Improving Allocation
Performance Based Allocation and Activity Rate: What is the Choice?

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The current experience:

EU ETS in its current form has raised fundamental challenges

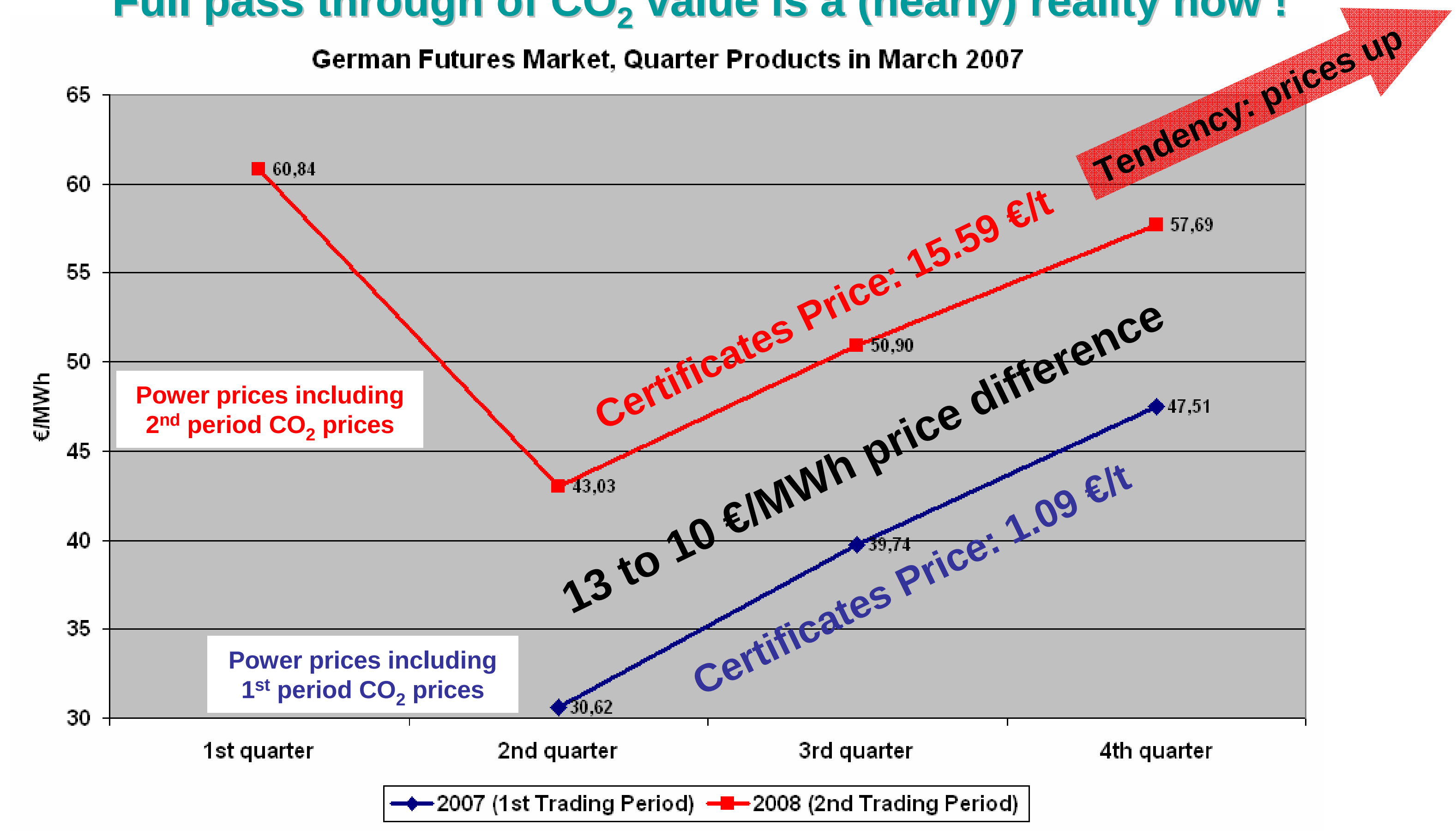
Industry strives for a way

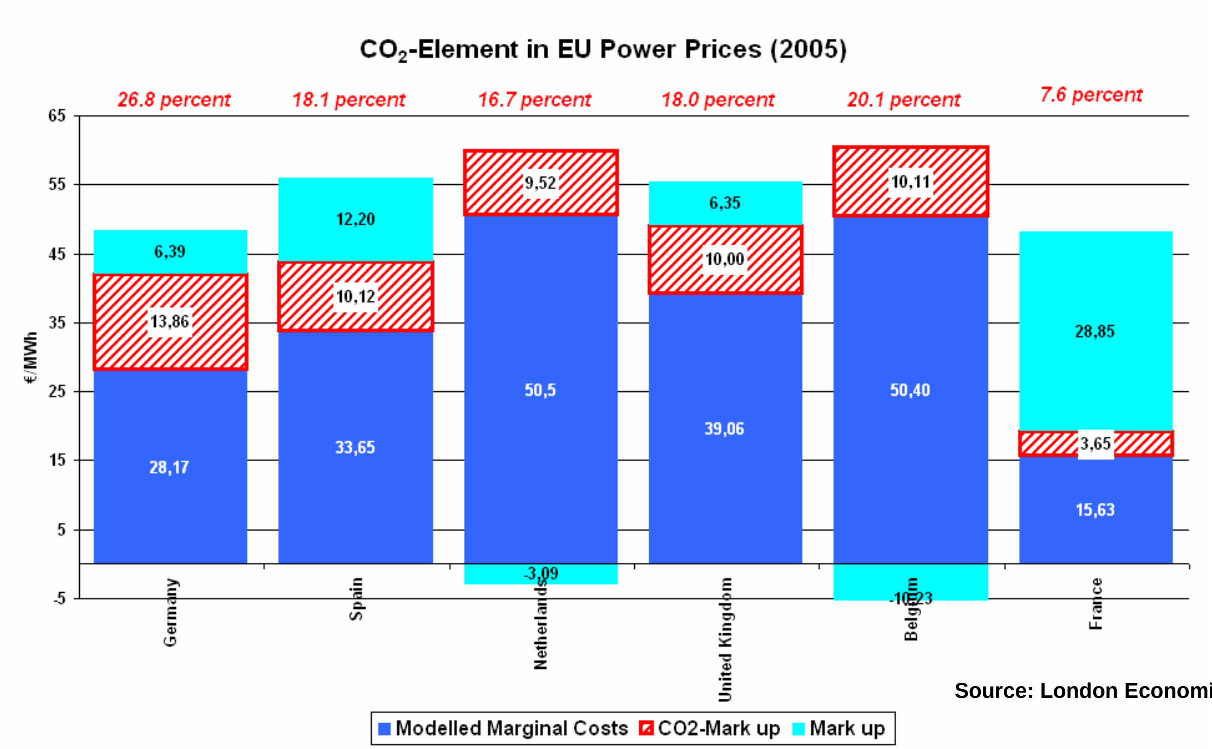
- **To solve these fundamentally**
- **To improve the emissions trading scheme**
- **To safeguard competiveness for energy intensive manufacturing industries in the EU**

➔ To create a win-win-situation for both climate change and economic interests

The major fundamental problem: the power price effect

Full pass through of CO_2 value is a (nearly) reality now !





Source: London Economics Study for EU Commission

- **The additional costs for consumers are significant EU-wide**
- **But also high competition distortion for consumers within the EU**
- **EU consumers / EU industry hit by EU ETS much more than needed !**

Most essential necessity in the review process for industry:
Reducing the power price effect to the adequate level!
Can it be done by choosing the right EU ETS design?

Benchmarking with the adequate basis

Benchmark x „X“ = allowanced granted

The issue to define „X“:

decided in advance	• standard load factor • historic production • projected production
decided subsequently	• actual production

Question:
Would taxes ever by based on simple forecasts / estimates ?

