

Emissions Trading Past, Present and Future

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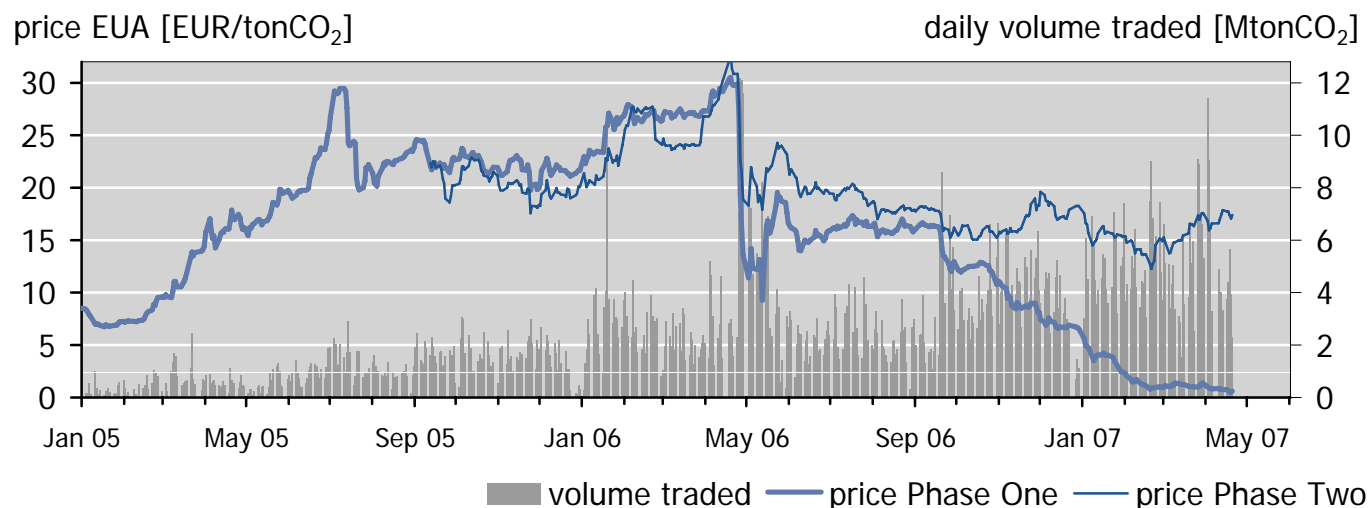


EU-ETS success to date

Liquidity evolution

2005 trade	“only” 262MtCO ₂ traded out of a total 2,100MtCO ₂ allocated
“critical mass” cumulated shorts	~400MtCO ₂ short 05-07 ~0.5MtCO ₂ daily average short (250 trading days per year)
Q1 2007	5.1MtCO ₂ per day average ~10x “critical mass”

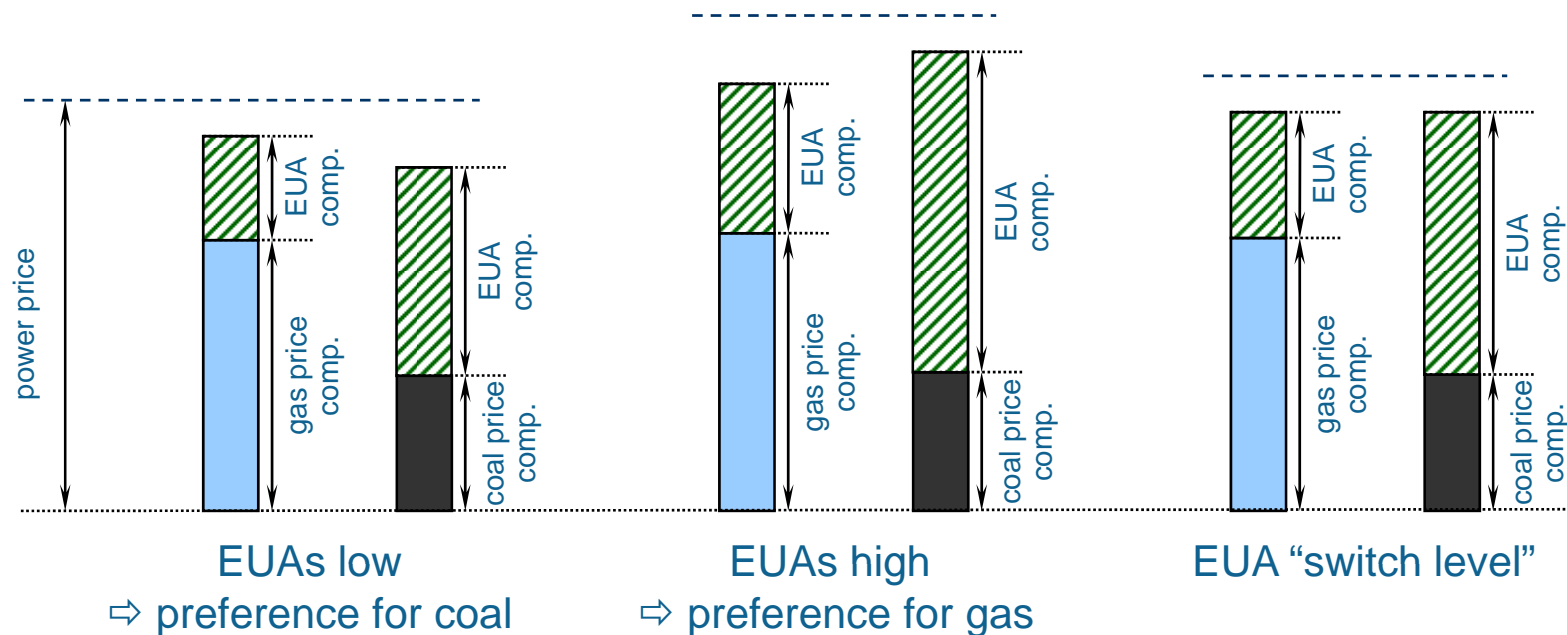
Market does much more than “simply” transfer longs to shorts
EUAs are more than a compliance tool



