How an enhanced EU ETS can push industrial innovation

A possible compromise

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EU Member States agree on targets but not on interim milestones

Reductions
-80 to -95% by 2050
-80% = domestic, ref. 1990

Investments
€270 Bn p.a.
in EU economy:
jobs
infrastructure
R&D

Savings
€170-320 Bn p.a.
Fuel cost
€88 Bn in 2050
Air quality and health
Low-end Industrial sectors scenario E.C. 2050 low-carbon roadmap
High-end scenario
0.8% pa efficiency improvement as from 2005 (fixed production)
2050: The challenge for EU industry

10-15 years time left to develop & make breakthrough technologies market ready

Deployment of New Technology

13%
Deep reductions are possible in cement, steel, paper and chemical sectors (over time). Reduction Potential in some industrial sectors.

Steel

- Reference level (average EU blast furnace)
- New blast furnace
- Fastmelt
- Fastmelt with CCS
- Top gas recycling with CCS
- Electrolysis (using renewable electricity)

Cement

- Reference level (average EU cement kiln)
- New Cement kiln (using biomass)
- Oxy-fuel technology with CCS
- Magnesium Oxide Cement

Year the mentioned technologies likely become operational on commercial scale.
Will the EU ETS bring about these breakthroughs?

- EU ETS is valuable carbon pricing instruments (cost-effective reductions driven by opportunity cost)

- **but** EU ETS will not bring about break-through technologies (e.g. ULCOS type). Costs and risks are too high.

- Complementary policy/support required

- There is a precedent (NER300) but that was “mainly” aimed at the energy sector
Enhancing the EU ETS for innovation: a policy compromise

- immediate **intervention** in ETS through set-aside/delayed auctioning of EU allowances followed by

- **permanent scarcity** through changing ETS caps as soon as possible (but only auctioning part)

- recycle part of delayed auctioning into EU industrial **low carbon innovation fund** [similar to NER 300 approach]

- **Free allowances remain untouched** up to 2020

- **Carbon leakage list frozen** until 2020
The revenues from the delayed auction go to new EU fund for industrial modernisation. The goal of this fund is to bring low-carbon product and process breakthroughs to the market by 2025-2030. This type of industrial policy has the goal to ensure both the survival and the sustainability of Europe’s manufacturing industry.
EU ETS compromise concept: an example (!)

- Total cap in 2013-2020: 15,000 million allowances
- 7,500 million allowances auctioning (50/50 split between free and auctioned allowances)
- 300 million allowances set aside
- 6,000 million auctioning (remainder)
- 600 million auctioned later and recycled to industrial Innovation fund
- 600 million cancelled at later date (e.g. phase IV)
- Permanent cap adjustment through linear correction factor from 1.74% to 2.5% as from 2015 continuing beyond 2020
- Average carbon price: 10-24 EUR/t in 2013-2020
- Support for industrial modernisation: 10 Bn EUR
- Results in: 900 million allowances
Suggestions for industrial innovation policy/funding

10 Bn EUR (2015-2020)

- **Process Innovation**
  - R&D into higher value added products
  - Products contributing to EU low carbon roadmap
  - Diversification into new products, services and/or production/supply chains

- **Social Innovation**
  - Social transition, Education & Entrepreneurship

- **Product Innovation**
  - Spire
  - SILC II
  - Bio-based i ppp
  - ULCOS II
1.1 Trillion EUR by 2020 (*)

Chinese public/private investments in 7 strategic emerging industries:
- Energy Saving & Environmental protection
- Next gen IT
- Biotech
- High end equipment manufacturing
- New Energy systems
- New Materials
- New Energy vehicles

(*) http://mobile.reuters.com/article/idUSTRE7AKOMT20111211?rpc=932

“The wall, the writing”

130 Bn EUR part of EU MFF 2014-2020
- Horizon 2020: 80 Bn
- CEF: 50 Bn
- best case scenario
“Innovation distinguishes between a leader and a follower”

Steve Jobs

Thank You

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