Normal procedure:

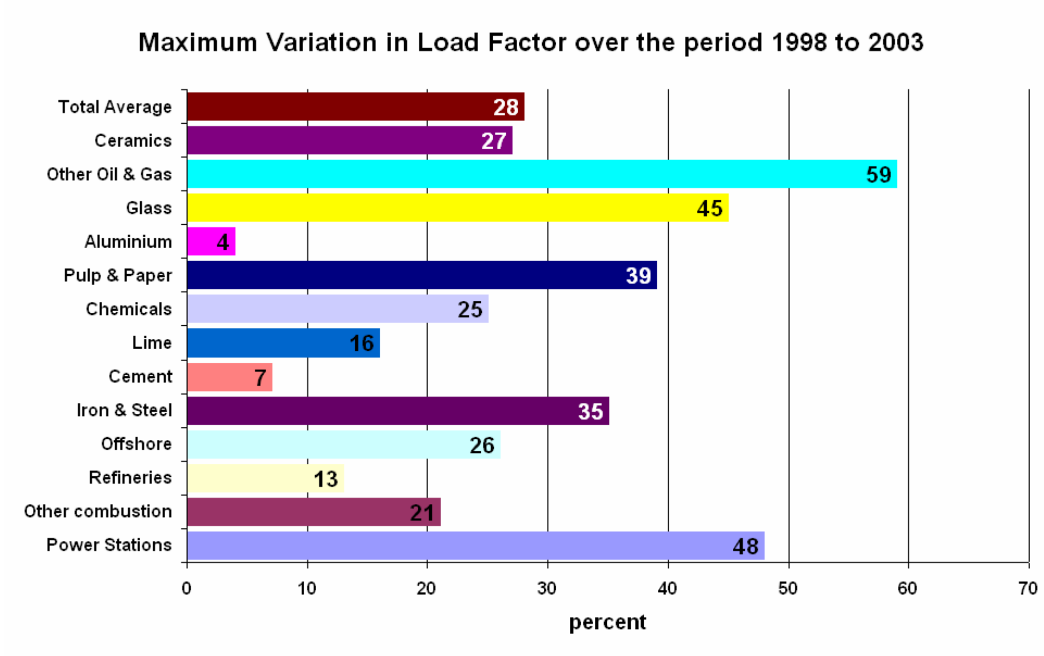
- Payments based on forecast / preliminary data
- Final settlement based on corrected actual data

➔ Ex ante system with subsequent corrections (conditional allocation)

The quality of historic data / forecasts

… with climate change instruments based on history?

Variations in annual load factors over five years, found in UK by NERA



The quality of historic data / forecasts

What means a historic cap when many new plants enter the market?

- **Many new power plants in Italy around 2009**

What means a historic cap when an economy is strongly recovering?

- **Growth in central Europe, e.g. Poland etc.**

What means a historic cap when import or export of product changes?

- **More electricity import NL from Germany – Is NL then doing well?**
- **New CHP in Luxembourg – Is Luxembourg doing bad?**

And: the experience from the 1st period:

German CO_2-balance 2005:

Surplus of 21 Mio t CO_2 allocated compared to emitted
whereas:
Ex post corrections as foreseen for some parts of the system, if executed:

➔Reduction of surplus by 12 Mio t CO_2 to only 9 Mio t CO_2
i.e. by 57 percent

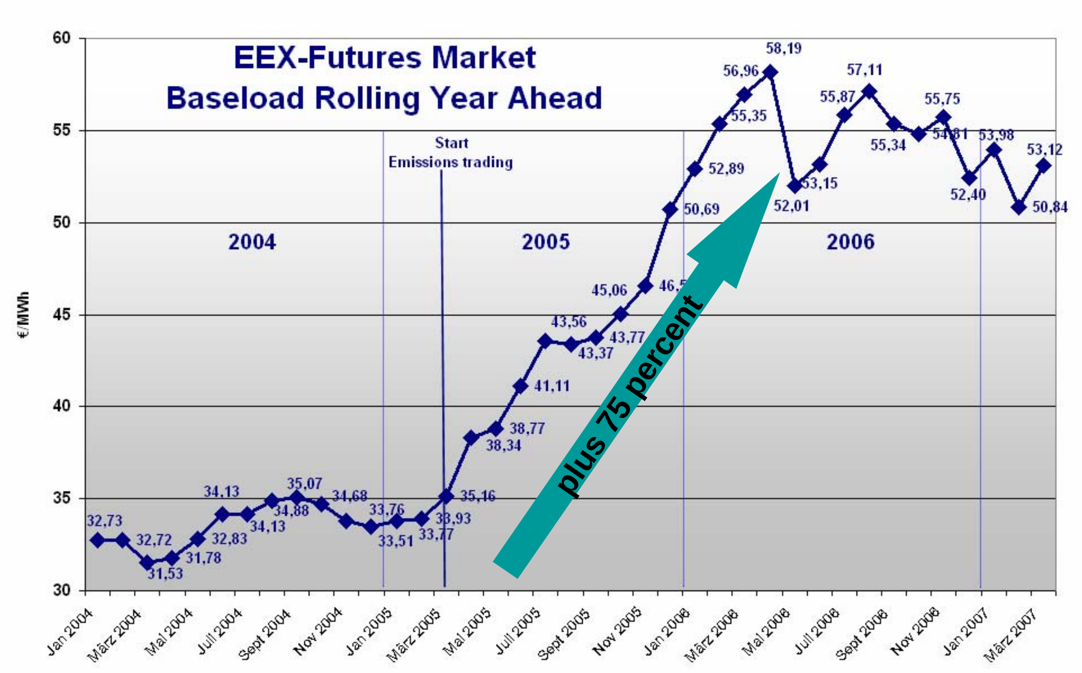
Question:

Would the price be below 1 €/t with an allocation based not on forecasts but on real data?

The problems with relying on forecast data
1. High, uncompetitive power prices

Purely as a consequence of forecast basis

- ➔ **The opportunity cost principle applies**
- ➔ **No sales below opportunity cost**
- ➔ **Selling allowances is then more profitable than producing**
- ➔ **Uncompetitive electricity prices in the EU**



The problem is not the windfall profits !

The problem is the inadequate high costs for EU consumers / industry !

The problems with relying on forecast data
2. Leakage / Loss of efficient production

„No sales below opportunity cost“ means for most industries
➔ Leakage of EU production at certain CO_2 price levels

Question:
Do we really want a system where lowering production is equally legitimate as efficiency improvements ?

For electricity industry:

- Maybe partly acceptable, but only as direct result of efficiency improvements of consumers

