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

Andrzej Blachowicz
Managing Director
Climate Strategies

Michael Mehling
Member, Project Lead
Climate Strategies
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 Overview**

**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](http://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
Policy Paper 1

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

**Authors:**

- Maciej Bukowski, President of the Management Board at WISE Institute Warsaw School of Economics
- eMail: maciej.bukowski@iss.org.pl
- Location: Warsaw, Poland
Policy Paper 2

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

**Authors:**

- Michael Mehling  
  President, Ecologic Institute (United States)
- eMail: michael.mehling@eius.org
- Location: Washington, D.C., United States
Policy Paper 3

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

**Authors:**

- Joyashree Roy  
  Professor of Economics, Jadavpur University  
  eMail: joyashreeju@gmail.com

- Duke Ghosh, Sohini Ghosh  
  Partner and Lead Researcher  
  Global Change Research, Kolkata  
  eMail: duke.ghosh@globalchangeresearch.in

- Location: Kolkata, India
Background

• 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 Paper 2: Policy Options

• 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 $A = B_{me} \times P \times \alpha_{cap}$

  - $A$: free allocation [EUA]
  - $B_{me}$: emission benchmark [t CO$_2$/t product]
  - $P$: historic production
  - $\alpha_{cap}$: adjustment factor to adjust allocation to the cap
Policy Paper 2: Case Study EU ETS (II)

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
Policy Paper 3: Overview (I)

- 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
Policy Paper 3: Overview (II)

- 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:

• Andrzej Blachowicz, Managing Director, Climate Strategies
  andrzej.blachowicz@climatestrategies.org
  +44 781 782 9745
  Office location: London, UK

• Michael Mehling
  michael.mehling@eius.org
  +1-202-518-2060
  Office location: Washington, DC