



Centre for Energy and  
Environmental Markets

**UNSW**  
THE UNIVERSITY OF NEW SOUTH WALES  
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# Recent developments in the EU emissions trading scheme

Presented by  
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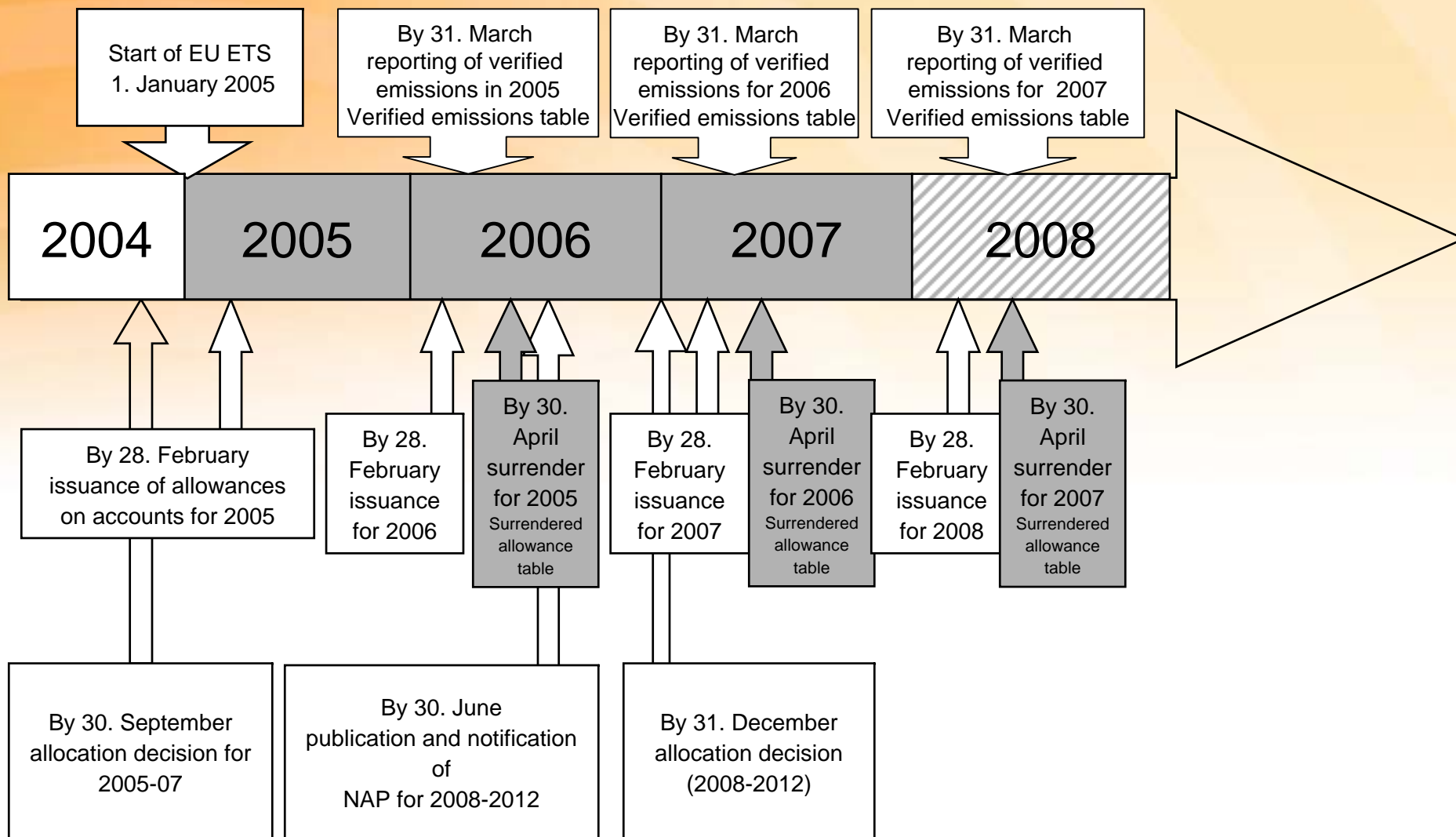
# Motivation and overview

