



The EU's Cap & Trade Program

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On loan to ARB from the UK Government

The Scale of the Task

- 27 countries
- Population: 493 million (13x CA)
- Emissions: 5 billion tons (10x CA)
- 20 official languages
- 12,000 emitters
- Many different industries
- Different stages of economic development



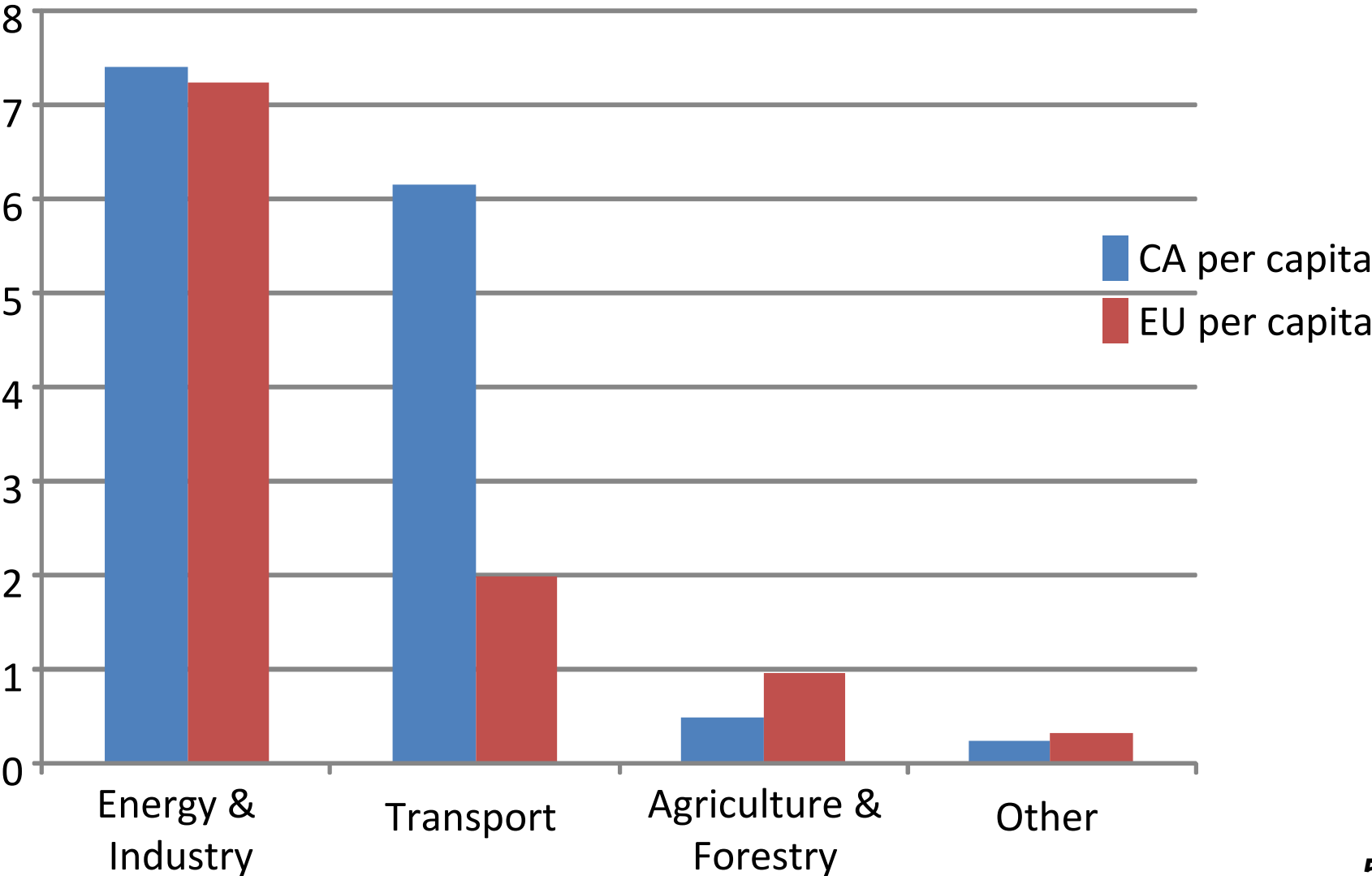
Why Europe Chose Cap & Trade: 1

- Has goal for emissions in 2008-12, as result of Kyoto treaty
- Wanted to reduce emissions cost-effectively and drive innovation
- Wanted to access all behavioral, technological and operational reduction options
- Best way? Make polluter pay for every emission
- Tried to agree a tax, and failed

