

CEPS task force on benchmarking:

The Swedish experience

The process and our involvement

- FlexMex commission (2002-03), Preparation for NAP1 (2004)
 - "Vision" for using benchmarks
 - Exercise: calculated benchmarks for electricity and heat
 - activity measure: production in GWh
 - Not fuel specific
- Preparation for NAP2 (2005)
 - report with recommendations
- Research on incentives from allocation methods (2005-)

Key messages include:

1. Installations with multiple products

NAP 1 (2004): Swedish thermal electricity production is largely combined heat and power installations (CHP). Complications when calculating benchmarks. Need for method for allocating CO₂-emissions on electricity and heat.

Options:

1. Based on total energy output? Rewards heat production
2. Based on electricity only? Rewards electricity
3. Other allocation keys: price, exergy, technical etc.

We chose: Based on single product production:

- electricity bm based on condense plants;
- heat bm based on boilers for district heating

2. Poor data quality - Need for ad hoc data collection

NAP 1:

- Was based on existing data on installation level: different data sources for emissions and production
- Energy efficiency was calculated at installation level. Revealed significant inconsistencies ($\eta > 100\%$)
- Data from only 70 percent of the installations could be used => need for retrieving new data
- NAP 1: The vision for benchmarking was replaced by grandfathering

NAP 2:

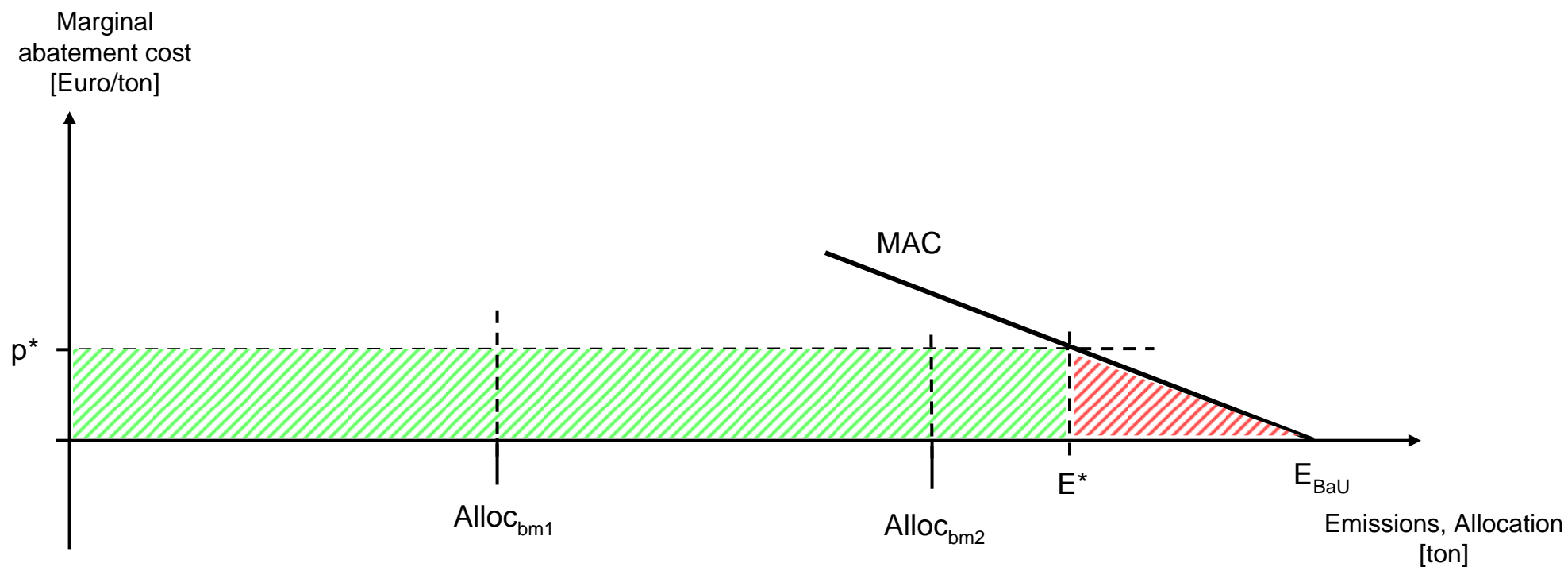
- Based on our report , real benchmarks were calculated by Swedish Energy Agency
- Finally only applied for New Entrants

Do benchmark levels influence incentives?

