German Institute for
Economic Research

DIW BERLIN

New Coal Issues

Summary of comments from Working Group at ALICE Symposium

Outline

1. Technology Questions
2. Long-Term Scenarios
3. Policy issues
4. Credibility of transition strategies
5. The European policy framework for CCS

Technology questions

- How good will the technology perform?
  - Indicators:
    - Share of CO_2 captured? 80-100%
    - Acceptability of "Energy penalty"?
    - Co-firing possibilities?
    - Pre-combustion, oxy-fuel, post-combustion opportunities
    - Stability and flexibility of operations

  → Demonstration projects are essential

- Leakage rate – Essential for climate and political acceptance
  - at 1% can be measured
  - below 0,1% makes CCS interesting
  - however a rate below 0,01% is necessary

  → Research + institutional design needed for evaluation

Long-term scenarios

Ultimate objective

- **Decarbonisation by 2050 (Eurelectric Study) - New EU Member States did not sign up**
- **Low-carbon versus renewable – Uncertainties on technology choice?**

→ Shared vision is essential for consistency and credibility for investors and infrastructure investments

Process to converge to a shared vision

- **Is CCS a bridging technology?**
- **CCS not only for coal but for biomass?**
- **CCS not only for power but for steel, cement, fertilizer?**
- **CCS and utilisation of $C0_2$?**
- **Other countries possibly more important (resources, politics)**

How can the shared vision be anchored in institutional/legal framework?

- **Example UK Climate Change Committee?**
- **Possible in Germany – or do we only like to discuss individual instruments?**

Issues from a policy perspective

What explains cancelation of many coal projects?

- **Economic situation (demand development/power price, carbon price)**
  - **Interactions with incentives for energy efficiency? (transport, heat pump creates new demand and stakeholder support ?)**
- **Public opposition**

For CCS political obstacles possibly strongest issue at this point:

- **Banana – issue across technologies / networks, how to create consensus?**
- **Incentive structures for local actors**

Main concern voiced from stakeholders:

- **System compatibility with renewables scenarios?**
  - **Is it a substitution**
  - **Is it compatible for system balancing**
  - **Does it block developments of other technologies / network infrastructure / capital allocation**
- **Is CCS used as argument for un-sequestrated coal?**
- **Leakage at storage sites?**
  - **Local safety**
  - **Global climate impact**

Credibility of transition strategies

Can we, as a society, country, EU, commit

- **to retrofit new-built unsequestrated coal?**
- **to shut down unsequestrated old coal stations?**
- **to build coal CCS as bridging technology?**
  - **Leading to renewables**
  - **Leading to co-firing of bio-mass**
- **to develop in parallel (i) renewables (ii) alternative materials**

Options

- **Legal framework**
  - **Experience from nuclear industry?**
  - **Vintage of power stations technology**
- **Emission trading scheme**
  - **How to make ETS robust, stringent enough?**
  - **Do investors assess the future risks for business model (S&P survey)**
- **Future governments abandon a technology / compensate owners**
- **Political economy developments create diversity and new interests**

The European policy framework for CCS

- European support package strongest financial component
  - Economic Recovery Package
  - 300 Mln EU ETS allowances for low-carbon technologies
  - Timely delivery
- Next steps:
  - National regulatory frameworks next step
  - Initiatives by all large utilities across several EU countries
  - What do we know / learn / plan about EU technology policy
  - Corporate strategy – is it still based on member states or EU level policy framework?
  - What does that imply for scenario formation, engagement, policies …