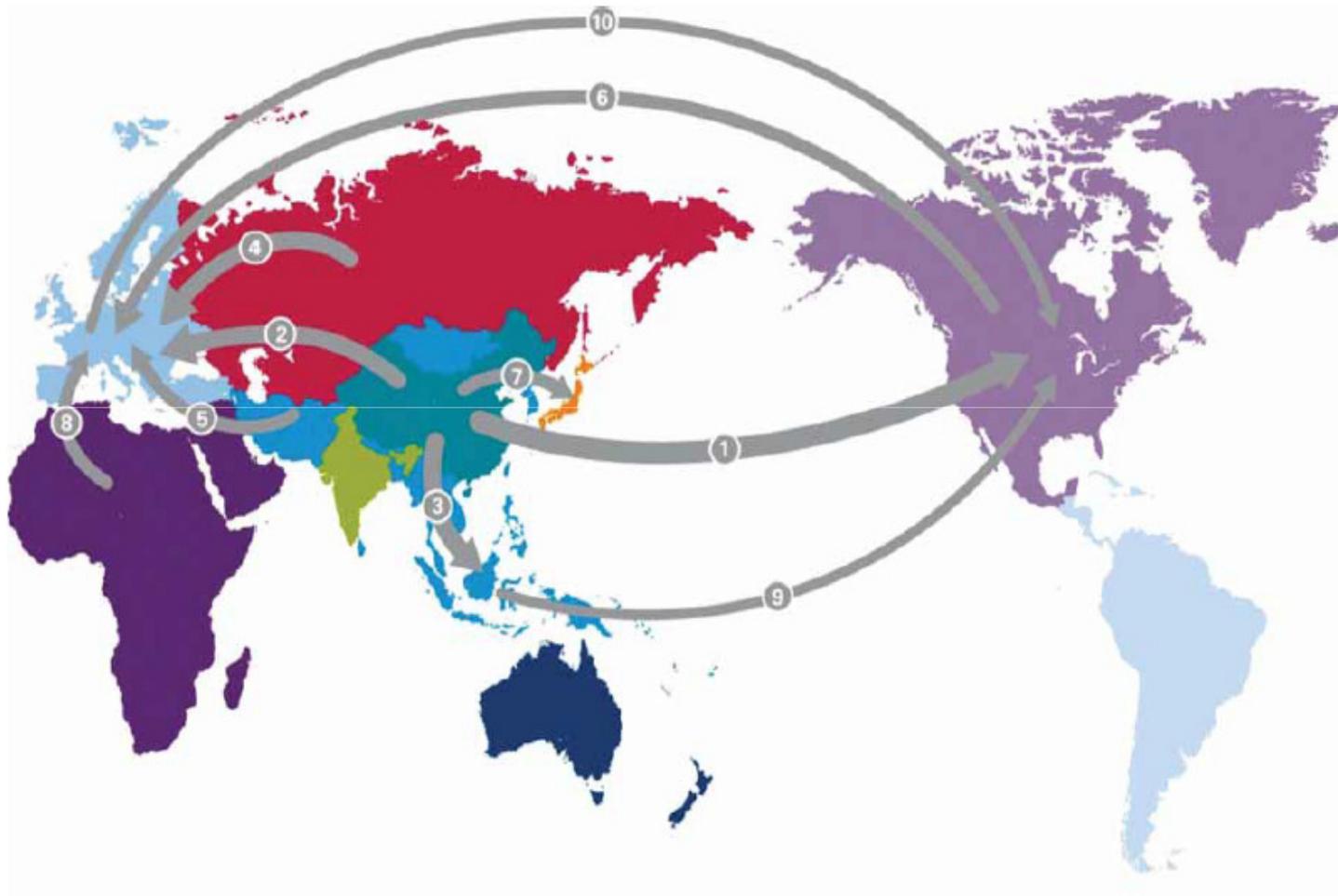
International industrial competitiveness, carbon leakage and approaches to carbon pricing – An analysis of the key sectors

Fundamental options for addressing carbon leakage

Level down, wait to level up everywhere, or adjust at border?



