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# Setting the Cap: Experiences from EU Emissions Trading

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Emissions Trading – Getting Crucial Design Elements Right

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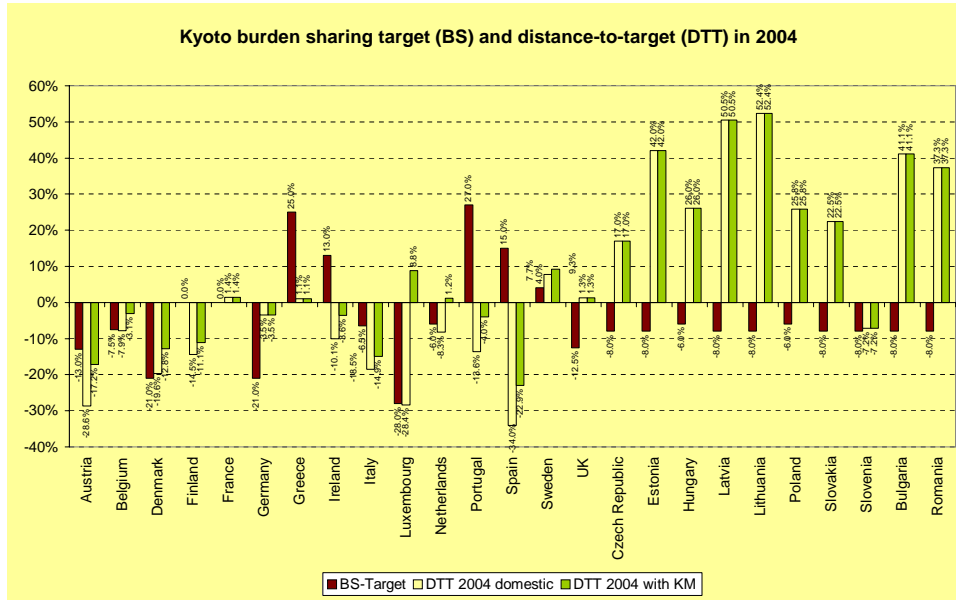
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## Outline

1. Environmental and legal boundary conditions for cap setting in EU ETS
2. Outcome and assessment of cap setting for phase 1
3. Outcome and assessment of cap setting for phase 2
4. Summary and outlook



# 1. Background: EU-Kyoto Targets and Achievements



Most EU 15 States are far from reaching their Kyoto-Targets; most new EU MS will easily reach their Kyoto targets

Without New MS, EU would not be on target to reach Kyoto-Target (~ minus 8%)



# 1. Background: Overview of EU ETS

- **Cap-and-trade** type scheme for large installations in energy & industry
- Operates in **Phases**: Phase 1 (2005-2007), Phase 2 (2008-2012) etc.
- **Banking** between Phase 1 and Phase 2 not possible but unlimited afterwards
- Links to credits from **Jl and CDM** projects established
- Allocation rules given by EU Emissions Trading Directive:
  - Auction share** at most 5% in Phase 1 and 10% in Phase 2
- **National Allocation Plans** (NAPs) for each phase:
  - MS set ET-budgets (Macro) and rules on installation level (Micro)
  - need to be approved by EU Commission
  - had to be based on objective and transparent criteria, including those listed in Annex III
  - NAP Guidance Papers by European Commission für Phase 1 and Phase 2;
  - BUT: no bindings rules existed for cap setting for Phase



# 1. Allocation Criteria

## Consistency with

- (1) Burden-Sharing Agreement & national climate program
- (2) Assessments of historic and projected emissions development to achieve required targets
- (3) Potential to reduce emissions, including technical potential
- (4) Other EU legislative and policy instruments
- (5) Non-discrimination between companies or sectors

## Information on

- (6) Treatment of new entrants
- (7) Whether & how early action is accounted for
- (8) How clean technologies are taken into account
- (9) How public was included in process
- (10) How competition from outside the EU is accounted for
- (11) List of installations with intended allocation
- (\*) Limit on company use of credits from JI and CDM-Projects

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# 1. How to Split the Pie – Appropriate Size of ET Budget?