EU-ETS success to date

Emission reductions through operational fuel switching

Balance gas/coal/EUA prices

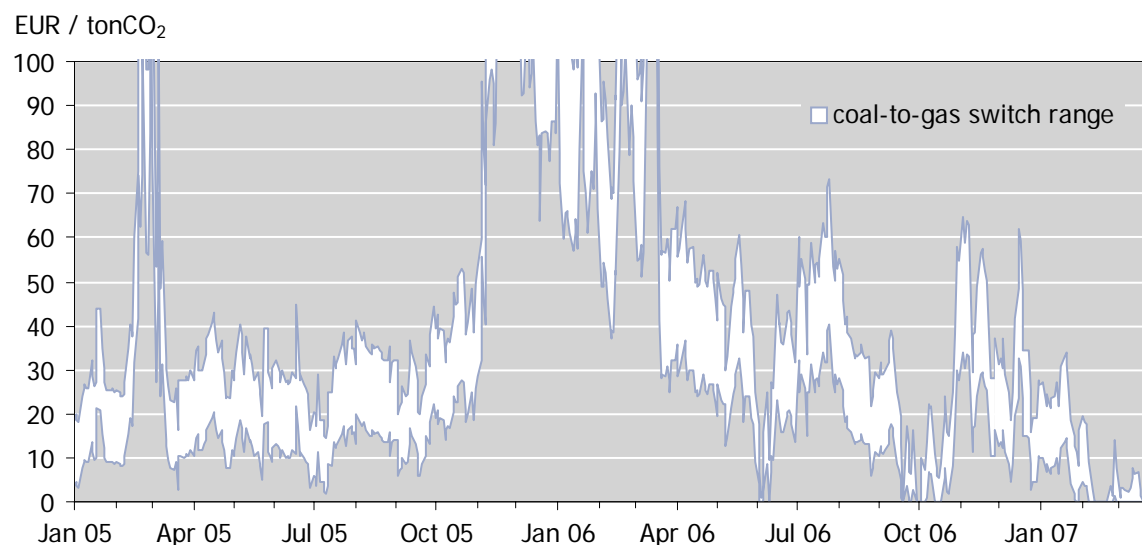


not one "magical" switch level,
but a whole range of switch levels for a range of power plants and fuels

EU-ETS success to date

Emission reductions through operational fuel switching

Coal to gas switching range



if EUA price is ...



