

Auctions of CO₂ allowances

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Auctions for CO₂ allowances

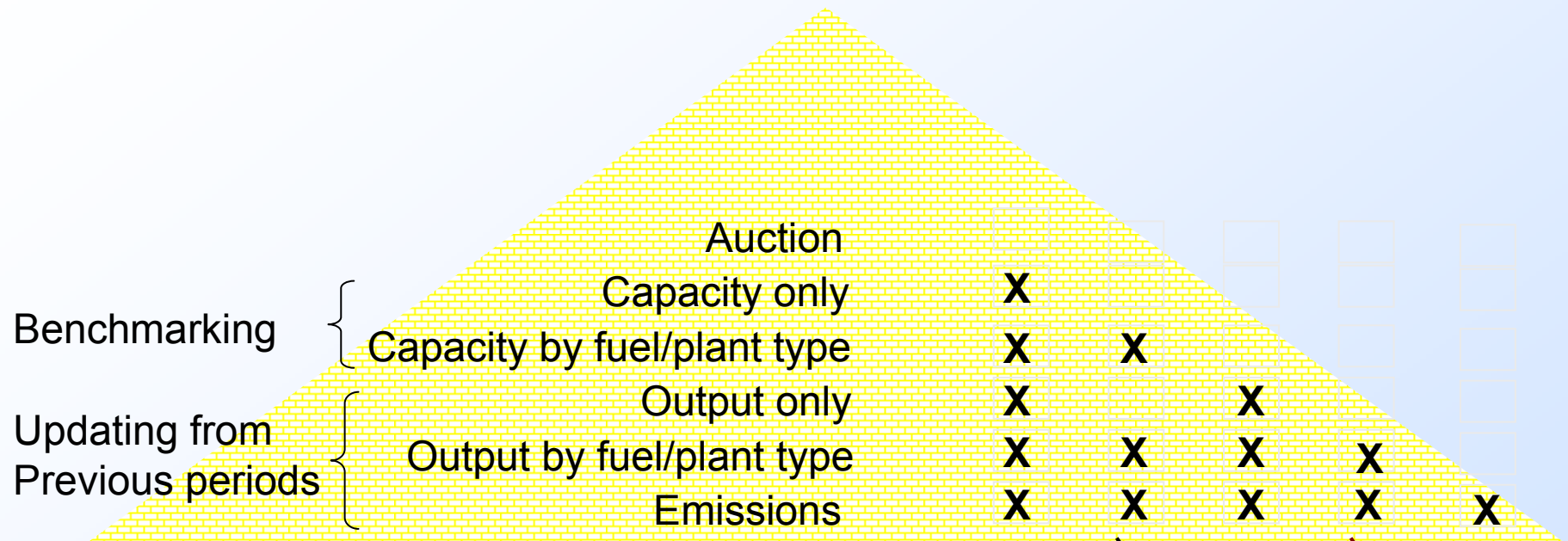
Motivation for auctions

- Avoid distortions from free allowance allocation
- Avoid excessive compensation
- Competitiveness concerns – see next presentation

