

IMPACTS of Emissions Trading on Energy Intensive Industries (EII) and Industrial Restructuring – Lessons Learned from the EU ETS for South Korea

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- *Leading independent, international research organisation based in the UK, with a network of global experts.*
- *Assists governments and industrial stakeholders around the world in setting climate change and energy policy.*
- *Not-for-profit organisation with all activities funded through a broad spectrum of governments, businesses and foundations.*

MAJOR STRENGTHS

- Ability to engage pro-actively with policy shapers → to identify the upcoming research needs and deliver influential important research compatible with policy agendas;
- Ability to connect research results to policy makers;
- Ability to attract high-level relevant researchers who ensure the policy-relevance of the outcome;

Project Title: IMPACTS of Emissions Trading on Energy Intensive Industries (EII) and Industrial Restructuring – Lessons Learned from the EU ETS for South Korea

Papers available online at www.climatestrategies.org:

- Leakage and Competitiveness Impacts under the EU ETS: Examining the Evidence after Eight Years of Trading
- Policy Options to Address Competitiveness Concerns: Lessons from the EU ETS and Other Trading Systems
- Assessing Leakage Risks in South Korea: Quantitative Assessment and Potential Impacts on Global Emissions

Topic: Leakage and Competitiveness Impacts under the EU ETS: Examining the Evidence after Eight Years of Trading

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Policy Paper 2

Topic: Policy Options to Address Competitiveness Concerns: Lessons from the EU ETS and Other Trading Systems

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Topic: Assessing Leakage Risks in South Korea: Quantitative Assessment and Potential Impacts on Global Emissions

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- A price on carbon can increase the cost of economic activity for covered emitters, impacting their productivity and – under certain circumstances – their **competitiveness**
- Cost increases affect emitters **directly** through the price of carbon and **indirectly** through rising energy costs
- Risk of falling production levels or redirected investment in response to carbon pricing can be a major **political concern**
- Not only an economic problem: relocation of production and investment to regions without a carbon price and rising use of energy and resources constitute emissions **leakage**

- Policy responses to address competitiveness aim at **leveling the playing field**: reduce the impact of carbon constraints on domestic entities, create a burden on foreign entities, or achieve convergence through international cooperation
- **Four options** generally discussed:
 - Subsidies and compensation payments
 - Cost containment and flexibility provisions
 - Border adjustment measures
 - Convergence of mitigation efforts through global or sectoral agreements or convergence of carbon prices through linkages

Free allocation of allowances on a product benchmark basis:

- Four underlying variables: ex-ante benchmarks, historical activity levels, carbon leakage exposure factor, and a cross-sectoral correction factor or linear factor

- Allocation formula $A = Bm_e \times P[\alpha_{cap}]$

A: free allocation [EUA]

Bm_e : emission benchmark [t CO₂/t product]

P: historic production

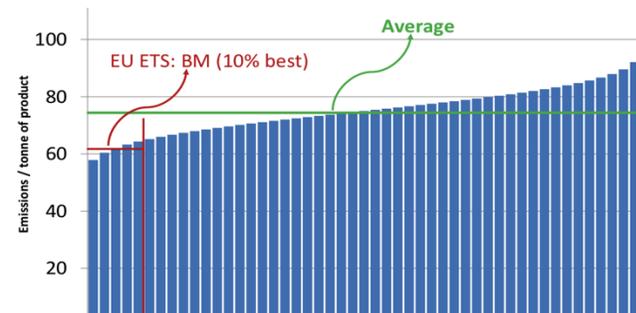
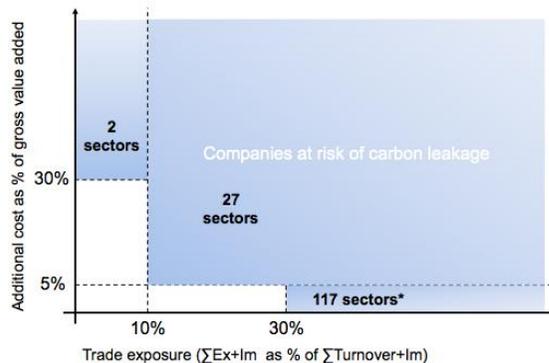
α_{cap} : adjustment factor to adjust allocation to the cap

Determining trade exposure and leakage risk:

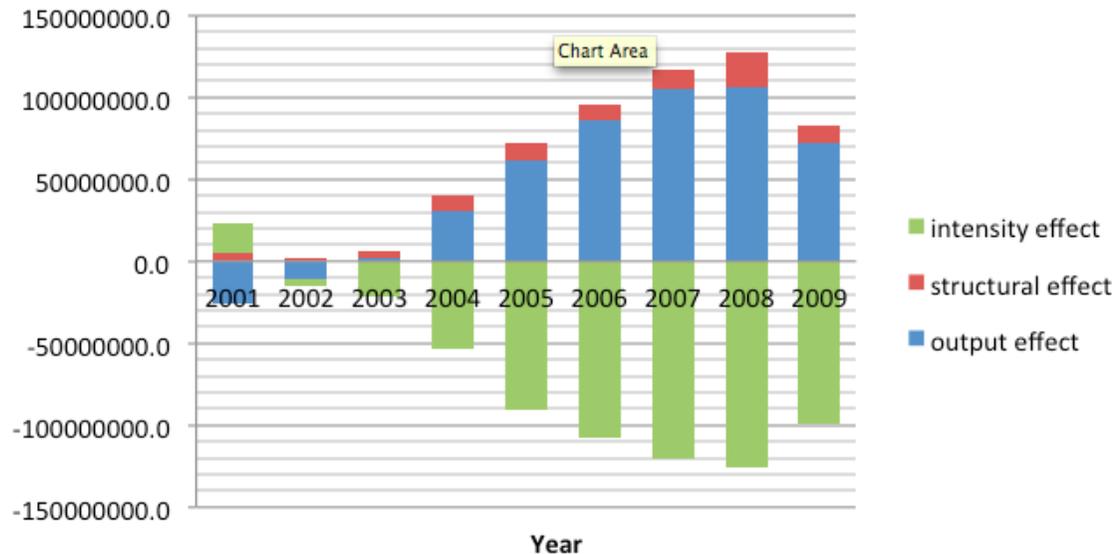
- 5% cost increase and 10% trade exposure
- 30% for one of the two

Challenge:

- 60% of sectors and 95% of industrial emissions covered
- Drastic change in circumstances, especially carbon price



- Structure of the South Korean economy and emissions trends:
 - output and intensity effects largely compensate each other
 - few structural shifts between sectors (primary/secondary/tertiary), but shifts within manufacturing sector to more intensive activities



- Overview of the current climate policy framework, notably the Korean Emissions Trading System (KETS) set to start in 2015
- Impact assessment of carbon pricing on Korean energy intensive industries, applying same criteria as in the EU ETS
- High trade intensity, in particular, renders a substantial percentage of manufacturing industries at risk of leakage, including eight sectors exposed to significant risk

Thank You!

- Papers are available at the following address:
<http://www.climatestrategies.org/research/current-projects/impacts-of-ets.html>
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