Carbon leakage and the carbon price signal

Climate Strategies, Carbon Trust & Öko-Institut:

- Did not prove that leakage will not occur, on the contrary:
- Showed that leakage is highly likely at meaningful CO_2-prices, € 50-70/ton (or more), as predicted by most analysts

European Chemical Regions Network
6th Congress, 27 October 2008
Vianney Schyns
IFIEC Europe

Climate Strategies

Impact on Gross Value Added :

- at € 20/ton CO_2 and € 10/MWh*
- at € 40/ton CO_2 and € 20/MWh
- at € 60/ton CO_2 and € 30/MWh

The 4% “danger line” drops significantly at the expected CO_2-price of € 50-70/ton

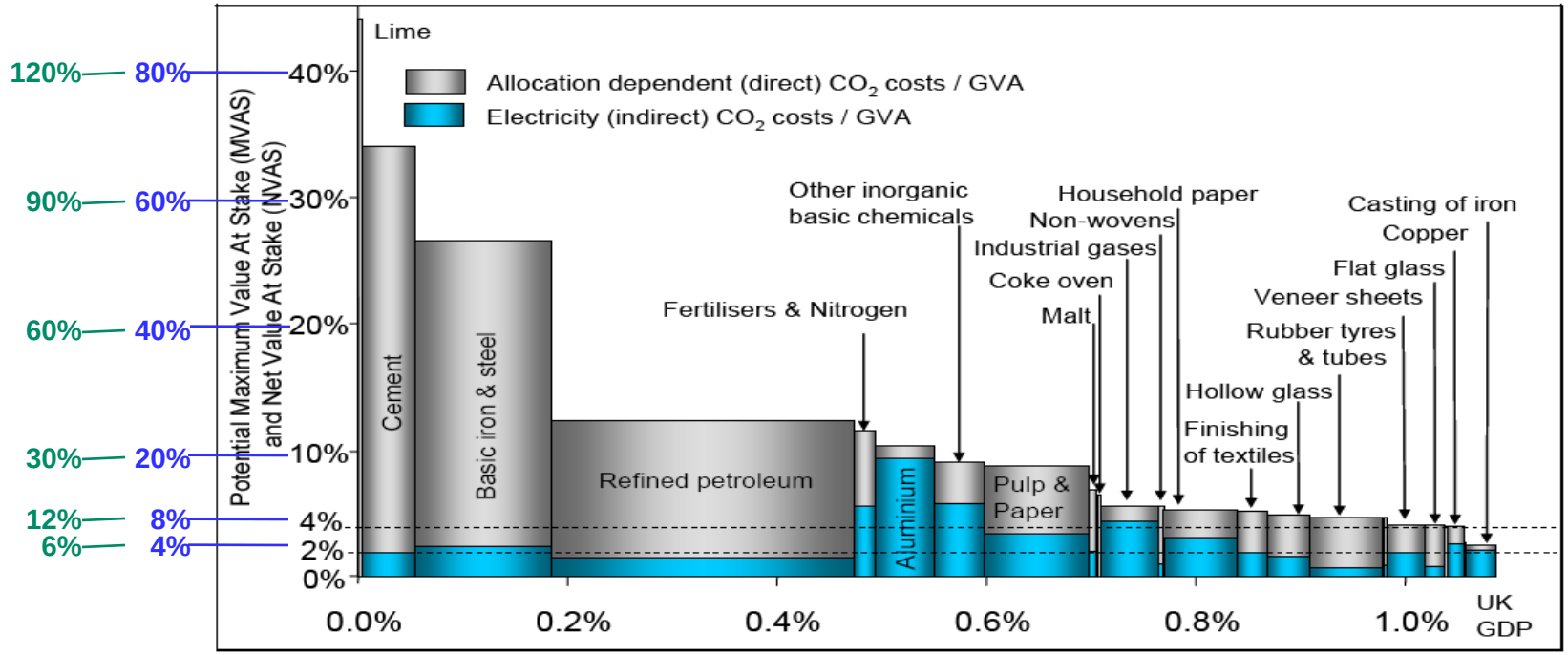


Figure 1 CO_2 cost screen: Subsectors potentially exposed under unilateral CO_2 pricing