Design of auctions

- Objective
- Frequency
- Format
- Institution
- Harmonisation

The pyramid of distortions – we should move up there

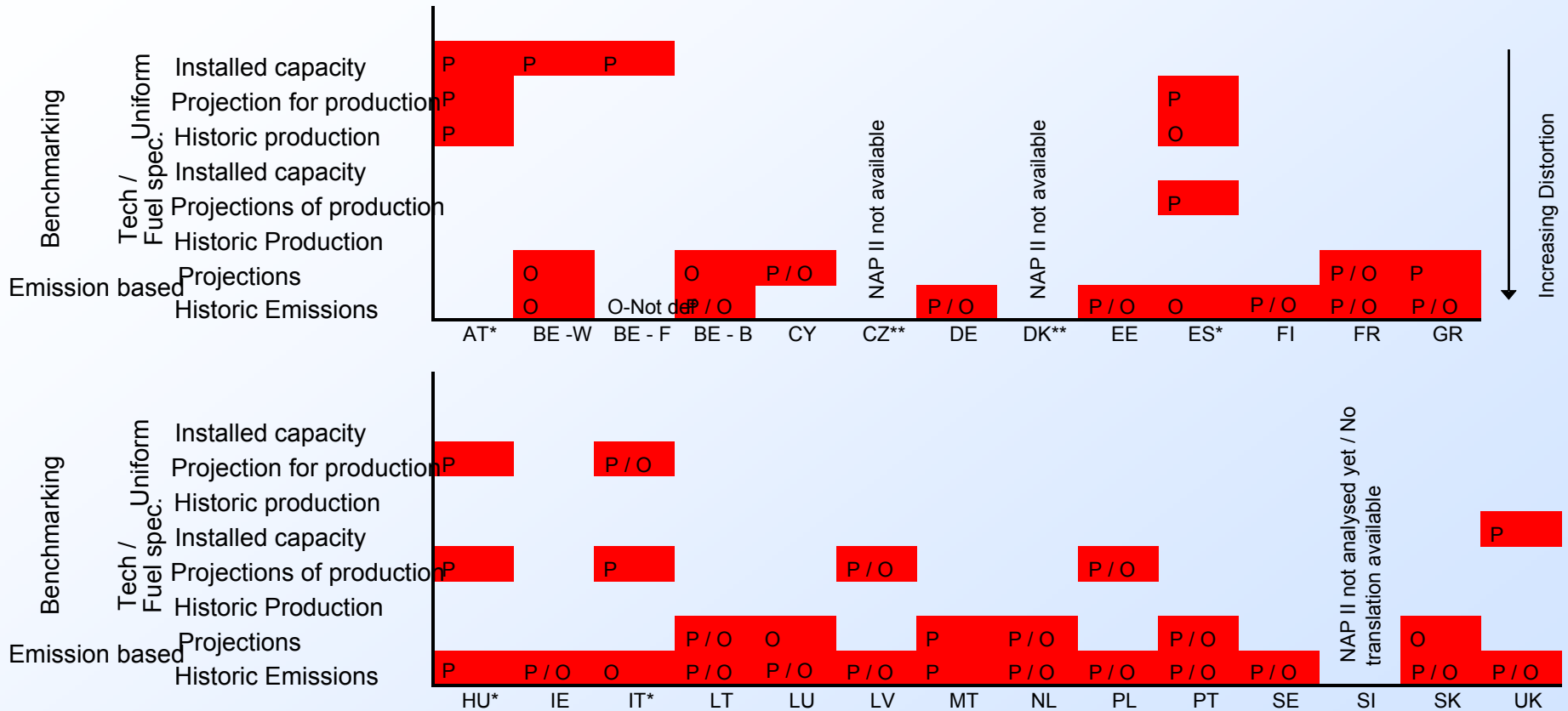


Impacts

- Increased expenditure on extending plant-life
- **Inefficient fuel choice**
- **Less efficiency improvements**

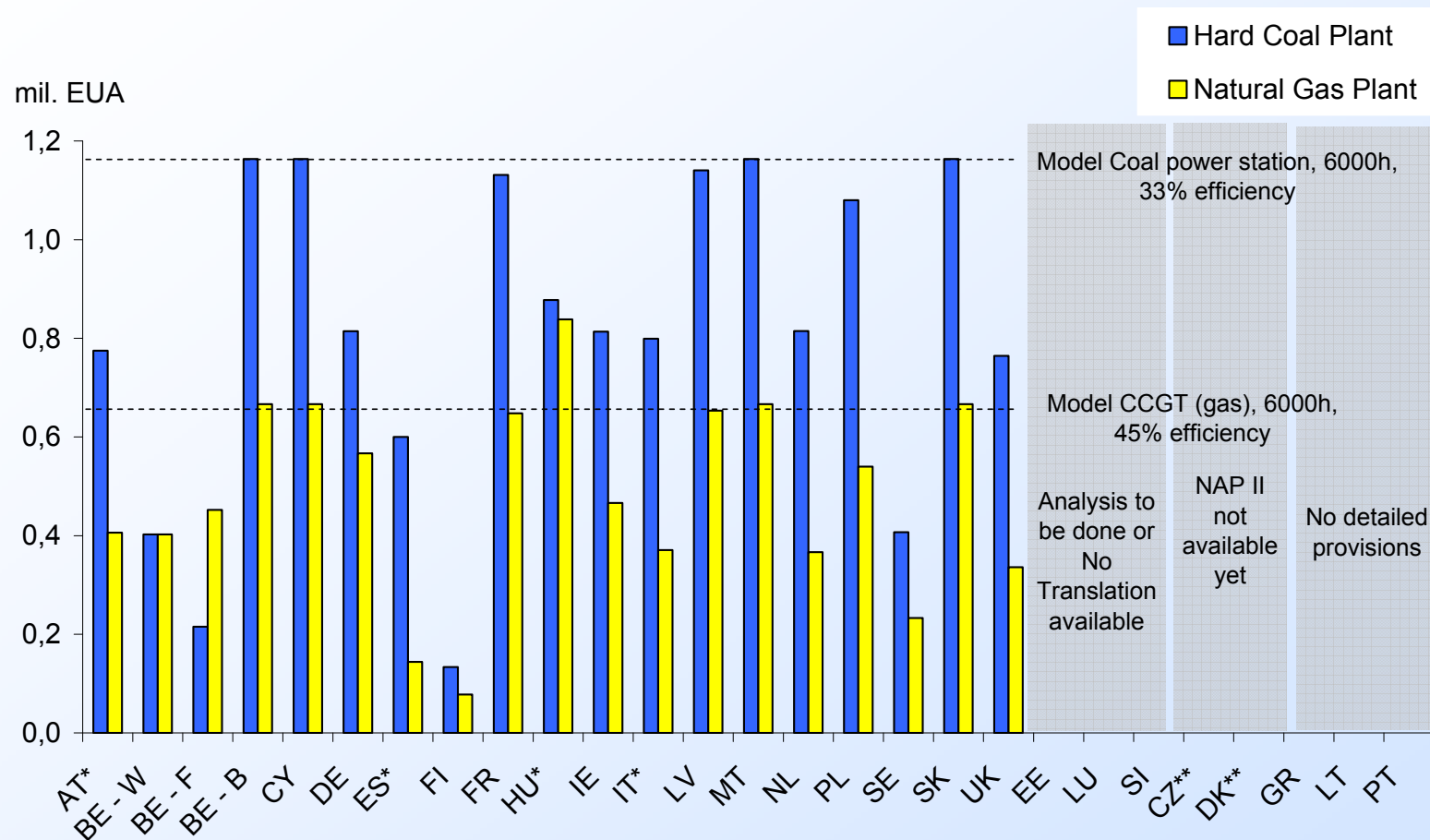
Discourage plant closure
 Distortion biased towards coal
 Shields output from average carbon cost
 Distortion biased towards coal
 Reduce incentives for
 Efficiency-improving investment