Why Europe Chose Cap & Trade: 2

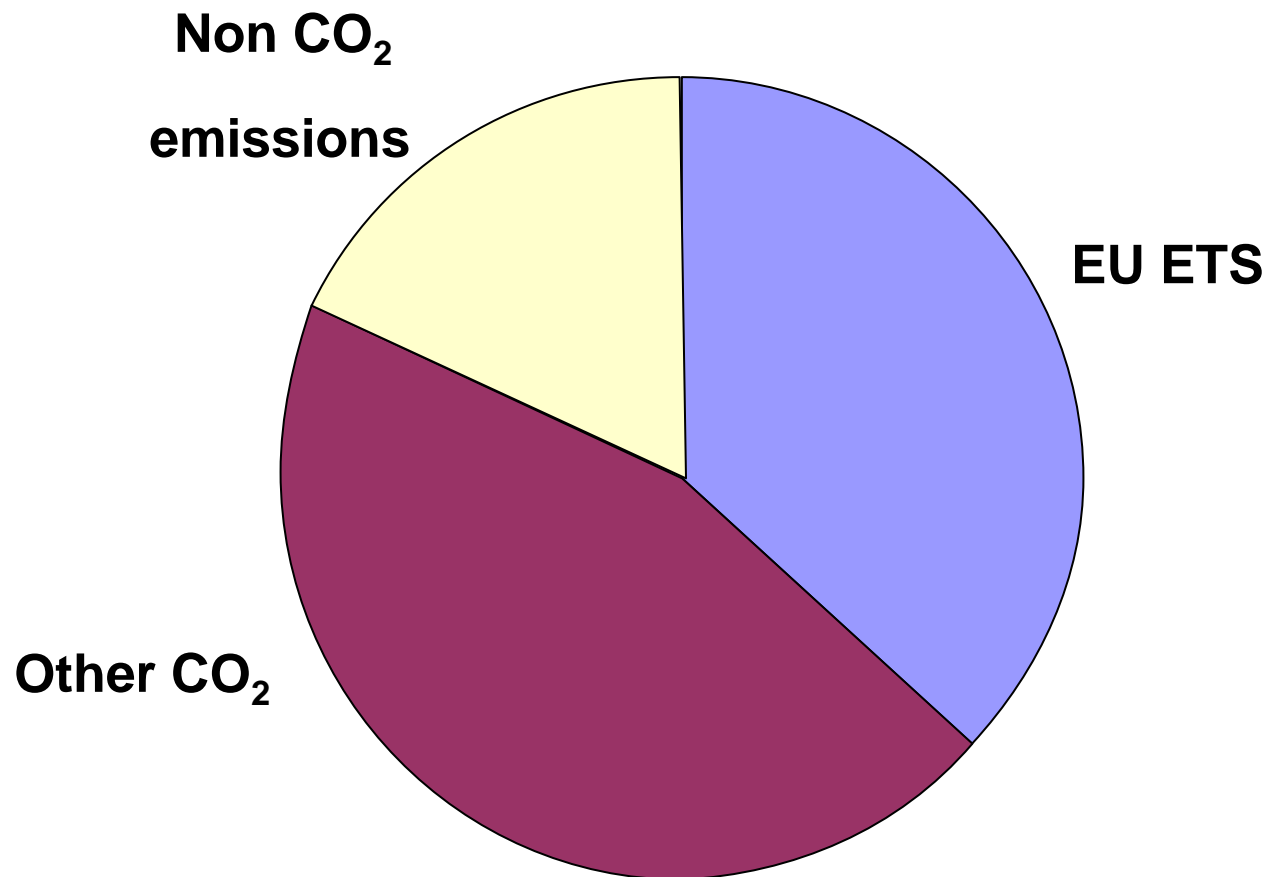
- Politically, cap & trade the best option
- Guarantees achievement of specified emissions level, a key feature for environmental groups:
 - *“One of the world’s most important mechanisms to tackle climate change”* WWF
 - *“A tremendously important achievement for European Climate Change policy”* Climate Action Network (CAN) Europe
- Still regulates emitters – need a license to emit

Where do emissions come from?