- **EU ETS – Why does it matter?**
  - Largest greenhouse gas emissions trading scheme today
  - Lessons learnt for the proposed scheme in Australia
  - Linking options
  
- **EU ETS overview**
  - Regulated installations
  - Basic rules
  
- **Recent developments**
  - Market update
  - Windfall profits
  
- **Conclusions**



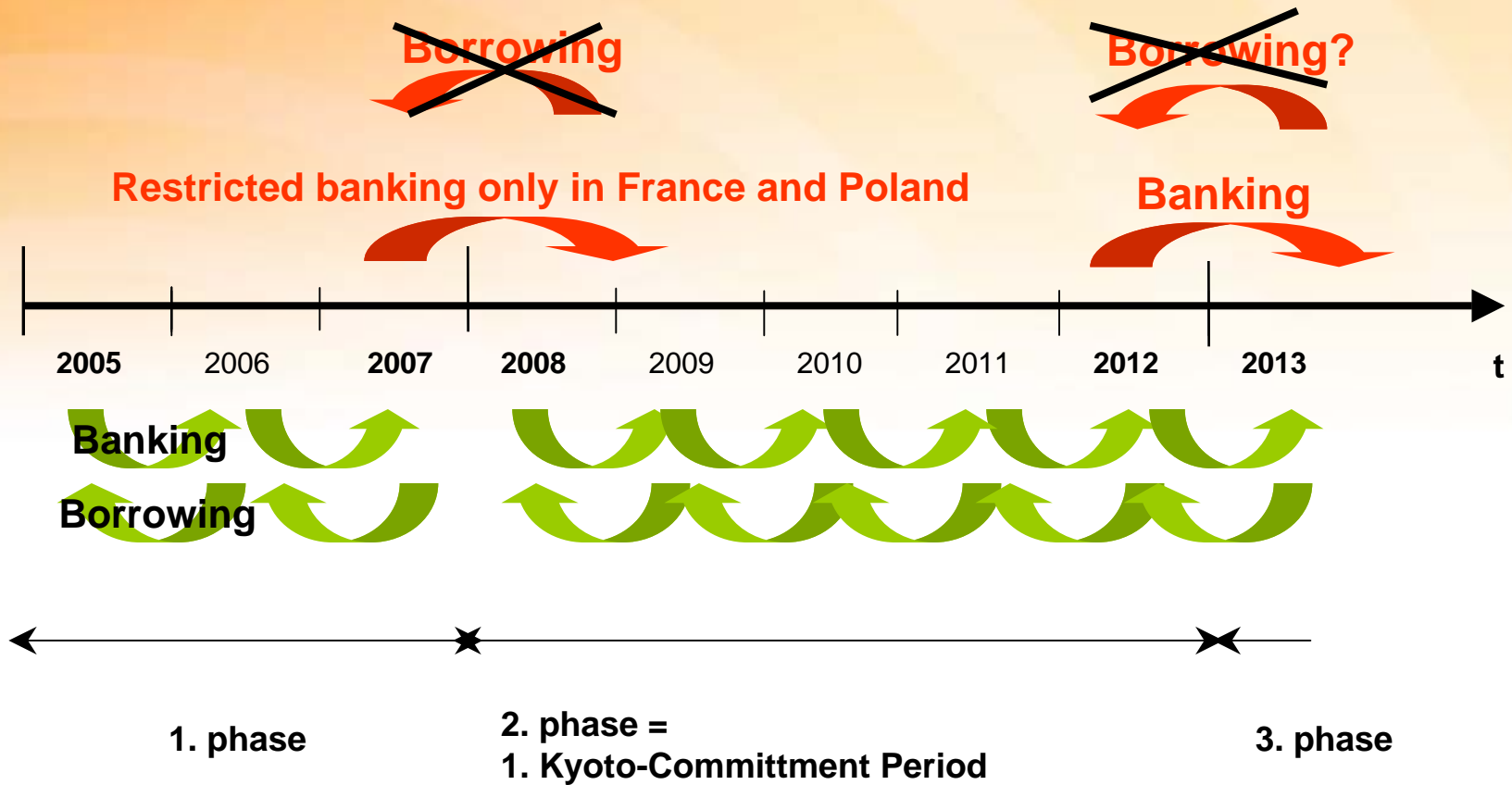
# Brief overview on EU ETS

- A cap-and-trade type scheme ...
- Operated in phases: 2005-07, 2008-12 etc.
- Covers initially direct CO<sub>2</sub> emissions of major emitting sectors (close to half of CO<sub>2</sub> emissions of EU) -> optionally from 2008 further GHGs
- Operators will need a permit for emitting CO<sub>2</sub>
- Harmonised monitoring, reporting and verification of CO<sub>2</sub> emissions based on Monitoring Guidelines
- Harmonised financial sanctions for non-compliance (40 €/t in 2005-2007 / 100 €/t from 2008) + surrender missing allowances + public notification
- Links to project credits established
- Partially harmonised allocation rules:  
95 % for free 2005-07 and 90 % in 2008-2012, rest to be auctioned





# Banking and Borrowing





# Regulated Installations

**Annex I** of the EU ETS Directive:

**Aggregation rule:** The **threshold values** given below generally refer to production capacities or outputs. Where **one operator** carries out several activities falling under the same subheading in the **same installation or on the same site**, the capacities of such activities are **added together**.

- **Energy activities**
  - **Combustion installations** rated thermal input > 20 MW (except hazardous or municipal waste installations)
  - **Mineral oil refineries**
  - **Coke ovens**
- Production and processing of **ferrous metals**: metal ore roasting or sintering installations, pig iron or steel including continuous casting (>2.5 t/h)
