EUROPEAN PERSPECTIVE TOWARDS THE CO2 CHALLENGE

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European perspective towards the CO₂ challenge

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Outline

1. Analysis of the past achievements in Europe
2. What can be done in the future
3. Future of the EU steel production - the EU ETS
4. Need for a proper CO₂ constraint
5. Conclusion
Analysis of the past achievements in Europe (EU15)

1. **-20% Dramatic improvement of material efficiency**
   
   '75: 71.5% '05: 92%  
   Continuous casting; quality control; process management

2. **-14% Increase in scrap availability**
   '75: 55Mt/y '05: 80Mt/y

3. **-18% Improved BF management and concentration**
   Measurements; models; charging; high grade ores

4. **-6% Shift away local C-bearing iron ores**

**Incremental development towards increased productivity**

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**Material efficiency (source: VDEh)**
Analysis of the past achievements in Europe (EU15)

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**What can be done in the future**

1. **Short & medium term: do the obvious**
   - Recuperate all process gases
   - Granulate all BF slag
   - Look for the best raw materials

   *No impact on direct plant emissions*

   General disagreement with claims that an untapped supply of available (expensive) technologies exists

2. **Long term: ULCOS - 2 families of possible solutions**
   1. Switch to other energy vector
   2. Adapt & prepare for Carbon Capture & Storage
Future of the EU steel production

1. Past production level: remarkable stability over the last 30 years
2. Future steel production in Europe determined by CO$_2$ policy?
   - Past experiences with EU ETS
     The control on the activity level is clearly felt: Market is probably long
     Power sector is making huge windfall profits and might even be increasing its emissions
     Allocation rules remain political compromises: No hope to ever find a fair allocation system due to direct emission approach
3. No bonus for innovation
   - New activities receive adapted constraints

The EU ETS

1°) The Kyoto Protocol and the EU target (-8%)
2°) US and others did not ratify
3°) US CO$_2$ / capita = 2.3 x EU CO2/capita
4°) Only 28 % of the total crude steel is produced in countries with KP mandatory targets
5°) In 2050: the EU industry (in ETS) will represent less than 2% of the worldwide GHG emissions
The EU ETS

- A unilateral action from the EU on a ultra fast track procedure on the basis of a model which is beneficial for some players
- 46% of the emissions covered
- Lack of harmonisation and burden sharing are at stake
- Steel is in but not all its competitors (aluminium and plastic)

- 2005-2007: a learning by doing phase?
- 2008-2012: the commitment period with much more scarcity?
- Beyond 2012: an EU ETS? an international ETS?
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Cost comparison slab production between the different geographical areas

Source: WSD 2005
Future of the EU steel production

Leakage or dike burst?

- Gradual (=invisible) externalization of CO₂ intensive activities:
  - Transfer scrap from EAF route to BF route
  - Buy more raw material with a CO₂ footprint: Coke, pellets, HBI, DRI
  - Produce semi’s elsewhere: slabs; HRC

- Minimize the production of non steel products
  - Granulated slag increases direct emissions -> try not to make it

Are we doing anything to decrease the overall CO₂ emissions?

Need for a proper CO₂ constraint

EUROFER believes that the current EU cap & trade system with ex-ante rules cannot be improved significantly since:

1. only a global system can resolve some of the discriminatory effects and other negative consequences of the current system;
2. such a system provides only a weak incentive for CO₂ reductions in the electricity producing sector as opportunity costs can be easily passed on to their customers, even if there is great improvement potential in the sector;
3. allocations cannot always be made on a fair basis, since the same processes with differences in upstream operations, different product mixes/raw materials and technologies used may not be comparable;
4. there is a strong signal to relocate through externalising CO₂ intensive activities.
Need for a proper CO₂ constraint

1. Need for a global & uniform approach
   - To avoid distortion between inside & outside trading space
2. No Cap on activities & take the indirect impact into account
   - To get developing countries on board and to keep activities in Europe
   - Guaranteeing a global optimization for complex processes
   - Providing an understandable pressure on operators
3. No net transfer of cost to the market (no internalization)
   - As long as Life Cycle issues including end of life cannot be addressed properly:
     Primary steel (2tCO₂/t) will return 5 times (avg.0,7tCO₂/t)
     Polyolefin's (1,5tCO₂/t) will decompose (4,5tCO₂/t)
4. For a sectoral approach: no net transfer to other sectors

Conclusion

1. The European steel industry has achieved a remarkable achievement of CO₂ reduction over the last 30 years
   - Availability of raw materials and improvement of process management
2. EU ETS does not help us to improve further on the contrary
   - Steel production activity risks to relocate in phase with decreasing allocation
3. The industry might still have an interesting potential if given the right incentive