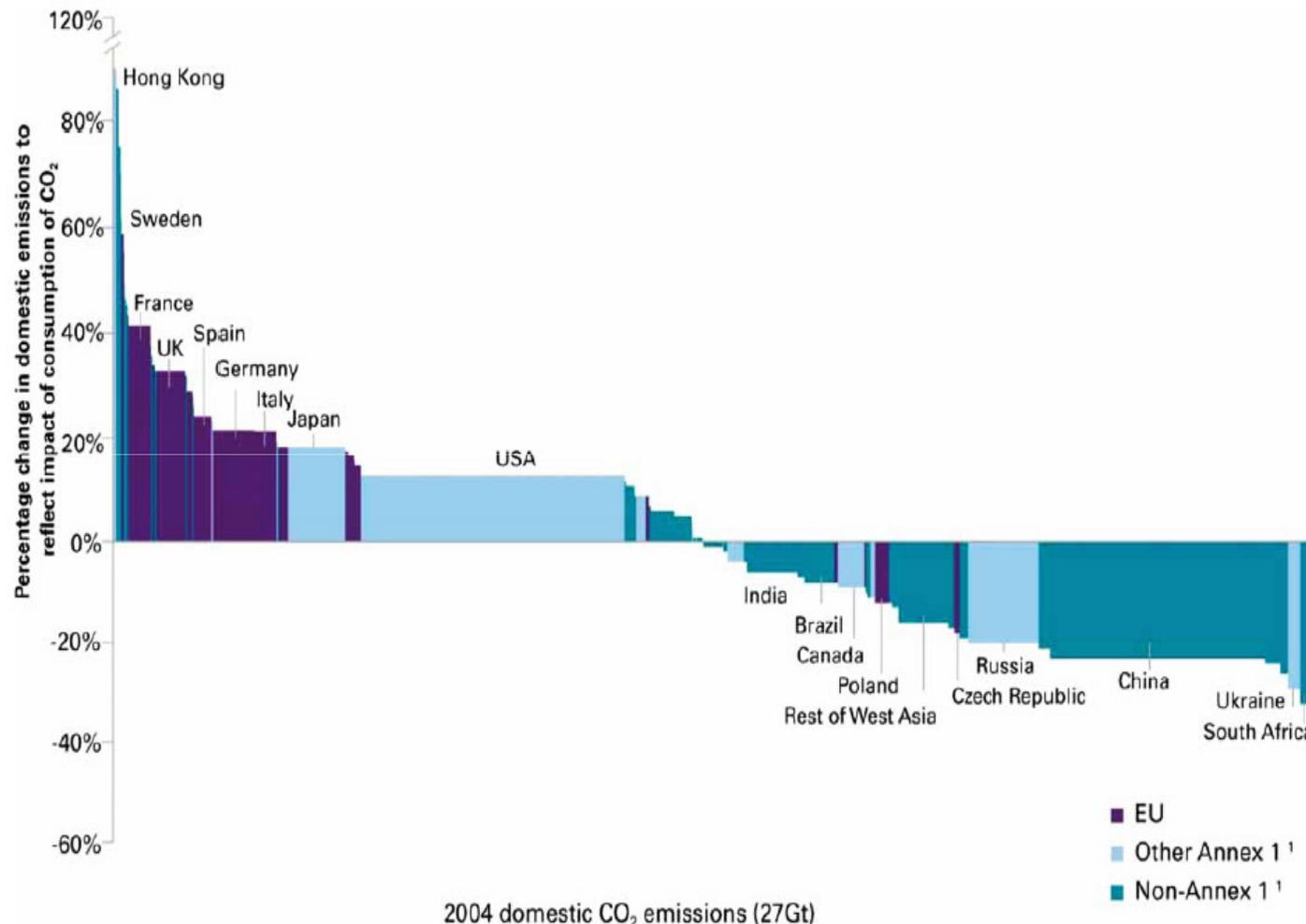
One quarter of global emissions are embodied in international trade