- **Mineral industry**: cement clinker (production capacity > 500 t/d), lime (> 50 t/d), glass (> 20 t/d), ceramic products (> 75 t/d, and/or kiln capacity >4 m<sup>3</sup>, setting density per kiln > 300 kg/m<sup>3</sup>)
- Industrial plants for the production of **pulp and paper** (>20 t/d)



# Coverage

Member State	CO <sub>2</sub> allowances in mio. tonnes	Share in EU allowances	Installations covered	Kyoto target
Austria	99.0	1.5 %	205	-13%*
Belgium	188.8	2.9 %	363	-7.5%*
Czech Republic	292.8	4.4 %	435	-8%
Cyprus	16.98	0.3 %	13	-
Denmark	100.5	1.5 %	378	-21%*
Estonia	56.85	0.9 %	43	-8%
Finland	136.5	2.1 %	535	0%*
France	469.5	7.1 %	1,172	0%*
Germany	1,497.0	22.8 %	1,849	-21%*
Greece	223.2	3.4 %	141	+25%
Hungary	93.8	1.4 %	261	-6%
Ireland	67.0	1.0 %	143	+13%*
Italy	697.5	10.6 %	1,240	-6.5%
Latvia	13.7	0.2 %	95	-8%
Lithuania	36.8	0.6 %	93	-8%
Luxembourg	10.07	0.2 %	19	-28%*
Malta	8.83	0.1 %	2	-
Netherlands	285.9	4.3 %	333	-6%*
Poland	717.3	10.9 %	1,166	-6%
Portugal	114.5	1.7 %	239	+27%*
Slovak Republic	91.5	1.4 %	209	-8%
Slovenia	26.3	0.4 %	98	-8%
Spain	523.3	8.0 %	819	+15%
Sweden	68.7	1.1 %	499	+4%*
United Kingdom	736.0	11.2 %	1,078	-12.5%*
<b>Total</b>	<b>6,572.4</b>	<b>100.0 %</b>	<b>11,428</b>	

- Opt-out/ opt-in not included
- Burden-sharing agreement for EU-15
- Malta, Cyprus have no Kyoto targets



# Allocation

- **Macro level:**
  - determination of total budget (including reserve for new entrants)
- **Allowances are allocated for free** to existing and new installations in most MS
  - auctioning in Denmark (5%), Hungary (2,5%), Lithuania (1.5%) and Ireland (>0.75%, revenues used to cover administrative costs)
- **Micro level**
  - Allocation based on historic emissions in most MS
  - base periods between 1997 to 2003 (mostly averages of several years)
  - exemptions / case of hardship and exclusion of the lowest year's emissions
  - almost all Member States use growth factors
- **Special provisions for:**
  - Cogeneration and other clean technologies
  - process-related emissions
  - early action

