

TSEC 2

Infrastructure Investment under Uncertainty The Role of EU ETS

Infraday
Berlin October 8/9, 2007

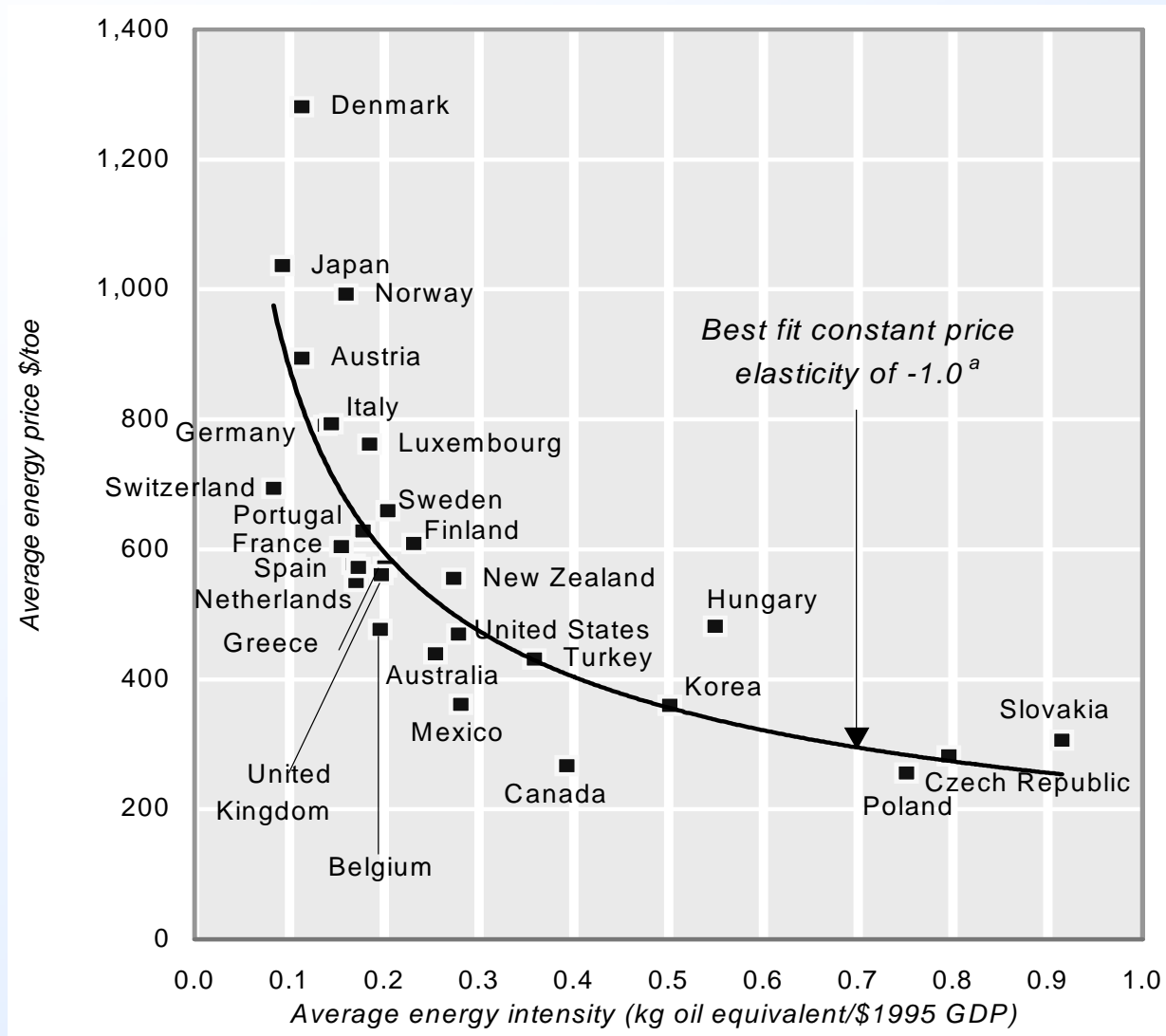
Karsten Neuhoff

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Infrastructure Investment under Uncertainty

- Carbon price is fundamental – transition is challenge
- Actors differ across sectors/organisations
- Low Carbon policy tailored for decision makers