EU ETS is a **partial system** (energy (> 20 MW<sub>th</sub>) & industry sector)

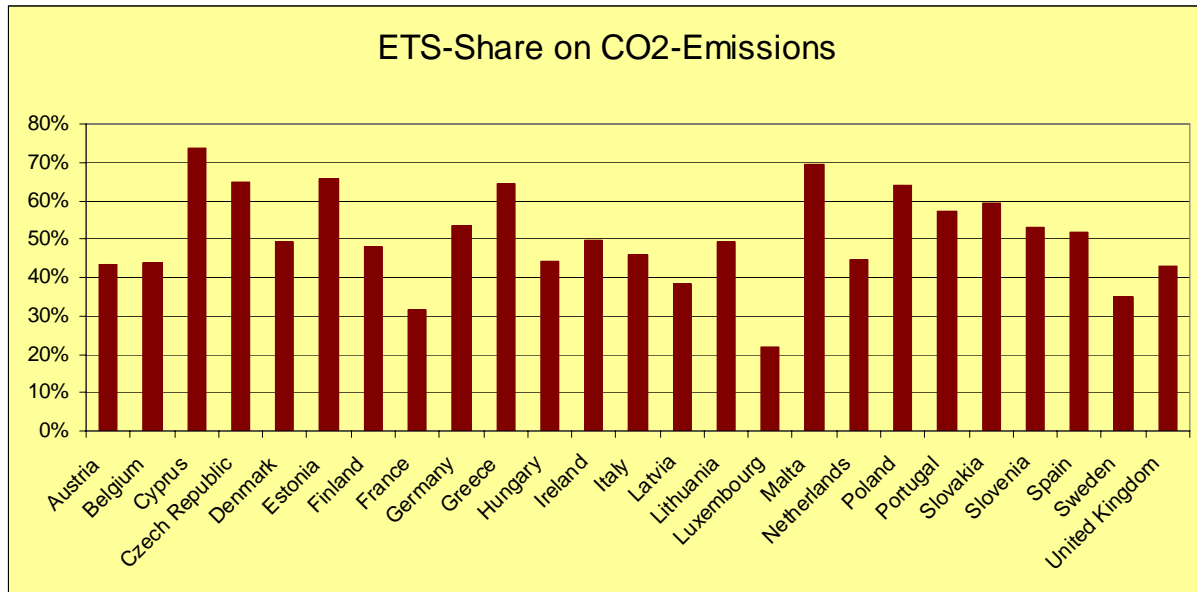
Approaches for splitting emission budgets b/w trading and non-trading sectors include

- **Economic efficiency** (equal marginal cost)
- **Equal burden** (equal additional cost)
- **Grandfathering** (equal shares)
- **Emission projections**

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# 1. ETS Share on CO2-Emissions in EU Member States



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## 1. Cap setting in EU ETS: Outcome of Phase 1

Most EU 15 MS chose **two-step approach**  
(Step 1: Define ET-budget; Step 2: allocation to individual installations plus compliance factor); but: top-down approach problematic because data from energy balances did not reflect coverage in EU ETS

Most EU 10 MS chose **one-step approach** (allocation to individual installations without compliance factors)

Size of ET-budgets in most EU 15 MS based on:

- **emission projections**
- existing Voluntary Agreements,
- reduction potentials as determined in national climate strategy
- economic efficiency only in a few MS
- mostly: **intense dialogue between governments and industry**

