Centre for Energy and Environmental Markets

UNSW THE UNIVERSITY OF NEW SOUTH WALES SYDNEY • AUSTRALIA



Allocation rules and investment incentives:

Experiences with the European Emissions Trading Scheme

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Background

To combat climate change we need different (investment) decisions regarding energy production and fuel consumption

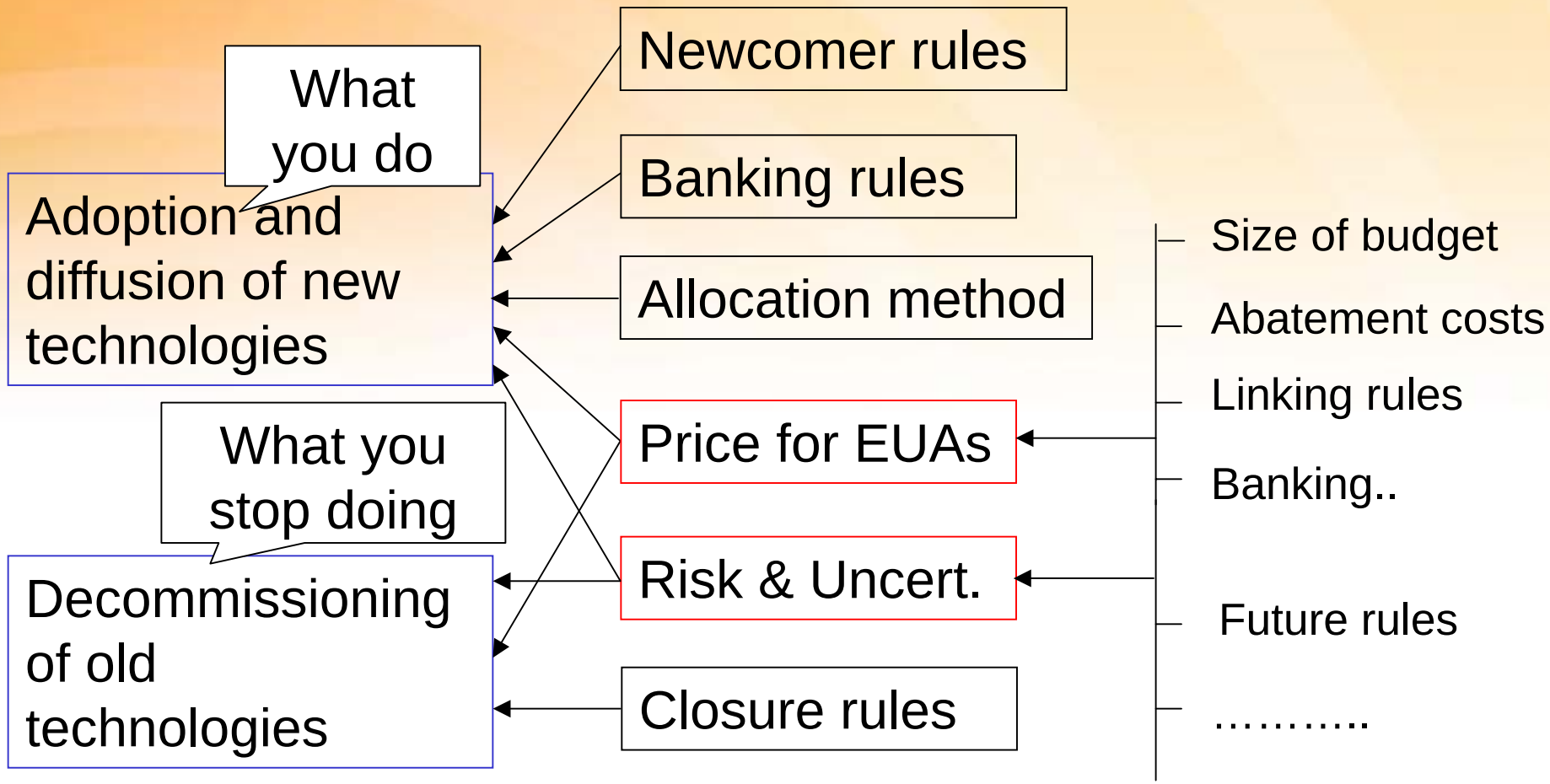
Aim of the presentation

Assessment of how the EU ETS will lead to the right investment incentives to decrease greenhouse gas emissions