Carbon price fundamental

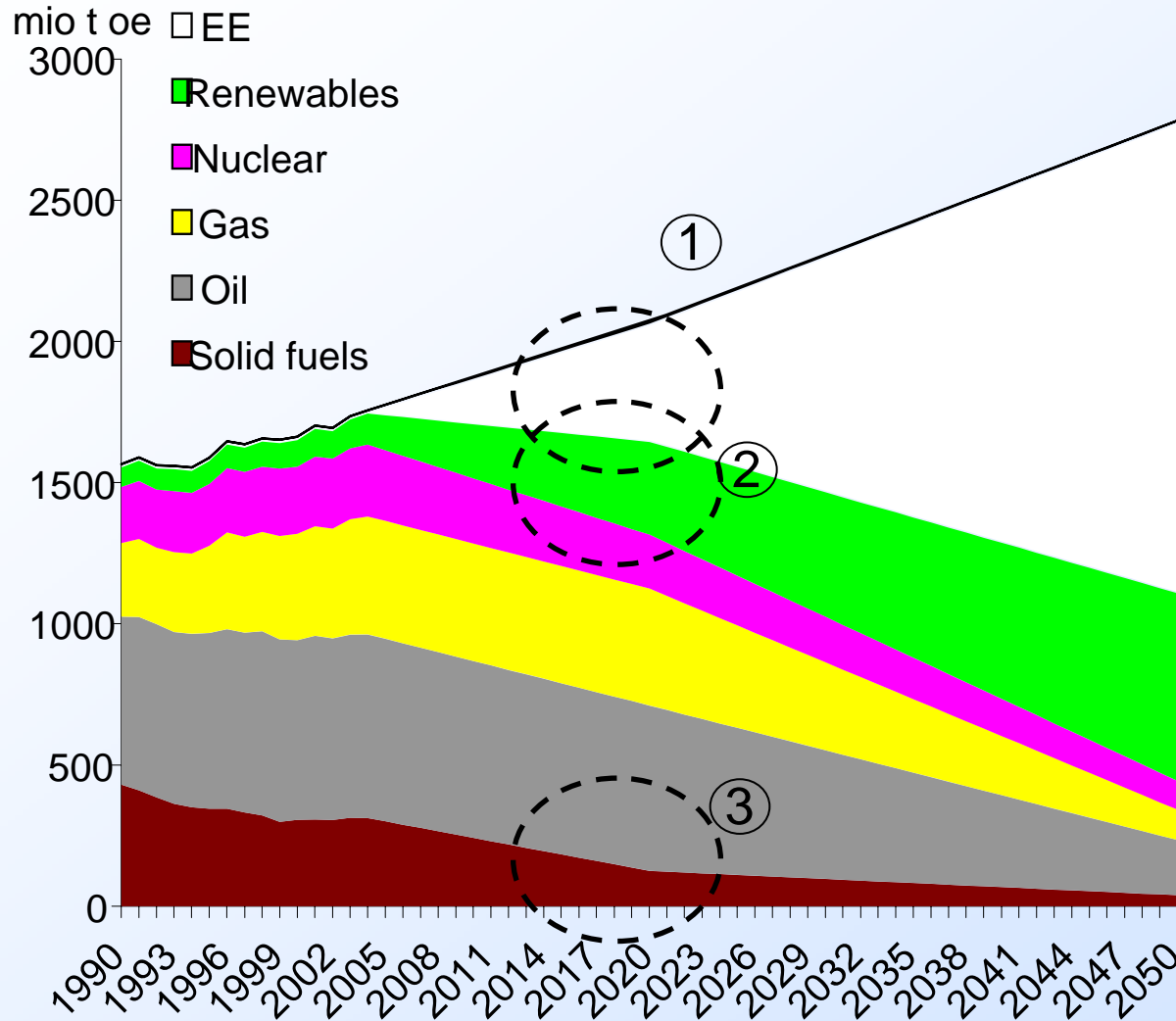


Source: Newbery, D. M. (2003) Sectoral dimensions of sustainable development: energy and transport. Economic Survey of Europe 2(73-93).