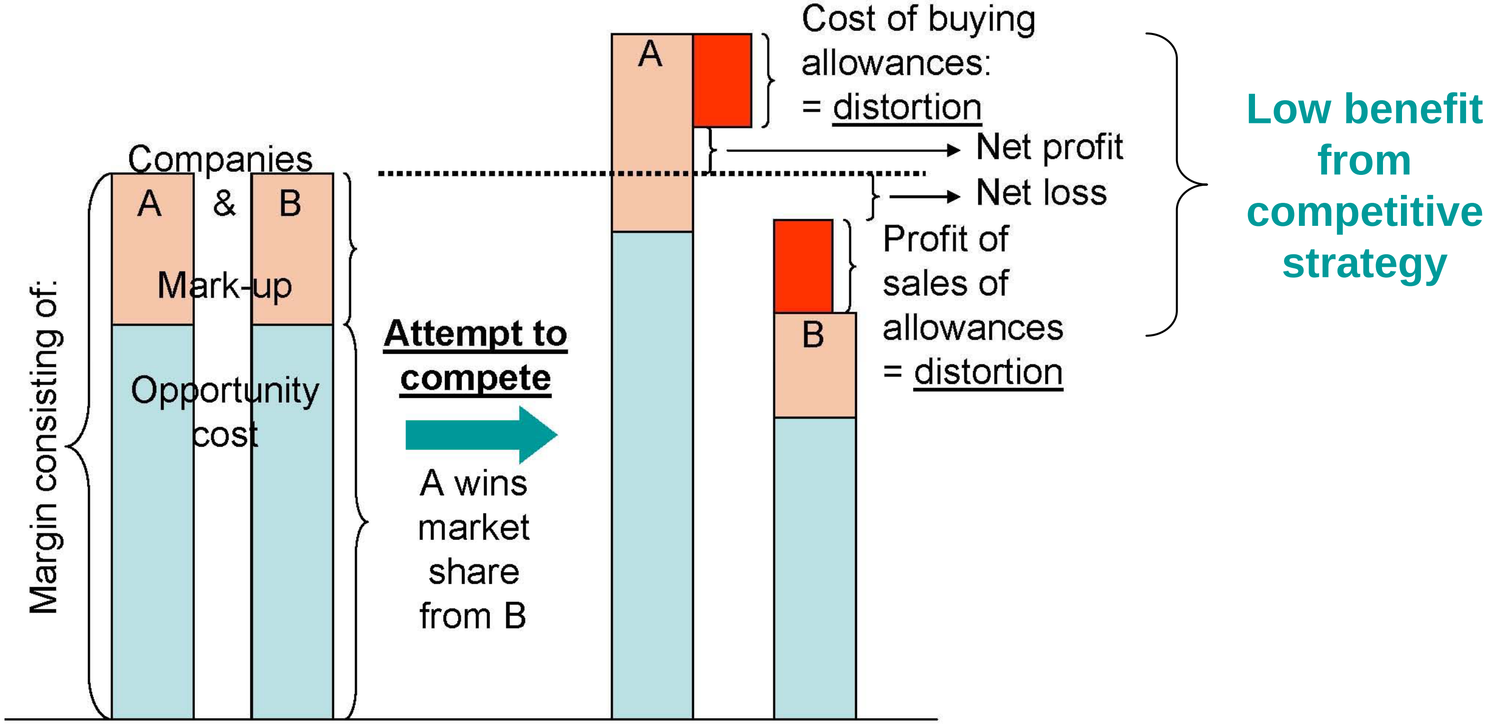
For other industries:

- Unacceptable as result of leakage / imports / production elsewhere
- Just the cause for higher global emissions

A sound and integer emissions trading scheme must aim for efficiency !

The problems with relying on forecast data

3. Obstacles to competitive strategies for the electricity market



- ➔ **No way out of paying less than the opportunity costs mark-up**
- ➔ **Protecting the incumbents**
- ➔ **Freezing market shares**
- ➔ **No way into real competition**

The problems with relying on forecast data
4. Disadvantages for new entrants

New entrants - a vital need for competition
- a necessity for the current electricity market

How to deal with new entrants based on forecast data?

- Uncertainties for new entrants (limited and exhausting reserve)
- State decision on new entrants‘ business / profitability by setting e.g. load factors (plan economy for competition)
- Incumbents keep old plant on stand by and keep allowances over certain period

Consequences:

- Clearly differing, unlevel playing field for incumbents vs. new entrants
- Disadvantages for new entrants
- High potential distortions in the market
- High obstacles for development of competition
- Further market concentration

The advantages of relying on actual data

The 4 problems solved !

1. Power prices

- Power price effect limited to actual cost
- Option not to produce but to sell is gone
- Cutting down the system's costs
- Providing for really cost efficient instrument
- Lower impact on competitiveness
- Higher attractiveness for other countries to join

2. Leakage

- Better competitiveness for industry
- Leakage only at extremely high CO_2 prices
- Negative global emissions effects diminished significantly

3. Hindering competitive strategies

- Competitive strategies (going for market share) supported to the benefit of whole economy

