EU ETS and competitiveness: dealing with carbon leakage

Washington, D.C.
Tuesday 22 September 2009

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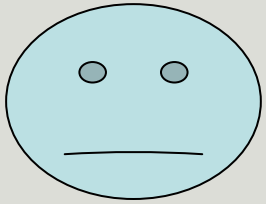
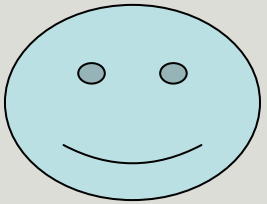
Border Measures



- Considerable administrative cost
- Ensure conformity with WTO and UNFCCC principles
- Avoid retaliation
- Negative effect on Copenhagen negotiations
- Welfare effects?

Co-operative sectoral approaches



- Focus on the development, application and diffusion, including transfer of technologies, best practices and processes that control, reduce or prevent GHG emissions;
- Foster initiatives in R&D, capacity building and technology cooperation (covering) all phases of the technology cycle;
- Include measures to overcome barriers to development, transfer and deployment of technology;

3 Studies

1. "Proof of concept": assess merits of SA as a tool to engage business to act
2. "Governance" – stakeholders involvement
3. "Efforts and costs to industry in different sectors and world regions"

European Commission's carbon leakage assessment: Background

- ETS Directive (Dec. 2008): Sectors at risk of carbon leakage will receive ***100% free allocations based on (AMBITIOUS!!!) benchmarks***.

- EC undertook comprehensive assessment of 258 NACE 4-digit sectors covering Mining and Manufacturing activities and specific subsectors where needed.

How have industrial sectors been assessed ?

- **Quantitative evaluation of indicators** (*Article 10a Paragraphs 14-15-16):*
  - Intensity of trade with third countries.
  - Direct and indirect additional costs induced by the implementation of the directive as proportion of gross value added.

- **Qualitative assessment** (*Article 10a Paragraph 17*) **taking into account :**
  - Extent to which it is possible to reduce emission levels
  - Current and projected market characteristics
  - Profit margins

When is a sector deemed at risk ?

- Quantitative assessment
  - Trade Intensity over 30% OR
  - CO2 cost over 30% of GVA OR
  - Trade Intensity over 10% AND CO2 cost over 5% of GVA
- Qualitative assessment at NACE 4-digit level
  - No threshold, expert judgement based on economic and technological assessment

What was the reference period ?

- Trade: 2005-2007 / 2004-2006 / 2006-2007

	2004	2005	2006	2007
Turnover	SBS COMEXT	SBS COMEXT	SBS COMEXT	COMEXT
Exports	COMEXT	COMEXT	COMEXT	COMEXT
Imports	COMEXT	COMEXT	COMEXT	COMEXT

- Cost increase: 2005-2006

	2004	2005	2006	2007
GVA	SBS	SBS	SBS	
Direct CO2	MS	CITL MS	CITL MS	CITL MS
Indirect CO2	MS	MS	MS	MS

How has Trade Intensity been measured

- Directive defines trade intensity as:

  "*ratio between the total value of exports and imports to third countries and the total market size for the community (annual turnover plus total imports from third countries)*"

- Data sources: EUROSTAT COMEXT and structural business statistics (SBS) databases

- Key issue:
  - Import and export data needed to be compatible with turnover data
    → annual production sold (not straight forward – different data domains!)
    → Fallback: turnover from SBS

How have CO2 costs been measured?

- Direct emissions:
  - process emissions
  - combustion installation related emissions
- Indirect emissions: cost increase due to CO2 cost pass-through by power sector
- … compared to gross value added at factor cost (GVA)

Direct Emissions in CITL

(Community Independent transaction log)

- CO2 emissions for each current ETS installation
- Matching of installations with NACE sector (AMADEUS, Dan&Bradstreet, Kompass; MS; Industry; …)
- Emissions and GVA of an installation have been allocated to the same NACE sector
- Results of the matching process >95% complete.
  - Emissions not matched do not impact on the position of any given sector relative to thresholds

- Key issues with CITL:
  - No emission data for new (“2013”) ETS sectors and gases
  - Sectors with a substantial number of small installations that are not included in the scope of the EU-ETS
  - Sectors with "opt-outs" or temporary exclusions.