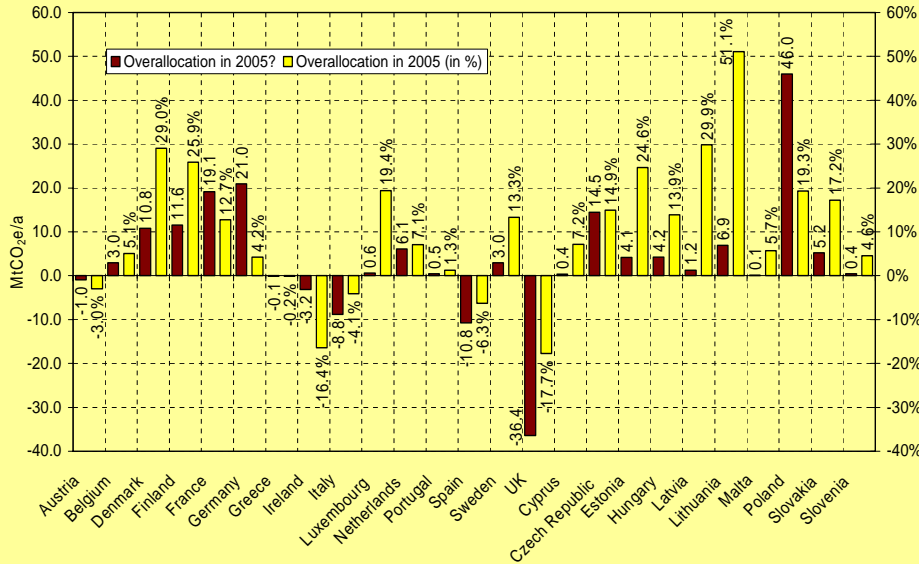
**Most MS apply tighter budgets for power sector than for other sectors**

**European Commission was rather lenient w.r.t size of ET-budgets**

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## 2. Stringency of Cap in Phase 1



Source: Betz, R., Rogge, K., Schleich, J (2006): EU Emission Trading: An Early Analysis of National Allocation Plans for 2008-2012, Climate Policy, 6 (4), 361-394.

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Allocation surplus :  
~100 Mio. EUAs in 2005 (~5%) (Kettner et al. 2007)

Reasons: **inflated projections** in most MS (Grupp and Ferrario 2006)

Excess allocation or abatement?

Abatement: 50-100 Mio. t CO<sub>2</sub>e (Buchner and Ellerman 2006)

Empirical evidence still scarce



## 2. Effect of Cap on Prices for EUAs in Phase 1

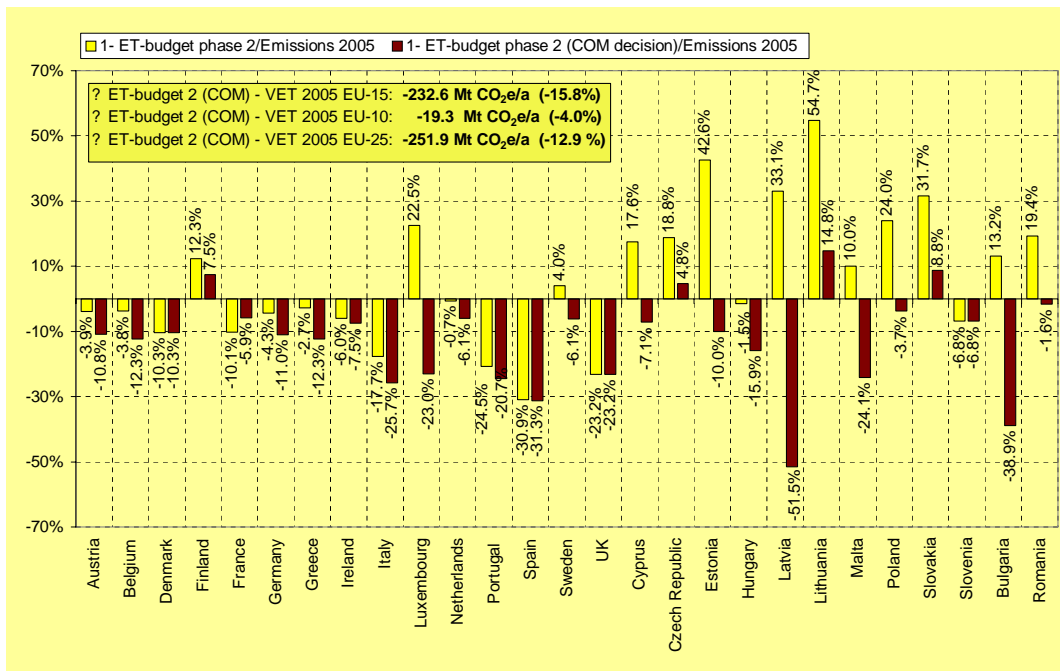


- Drop in price for EUA once allocation surplus became known;
- Price drops to zero because of ban on banking from Phase 1 to Phase 2

