Coverage & scope: Choice of sectors, greenhouse gases and regulated entities under an ETS. Rationale and criteria

Partnership for Market Readiness (PMR)
Technical Workshop: Domestic Emissions Trading (ETS)

Dr. Felix Chr. Matthes (孟斐)
Shenzen / 深圳, 12 March 2012
• The views and opinions presented in this paper are partly based on results from research commissioned by the German Federal Ministry for the Environment, Nature Protection and Reactor Safety, the German Federal Environment Agency and the European Commission.

• The contents of this presentation does not necessarily reflect any official position of Germany or the European Union.
Coverage and scope of an ETS
ETS design chain & assessment criteria

• **Early key decisions**
  – coverage: sectors to be regulated by a GHG ETS
  – scope: entities to be regulated by a GHG ETS

• **Key criteria for assessment of coverage & scope options in the design phase of an GHG ETS**
  – effectiveness: meeting the (environmental) objective with a low level of uncertainty
  – efficiency: meeting the (environmental) objective at the least cost
  – (political) acceptability
    • building on political opportunities
    • creating a smart policy mix
    • reflecting national/regional/market circumstances
Basic design of an GHG ETS
Coverage options

• Sectors dominated by large point sources
  – power generation
  – Industry (including process emissions)
  – other large combustion plants

• Sectors dominated by diffuse CO2 sources
  – transport
  – residential
  – tertiary sectors

• Sectors dominated by diffuse and non-CO2 sources
  – agriculture
  – waste management

• Land use, land use change and forestry (including sinks)
Basic design of an GHG ETS
Coverage options – Effectiveness issues

- Are cap-based instruments needed and suitable for certain sectors and greenhouse gas emissions?
  - robust environmental objectives
    - (implicit or explicit) absolute targets
    - economy-wide or for certain sectors
    - for a longer time-horizon
  - need for accountable implementation of objectives
  - coverage of existing policies
    - interactions of ETS with other policies is an important (and challenging issue)
    - ETS offers flexibility for other (non-climate) policy choices
- Reliability & robustness of available data is a key issue (ETS puts an economic pressure on parameters & methodologies!)
Basic design of an GHG ETS
Coverage options – Efficiency issues

- Are flexible pricing instruments suitable for certain sectors and greenhouse gas emissions?
  - heterogeneity of abatement options
    - abatement options in a technical sense: is there a wide range of competing options?
    - abatement options with a view on timing: do long-living capital stocks play a major role?
    - abatement options through the full value chain: are changes in consumption patterns or product substitutions relevant options?
  - need for price discovery
  - (potential) price sensitivities
    - matured abatement options available
    - market structures
Is there a robust coalition to go down the ETS road

- in general and when it comes to implementation
- political framing and opportunities
  - timing and ambition of policy objectives (ETS creates transparency on that)
  - governance and policy traditions and cultures
  - stage of climate / environmental / energy policy
    - setting up ETS is more easy if ETS targets sectors which are characterized by low level of existing policies and measures
    - setting up an ETS in an environment which is characterized by a broad range of existing policies and measures is more difficult / complicated
Basic design of an GHG ETS
Scope options

- **Downstream ETS**
  - point of regulation is release to the atmosphere
    - firms
    - installations
  - point of regulation directly focusses (regularly) the entities which implement abatement measures

- **Upstream ETS**
  - point of regulation is entry of carbon to the (national/regional) value chain (energy producers, importers, distributors, etc.)
  - point of regulation does not directly focus (regularly) the entities which implement abatement measures

- **Midstream ETS:** Point of regulation is … somewhere else

- Combination of different scope approaches is an own option
• Effectiveness does not differ for different scope options
• However, upstream approaches or upstream components
  – allow often a broader coverage
  – increase the GHG emissions regulated by an absolute cap
  – increase effectiveness of an GHG ETS if no sufficient policies are in place or will be implemented for the upstream-regulated emission sources
Basic design of an GHG ETS
Scope options – Efficiency issues

• Transaction costs
  – upstream ETS have regularly lower transaction costs
  – however, transaction costs for allocation must be considered

• (Real world) carbon cost pass-through is the key issue
  – will the carbon price signal arrive at the entities who make decisions on GHG emission abatement?
    • market structure and regulatory framework (is the pass-through possible?)
    • market power (will there be a symmetric pass-through to all customer groups?)
    – downstream ETS often preferable

• Other practical evidence
  – institutional and organizational changes if there is a need to deal directly with the new commodity ‘carbon’
Basic design of an GHG ETS
Scope options – Acceptance issues

• **Important interactions between coverage and scope**
  – coverage for some sectors depends directly on scope (small CO2 emitters, agriculture)

• **Market structure, market power and regulatory (energy) policy structure must be considered carefully**
  – the less ‘perfect competition’ the higher the efficiency losses of an upstream ETS

• **Upstream ETS is much closer to taxes than downstream ETS**
  – is this important for political acceptance?

• **Downstream compensation is an issue for upstream ETS**

• **Smart combinations (hybrid models) could be considered**
• **All ETS debates start with upstream approaches with broad coverage**

• **The closer the schemes come to implementation the more the schemes emerge as downstream ETS**
  – EU ETS, AUS ETS, RGGI
  – (partial) exceptions (CA ETS (really?), NZ ETS)

• **Policy mix and the role of ETS within the policy mix is one of the key issues for coverage and scope**
  • in terms of (long-term) effectiveness and, efficiency and acceptability
  • in terms of (long-term) policy interactions (and ETS price distortions …)
Questions for the panel

- What are the key design features on coverage and scope?
- More important: why where these design features chosen?
  - with respect to effectiveness
  - with respect to efficiency
  - with respect to (political) acceptance
  - with respect to the regulatory framework (e.g. for energy and competition policy)
  - with respect to the policy mix and policy interactions
- What are the key lessons learned?
- What would be your recommendations to other jurisdictions, reflecting also the (potential) specific circumstances of your own jurisdiction?
- What ex-ante analysis should be undertaken primarily?
Thank you very much
非常感谢! 欢迎指教!

Dr. Felix Chr. Matthes (孟斐)
Öko-Institut (生态研究所)
Energy & Climate Division (能源和气候保护)
Berlin Branch
Schicklerstrasse 5-7
D-10179 Berlin, Germany
f.matthes@oeko.de
www.oeko.de