Data Sources other than CITL

- Process emissions data from the European Community' s greenhouse gas inventory.
  - matching of activities with NACE sectors
- Direct CO2 emissions, fuel consumption, (limited) process emissions data by Member States
- Issue with indirect cost: Data on electricity not available
- Response: Electricity consumption reported by MS

Indirect CO_2 Cost

- Primary data source: MS data on net electricity consumption in volume (MWh)
- Calculation of corresponding emissions: Average CO2 content of the EU-27 electricity mix (0.465 CO2 tons per MWh) used to estimate cost increase due to purchasing of allowances by power sector.
- Not all MS reported data but ratios calculated for reporting MS assumed to be representative of EU27 as a whole

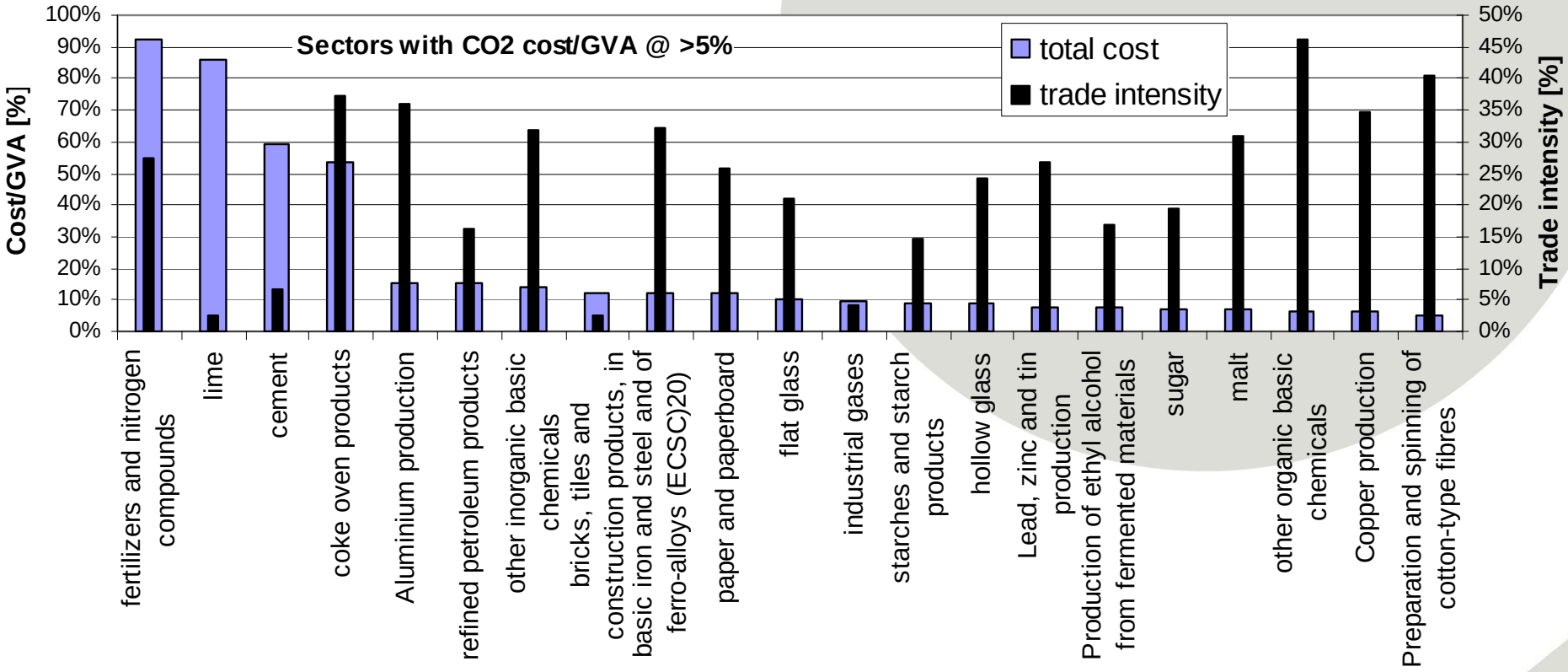
- Key issues with indirect emissions:
  - Relevant emission factor
  - NET electricity consumption: auto-generation & double counting
  - Data coverage & representativity

Gross value added (GVA)