... but we seem to have made little progress in NAP 2



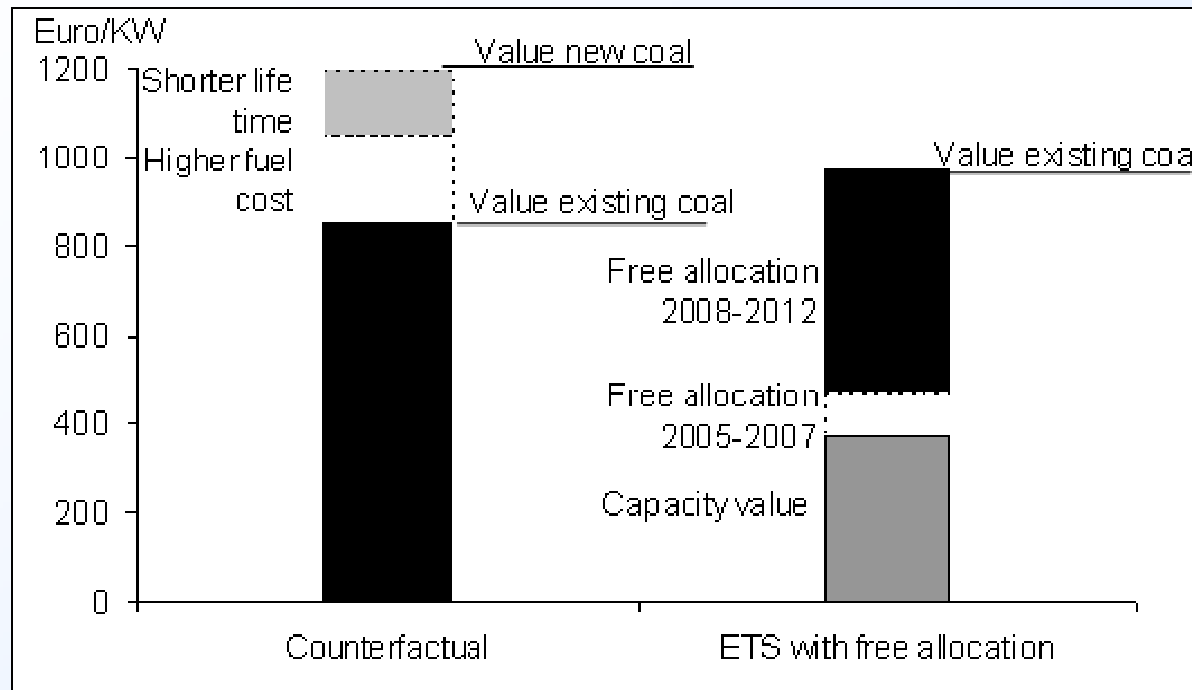
Source: Neuhoff, K., Rogge, K., Schleich, J., Sijm, J., Tuerk, A., Kettner, C., Walker, N., Åhman, M., Betz, R., Cludius, J., Ferrario, F., Holmgren, K., Pal, G., Grubb, M. and Matthes F., 2006, Implications of announced Phase 2 National Allocation Plans for the EU ETS, Climate Policy 6(5) pp. 411-422.