The challenges for the transition

- Concerns about leakage
- Distributional impact from changes of relative prices
- Managing the transition:
 - “next 10 to 20 years ...[until] carbon pricing is universal and is automatically factored into decision making” [The Stern Report]

Perspective 'Oil companies' - the big picture



1. Early role of energy efficiency
2. Long-term role for renewables, but no time frame
3. Phasing out of conventional coal

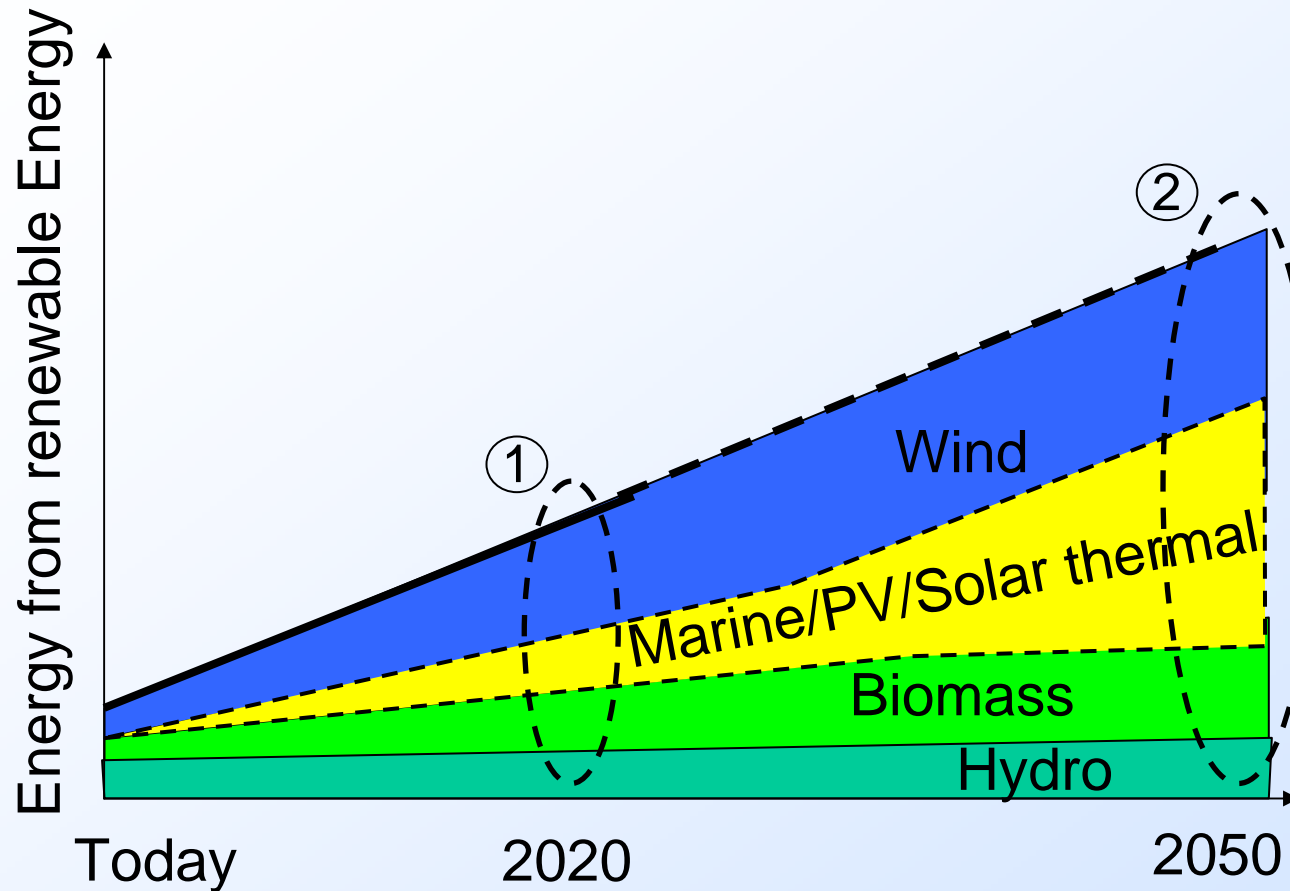
Historic data – Energy and Transport in Figures, 2006. Own projections for 20% Emission reductions by 2020 and 80% by 2050.