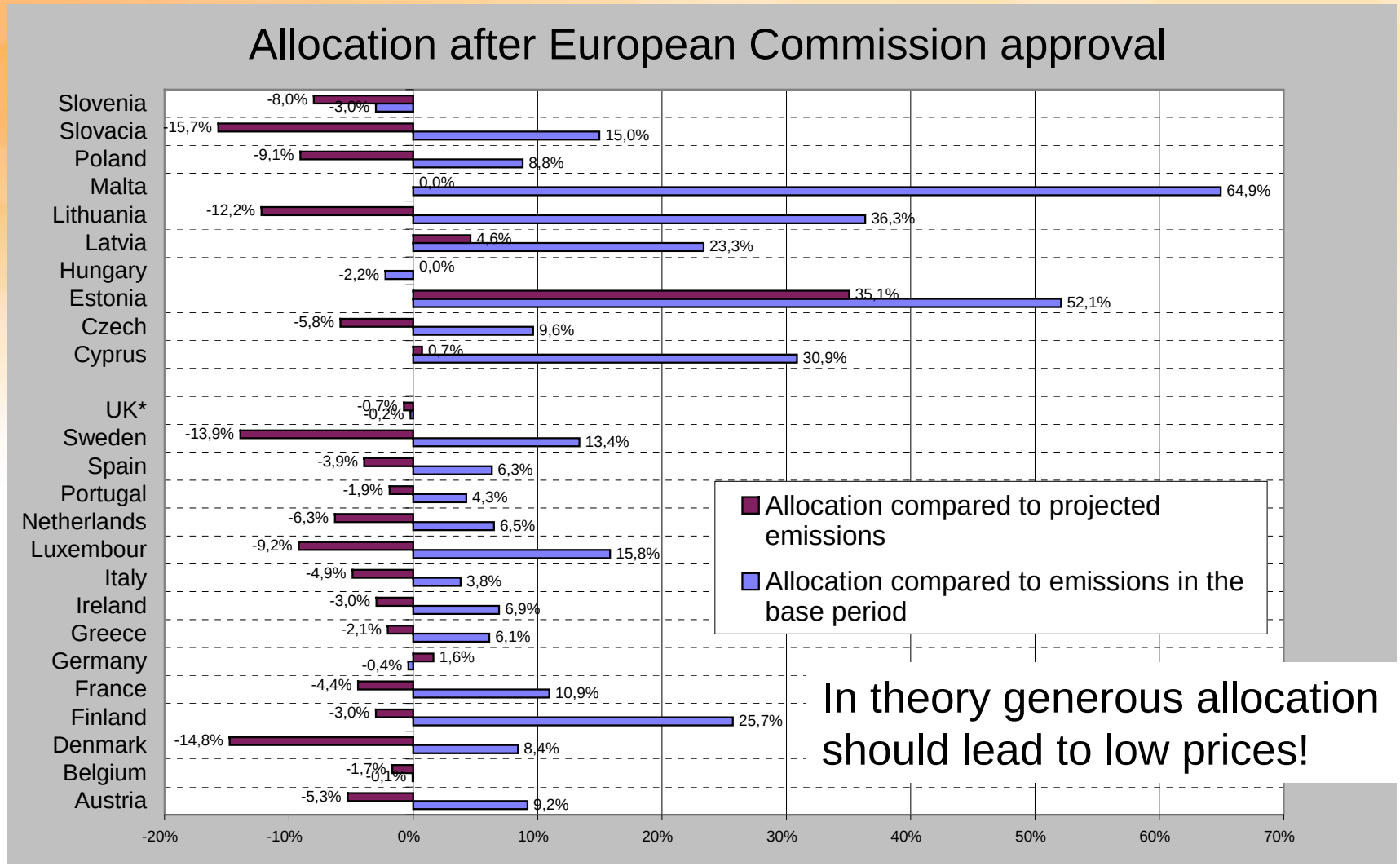
What are the key features of the EU ETS?

- **Regulated entities:** ca. 11.000 CO_2-intensive installations
- **Timing**: successive phases: 2005-07, 2008-12 etc.
- **Approach**: cap-and-trade system
- **Covered greenhouse gases**: only CO_2 + opt-in from 2008
- **Allocation method**: partially harmonized
  2005-07: 95 % free of charge; 2008-2012: 90 % free
- **Flexibility**: banking and borrowing between/within phases
- **Accountable units**: EU allowances, CERs (CDM) from 2005 and ERUs (JI) from 2008, quantitative limits from 2008 -> no forestry CDM units
- **Sanctions**: harmonized financial sanctions for non-compliance (40 €/t in 2005-2007; 100 €/t from 2008-) & surrender missing allowances + public notification

What is the relation between allocation rules and innovation incentives?