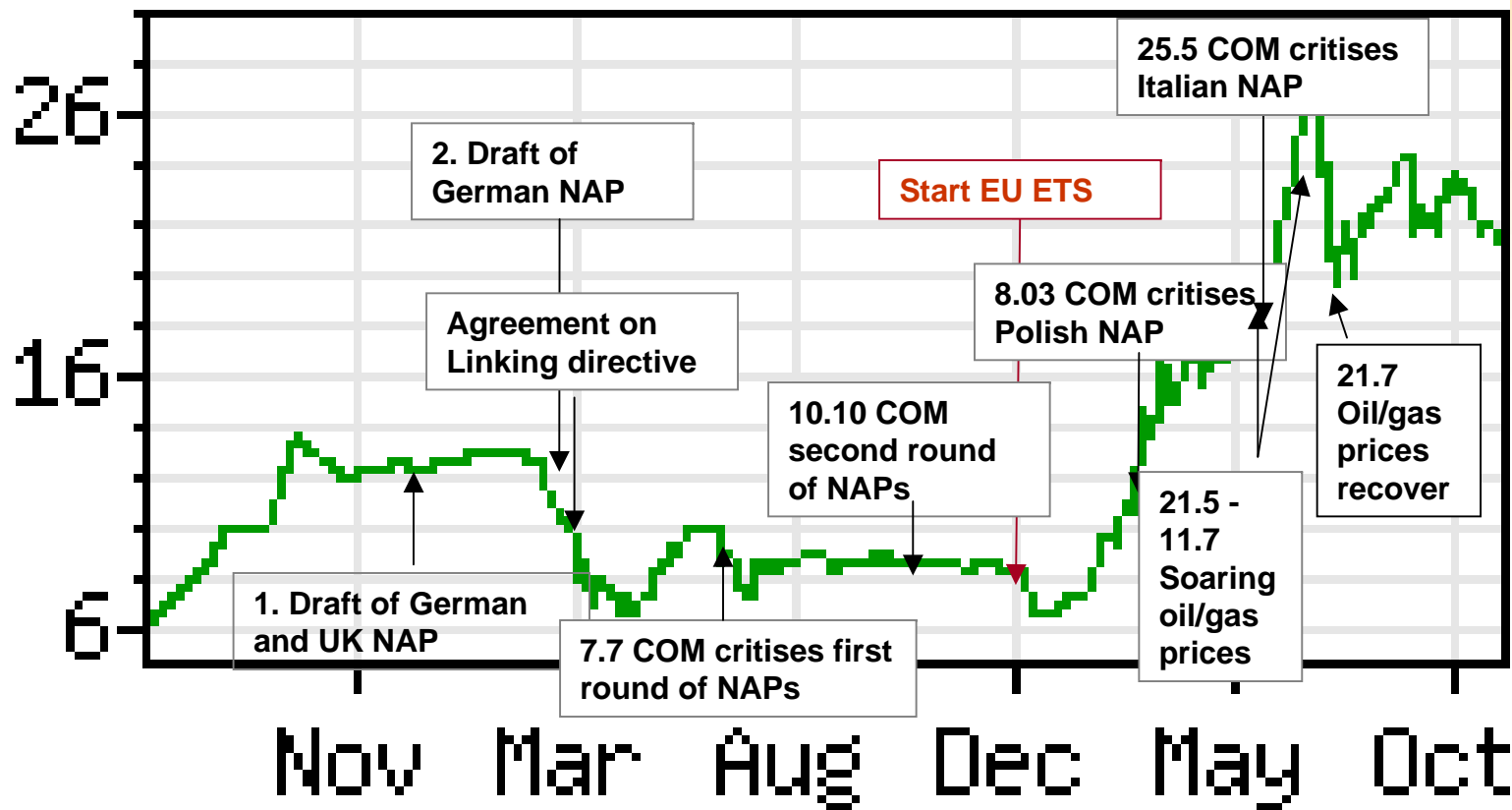




# Price Development of EU Allowances

➤ EUA 05 price (Jun03–Nov05)

Efficiency?