... above "switch band"
> utilities prefer gas



... below "switch band"
> utilities prefer coal

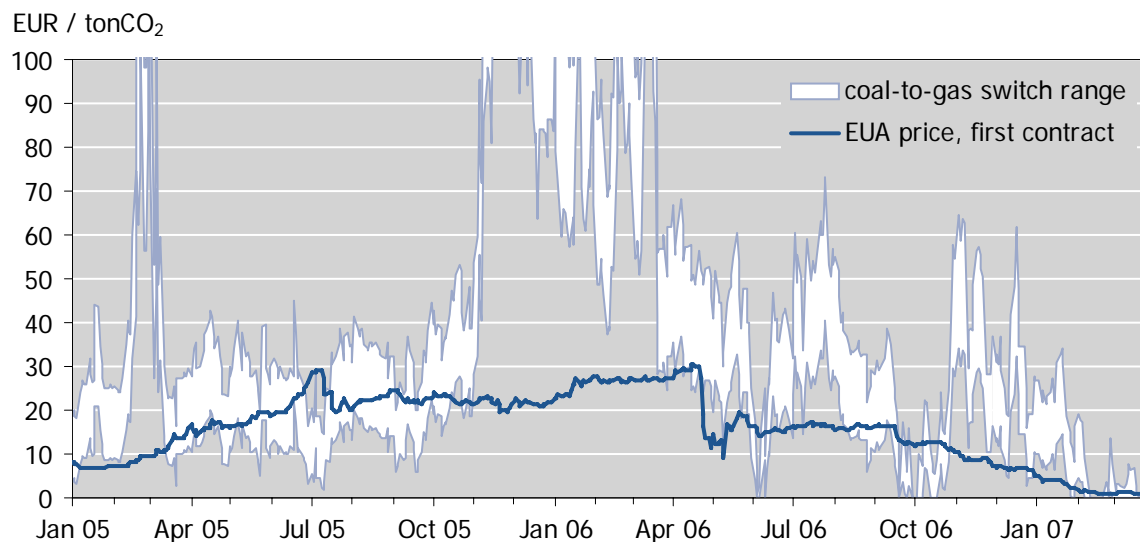
first observation

without CO₂ valuation (EUA at €0/tCO₂), there would have been NO fuel switching;
all utilities would have constantly preferred coal over gas

EU-ETS success to date

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if EUA price is ...

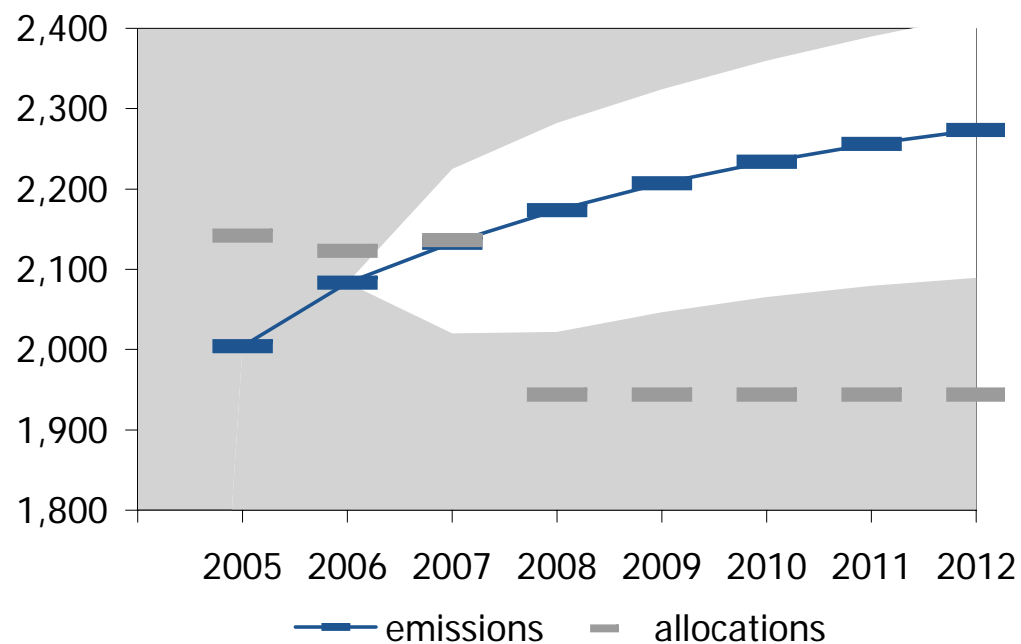
↑
... above "switch band"
> utilities prefer gas

↓
... below "switch band"
> utilities prefer coal

second observation

CO₂ valuation gave a clear incentive for utilities to switch from coal to gas
from March 2005 until October 2005

EU-ETS outlook : Phase I and Phase II



Phase I
 expected emissions below cap;
 in total ~200Mt long

Phase II
 expected emissions above cap;
 avg ~300Mt/a short

Kyoto outlook, supply and demand

SUPPLY

CERs/ERUs
2,000M (+/-1,000M)

Unused AAUs
???

