Carbon leakage and competitiveness – how to measure it?

First Stakeholder meeting on post-2020 carbon leakage provisions for the EU Emissions Trading System

Robert Jan Jeekel
Carbon leakage provisions: Pre-conditions for win-win solutions

- Precondition 1: the most effective, workable policy tool & ETS design

- Precondition 2: create fair & realistic impact assessment as basis
Precondition 1: the most effective, workable policy tool & ETS design

- Now ETS is fundamentally changing, from the most cost-effective policy tool to reduce emissions, to a very cost driven one with the MSR; is it the best policy instrument?

- ETS is only acceptable if it provides effective GHG reduction while protecting against carbon- and investment leakage

- 100% free allocation at benchmark level should be 100%, not mean in practice 50% shortage or more on direct emissions

- Effective compensation for indirect costs in place

- Feasible long-term future investment management possible
Precondition 2:
Create fair & realistic impact assessment as basis

- No realistic EC impacts assessment have been done on the ETS sector shortages, nor on consequences on direct and indirect and cost impact on the steel industry and society
  - It still needs to be done, at EU & national level

- The macro models used by the EC impact assessments can still not match the real costs impact on industry and society
  - Structural improvements are required: eg use real data, all aspects

- CEPS energy costs & cumulative costs studies: good start how to match reality, but ad-hoc
  - Agree: creation of an adequate analytical framework is key
Improving EC Impact assessments on industry
Reality vs EC impact assessment structurally too big

4) Accumulated shortage of allowances for **direct** emissions in 2030: (B) 0.43 bn t; (C) 1.03 bn t; (D) 2.23 bn t

5) Shortage for **indirect** emissions: 32 Mio t CO₂/year (Assumptions: (a) Electricity consumption EAF=550 kWh/t cs; BF/BOF = 150 kWh/t cs; Downstream processes = 136 kWh/t HRC; (b) 10% electricity import for BF/BOF route; (c) Electricity emission intensity in line with state aid guidelines; (d) yield for hot rolling = 98%

Source: Own calculations dated June 2014, based on information available at that stage.
# Impact of the EU Com proposal for the Review of EU ETS Post-2020 on the EU steel industry

Any case scenario shows that the steel industry will face high direct and indirect costs related to the EU ETS.

- The EU Com proposal (D) leads to CO₂ costs of 79 to 101 billion EUR bis 2030.
- Even with 100% free allowances (scenario B) the CO₂ costs will amount 22 to 29 billion EUR by 2030.

Source: Own calculations dated June 2014, based on information available at that stage.

<table>
<thead>
<tr>
<th>Scenarios</th>
<th>CO₂ price EUR/t</th>
<th>Direct + Indirect CO₂ costs billion EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong>: (a) 100% free allowances on benchmark level and financial compensation for indirect emissions, (b) 10% efficiency increase from 2010 to 2030 (Steel Roadmap)</td>
<td>30</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>28.5</td>
</tr>
<tr>
<td><strong>C</strong>: (a) Carbon leakage provisions, (b) CSCF remains, (c) 2.2% linear reduction factor</td>
<td>30</td>
<td>39.6</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>52.9</td>
</tr>
<tr>
<td><strong>D</strong>: Current EU ETS</td>
<td>30</td>
<td>78.6</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>100.8</td>
</tr>
</tbody>
</table>

Source: Own calculations dated June 2014, based on information available at that stage.
Improving EC impact assessments on industry

Accept limitations of macro models for industry impacts

- Best available on modeling is not good enough
- Optimization of modeling was tried in vain: PACE model - DG Enterprise process “Improving macro modeling to realistic impacts”: not possible to match reality with the least worse model: PACE
- Test: test all models on empiric evidence (eg NAP1 windfall profits power sector), stop using unsuitable products / models; eg GEM E3, E3MG
- Macro-equilibrium models should not be used: no equilibrium
- Do not use power sector models for overall conclusions for other sectors or society, eg on cost or allowances surplus (Primes, Gaines)
- Use realistic assumptions: eg not full revenue recycling to industry
Improving EC impact assessments

- Full transparency: eg need right classification steel waste gases in CITL – now partly hidden in power, while branding sector as benefitting from ETS

- Use regular realistic existing (forward) price data, like Platts, Eurostat

- Need a more regular data / impact monitoring, not ad-hoc

- Game theory on commercial sector behavior (see later)

- Use micro models on sectors & carbon market studies on price CO2
Improving EC impact assessments