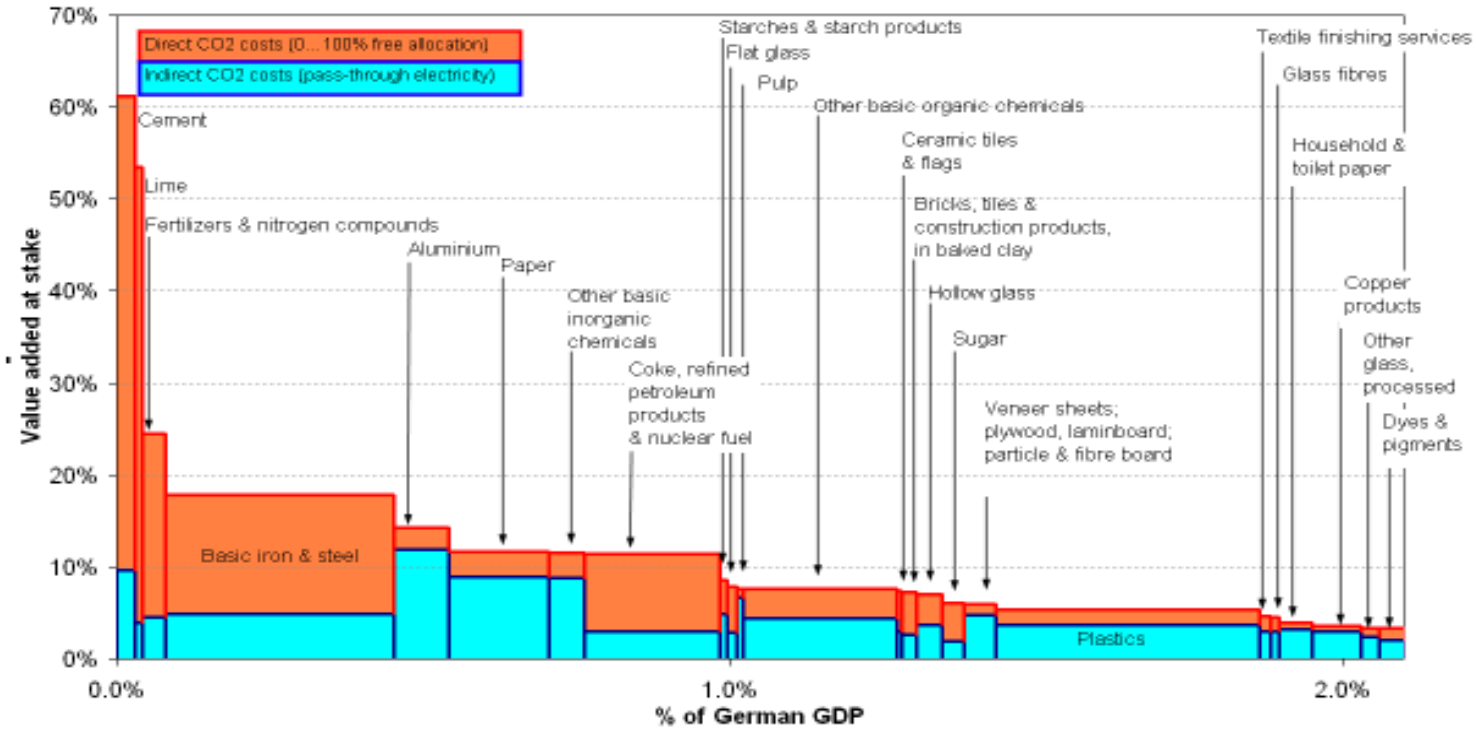
*The impact on power price is more like about 60%-65% than 50 %

ifiec europe

Öko-Institut

Impact on Gross Value Added at € 20/ton CO_2 and € 10/MWh:

Figure 2 Value at stake relative to GDP – area in light blue represent indirect costs, areas in red reflect direct costs