And the level of allocation is not trivial



Source: Neuhoff, K., Rogge, K., Schleich, J., Sijm, J., Tuerk, A., Kettner, C., Walker, N., Åhman, M., Betz, R., Cludius, J., Ferrario, F., Holmgren, K., Pal, G., Grubb, M. and Matthes F., 2006, Implications of announced Phase 2 National Allocation Plans for the EU ETS, Climate Policy 6(5) pp. 411-422.

How does ETS change value of power stations?



- Counterfactual – continued investment in coal
 - ETS – Net revenue at peak hours ~ capacity value
 - Phase I: estimation, might be higher
 - Phase II: allocation as in German NAP
- > ETS profitable even with full auctioning post 2012

Objectives of auction

- Simplicity and transparency
- No discrimination of bidders with less information
- Avoid cash flow difficulties and risks for emitters
- Market clearing price that reflects value of allowances

Frequency of auction



Advantages of higher frequency

- Small value / auction -> reduces risk of participation
- Emitters can buy at time to match requirements
- Emitters have to post smaller collateral
- Smaller risk of pre-emption (volume not big enough)
- If relevant – impact on secondary market smaller

Advantages of lower frequency

- Allows more sophisticated auction format
- Lower frequency at fixed format might reduce costs

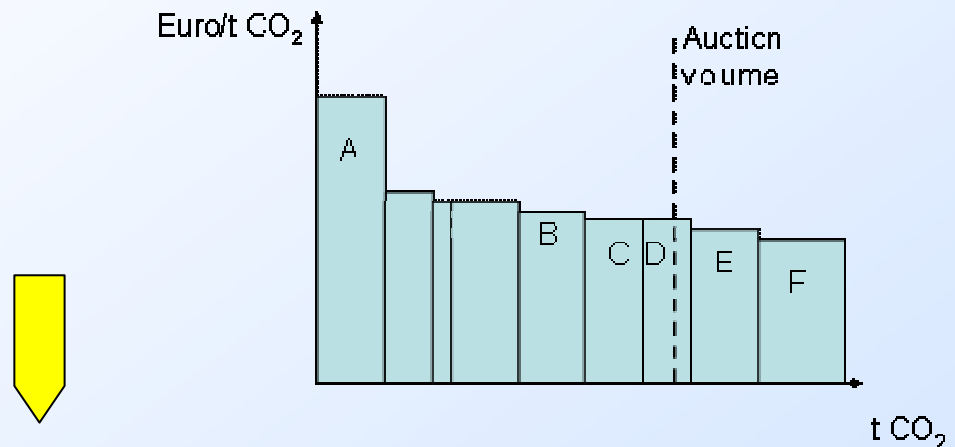
Auction format – multiple rounds

Sealed bid

Ascending, descending clock etc.

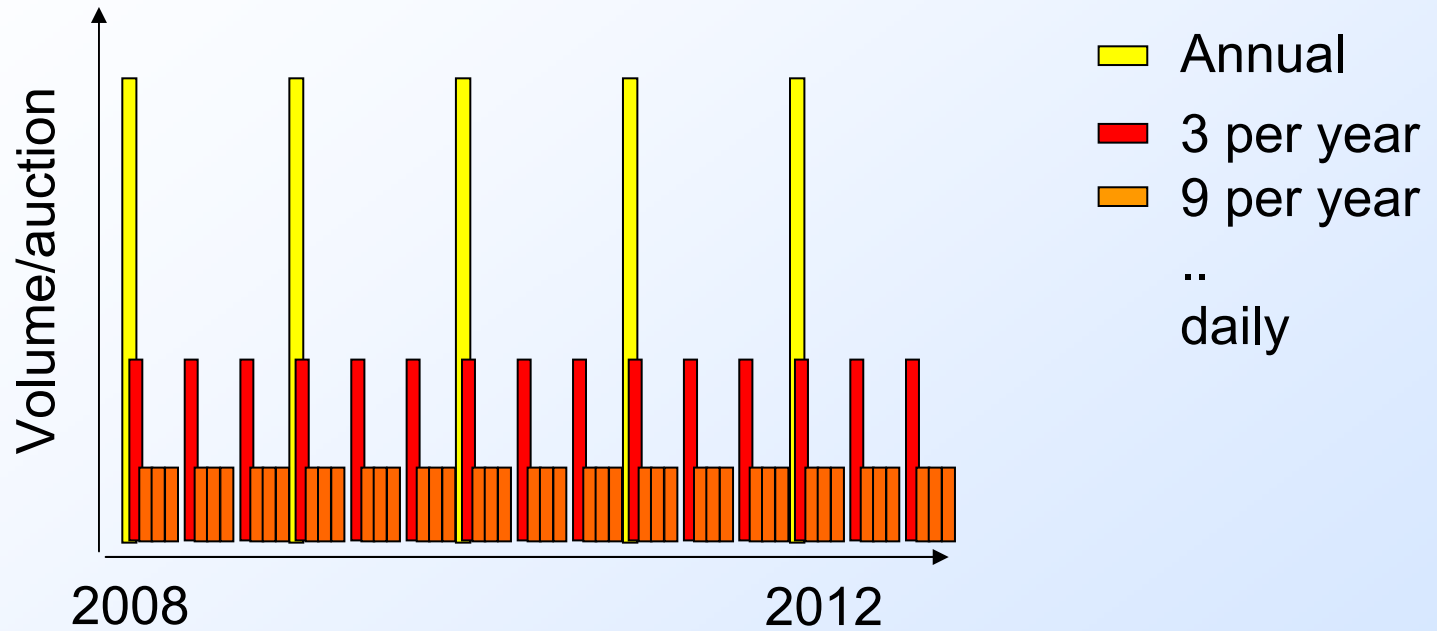
- Reveal information during auction, reduces risk
- But most information already in secondary market