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### 3. Stringency of Caps in Phase 2



#### Notified CAP

- Implied only **small reductions**, in particular in new MS

#### EC cut CAPs

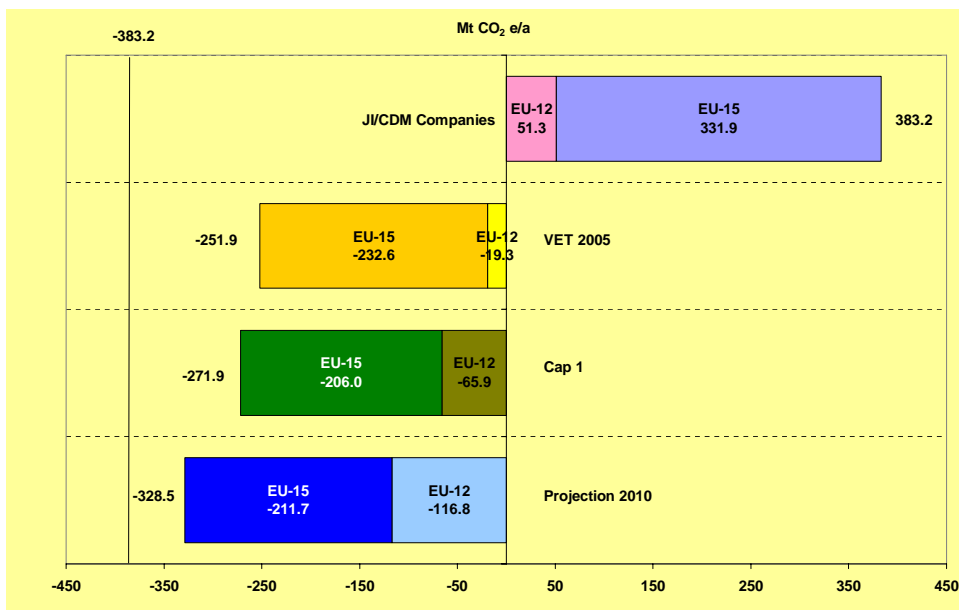
- **Formula-based**
- by 10.5% (on avg)

#### Approved CAP

- **Much more ambitious**



### 3. Overview on Stringency of Caps in Phase 2



#### Implied reduction requirements compared to

- **Verified emissions in 2005: 12.9%**
- **Cap 1: 13.1%**
- **Projections: 15.8%**

#### Use of CDM/JI credits:

Abatement in ET sectors low ?



## 3. Economic Efficiency of Cap

### How should the pie be split at the macro level ?

#### Theory

- Marginal abatement costs in trading and non-trading sectors should be equal (prior to trading)

#### Implication

- Since marginal abatement costs tend to be lower in ET-sector it should contribute more than in proportion to emission reductions necessary to meet Kyoto/Burden-Sharing targets

#### Reality

- From Phase 1 (and notified NAP 2): most ET-budgets are too large compared to cost-efficient split; reduction burden for other sectors too high

#### Corollary

- Without EC intervention costs to achieve emission targets would have been higher in most MS

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## 4. Summary and Outlook

### Historic cap setting in EU ETS

- Cap in Phase 1 was too lenient; result of a) lobbying by industry ; b) poor data availability; c) European Commission's strategy to rather be soft on cap in Phase 1 than risk start of EU ETS
- Tendency by governments to purchase CDM/JI credits to allow for more generous ET-budget
- Intervention by EC at macro level "saved" environmental effectiveness, efficiency and possibly existence of ETS;(Forward price for Phase 2 currently around 25/t)
- Generous use of ERUs/CERs casts doubt on extent to which ETS will lead to abatement efforts within ET sectors

### Future cap setting in EU ETS

- Centralized (and possibly differentiated) at EU level or at level of Member States?
- Centralized approach to "split pie" based on projections or marginal costs would require "accepted parameters"
- Impact of other regulations such as renewable targets for MS needs to be recognized
- Length of phase 3: debate on 5-years vs. 8 years; Perceived tradeoff between flexibility and investment security

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# Literature

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