- Around one quarter of global CO2 emissions are embodied in international trade
- Around 40% of these emissions arise from electricity generation

Source: Sinden, Peters, Minx & Weber, 2011/Carbon Trust 2011

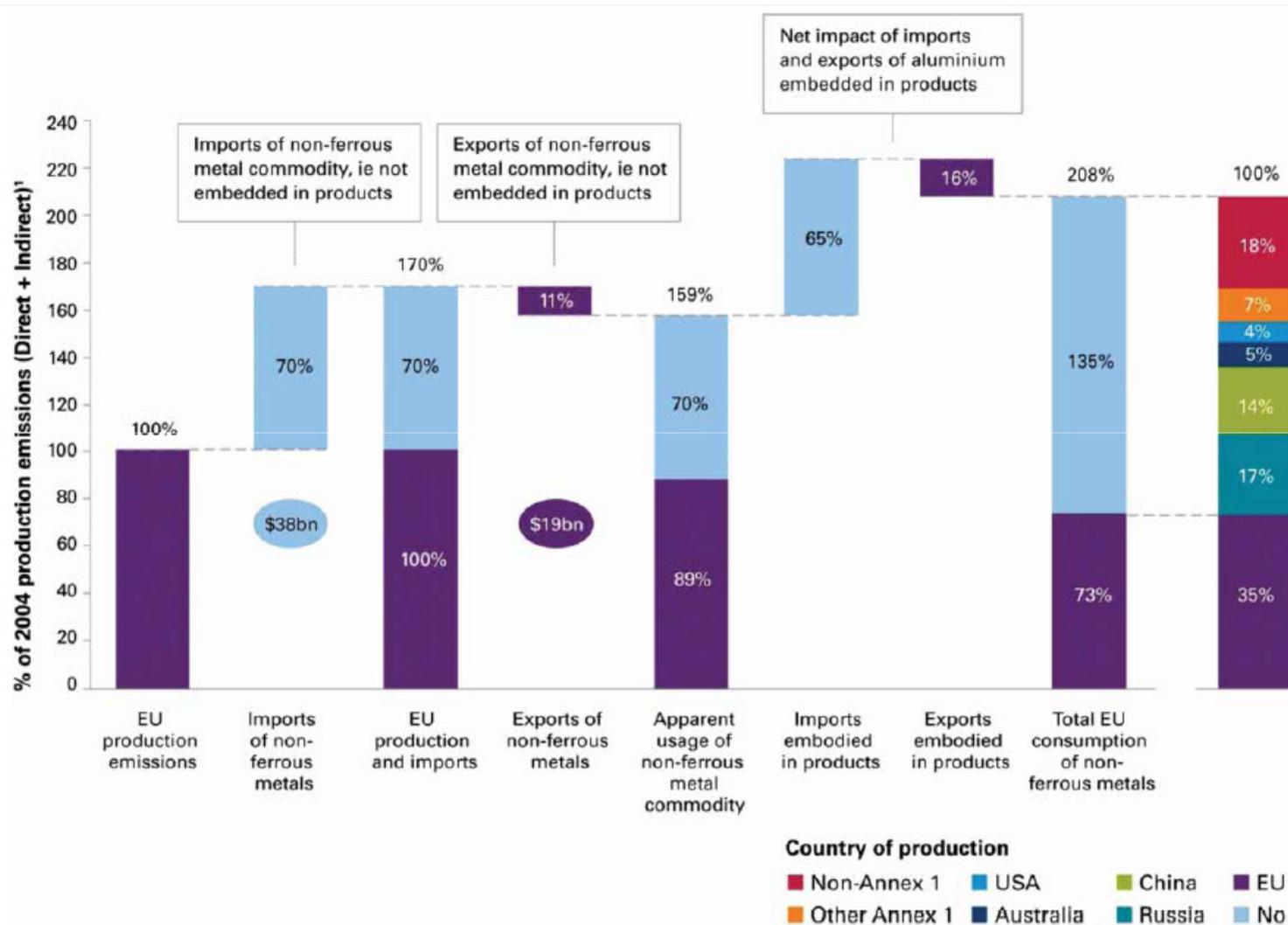
The are large differences between production and consumption emissions in different countries



- Developed countries tend to be net importers of emissions
- Net imports by the EU of emissions embodied in trade are equal to 23% of EU production emissions.