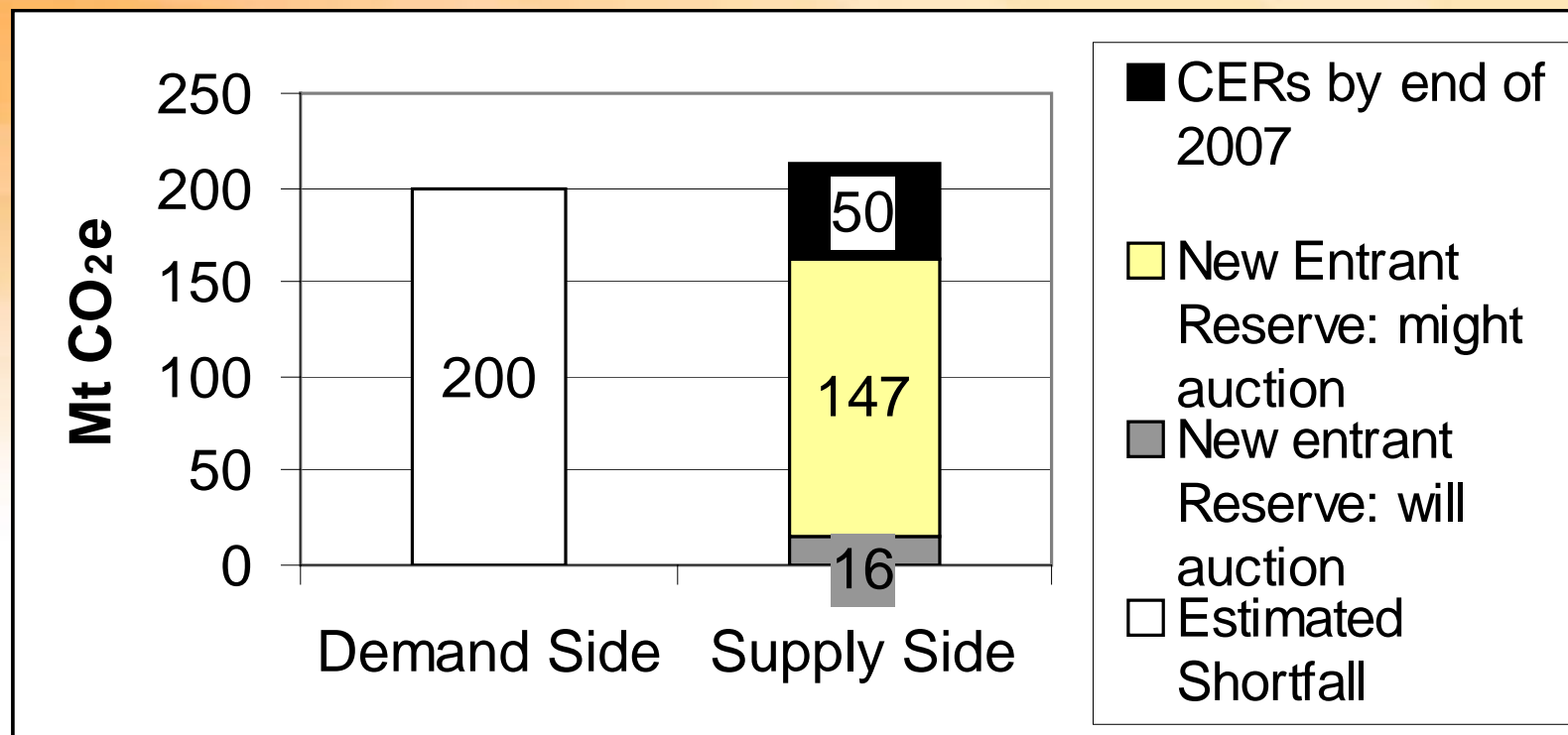


# Price drivers

- Supply side:
  - Some registries of accession countries are not in place (e.g. Poland but also Italy is missing.. only 13 are functioning so far of 25 registries),
  - Little supply of CERs and ERUs (50% are directly acquired by World Bank Carbon funds and 25 % ECF) and CERs have not been traded spot
  - Industrial players and small emitters with potential to sell not active in trading -> wait and see how the market performs,
  - Absence of banking to 2008-2012,
  - New entrant reserves surplus and treatment uncertain
  - Restriction on use of JI and CDM in second phase (2008-2012)
  - Future linkage with other trading schemes or inclusion of sectors (e.g. aviation) / Post-Kyoto discussion.