4. Discriminate new entrants

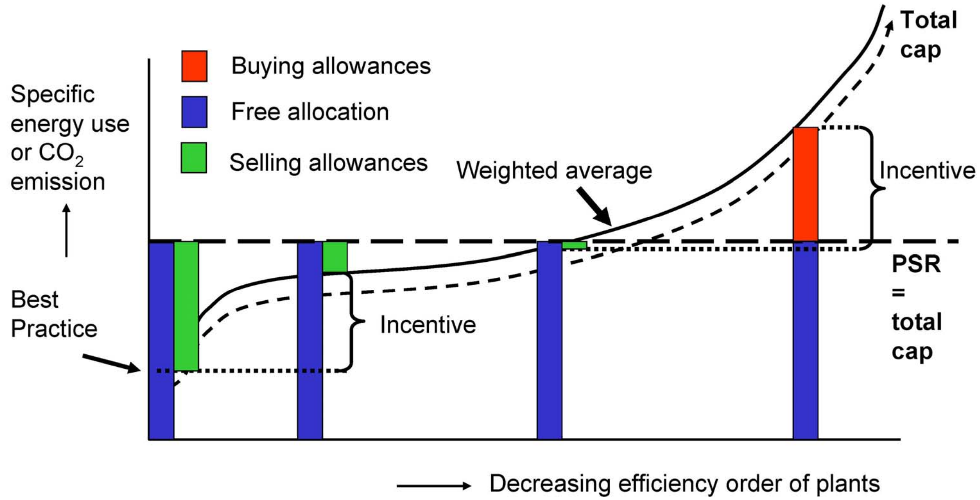
- No special rules for new entrants
- No special rules for closures
- Equal treatment for every player in the market

Basing EU ETS on actual data provides for a system, that

- **stimulates efficiency improvements**
- **establishes a real cost-efficient instrument**
- **enables (extremely needed) competition in the electricity market**
- **makes it feasible to combine Kyoto and Lisbon**

Refute criticism against actual output basis

1. Illiquidity and uncertainty of the market



A performance based system provides for:

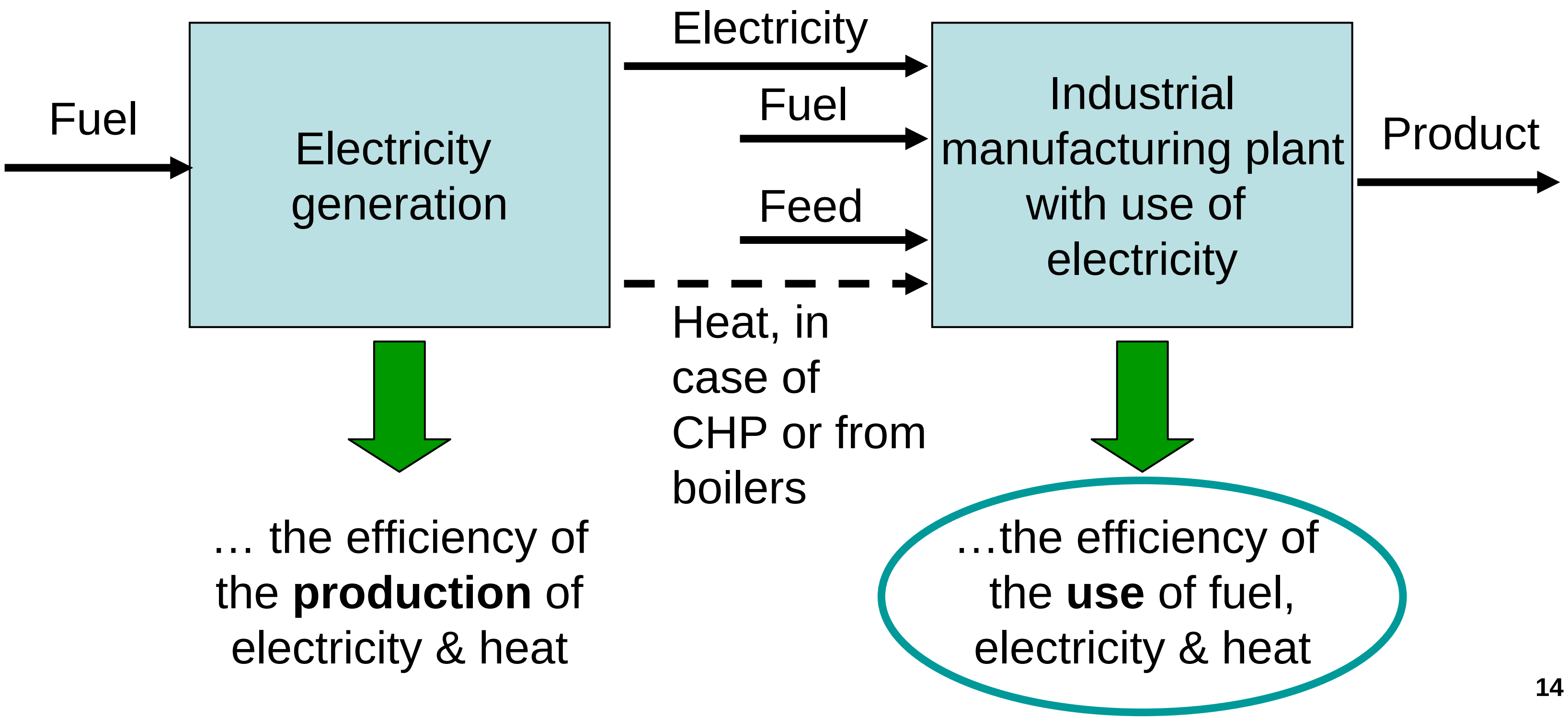
- In-built shortages (red) and oversupply (green) of the system for installations of different efficiency
- Good and sound basis for trading and for high market liquidity