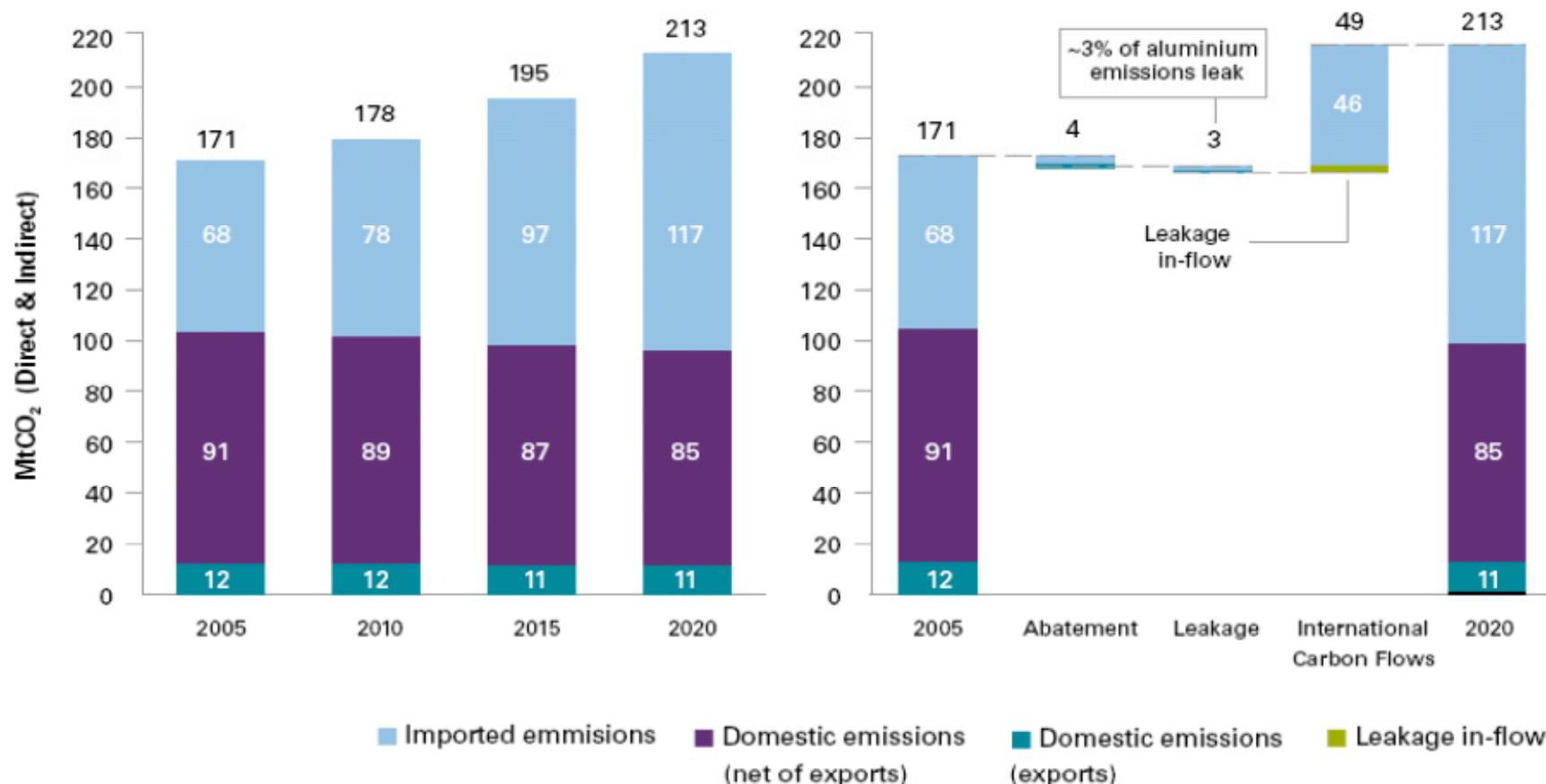
Source: Sinden, Peters, Minx & Weber, 2011/Carbon Trust 2011

