Main issues

When is the EU ETS fit for purpose?
  • Environmental delivery
  • Economic efficiency & cost effectiveness

Corollary
  • Market functioning
  • Carbon leakage & competitiveness

Stakeholder expectations
Environmental delivery:

Delivery against
- Trading period
- Against long term domestic target
- Against international commitments

Domestic dimension:
• 2050 low-carbon roadmap
• 2030 Framework
• Oct 2014 EUCO Conclusions

International dimension:
• Paris Agreement
• IPCC Assessment Reports
Emissions in ETS sectors:

2014 emissions (latest year): - 4.5%

Source: EEA EU ETS Data Viewer
Environmental delivery: domestic

EU CO of Feb 2011 endorses 80-95% reduction target and called on EC to develop roadmap

2050 Roadmap for moving to a competitive low-carbon economy

Temperature target:
• Roadmap refers to COP15 where “world leaders agreed that global average temperature should not rise more than 2°C”

GHG reduction targets:
• 2030: 40%
• 2040: 60%
• 2050: 80%
• RM refers to 80-95%, but considers the above trajectory in line with this
Environmental delivery: domestic

2030 Framework

Temperature target:
• 2030 framework Communication mentions “limit global temperature rise to below 2°C”
• Impact Assessment repeats “to below 2°C”

GHG reduction targets:
• 2030: 40% compared to 1990
  • ETS: 43% compared to 2005
  • Non-ETS: 30% compared to 2005
Environmental delivery: domestic

October 2014 EUCO Conclusions

• “At least 40% domestic reduction in [GHG] emissions by 2030 compared to 1990”

• LRF of 2.2%

• EUCO “will revert to this issue [contributions/targets to UNFCCC] after the Paris Conference”
Environmental delivery: international

Paris Agreement:

• P.A. Art. 2(1a) speaks of “well below 2°C” and “to pursue efforts to limit [the increase] to 1.5°C”

• CP.21 para. 20 [COP Decision]: Facilitative dialogue in 2018 to take stock of collective efforts of Parties in relation to progress towards the long-term goal

• CP.21 para. 24 & Art. 4(9): communicate or update NDC by 2020 and to do so every 5 years – new EU NDC by 2025

• Art. 14: global stocktake every 5 years (binding); starting in 2023
Environmental delivery: international

• IPCC: possible impact of 6th Assessment Report (AR6) – ARs released every 5-7 years (AR5 released in 2013-2014)

• UNEP Emissions Gap Report (November 2015):
  • Modest emission reductions up to 2020 → “deep and stringent emission reductions over later decades”
  • Net zero or negative emissions require more investment into absorption/carbon sink measures; both domestically and internationally

• Other jurisdictions may also increase ambition with new NDCs
Reconciling domestic and international dimensions of environmental delivery

• 2.2 LRF would be on the lower bound of ambition; based on ‘below 2°C’ & 80% by 2050

• LRF is also bound by other headline targets (RE/EE)

• Provisions in the Paris Agreement make it probable that the EU’s ambition will be updated before 2030
Economic efficiency & cost effectiveness

EU ETS should not only deliver environmentally, but do so in an economically efficient and cost-effective way

• Trade-off between economic efficiency & political reality
  • EU ETS scope reflects this: firewall between ETS/ESD, no international credits in Phase 4
  • Overlapping policies as there are more objectives than just decarbonisation (e.g. energy security; competitiveness)
  • MSR introduced to address overlap & increase economic efficiency, but it is itself the result of a political compromise

• ETS is purportedly the ‘central pillar’ of EU climate policy – for this to be true, it needs to be the main driver of GHG emission reductions
Cost efficiency:

Short-term vs long-term (dynamic) efficiency

• Cap-and-trade inherently cost-efficient as reductions should take place where they are cheapest first

• Price should not matter in a short-term perspective; however, the surplus + relatively depressed prices have triggered calls for political reform
  • Other systems, such as RGGI, use a hybrid system which includes both quantity and price control
    → MSR shows that EU is set on quantity control as only means to reconcile short and long-term efficiency