- Demand side:
  - Economic growth,
  - Fuel price spreads (e.g. high gas prices in the UK have not allowed for fuel switching, prices for EU allowances need to be above 70€),
  - Weather (Electricity demand in south Europe (Spain) was unexpected high since it was a hot summer. At the same time little rainfall and wind speed had a negative impact on hydro and wind electricity production),
  - Borrowing within a phase -> no pressure to buy today,
  - Future linkage with other trading schemes or inclusion of sectors (e.g. aviation) /Post Kyoto discussion



## Estimating the shortfall (2005-2007)

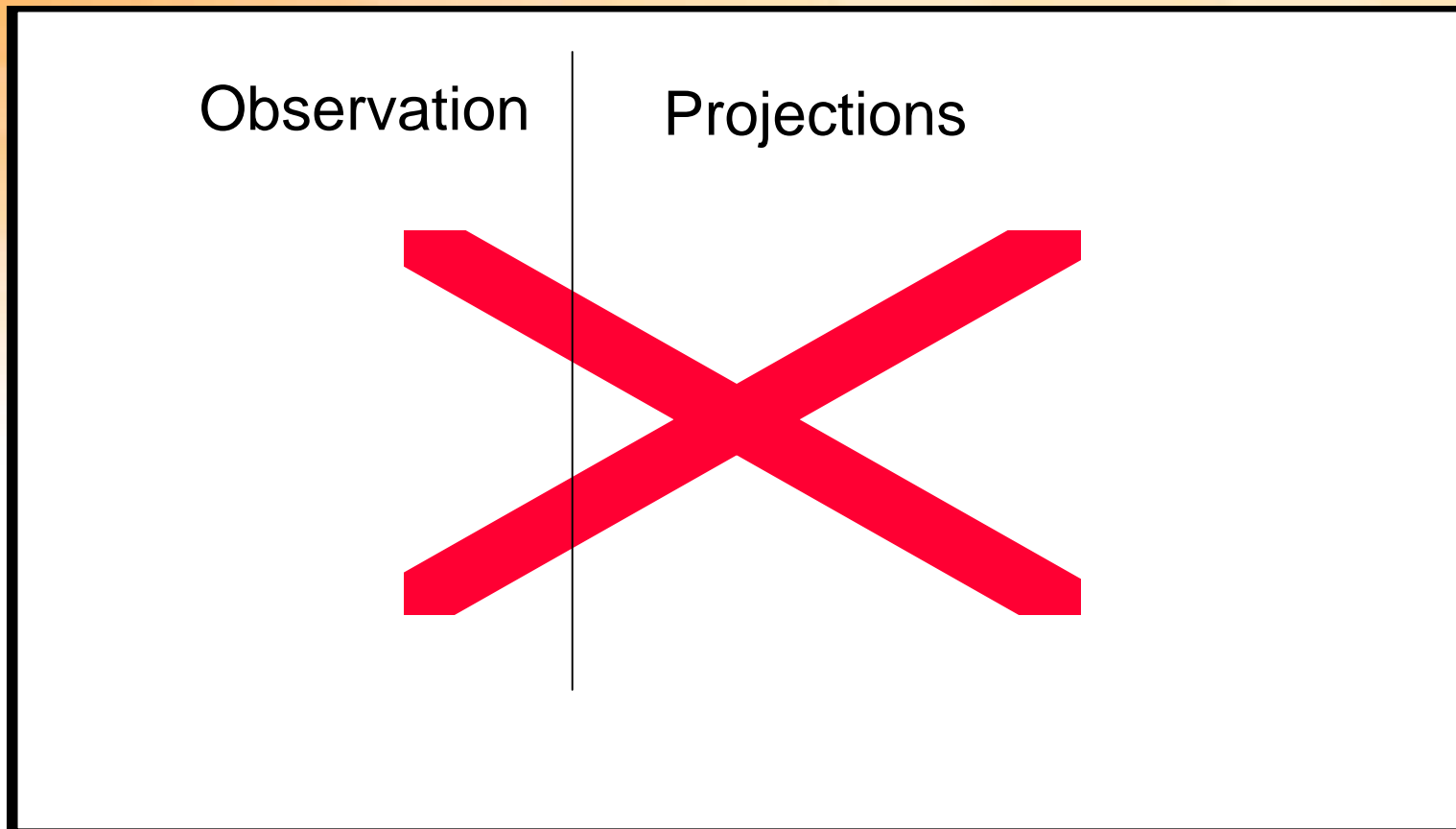


New entrant Reserve: 40 M t CO<sub>2</sub> will be cancelled  
(5 Member States)