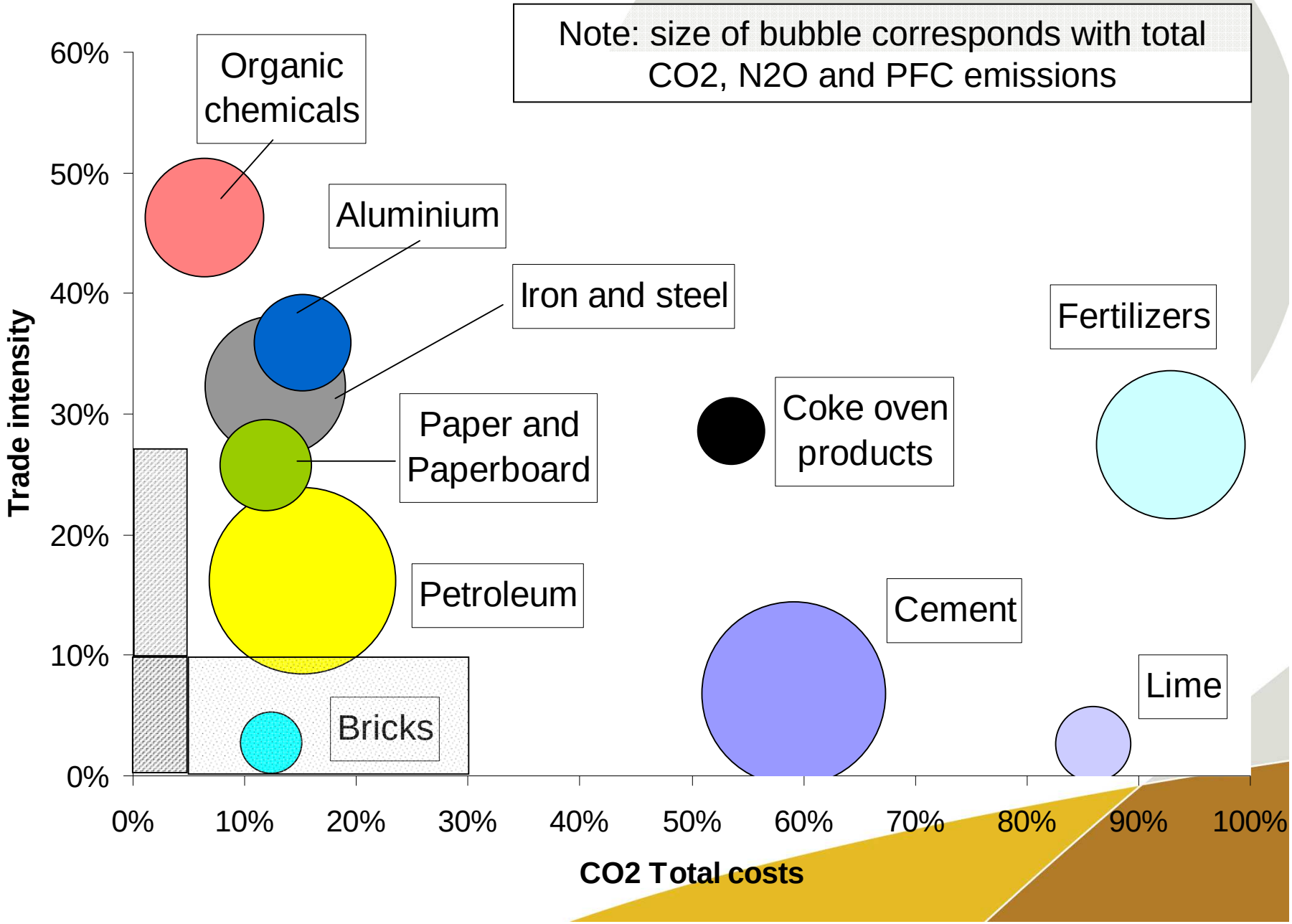
- Data sources: EUROSTAT SBS database
- Key issues:
  - Ensure consistency with emissions data
  - Not readily available at company level (for assessment at higher disaggregation)
- Response:
  - Ad-hoc aggregates of GVA estimates < EU-27
  - Business consultants reviewing company data under confidentiality agreements