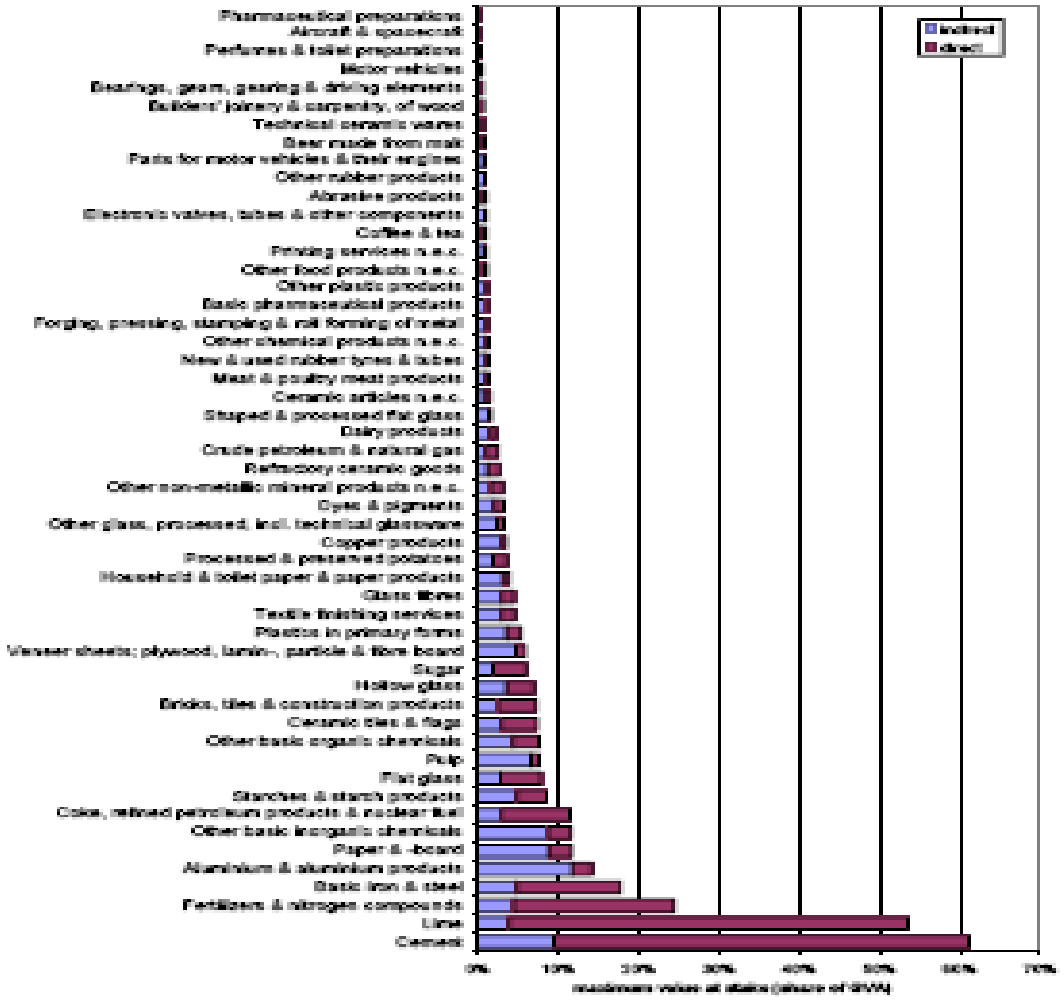
Sources: Statistical office, Öko-Institut

"Only a few sectors are affected" is a damaging, wrong notion.
Carbon leakage at € 40-70/ton for virtually all EU ETS sectors.

ifiec europe

Öko-Institut

Figure 1 Maximum value at stake as share of gross value added for German industrial sectors, 2006