**Effectiveness?**



# EUA Price developments





# Status of CDM/JI Market

- Clean Development Mechanism (CDM)
  - 500 CDM projects are under development
  - 21 registered projects,
  - For 3 projects CERs issued (about 60.000 t CO<sub>2e</sub>).
  - 90 Designated National Authorities in place
  - Post 2012: World Bank is buying post 2012 CERs and some of the registered projects have a crediting period beyond 2012.
- Joint Implementation (JI)
  - Only Russia and Ukraine are likely to use the rule of 1st track.
  - All other Annex-I countries will use 2nd track and define own rules.
  - The supervisory board will be elected in Montreal which is determining 1st Track rules similarly to the Executive Board for CDM.
- Kyoto Market
  - Demand from European governments: 104 Mt CO<sub>2e</sub> per year in 2008-2012
  - EU allowances and CERs fully fungible -> Price difference today
    - Independent Transaction Log is not functioning -> risk premium
    - No spot trading - > Other project related risks
    - > Prediction: Convergence of CERs and EAU price with spot trading of CERs

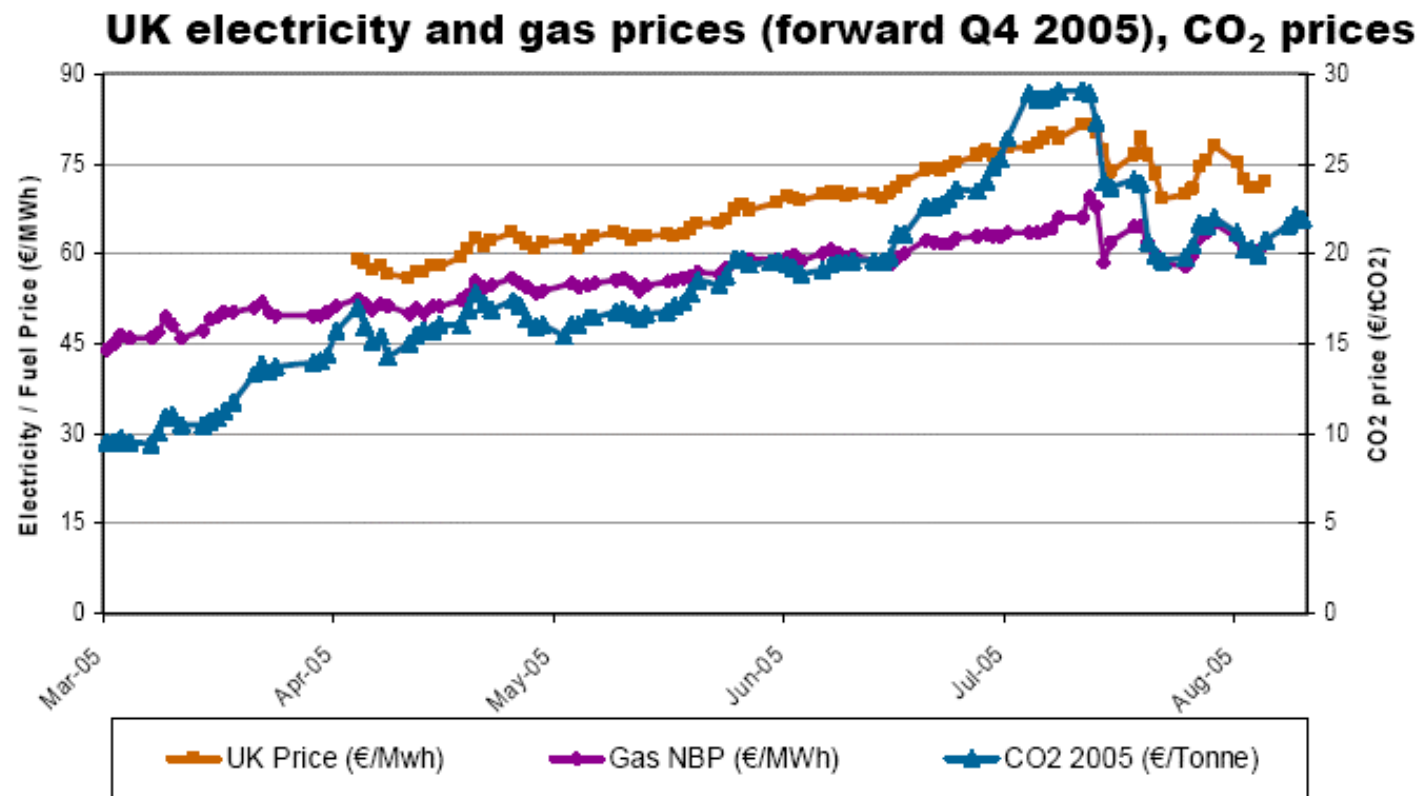


# Allocation and Windfall profits **Equity?**

- Economic theory: Method of allocation (auction vs. free allocation) will have distributional effects no effects on efficiency
- “Windfall profits”: Pass-through of opportunity costs of allowances to end-user
- Assumed impacts:
  - Short term: less power sales, if power demand is price elastic and/or a change in the merit order, if the costs are high enough to effectuate such a change.
  - Long-term adjustments may moderate effects (e.g. adjustment to demand)
- Free allocation of allowances implies a transfer of wealth from consumers to producers
- Distributional Impacts:
  - Negative impact on: power-intensive industries / electricity consumers
  - Positive impact: low users of scarce / expensive resource and efficient units



# Price developments in 2005



Source: Platts, PointCarbon and NERA calculations



# Influence on electricity price

- “Standard factors” affecting electricity price and generators
  - Price of CO<sub>2</sub> allowances
  - Shift in electricity market merit order due to change in fuel prices and exchange rates
  - Diversity in carbon intensity of marginal generation
  - Long-run electricity market effects