Auction format – calculation of clearing price

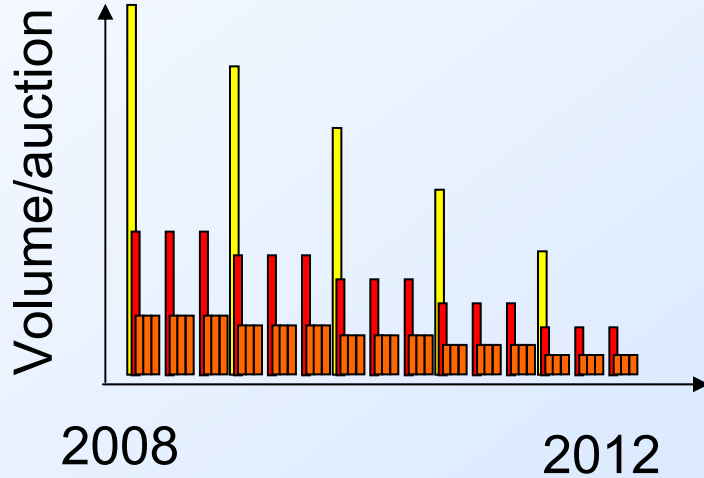


	Uniform price auction	Discriminatory price auction
Bid shedding	Risk with <ul style="list-style-type: none"> • Big player • No active traders 	No
Value of market intelligence	Non	High, benefits active players
Discrimination	Non	Against uninformed

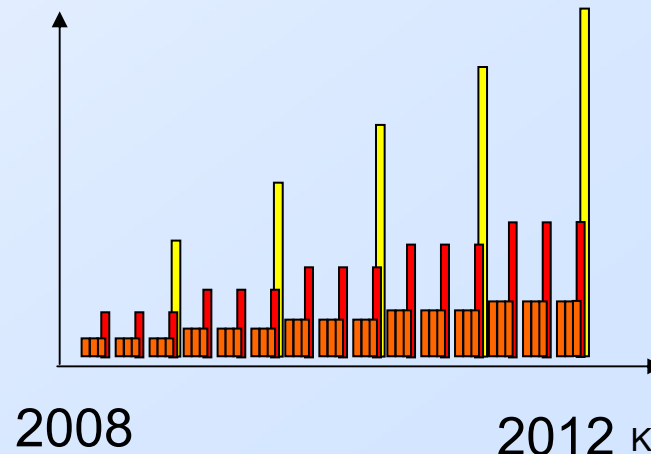
How to distribute allowances across auctions?



Front-loaded – allows hedging



Back-loaded – match product sales



Gaming opportunities

- Bid shedding
 - Unlikely good strategy with many participants
- Short squeezing
 - Buy allowances to create scarcity & resell
 - Only profitable if buying unobserved
 - Not viable with high frequency auction (One auction too small, but extra demand revealed)
- Price manipulation
 - Change spot price with unprofitable positions
 - Benefit in derivatives, other markets (electricity ...)
 - Also in bilateral market – ensure EU wide monitoring!!!