Sources: Statistical office, Öko-Institut

Impact on Gross Value Added (GVA) at € 20/ton CO_2

EU ETS sectors are in the bottom of the figure

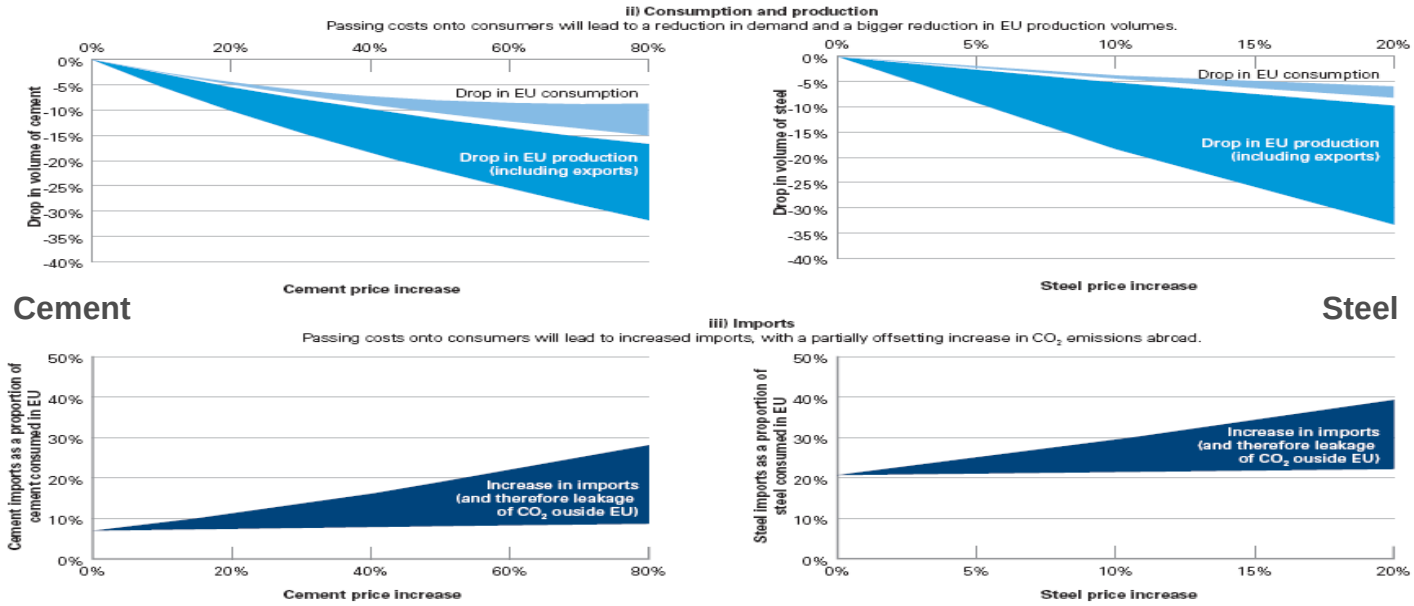
Practical proposal: 1 kg CO_2 / € GVA, equals 2% on this figure

Good governance: risks must be avoided at all cost, credibility EU ETS at stake in global arena

ifiec europe

Carbon Trust

Product carbon price signal: lower product demand (price elasticity), inter-sector competition, fewer exports & more imports = carbon leakage:



Key observations

- Economists argue degree of price elasticity; and it takes lead time
- Carbon Trust modelled leakage at least twice as high than lower demand
- This is more than “a few percentage points”, mentioned in European Parliament

Report mentions all EU ETS sectors and signals either **likelihood of leakage** or **major uncertainties**

Climate Strategies & Carbon Trust

Three solutions against carbon leakage: (1) global carbon market – sectoral agreements (2) Border Adjustments (3) benchmarks in proportion to actual production – dynamic benchmarking

Dynamic benchmarking is refuted by Delbeke, Grubb and others because of "loss of carbon price signal", while at the same time carbon leakage must be avoided with an ex-ante frozen free allocation – static benchmarking.

But is this argument consistent? No it isn't.

There is either carbon leakage or loss of carbon price signal

Statement of Carbon Trust: *"The actual degree of emissions "leakage" combines many uncertainties in demand, trade and abatement responses".* Also inconsistent, how can uncertainties be avoided?

Climate Strategies & Carbon Trust & DG Environment

The allocation must be balanced between auctioning and static benchmarking, the latter for the carbon price signal stimulating radical innovation (in the use of products), a balance between avoiding carbon leakage and avoiding windfall profits

Grubb and Delay: *"Moreover, industry's arguments that domestic producers would pass-through very little carbon cost implies pricing strategies to minimise loss to overseas production – avoiding carbon leakage – rather than to maximise short-run profits".*

But is the argument above then consistent? No it isn't.

