How an enhanced EU ETS can push industrial innovation

A possible compromise

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European Commission’s 2050 low-carbon roadmap

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

EU Member States agree on targets but not on interim milestones
Low-end Industrial sectors scenario E.C. 2050 low-carbon roadmap

- High-end scenario
- 0.8% pa efficiency improvement as from 2005 (fixed production)

Deployment of New Technology
2050: The challenge for EU industry

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

Deployment of New Technology

10-15 years time left to develop & make breakthrough technologies market ready
Deep reductions are possible in cement, steel, paper and chemical sectors (over time).

**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.

Reduction Potential in some industrial sectors.
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
<table>
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<tr>
<th>Total cap in 2013-2020</th>
<th>Free auctioning</th>
<th>Auctioning (remainder)</th>
<th>Set Aside</th>
<th>Delayed auctioning</th>
<th>Permanent cap reduction</th>
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“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
- Free auctioning:
  - 7,500 million allowances
  - Assuming 50/50 split between free and auctioned allowances
- Auctioned:
  - 6,000 million allowances
- 1,200 set aside
- 300
- 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 less allowances in 2013-2020
  - Auctioned later and recycled to industrial Innovation fund
  - Cancelled at later date (e.g. phase IV)
Suggestions for industrial innovation policy/funding

10 Bn EUR (2015-2020)

- Spire
- SILC II
- Bio-based i ppp
- ULCOS II

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
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

(*) [Link](http://mobile.reuters.com/article/idUSTRE7AKQMT20111112?rpc=932)

130 Bn EUR part of EU MFF 2014-2020

Horizon 2020: 80 Bn
CEF: 50 Bn
best case scenario

“The wall, the writing”
“Innovation distinguishes between a leader and a follower”

Steve Jobs

Thank You

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