Installations' good knowledge on own efficiency and own production rate
➔ Certainty of the players on own allowance status / ability to trade

Refute criticism against actual output basis

2. Production subsidy effect

With correct benchmarks and ex post correction incentive to use electricity efficiently is in-built.
The excessively high electricity price signal not needed.



Refute criticism against actual output basis

3. Insecurity on meeting the cap

One way to guarantee total cap in an actual output related allocation system

		Second trading period					
		2008	2009	2010	2011	2012	Total
FORECASTS	Production fossil, TWh	2000	2034	2069	2104	2140	10346
at the start	Benchmark, ton CO_2/MWh	0,600	0,590	0,580	0,570	0,561	
	Total cap, Mton CO_2	1200	1200	1200	1200	1200	6000
		Fixed	Fixed				

Total cap to be guaranteed

Scenario with a higher production growth than forecasted

		2008	2009	2010	2011	2012	Total
Ex-post	Update production fossil, TWh	2030	2034	2069	2104	2140	10376
over 2008	Ex-post, TWh			30			
done in 2009	Ex-post, Mton			18			
to 2010	Allocation, Mton CO2	1200	1200	1194	1194	1194	
	Benchmark, ton CO2/MWh	0,600	0,590	0,577	0,568	0,558	
	Total cap, Mton CO2	1200	1200	1212	1194	1194	6000
	Benchmark	Fixed	Fixed	Fixed			

The higher production of year n is detected in year n+1 and accounted for in year n+2 acc. to the benchmark for n+1

Allocation for year n+2 is cut accordingly by spreading the excess from year n over remaining 3 years; the benchmark is adjusted accordingly.

… and so forth each year till the end of the period

		2008	2009	2010	2011	2012	Total	Third period 2013	Third period 2014
Ex-post	Update production fossil, TWh	2030	2045	2130	2140	2175	10520	2190	2225
over 2012	Ex-post, TWh			30	11	61		36	35
done in 2013	Ex-post, Mton			18	6	35		21	19
to 2014	Allocation, Mton CO2	1200	1200	1194	1191	1155		979	981
	Benchmark, ton CO2/MWh	0,600	0,590	0,577	0,566	0,540		0,447	0,441
	Total cap, Mton CO2	1200	1200	1212	1197	1191	6000	1016	1016
	Benchmark	Fixed	Fixed	Fixed	Fixed	Fixed		Fixed	Fixed

Total cap of trading period met!
Minor adjustments referred to next period.

Meeting the total cap is possible by applying adjustments of the benchmark!
Higher production growth ➔ higher scarcity (as also with auctioning)

Conclusions

The proposed design solves the major problems:

Eliminating the disadvantages of present rules

- Uncompetitive high electricity prices
- Exporting and increasing emissions (leakage)
- Hindering competitive strategies
- Discriminating new entrants

Realizing the advantages of a market based instrument

- Providing for cost efficiency
- Setting the right incentives for efficiency improvements
- Guarantee of total cap

If not solving ETS‘ hugh power price effect ➔

there is the need to save EU energy intensive industry by additional mechanisms, which would bring discredit on EU ETS