- Additional “Complicating factors”
  - Allowance allocation methodology (new entrant reserve)
  - Regulation in electricity markets
  - Competitive conditions in electricity markets
  - International trade in electricity
  - Other climate policy (e.g. green/white certificates)
  - **Government constraints on electricity prices and/or windfall profits**





# Policies and predicted effects

Policy	Country and Implementation status	Intended effect		Unintended effects	
		Elect. price	Windfall profits	Elect. market	Allowance Market
<b>Adjust allocation/ tax "windfall profits"</b>	Currently investigated by Sweden, Finland, Spain	No	Yes	No	No
<b>Revenue recycling</b>	Shelved in Ireland for the time being -> subsidizing transmission charges	possibly	possibly	Yes (inefficient transmissions charges)	Yes (higher costs)
<b>Wholesale price regulation</b>	In force in Ireland, special industry tariffs announced in France	Yes	Yes	Yes (regulated pricing)	Yes (higher costs)
<b>Retail price regulation</b>	In force in Spain (electricity rate increase <2%)	Yes	No	Yes (bank- ruptcies, supply shortages)	Yes (higher costs)



# Conclusions

- Effectiveness: +
  - Overall abatement low (Can transaction costs be justified?). Uncertainty of treatment for new entrant reserves make real abatement assessment difficult
  - Small shortfall compared to potential supply sources
- Efficiency: (static -/ dynamic +)
  - Market seems immature today: volatile price signals will lower innovative incentives or could drive inefficient investments
  - Uncertainties about future allocation rules and new entrant reserve treatments should be prevented in the future
- Equity: -
  - Empirical information suggests that current allowance prices are being included in electricity prices, but the relationship is complex
  - More auctioning especially to electricity industry (2008-2012) to reduce windfall profits best option (However, EU directive allows max. 10 % auctioning)
  - However, not clear that concern of policy makers is on windfall profits, since focus seems to be on electricity prices

# Thank you very much for your attention!



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"Emissions Trading for Australia: Design, transition and linking options" by Regina Betz and Iain MacGill

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