CCS fraction 2% in 2020, efficiency 85% in 2020 and 80% in 2050, all emission reduction domestically

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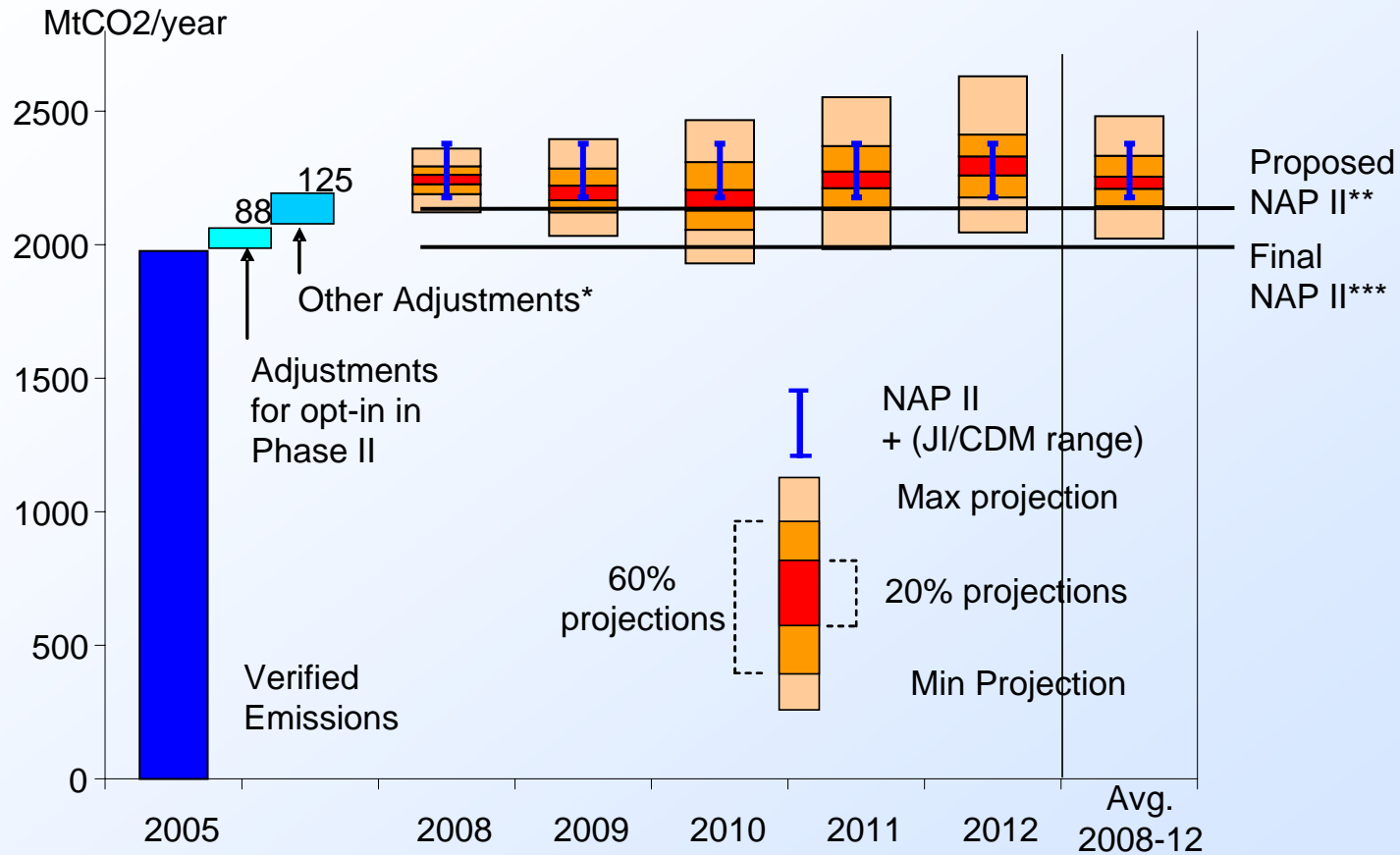
Perspective 'Technology company' - Renewable targets

Illustrative



1. 'Early' role for renewables
2. Long-term position of technologies conditional on their performance