• For long-term, dynamic efficiency, the ETS should reflect long-term scarcity
  • Rigidity of supply distorts visibility of long-term scarcity
  • ETS should also create long-term investment signal for dynamic efficiency
  • System may not optimally reflect long-term scarcity right now
EU ETS as indirect driver of change

• Presence of EU ETS can affect corporate culture beyond what the price signal does

• Adoption of internal (shadow) carbon prices which are higher than EUA prices
  • e.g. Total (40$), BP (40%), ExxonMobil (60%), AkzoNobel (64.5$)
  • Internal carbon prices may influence long-term investment and strategic decisions

• EU ETS spurs the development of carbon pricing globally
  • EU ETS is a pioneer; other jurisdiction learn from EU ETS
  • Launch of CPLC at COP21

• Frequent regulatory changes; but all aim at strengthening the instrument, showing strong political support
Direct impact of EU ETS

- Direct impact of EU ETS price signal
  - Short term: operational; fuel-switching
  - Medium term: deployment
  - Long term: spur innovation/investment
- At EUA prices observed over the Phase 3 years, ETS cannot drive even short term operational change
- Other policies (RE support) drive renewable energy deployment – even if the costs are far higher than EUA price
- Marginal role for ETS impetus for some MS to propose national measures
  - UK price floor
  - German lignite phase out
Economically efficient?

• Short-term ETS goals are being achieved at very low EUA prices – yet, there’s a pervasive sense the EU ETS is not functioning as should

• Low prices in principle not a problem; logic of market – however...
  • Achievement not driven by ETS price signal
    • Undermines economic efficiency
  • EUA price collapse in early 2016 erodes confidence
    • Paris Agreement did not buttress EU carbon market
  • Uncertainty about ETS to deliver long term
    • Market seems to have only near term visibility of scarcity
Over the last years, the ETS is marked by:

- The carbon market being long
- The environment being short

- There will need to be alignment at some point

- The ETS also has operated in an environment with low or negative GDP growth and low energy prices
  → these circumstances may not hold in the future
  → Incentive for inaction → incentive for regulatory intervention
Market Functioning

What kind of market is the EU ETS?

• A regulatory market which depends on a societal and political license to operate

• Is the EU ETS driven by fundamentals or sentiment?

  • Overhang of about 2 billion; supply far outstrips demand but prices not zero
  • Positive EUA prices seen as an option on future scarcity
  • In the absence of scarcity, sentiment dominates
  • Other commodity (energy) markets drive ETS
Market Functioning

Can the EU ETS be considered to be a well functioning market, mechanically? It depends on:

• Liquidity
• Volatility
• Transparency
• Market participation
• Registry security
• Financial regulation [e.g. MiFID II]
Market Functioning

Liquidity:
• EU ETS exhibits clear price discovery
• But liquidity modest compared to other markets

Market participation:
• On average about 18 participants in auctions (2015: 18/2014: 16)
• Cover ratio auctions 2015: 3.18 (decent demand)

Volatility:
• Auctions clear close to secondary market price
• Small spreads secondary market bid/ask → good market functioning

Execution:
• OTC trades about 50% of volume in 2008, but in single digits today
Market Functioning

Volumes:

- Volumes peaked in 2013; 2015 volumes lowest in 7 years

Source: CEPS, on basis of ThomsonReuters PointCarbon data (2016).
Seasonality in the market?

- More market activity in first half of the year

![Phase 3 volumes in millions - Jan-Jun vs Jul-Dec](chart)

*Source: CEPS, on basis of ThomsonReuters PointCarbon data (2016).*
Market Functioning

Other observations on the functioning of the market:
• Major banks, serving as liquidity providers, have exited the market
• Power operators have more inelastic demand response to price changes
• Industrial operators only access the market a few times a year
  • No need: receive free allocation, only access for compliance purposes

→ Skewed market participation
  • More influence for speculative market actors
  • More volatility to the downside → no natural demand when selling picks up
• High liquidity seen as goal in itself → drives cost efficiency of ETS
• Regulation matters:
  • Stringent participation rules deter market entry
  • EUAs cannot serve as collateral under Financial Collateral Directive
  • MiFID II may improve transparency on positions held due to increased reporting
Ensuring protection against CL risk:

• Free allocation is chosen method for this, but is this sustainable in the long-run?