- Create credibility & trust in EC independence and impact assessments
- Test any tool to past data – only allow proven successful assessments
- An impact on a sector can be huge, should not be hidden as GDP %
- NAP2 Carbon Leakage assessment is no justification for NAP4 policy
- Need fair data: eg as basis benchmarks setting: no steel plant can make it
- CL list: set indirect impacts as in the CO\textsubscript{2} compensation guidelines
  DG Comp : use marginal prices, not average CO\textsubscript{2} grid factor
Improving EC impact assessments

- Do not hide policy impacts:
  - Current creation by higher carbon & energy prices of new ‘MSR’ windfall profits in the power sector, who bought huge surplus allowances
  - ETS targets & switch to gas create further EU gas dependency and costs
  - Extreme shortages in industry - 100% or - 50% by 2030
Improving EC impact assessments on industry

Other indicators of competitiveness impacts

Priority 1: solve ETS problem: impact assessment & huge policy impacts

Priority 2: other indicators on industrial competitiveness:

- Value chain impacts, EU dependence, price taker
- Excess of production to demand in EU, but also worldwide –> China
- Measure leakage: carbon intensity consumption vs domestic production
- Raw materials quality evolution: possibly > impact technology
- External market aspects; the EU is an open economy vs closed markets
- When Life Cycle Assessment is not applied, steel is disadvantaged vs. competing materials and recycling can be a disadvantage
- Distinctive aspects between Energy Intensive industries, eg profits, see later
Distinctive aspects between Energy Intensive industries
Base policy on different economic and technical sector realities

- Large span of profitability ranges, per sector. Steel at the very low end
- Huge difference of ability to pass on costs
- Steel process emissions: less potential for change than other sectors
- Power sector asking for carbon price 30 and 50€/t, then no point to produce steel, while it may be too weak an incentive for sector X to move
- Not reasonable to think that a single carbon price will incentivize all these sectors without closing one of them: steel first (indirect CL started)
- Some sectors can wait for eg steel to stop producing; no lobby 2030 cost
- Some sectors accept high reduction targets; eg innovation subsidy ok
- Steel are asking for an approach by sector, based on benchmarking with the right to produce for the most efficient producers
## Impact assessment

### Regulatory costs for steel compared to EBITDA per tonne of steel, 2002-2011:

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBITDA t/steel</td>
<td>€48</td>
<td>€71</td>
<td>€99</td>
<td>€77</td>
<td>€142</td>
<td>€110</td>
<td>€92</td>
<td>-€25</td>
<td>€38</td>
<td>€43</td>
</tr>
<tr>
<td>EU regulatory costs</td>
<td>28.1%</td>
<td>18.9%</td>
<td>13.4%</td>
<td>17.3%</td>
<td>9.4%</td>
<td>12.2%</td>
<td>14.5%</td>
<td>-53.9%</td>
<td>35.0%</td>
<td>30.9%</td>
</tr>
</tbody>
</table>


EBITDA: *earnings before interest, taxes, depreciation, and amortization*

- Already today huge impact on profit margins
- At an Ø EBITDA of €69.5 (2002-2011) a CO2 price of €30 or €40 without safeguard measures for direct and indirect costs could wipe out all profit margins.
- **A CO2 price of €40 = up to €80 additional costs** per tonne of steel (BF/BOF route)
Preliminary assessments show that the implementation of the EU Commission proposal would lead to increased high additional costs and a further damage of the competitiveness of EU energy intensive industries.

EUROFER believes that a genuine reform of the EU ETS with an improved carbon leakage support must take place and not the proposed piecemeal approach of the EU Commission.

EUROFER is actively involved in finding solutions for achieving both the EU’s climate objective for 2030 while safeguarding the global competitiveness of industries at risk of carbon leakage.

Therefore EUROFER has made concrete proposals for the Review of EU ETS Post-2020
What we need to safeguard our global competitiveness:

- Provide sectors at risk of carbon leakage with 100% free allocation at the level of the most efficient installations, based on achievable benchmarks and no correction factor and continuation of 100% free allowances beyond 2020.

- Provide sectors at risk of carbon leakage with full off-setting of CO₂ cost-pass through in electricity prices in all member states by either financial compensation, free allocation, or re-designing the electricity market in a way that it prevents any carbon price pass through in electricity prices, or a combination of these.
More concrete proposals for a review of the EU ETS Post-2020:

- The repartition of the ETS cap between a manufacturing cap and a power cap shall become flexible to allow full free allocation up to the level of the benchmark to every leakage industry. The remaining part is left for auctioning. **In this way there is no longer any need for a correction factor.**

- Leakage industries should receive free allocation for their direct emissions up to the level of their benchmarks **times the effective production** (based on the year n-1); they need however to purchase and surrender additional allowances to cover the emissions emitted **beyond the benchmark** times the real production level.
Thanks for your attention