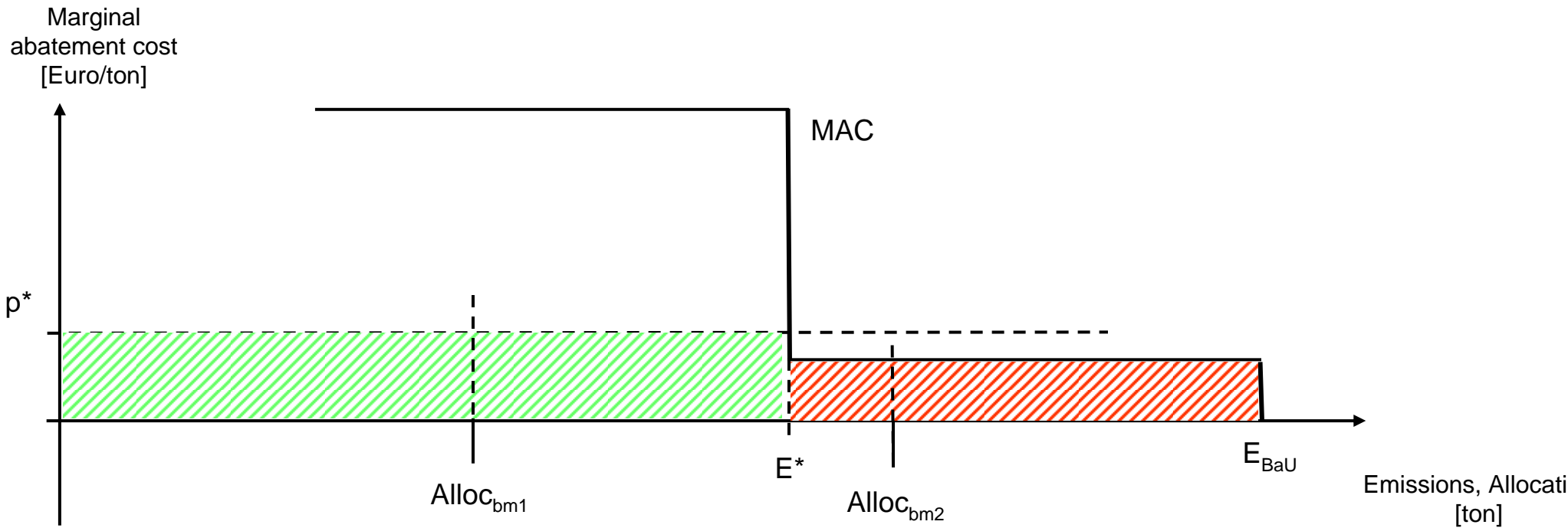
What incentives are we talking about?

- **incentives for reducing emissions within the EU ETS?**
- **incentives for avoiding leakage?**

3. Do benchmark levels influence incentives for emission reductions?



3. The case of cement and steel?



4. Benchmark levels may influence costs and carbon leakage

- Free allocation based on prescribed benchmark levels and historic production data does not influence **incentives** for emission reductions, given that leakage is avoided.
- Incentives are determined by allowance price
- Benchmark levels may significantly influence **costs**. May influence carbon leakage (too little compensation may make overseas production a better option)
- Free allocation (for instance through benchmarking) is the distribution of an asset to firms. Can be used for compensation.

5. Benchmarks define sector allocation

- The setting of benchmarks defines the total sector allocation (since production is fixed by historic data)
- Once the sector allocation is defined, the distribution within the sector is automatically given. Only production data needed.
- If the sector allocation is defined by other means (for instance historic emissions minus 21%), no benchmarks need to be calculated. Production data will suffice.

6. Benchmarks define inter-sectoral burden sharing

- If the sum of sector allocation is higher than the overall cap, the Cross Sector Correction will adjust all sectors down by the same percentage
- Each sector gains from arguing for high benchmark levels
- The used benchmarks hence define the inter-sectoral burden sharing
- Race to the bottom

Conclusions

- Complications with Swedish benchmarking exercise:
 - Multiple products from same installation
 - Data quality. Need for ad hoc data collection
- Benchmark levels do not influence **incentives** for emission reductions, if leakage is avoided
- Benchmark levels may significantly influence **costs**, and risk for carbon leakage
- Benchmarks define sector allocation. Once this is set, distribution to installations is given
- Benchmarks define inter-sectoral burden sharing – a struggle between sectors
- Problematic if installations that turn carbon free after 2012 lose allocation