Source: European Statistical Agency and California Air Resources Board

What Emissions does the EU ETS Cover?



Source: European Commission

What About the Other Emissions?

- EU put forward proposals in January on renewable energy, carbon capture & storage, energy efficiency and cap & trade
- Cap & trade one of a suite of measures
- Role for governments in supporting long term research and development and driving energy efficiency

Getting Started: Phase I

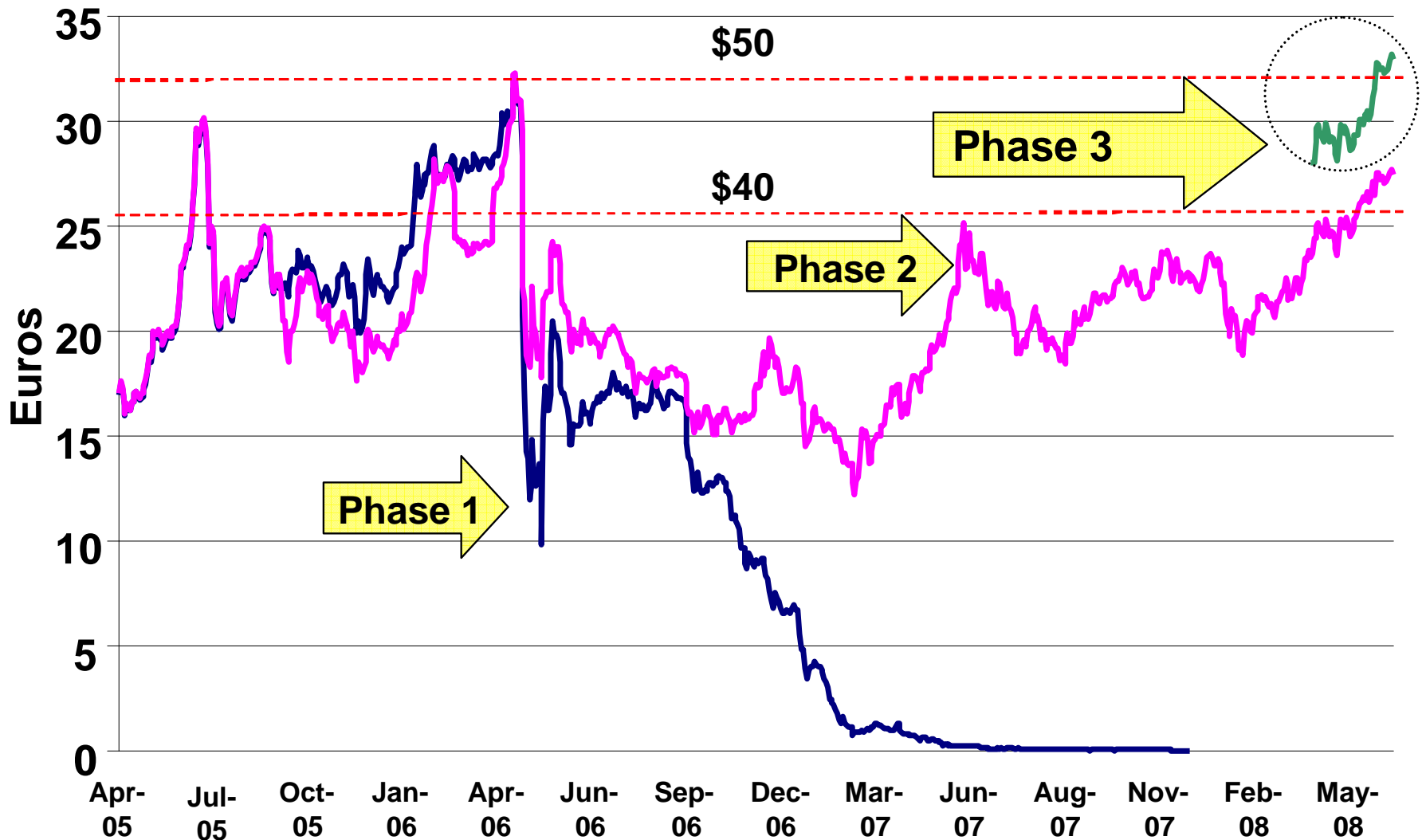
- A big project – so Europe did a pilot phase/ ‘soft launch’
- Put systems in place.
- Highlighted some issues...