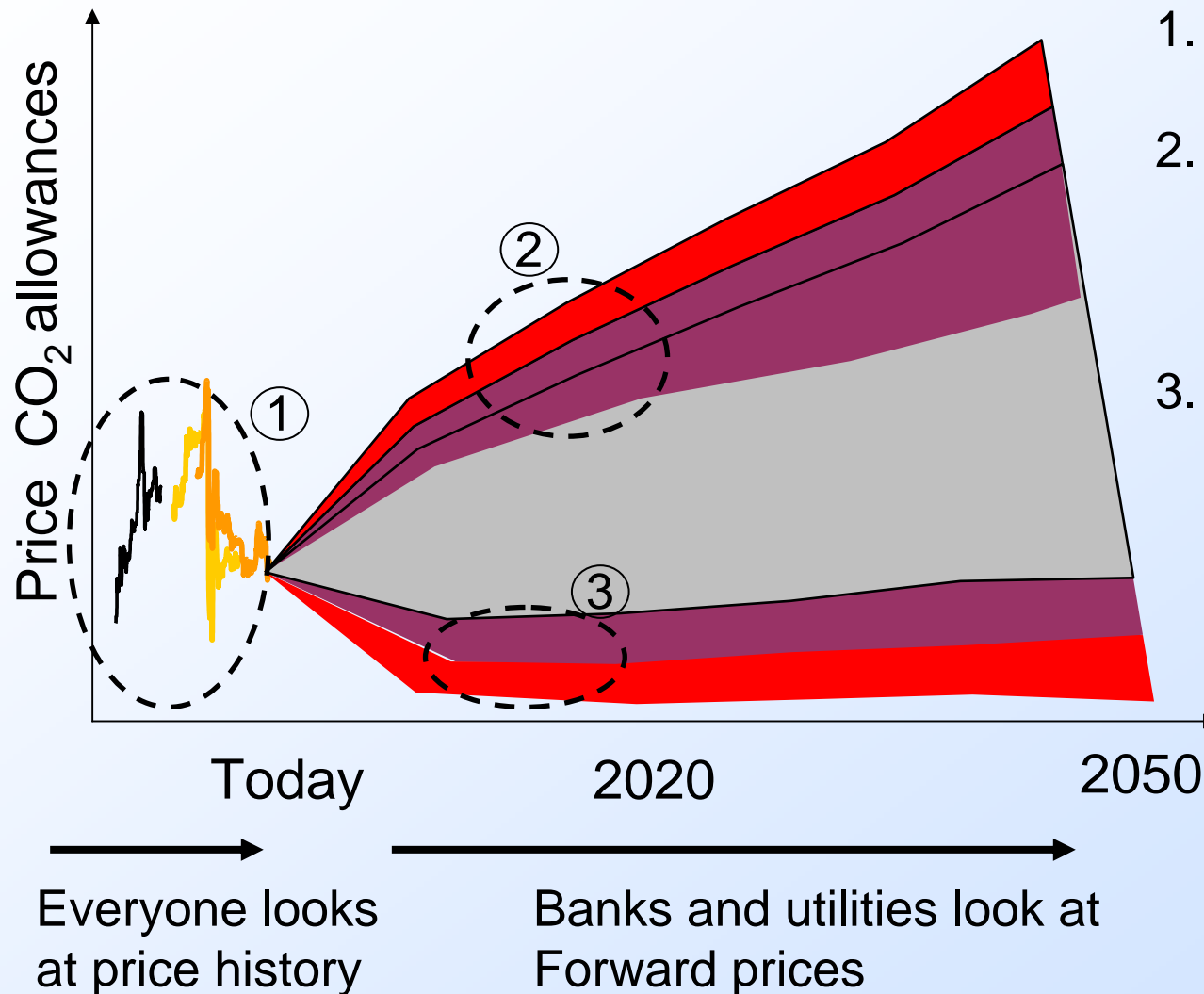
Perspective 'Large utilities' - Emission projections



Source: Emissions Projections 2008-2012 versus NAP II (2006) by Karsten Neuhoff, Federico Ferrario and Michael Grubb. Published in *Climate Policy* 6(5), pp 395-410.

Perspective 'Non-energy companies and banks' - CO₂ market prices

Illustrative



1. Short and not representative history
2. Downside risk for high Carbon assets main obstacle for coal investment
3. Difficult to quantify downside risk for low Carbon investments

Perspective 'Small decisions' - Regulation and standards

- In many decisions Carbon price insignificant
- Landlord tenant issues, habits, information failure
-> Carbon price alone can not tackle inertia

- Regulation against the price signal difficult to enforce
-> Regulation alone does not do the trick either

Conclusion – and outlook

'Stylised sector'	Decision based on	Policy implication
Oil majors	Credible emission target	Consistent policy
Large utilities	ETS cap	Strong caps, auctions, put options by government
Non-energy/ bank	CO2 price projection	Reservation price in auction
Technology	Renewable target	Enact national responsibility
Small decisions	Current prices/standards	Make ministries responsible

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