Quantitative assessment results

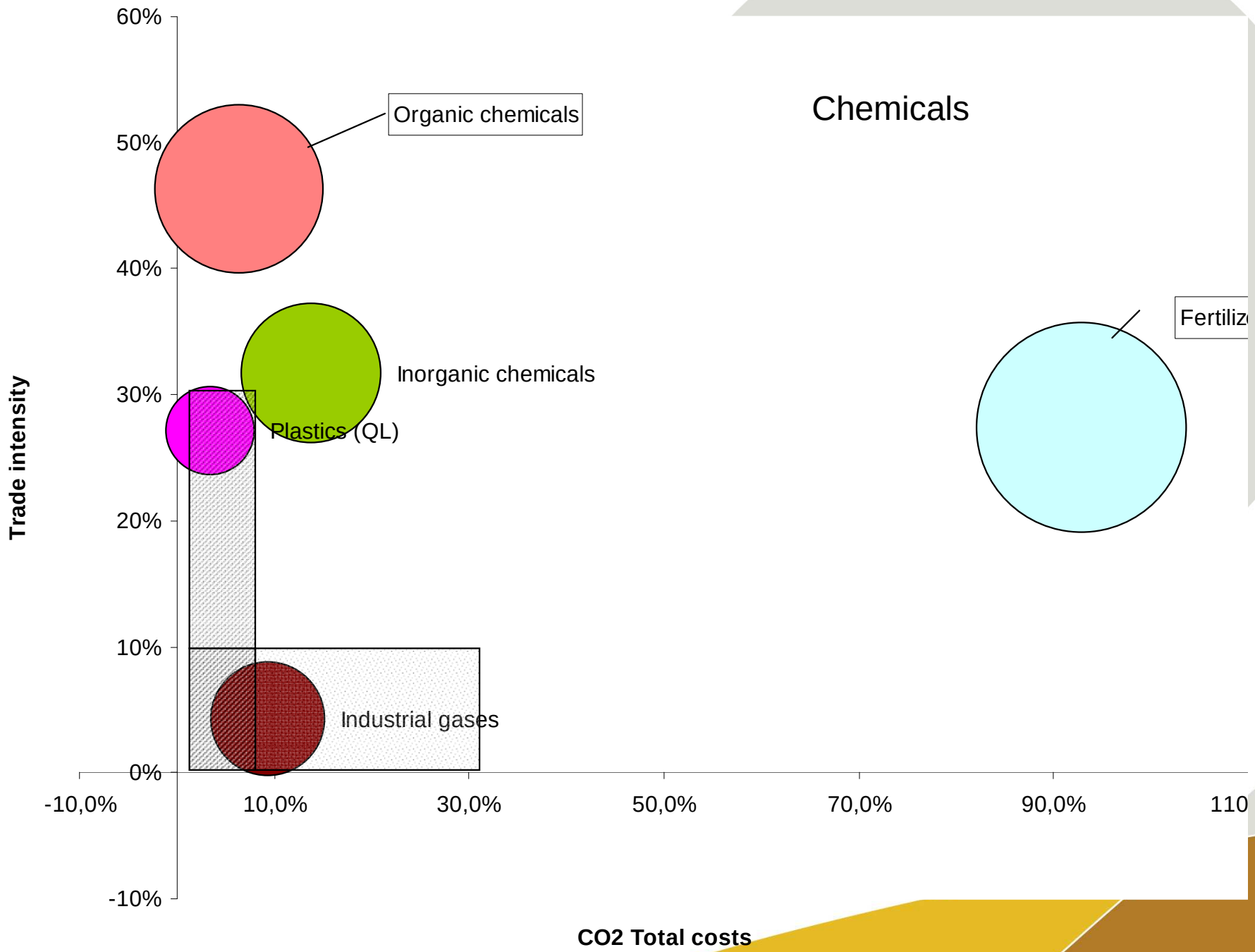
- Out of 258 sectors, 146 meet the criteria at NACE 4-digit level
  - Most (117) sectors show a high trade intensity (>30%)
  - Others (27) have both significant CO2 cost and trade intensity
  - Two sectors qualify through significant CO2 cost alone (>30%)


Sectors with CO2 cost/GVA @ >5%
total cost
trade intensity
Cost/GVA [%]
Trade intensity [%]
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
fertilizers and nitrogen compounds
lime
cement
coke oven products
Aluminium production
refined petroleum products
other inorganic basic chemicals
bricks, tiles and construction products, in basic iron and steel and of ferro-alloys (ECSC)20)
paper and paperboard
flat glass
industrial gases
starches and starch products
hollow glass
Lead, zinc and tin production
Production of ethyl alcohol from fermented materials
sugar
malt
other organic basic chemicals
Copper production
Preparation and spinning of cotton-type fibres

Results: selected sectors (@ 100% auctioning)



Chemicals


60%
50%
40%
30%
20%
10%
0%
-10%
Trade intensity
Organic chemicals
Inorganic chemicals
Plastics (QL)
Industrial gases
Fertiliz
-10,0%
10,0%
30,0%
50,0%
70,0%
90,0%
110
CO2 Total costs

Sectors quantitatively assessed at a higher level of disaggregation

- **WHY:** Assessment at NACE 4-digit can be missing specific products or groups of products which would meet the thresholds for the quantitative criteria laid down in the Directive.