Issues	Solution for future
Weak emissions data leading to over-allocation	Use verified data for 2005-07
Windfall profits	More auctioning
Targets too short term	Set cap that declines at constant rate forever
Industry treated differently in neighboring countries	Allocation the same in all EU countries

Getting Real: Phase 2 (2008-12)

- Caps set much more strictly, because:
 - Better data (2005 verified emissions)
 - Caps tied to previously agreed Kyoto targets
 - Projections of high economic growth strongly questioned
- Result – caps revised downwards by an average of nearly 7%
- Made a difference...

Price of Emissions in Europe



Source: European Climate Exchange

Bottom line

- EU ETS expected to reduce emissions by **>200 million metric tons of CO₂ per year** in 2008-2012
- Like making all transport in California run on 100% renewable energy

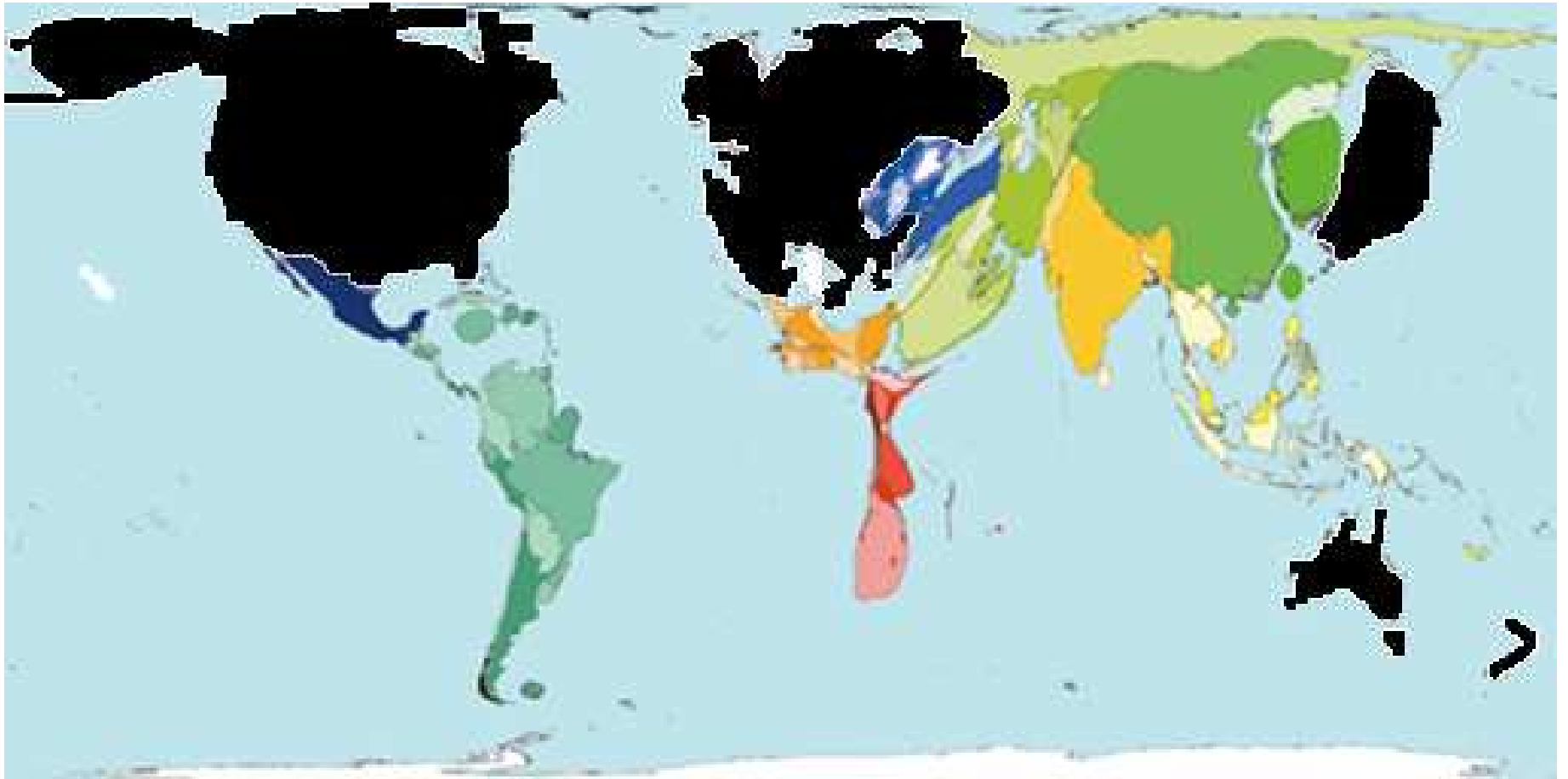
The future – after 2012

- Central cap, reducing by ~36 MMtCO₂e per year from 2008-12 levels, forever
- Polluter pays:
 - No free allowances for electricity generators
 - No free allowances for anyone by 2020 (unless risk of carbon leakage)
- Tighter limits on use of offsets

What is the CDM?

- ‘Clean Development Mechanism’
- Part of the Kyoto Protocol
- Generates emissions credits (‘offsets’) from emissions reductions in developing countries
- Companies regulated by EU ETS can use credits to cover some of their emissions
- Buzzword – ‘*additionality*’
 - Are the ‘emission reductions’ real?
 - Difficulty of defining what would have happened otherwise
- Like EU ETS, practical experience has shown many imperfections. Like EU ETS, CDM is under review

Who is Considering Cap & Trade?