"Maximising profits" means the EU ETS is supposed to generate windfall profits, if there must be this product carbon price signal.

ifiec europe

Dynamic benchmarking: production carbon price signal

Dynamic benchmarking (1)

- Break-even CO_2-price for leakage is a factor 4-5 higher than under auctioning or static benchmarking – carbon price signal limited to the difference of emissions per unit of product with the benchmark
  - Hardly an incentive to lower production and import product
- Unambiguous carbon price signal for investments to reduce emissions
- This production carbon price signal is independent of the benchmark value in a certain year, often overlooked
  - Project reduces emissions from 900 to 600 kg per unit of product
  - Incentive = avoided purchases + sales of allowances
  - At benchmark 700 kg: incentive = {900 – 700} + {700 – 600} = 300
  - At benchmark 600 kg: incentive = {900 – 600} + {600 – 600} = 300

The production carbon price signal will spur radical innovations in manufacturing processes, driving inter-sector competition as well

IFIEC method – dynamic benchmarking, smarter method

Benchmarks for the major emitters

- **Total quantity of allowances is the same as under auctioning**
- **Same guarantee of the total cap**

➔ **For allocation: what activity level – production – to be used?**

- Historic production (2005-2007) ➔ means **auctioning for growth** and suppresses market share growth of innovative producers
  - What about low production in Poland & other new Member States?
  - New entrants reserve: **very cumbersome** ➔ thresholds suppress efficient growth by debottlenecking, anyway uncertainty for growth
  - Closure rule: Principle is wrong: -100% is loss of allowances, -x% no consequence! Practice is: often more plants on a site ➔ no loss of allowances
  - Ecofys study and Court of First Instance refuted Commission's worry that *"ex-post adjustments would create uncertainty for operators, and be detrimental to investment decisions* [to reduce emissions] *and the trading market"*

➔ **Actual production: allowed & effective, minimising leakage**

ifiec europe

Dynamic benchmarking: production carbon price signal

Dynamic benchmarking (2)

- Increasing market share: a most important objectives in business
- Gradual capacity increases often achieved by “debottlenecking”, by improving mass and heat transfer ➔ ecological gain

Static benchmarking is a static approach in dynamic markets: efficient winners of market share are seriously hindered. Winning market share at same carbon efficiency as competitor is fully penalised ➔ fully against a free undistorted market

Dynamic benchmarking, a dynamic approach in dynamic markets:
➔ Efficient and innovative market share winners are stimulated, laggards face an economic disadvantage.
➔Winning market share at same carbon efficiency as competitor is neutral – as it should be.
➔It’s just like auctioning, but with resistance to carbon leakage

ifiec europe

The challenges ahead

EU ETS sectors -21% versus 2005 in 2020:

- Difficult to imagine moving most or all plants to Best Applied Practice
  - Lead time, investments, contractor capacities
- Crucial elements to lower emissions will be
  - CHP (locally more, overall less emissions) via clear EU ETS
    - Stagnation in most MS in the last 10 years
    - National schemes proved to be not stable and predictable
    - The EU ETS did not help so far
  - Good start with CCS, also in industry where possible
    - Stimulation not for limited number of selected demonstration projects but for a sum of Mton CO_2 sequestrated

➔ Simple, effective and predictable EU ETS rules are essential

ifiec europe

Dynamic benchmarking – analogies

Personal and income taxes

- Provisional tax, ex-post corrected to the actual income for the final tax
- The EU ETS seems heading for: personal & corporate income tax for the period 2013-2020, based on the income of 2005-2007

➔ No one would ever consider a frozen ex-ante system for taxes

Clean Development Mechanism and Joint Implementation

- Allowances are granted according to a baseline and actual production
- Only allowances for the actual realised savings

➔ No one considers a frozen ex-ante system for CDM & JI

➔ Before global auctioning: benchmarks with actual production

➔ With global auctioning: carbon price in product prices, but only then

ifiec europe