Institutional set-up

Objectives:

- Bid and IT management for quick turnaround
- Back office capacity to clear many bids

Candidates:

- New governmental body
 - Track record of new IT systems
- Build on treasury bond auction experience
 - Not used to large number of bidders



Commission to institution with existing operations

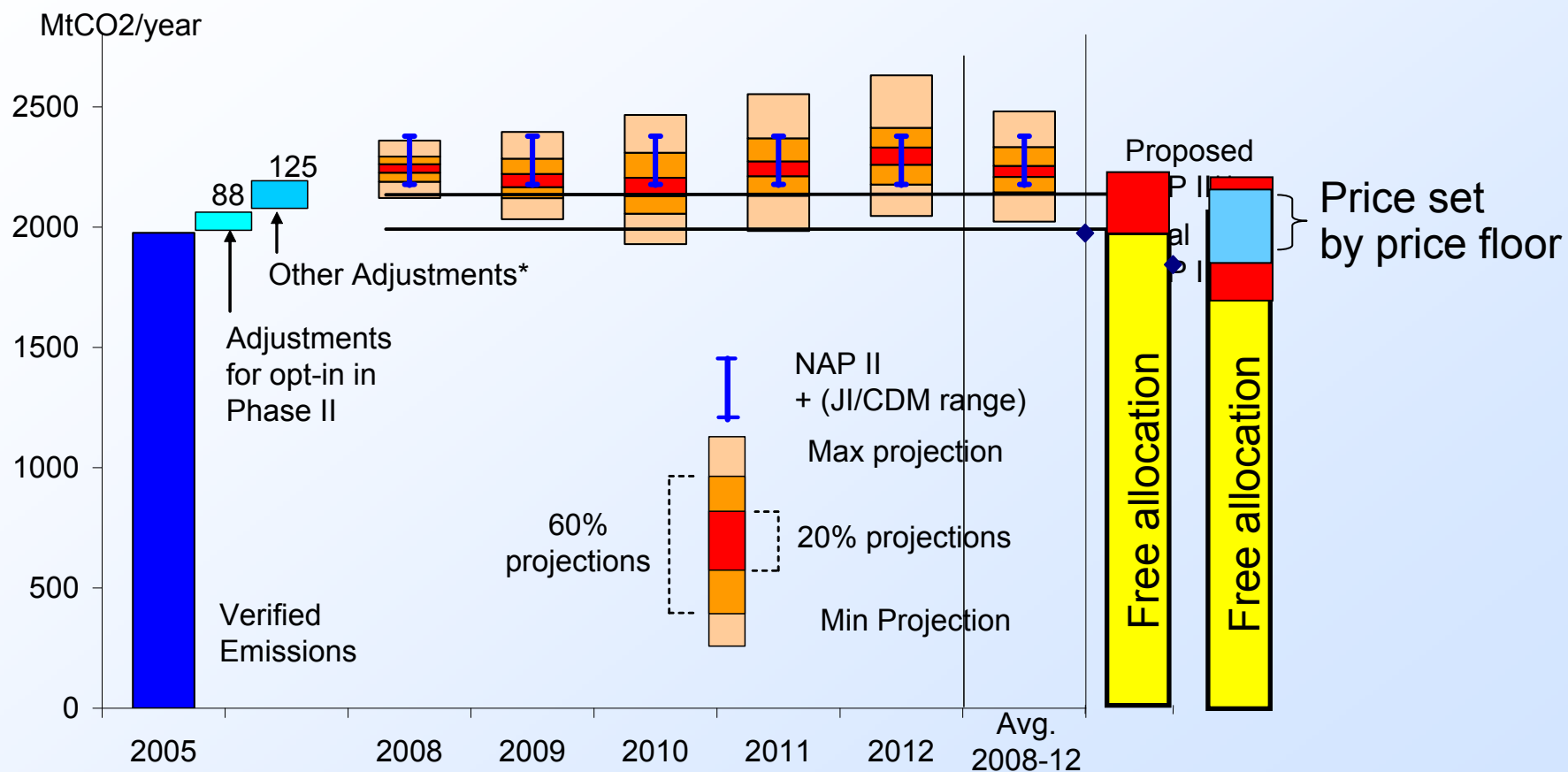
- CO₂ trading like ECX, EEX, Nordpool
- Power exchanges like APX, UKPX, EEX, Nordpool
- Financial market places

Reserve price in auction

- (I) To 'protect' auction from unforeseen events
 - Perhaps 90% of previous day's market price
 - Announcing reserve price increases transparency
 - Keeping it secret prevents coordination at this price

- (II) To increase robustness of Carbon signal
 - Has to be announced ahead of time