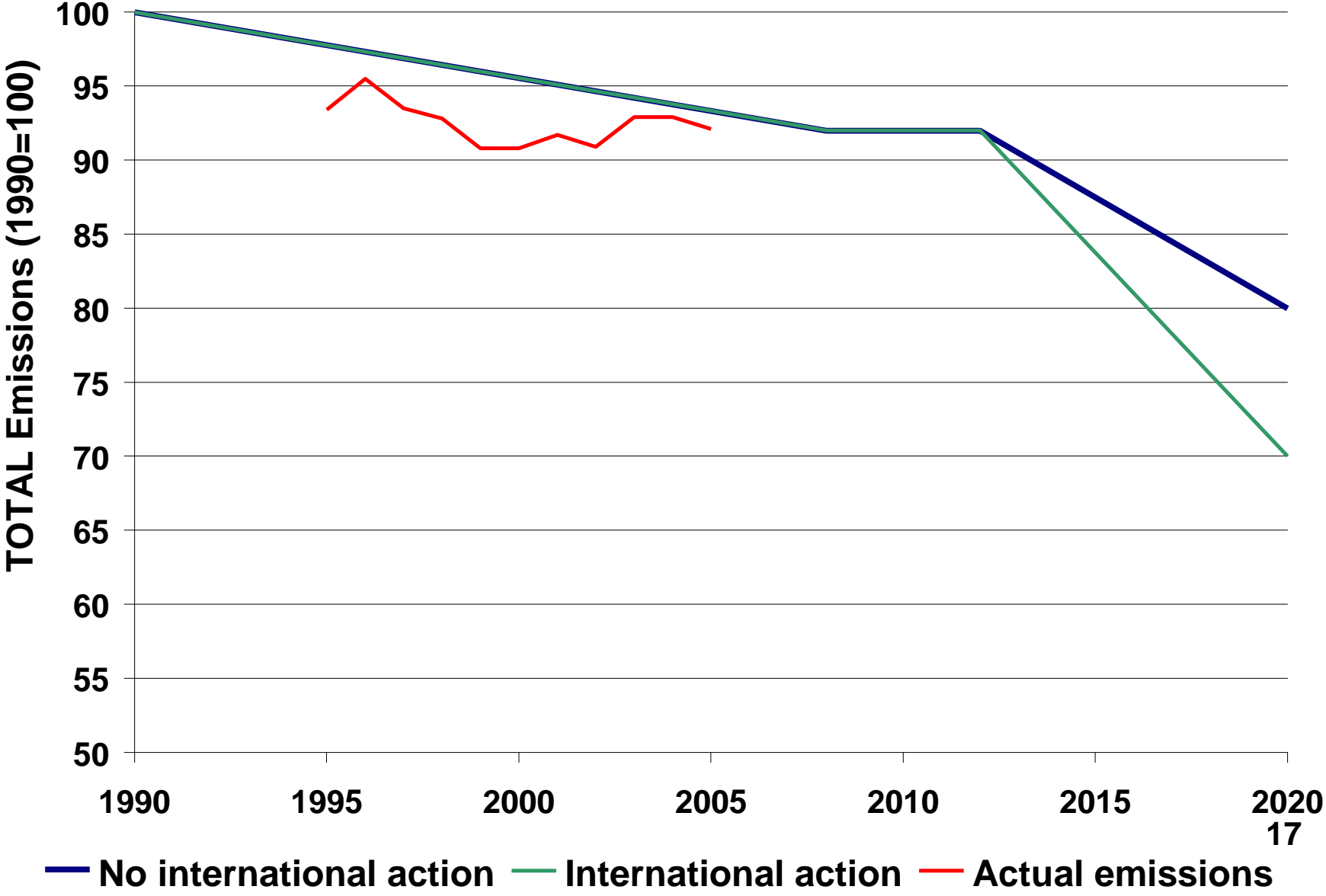
Source: Worldmapper.org

Summary

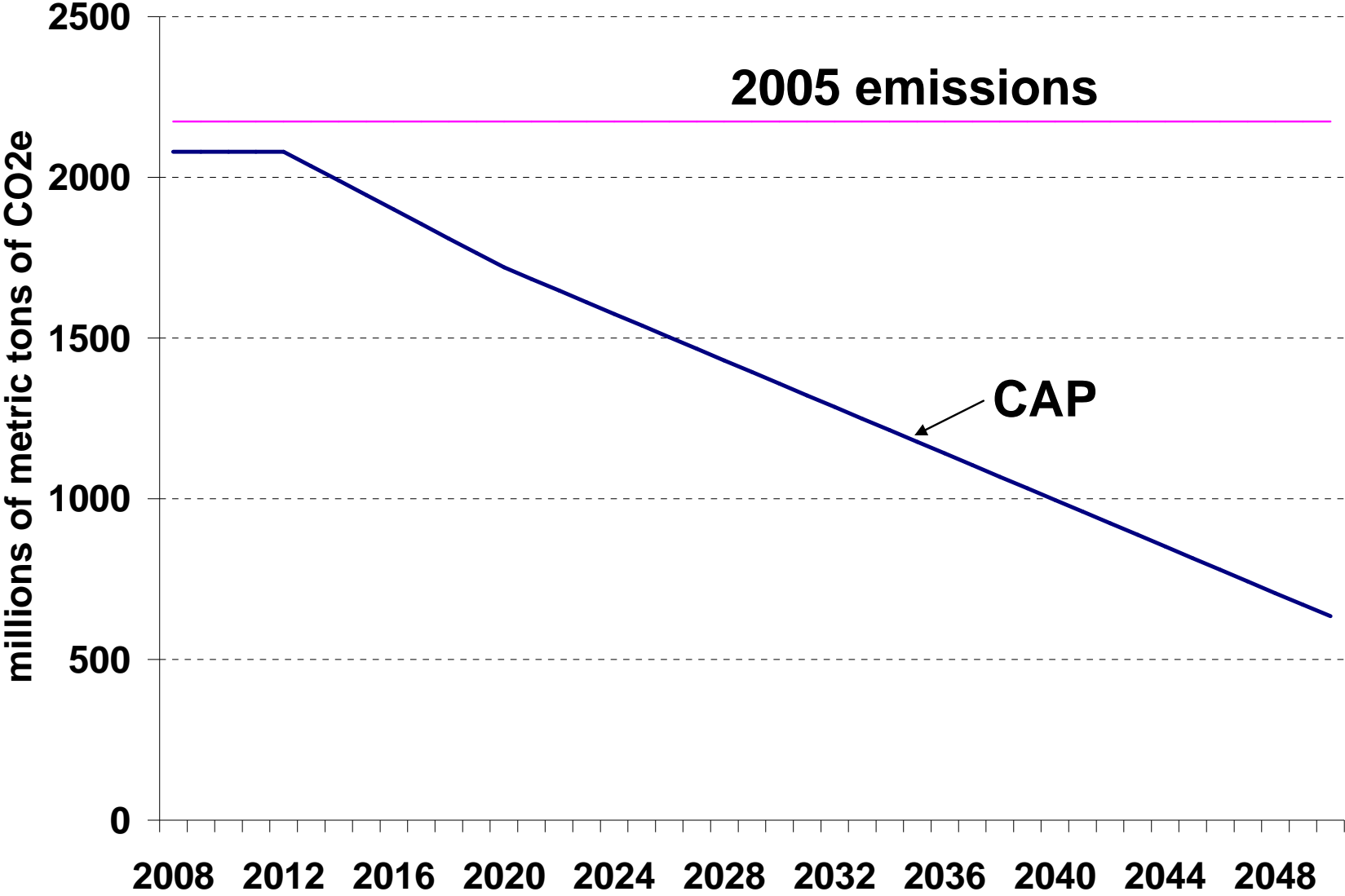
- Cap & trade **sits alongside other forms of regulation.**
- Polluters now paying \$40 a ton to emit – delivering **real reductions** (200 m tons per year)
- **Windfall profits are not inevitable**
- Get **good emissions data**