Emission reductions
???

DEMAND

EU-ETS
1,400M (+/-700M)

EU, non-ETS
~500M budget so far (~1,000M needed)

Japan
~500M budget so far (~1,000M needed)

Canada
??? 0 - 1,500M ???

Others: VS, Australia, voluntary, ...
??? >0 ???

Banking beyond 2012
???

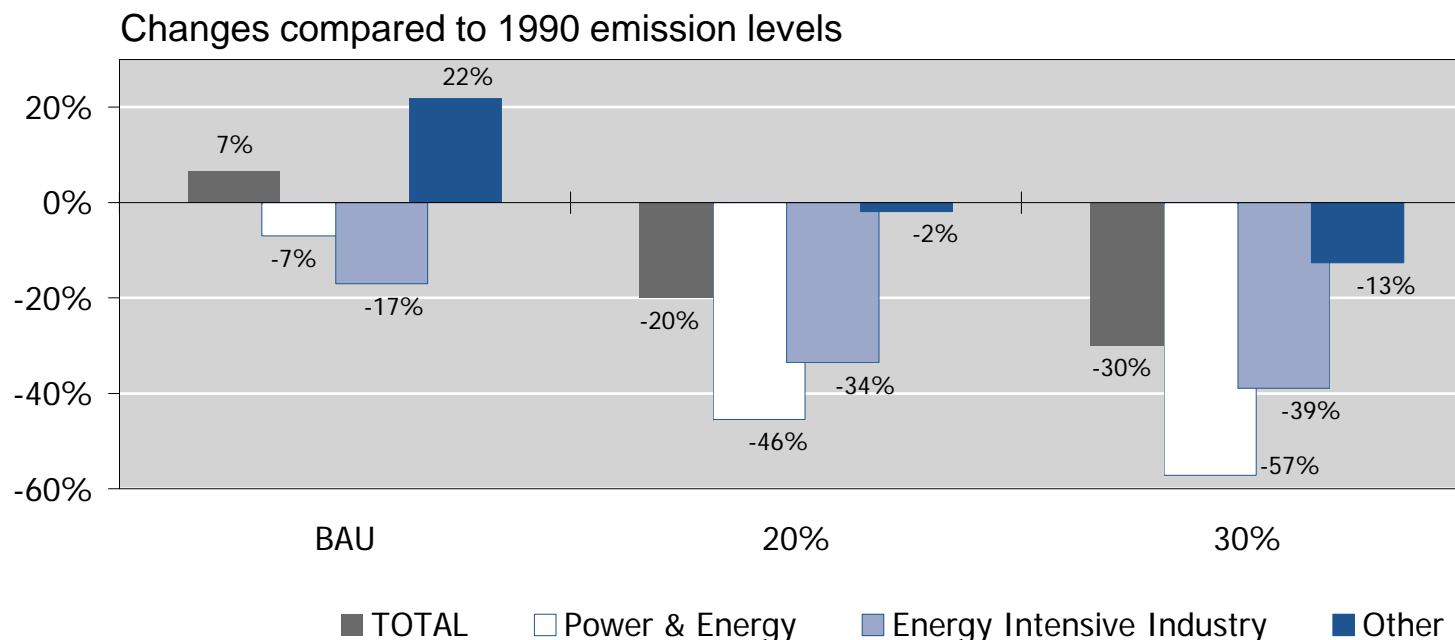
Beyond 2012...

**Not including a value for CO₂ in investment projections
will become increasingly hazardous**

Some observations

- The EU-ETS has **no** sunset clause; it will continue after 2012.
Currently, this commitment has only been given concrete form up to 2012.
- Europe has already announced its determination to cut emissions further by up to 20% or even 30% of 1990 emissions by 2020.
- Players outside the EU have already expressed interest and are likely to start similar (compatible?) schemes soon.
- As the emission reduction target becomes more ambitious, it is very likely that high CO₂ price signals will be maintained in order to facilitate the necessary emission reductions.

Quantification of plausible 2020 allocation for EU27



Assumptions

Methodology as used by European Commission in ruling on the NAPs for Phase II

Lowest cost allocation of reduction target between all sectors

Marginal Abatement Cost curves derived from "Capros, P., Mantzos L., *The Economic Effect of EU-Wide Industry-Level Emission Trading to Reduce Greenhouse Gases. Results from PRIMES Energy Systems Model*"

BAU projection based on "Mantzon L., Capros P., *European Energy and Transport, Trends to 2030, update 2005*"

Thank you

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