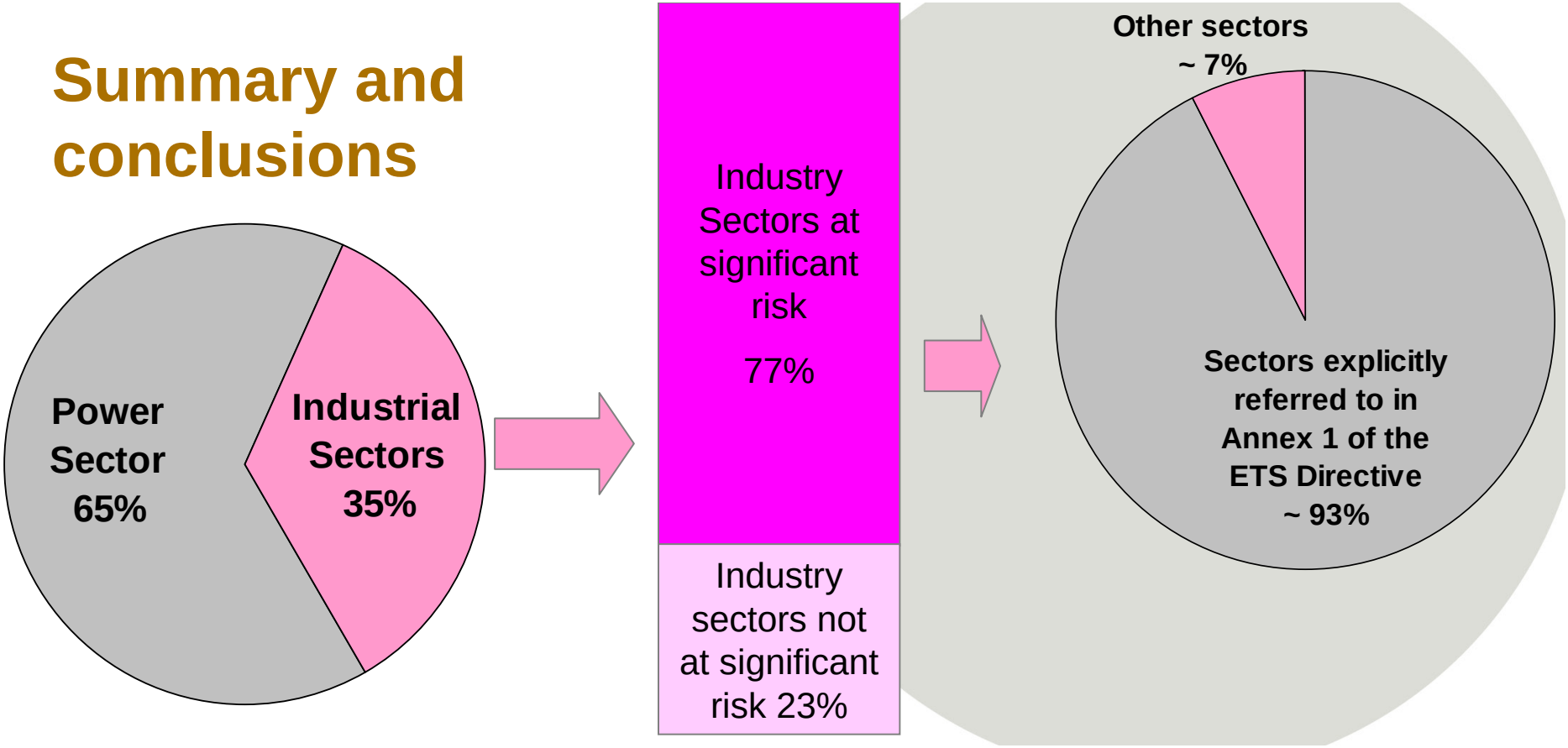
- **HOW:** Same Trade Intensity and CO2 Cost indicators and thresholds as for NACE 4-digit sectors.

- 9 product groups deemed at risk of carbon leakage, including: Reinforced Glass Fibres; Hydrogen, Nitrogen and Oxygen

Qualitative assessment results

- **What triggered a qualitative assessment**
  - sectors close to the thresholds,
  - absence of data for one of the indicators (ex.: casting sectors → no trade data),
  - doubts about accuracy or coverage of quantitative data (Ex.: discrepancy GVA vs. emissions)
  - integrated production
- **Selective, clear EXCEPTION to the rule:** only 7 out of 94 sectors that did not meet the thresholds were assessed.
- 5 sectors deemed at risk of carbon leakage, including plastics in primary forms and casting of light metals

Summary and conclusions



- A majority of emissions in ETS will be auctioned
- Free allowances focused on sectors explicitly referred to in Annex 1
- The environmental objectives not compromised at all, as cap is not influenced; only distributional effects
- Emission reductions are autonomous and non-conditional, unlike under border measures!

Thank you!

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