Reserve Slides

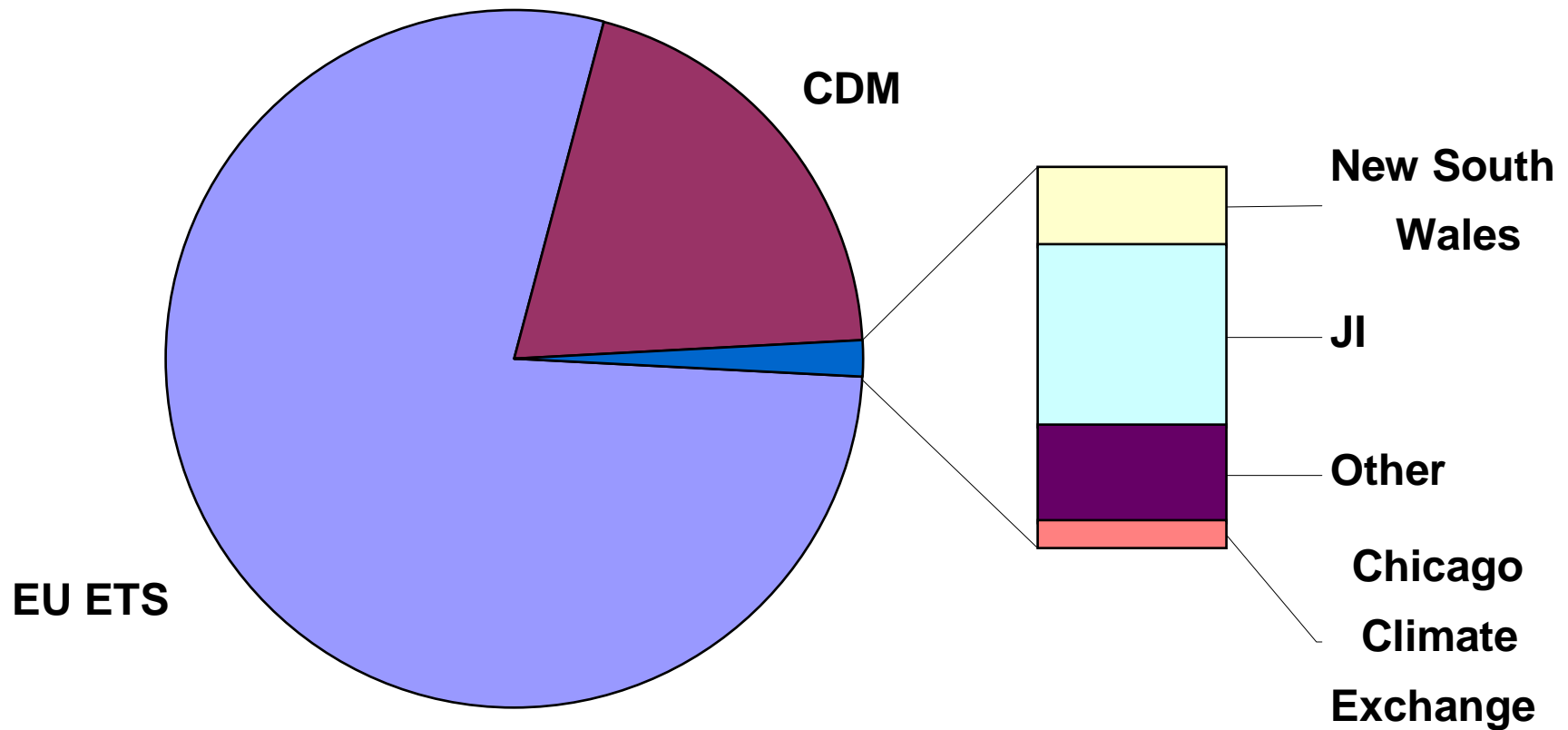
EU Emissions and Targets: 1