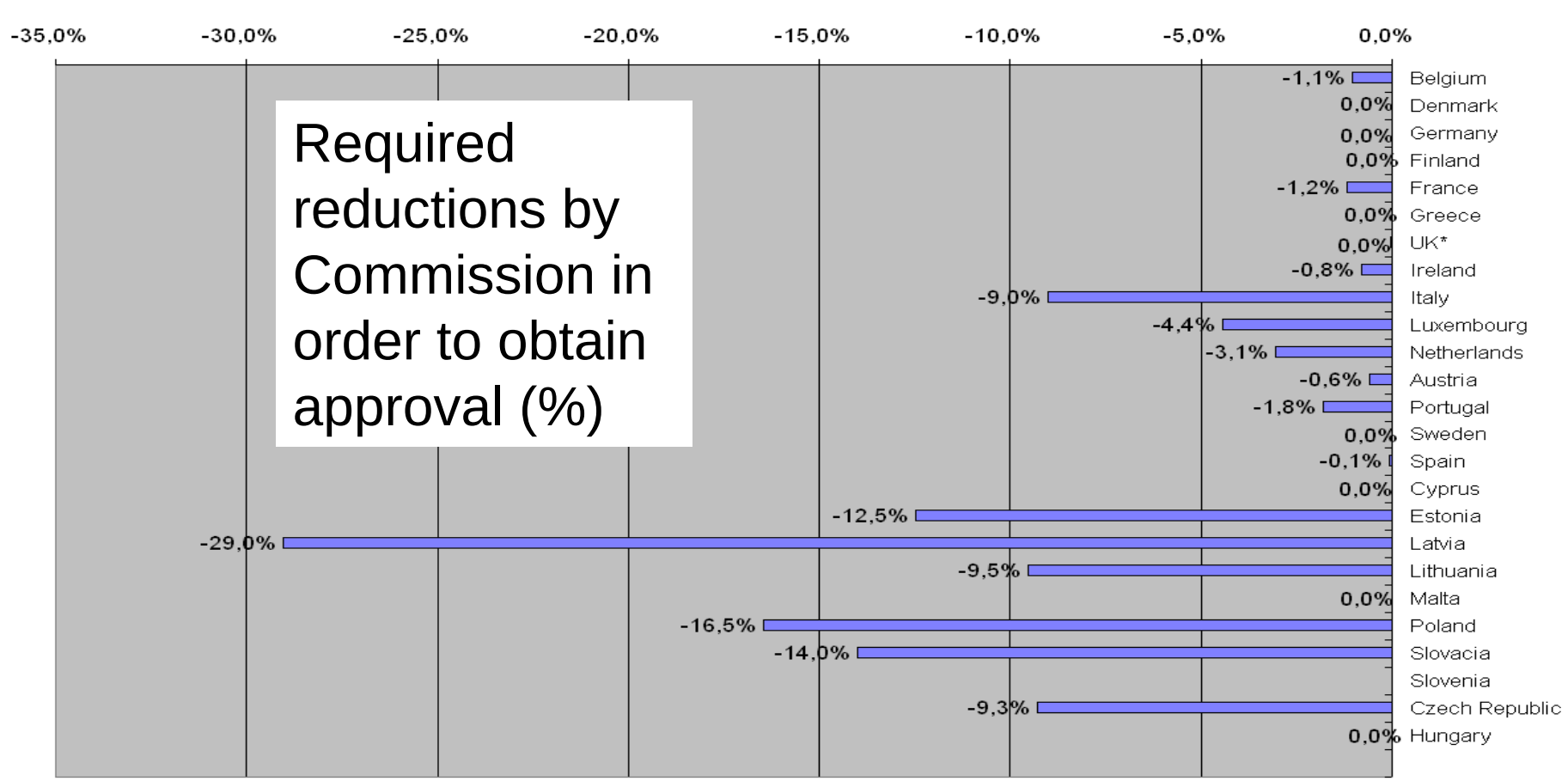


Will allocation result in high prices?