• Justification for compensation such as F.A. is asymmetries in global carbon constraints → these constraints may change with time, particularly post-Paris

• Rigidity of supply creates problems when output levels change considerably, such as during a recession

• Partial cessation rules created perverse incentives to strategically adjust production → contributed to surplus
Ensuring protection against CL risk:

Costs of mitigating carbon leakage risk

• Free allocation, in particular if not well targeted, may distort incentives for reductions and affect ETS market participant behavior

• Auctioning revenue is foregone if free allocation is granted; this also has implications for the beneficiaries of these revenues, e.g. if they are used for climate-related purposes

• Distortions in the internal market may arise if direct & indirect carbon costs are compensated unequally (FA vs state aid)
## Observed carbon costs

ETS costs for selected sectors, in % of EBITDA

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<tbody>
<tr>
<td>Steel: Blast Oxygen Furnace (direct, indirect and admin costs)</td>
<td>0%</td>
<td>-9%</td>
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<tr>
<td>Steel: Electric Arc Furnace (direct, indirect and admin costs)</td>
<td>5%</td>
<td>12%</td>
</tr>
<tr>
<td>Primary Aluminium (indirect costs)</td>
<td>Between 1 and 51% (average: 27%)</td>
<td>Between 30 and 99% (average: 49.8%)</td>
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<tr>
<td>Flat glass (indirect costs)</td>
<td>/</td>
<td>Between 1.6% and 5.7% (average: 3.1%)</td>
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Source: CEPS publications, pass-on rate 1
### Observed carbon costs

ETS costs for selected sectors, in Euro/ton production costs

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<tbody>
<tr>
<td><strong>Steel</strong>: Blast Oxygen Furnace (direct, indirect and admin costs)</td>
<td>-2.88 Euro/ton</td>
<td>-6.97 Euro/ton</td>
</tr>
<tr>
<td><strong>Steel</strong>: Electric Arc Furnace (direct, indirect and admin costs)</td>
<td>4.05 Euro/ton</td>
<td>3.86 Euro/ton</td>
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<tr>
<td><strong>Primary Aluminium</strong> (indirect costs)</td>
<td>58.79 Euro/ton</td>
<td>61.47 Euro/ton</td>
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<tr>
<td><strong>Flat glass</strong> (indirect costs)</td>
<td>/</td>
<td>1.37 Euro/ton</td>
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<tr>
<td><strong>Ammonia</strong> (indirect costs)</td>
<td>/</td>
<td>1.8 Euro/ton</td>
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<tr>
<td><strong>Chlorine</strong> (indirect costs)</td>
<td>/</td>
<td>31.13 Euro/ton</td>
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<tr>
<td><strong>Bricks and Roof tiles</strong> (indirect costs)</td>
<td>/</td>
<td>0.61 Euro/ton</td>
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<tr>
<td><strong>Wall and Floor tiles</strong> (indirect costs)</td>
<td>/</td>
<td>1.48 Euro/ton</td>
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Source: CEPS publications, pass-on rate 1
Ensuring protection against CL risk:

• Observed carbon costs not always a significant component of total costs for all sectors; sometimes negative costs

• CL protection has worked so far, but problems may arise in future
  • If fixed auctioning share of 57% is maintained, provision for CSCF becomes inevitable – but CSCF reduces protection

• Choice has to be made for...
  • Accepting CSCF may be triggered
  • Breaking 57% auctioning share, thereby no longer capping free allocation
  • Using allowances from MSR
The cross-sectoral correction factor (base case)

Assumes 1% annual benchmark reduction
2013-2017: Median industry production level expected 15% below 2005-2008 levels
2018-2022: Median industry production level expected 10% below 2005-2008 levels

Source: ThomsonReuters PointCarbon, 2015