Emissions associated with production and consumption of Aluminium in Europe



Source: Sinden, Peters, Minx & Weber, 2011/Carbon Trust 2011

Significance of embodied emissions in EU aluminium consumption forecast to grow



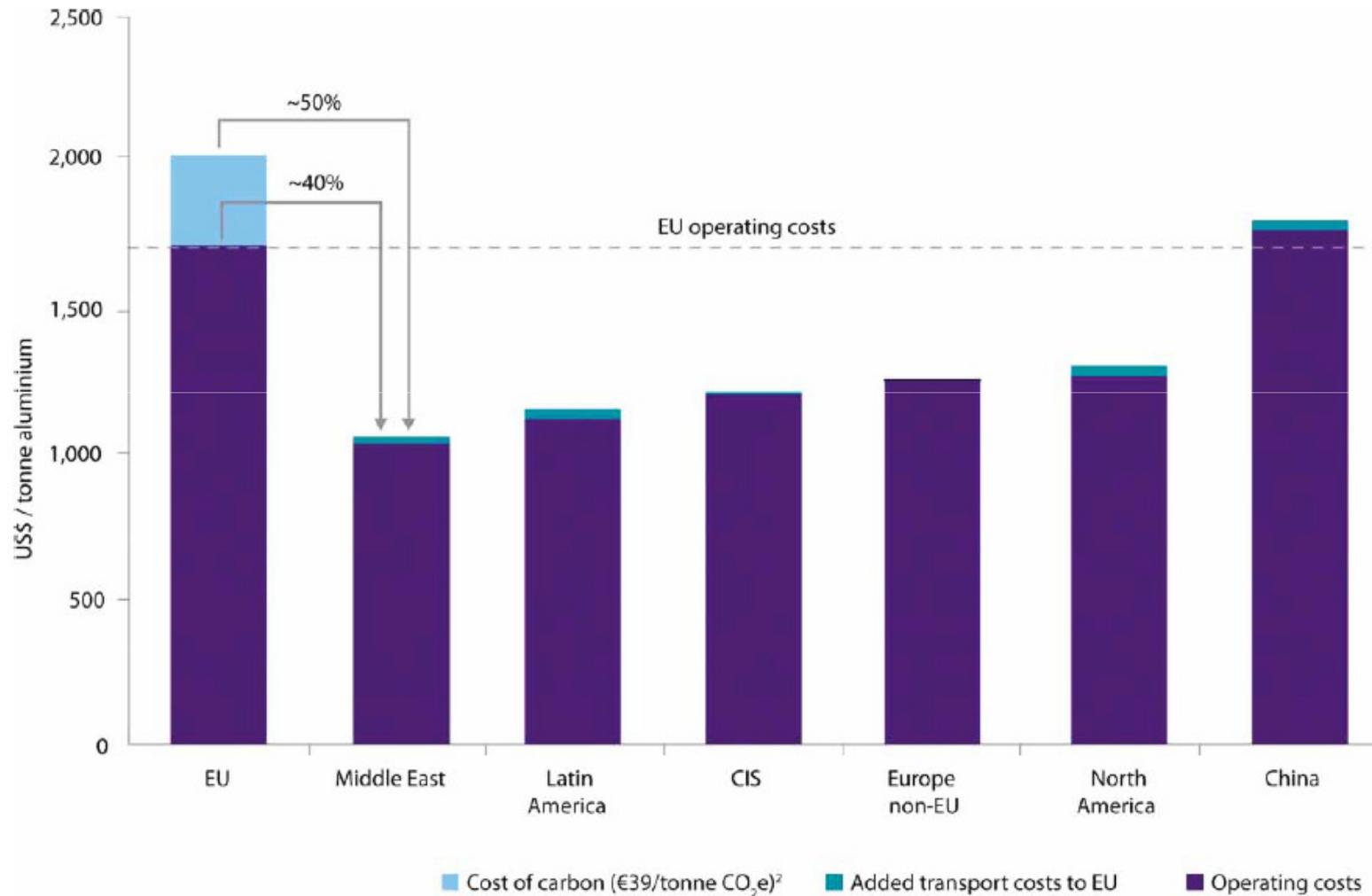
Note 1: Assumes imports decarbonise by 9% (moving to current best practice average) and that emissions from domestic EU production decline in line with contribution expected from the sector – see Carbon Trust report 'Tackling carbon leakage in a world of unequal carbon prices'.