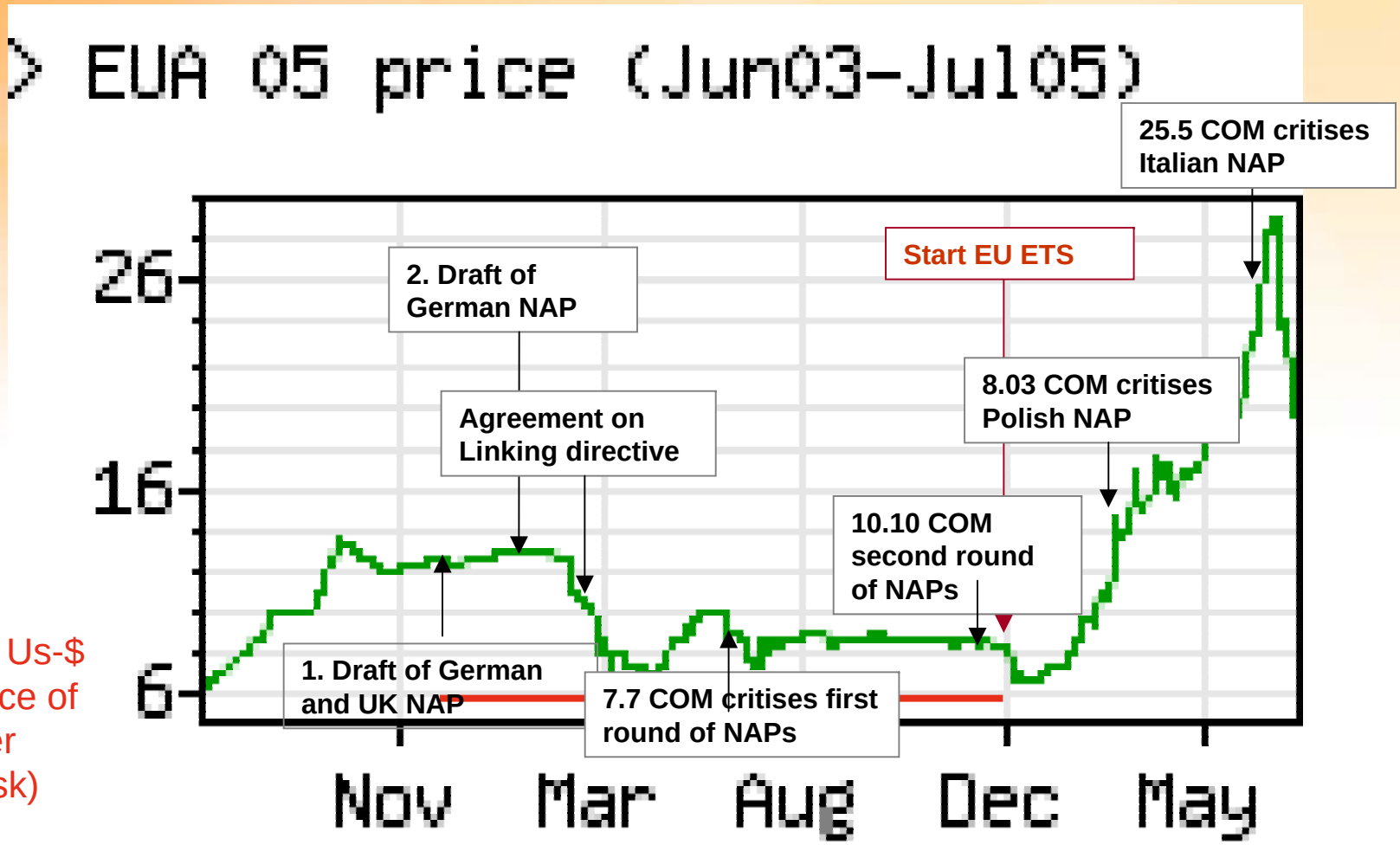


In theory generous allocation should lead to low prices!

What was the impact of the EU Commission?



Price Development of EU Allowances



4.5 € or 5.6 Us-$ average Price of CERs (seller takes the risk)

Source: Evolution Markets LLC

Prices don't reflect abatement costs

- CERs and EU allowances fully fungible:
  -> Why this price difference?
    - Registration risk -> not the real cause
    - Little supply -> prices should reflect this scarcity
- Very little trading volume
  - No pressure to trade today -> borrowing up to 2007 possible
- Possible explanation:
  Manipulation of the market by companies:
  - to show that trading is not functioning
  - to influence allocation in 2008-2012, which will be decided mid 2006

Allocation mechanism: Auctioning – Free

Implementation:

- Only 4 Member States (DEK,LIT, IRL, HUG) will auction off a small share (0.2 % of EU total emissions trading budget), all others allocate 100% for free
- Typical two-step approach: budgets for entire ET-sector or sub-sectors (macro-level) and formula for allocation on installation level (micro-level)
- To guarantee consistency of micro and macro level: use of reduction factor or sub-sector budget and production share
- Allocation based on historic emissions rather than benchmarks: different base periods (averages of several years) from 1995 (Estonia, Malta) to 2003
- Use of growth factors common

Innovation incentive for existing installations:

- Under certain assumptions there is no differences between auctioning and free allocation
  - freed-up allowances can be sold
  - less allowances have to be purchased in case of auctioning
- However:
  - Diffusion: auctioned allowances increase the benefits from lower prices compared to free allocation
  - Price signal: auctions may produce good early price signals and companies have an incentive to assess their marginal abatement costs early

New entrants (NE) – closure rules

Implementation:

- All Member States allocate new entrants' allowances for free (exemption: electricity installations in Sweden beside CHP) based on a reserve (first-come-first-served rule)
- All Member States terminate allocation after closure (required by directive)

Innovation incentive:

- Auctioning and grandfathering have different effects dependent on new entrant and closure rules
- Incentive to invest:
  - NE buy on the market:
    - Allocation for free for existing installations will have negative impact on investment
    - With auctioning for existing installations high incentive
  - NE get allowances based on stringent benchmark
    - With allocation for free for existing installations will delay investment (no anticipated investment)
  - After closure allocation terminates:
    - Little incentive since no opportunity costs -> transfer rule helps
  - After closure allocation continues
    - High incentive since opportunity costs -> not in line with EU directive
- Incentive to invest in lowest CO_2-emissions technology:
  - NE buy on the market: high
  - NE get allowances for free the incentive depends on benchmark:
    - High for uniform benchmarks
    - Low for sub-benchmarks e.g. fuel or technology specific

Banking

Implementation:

Almost all MS will ban banking of allowances from 2007 to 2008
(Poland & France allow for restricted banking)

Considerations:

- excess allowances from MS with banking provisions flow into MS without banking provisions
- difficult to estimate total quantity of banked allowances by the time the allocation plan for the second phase has to be submitted (6/2006)

Innovation incentive:

\+ allows for buffering allowances -> improves profitability of new investments but may

\- reduce future investments (prices impact)

Future allocation rules

Implementation:

- Only few member states mention future allocation rules (e.g. Germany)
- If mentioned in the 1. NAP but the Commission has not approved 2. NAP rules, impacts on investment certainty

Innovation incentive:

- Future allocation rules are important for investment certainty -> risk of updating will have negative impacts on innovation!
- For long term investment (e.g. a coal fired plant will need 5 year planning and 20 years for amortization) the time span of the 1. national allocation plan and the 2nd are too short
- Recommendation: Information about future targets and rules are necessary to drive long term investment

Overview of selected allocation rules and MS

Rules	Number MS with	Number MS without
Auctioning	4 (Denmark, Hungary, Ireland, Lithuania)	21
Newcomers	BAT: 16 Benchmark: 7	Estimations or based on projected emissions: 2 No information: 1 (Cyprus)
Closure	Further allocation: 0 No further allocation: 15	No information/ not decided: 10
Transfer option	Explicitly mentioned: 9	No information / not decided yet: 3 No transfer: 5
Banking	2 (Poland and France restricted banking)	22 (Malta not decided yet)

Conclusions

- **EU ETS ambitious effort and EU policy innovation:**
  - More than 11,000 installations in 25 countries
- **Sound framework – fundamental design choice:**
  - Deterrent sanctions
  - Robust monitoring
  - Implementation in different phases with review options gives flexibility for improvement
- **Poor innovation incentives likely in first trading period:**
  - Size of ET-budget -> low prices:
    - Low effects on ET-sector -> generous allocation
    - High effects on non-ET-sector (households, transport)
  - Auctioning – low effects since 99.8 % for free
  - New entrant rules
    - Benchmark for homogeneous group -> higher effect
    - Best available technology -> little effect
  - Closure rules – low effects -> transfer rules positive effect
  - Future allocation rules – low effects
  - Renewables are not directly covered and promoted (only indirect through elec. price)
- **Design choices of allocation heavily influenced by industry lobbying**
- **Ways forward – proposed changes:**
  - More auctioning
  - Stricter targets
  - New entrants buy on the market and allocation is continued after closure

Thank you!

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