10% auctions with price floor could facilitate investment



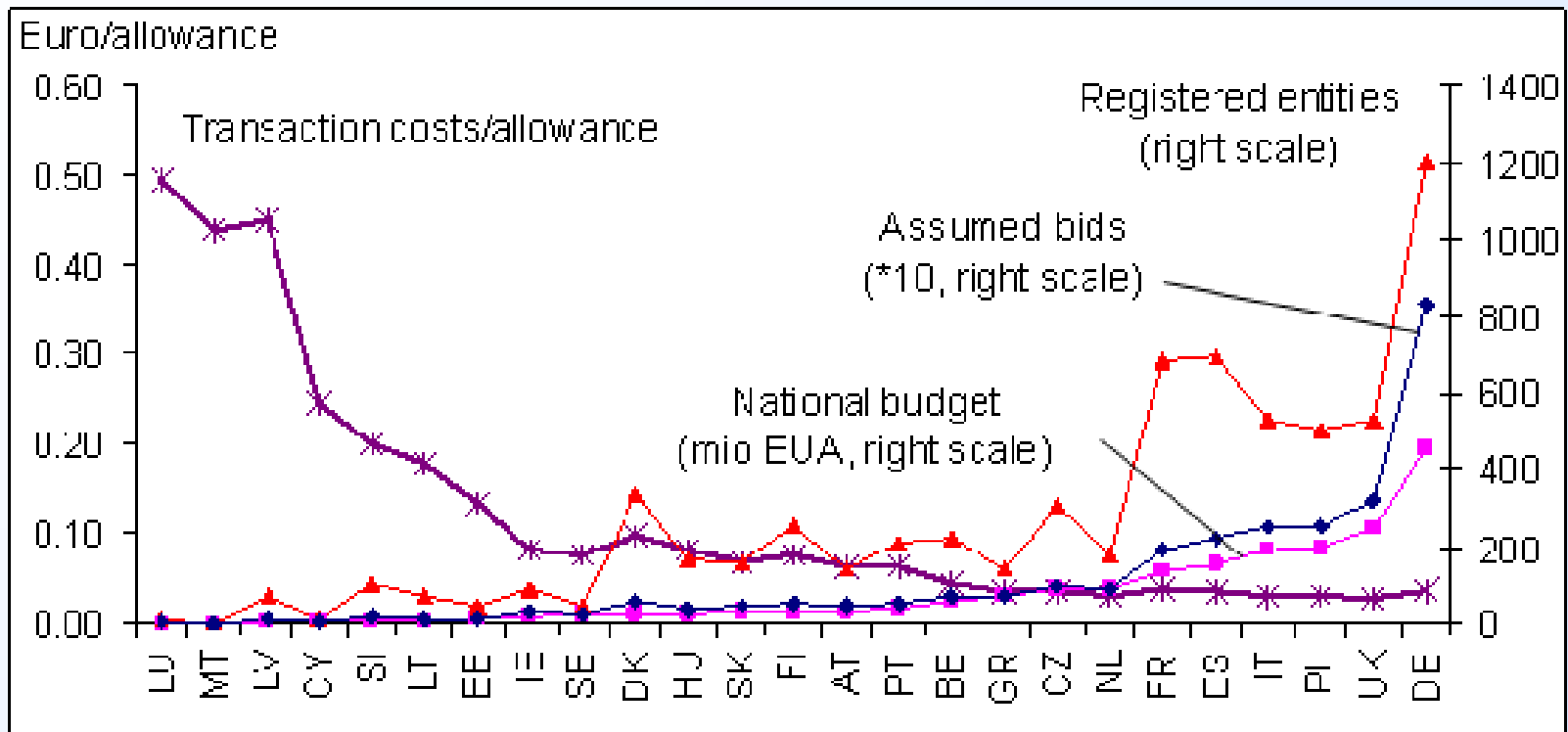
Coordinated auction with price floor can reduce risk of low prices

Source: Emissions Projections 2008-2012 versus NAP2 (2006) by Neuhoff, Ferrario, Grubb, Gabel, and Keats and . Published in Climate Policy 6(5), pp 395-410.

Harmonised and joint auctions

<i>Indicative results (+ positive and - negative)</i>	Independent auctions	Harmonised design	Commissioning same institution	Joint auction	Auctions under EU cap
Number of auction places in EU	25	25	1-few	1	1
Subsidiarity principle	+		+		
Risk of failed implementation	-		-	-	-
Transaction costs seller	-	-			