Note 2: Includes Scope 1 (direct) emissions and Scope 2 (allocated electricity) emissions.

Source: Carbon Trust Analysis based on data from: Addressing leakage in the EU ETS: Results from the Case II Model (Climate Strategies, 2009); CICERO / CMU / SEI GTAP 7 MRIO/ EEBT Model (2004).

Source: Sinden, Peters, Minx & Weber, 2011/Carbon Trust 2011

Costs of aluminium production vary significantly by region



Source: Sinden, Peters, Minx & Weber, 2011/Carbon Trust 2011

A role for border mechanisms?

- There are a wide variety of options available for policy makers seeking to address consumption emissions
 - E.g. a global deal, sectoral approaches, linking schemes and border mechanisms
 - No clarity over MRV, mechanisms, governance
- Considerations for addressing embodied emissions
 - Policy imperative, or policy option?
 - Anti-trade, or implicit in trade?
 - To be reduced, or to be recognised?
- Principles for implementing border mechanisms
 - Equivalent coverage
 - Mutual recognition
 - Non-discriminatory (by origin)

Border mechanisms: Wide ranging designs, with different effects

There is no universally agreed approach to border mechanisms, and different stakeholders have widely varying views of how border mechanisms would operate.

There are different policy designs and implementation approaches, with different advantages, disadvantages and outcomes arising from different designs.

Policy design

- Consumption based cap and trade scheme
- Border pricing
- Certificate retirement

Implementation approach

- Measure
- Fixed global average
- Rising global average
- Relative to best available technology
- Relative to worst available technology

Recent reaction to, and experience with, border measures

- Australia
 - The potential role of border rebates for emissions intensive, trade exposed industries has already been raised
- WTO
 - Not recommending border measures, and do not consider them efficient. But, “it is unavoidable that this discussion will take place in countries that want to take action now.” Geneva, September 2011
- **Aviation in the EU ETS**
 - Example of extra-territorial emissions pricing (with 85% free allocation)
 - The EU’s Emissions Trading System (ETS) could deliver it a €2 billion windfall profit. Malina *et al.* J Air Transport Management. Online 31 December 2011
- China (on aviation)
 - “What we need to do now is co-operate together and pressure them to scrap this,” Chai Haibo, vice secretary general of Beijing-based China Air Transport Association, 3 January 2012
- India (on aviation)
 - The Indian Civil Aviation Ministry has asked the Indian airline carriers not to cooperate with the EU authorities over submission of their emissions data
- USA (on aviation)
 - “We urge the EU and its member states...to return to working with, rather than against, the international community in the appropriate multilateral forum” Hillary Clinton
 - Bill passed by the U.S. House of Representatives in November 2011 prohibiting the country's airlines from participating in the ETS (Bloomberg, 4 January 2012)

Thank you



Climate Strategies is an international organisation that convenes networks of leading academic experts around specific climate change policy challenges. From this it offers rigorous, independent research to governments and the full range of stakeholders, in Europe and beyond. We provide a bridge between research and international policy challenges. Our aim is to help government decision makers manage the complexities both of assessing the options, and of securing stakeholder and public consensus around them. Our reports and publications have a record of major impact with policy-makers and business.

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