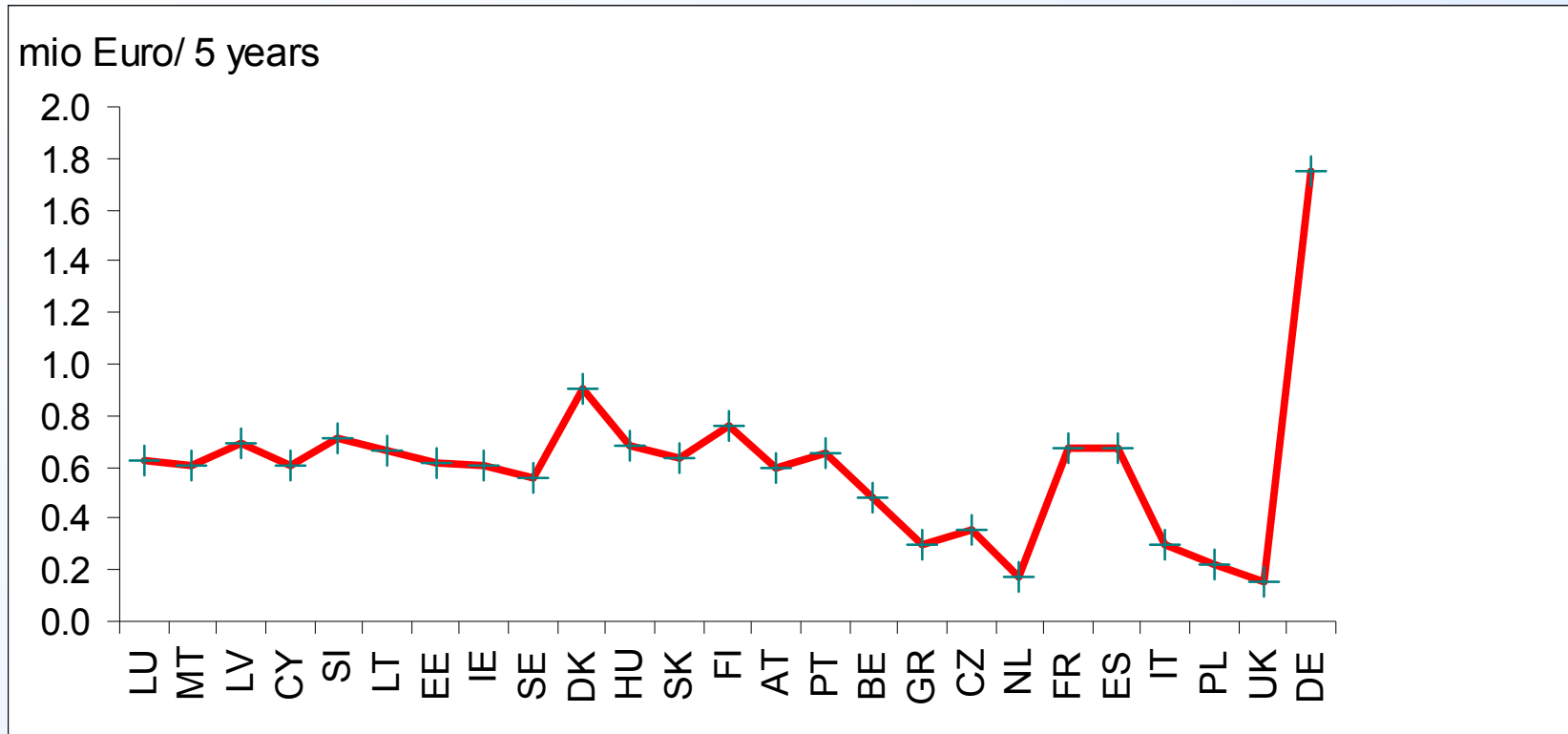
Estimated costs for auctioning allowances (seller side)



Assumptions

Euro	Initial IT	Fixed cost/auction	Cost/registration	Cost/bid
Costs	500.000	25.000	100	150

Estimated savings from joining auctions (seller side)



For details please see auction paper on www.electricitypolicy.org.uk/tsec/2

Harmonised and joint auctions

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Transaction costs seller		-	-			
Participants perspective	Only one registration required			+	+	+
	Frequent auction available			+	+	+
	Simplicity of ETS scheme		+	+	+	+
Coordination	Attention/demand fatigue if auctions coincide	-	-			
	Governments pre-empting to maximise revenue	-	-			
	Lock in to 'random' national designs	-				
Predictability	Reserve price can support price floor			+	+	+

Do auctions reduce liquidity in secondary markets?

- Passive strategy no longer viable
 - Increase overall market participation and hedging
- Concerns from early experience US SO₂ auctions
 - Illiquid market
 - Long lead times for auctions
 - Auction also used to resell on behalf of market
 - > Not really relevant
- Experience of T-Bill auctions
 - Work with Vanessa Smith and Andreas Pick
 - Trading volume increased when bonds reissued

Conclusion

- Motivation for auction
 - Commitment to mainly auction avoids distortions
 - Avoids distributional imbalances
 - Other instruments for sub-sectors really exposed
- Simple auction design wins participants
 - Sealed bid, uniform, frequent
 - Commission to institution with existing operations
 - Distribution across auctions – uniform?
 - Can we use reserve price to support price floor?
- Harmonisation of auctions – simple but effective
 - Simplicity, facilitates participation, avoids lock in
 - Consider jointly commissioning to one institution