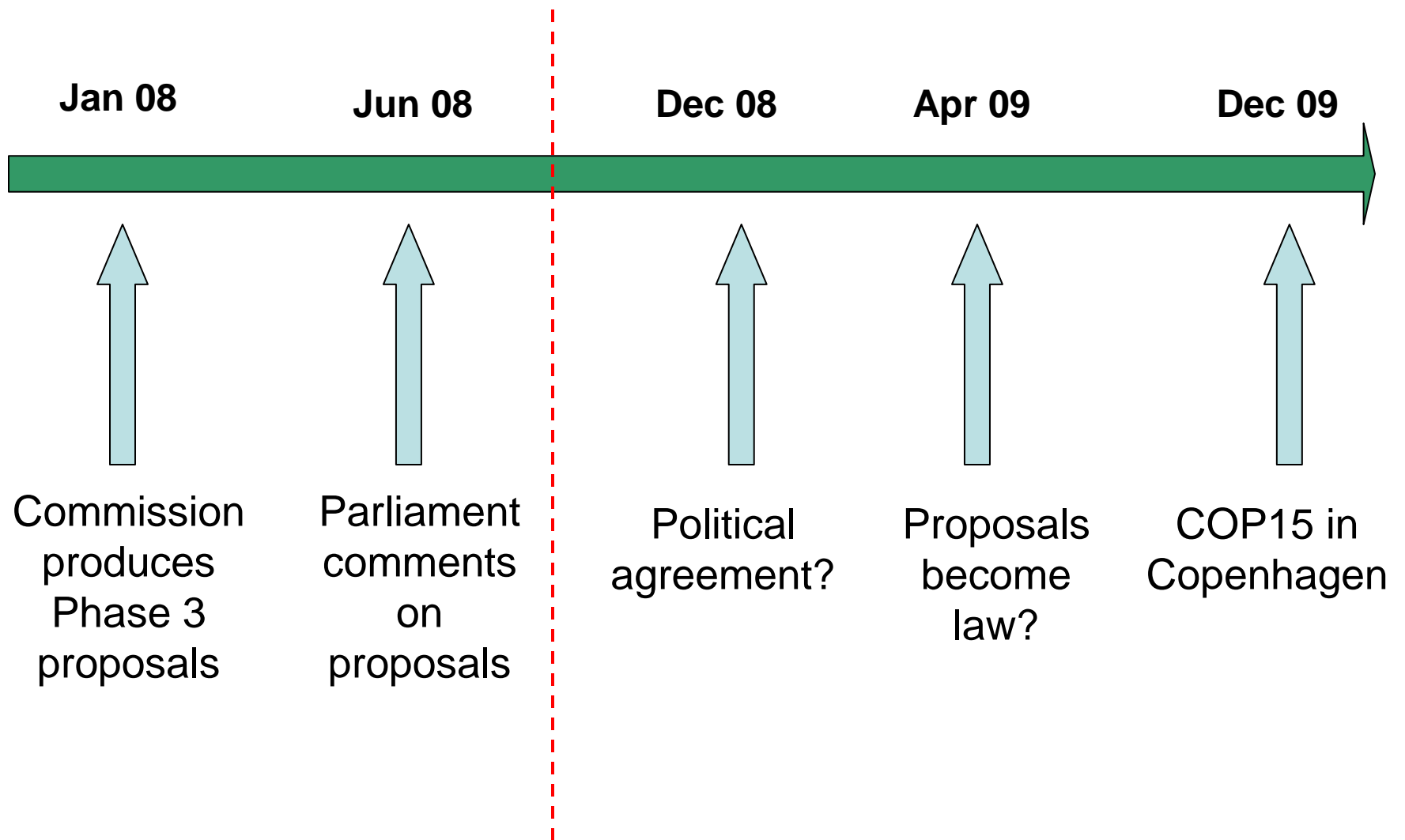
EU Emissions and Targets: 2



Value traded, compared to other markets



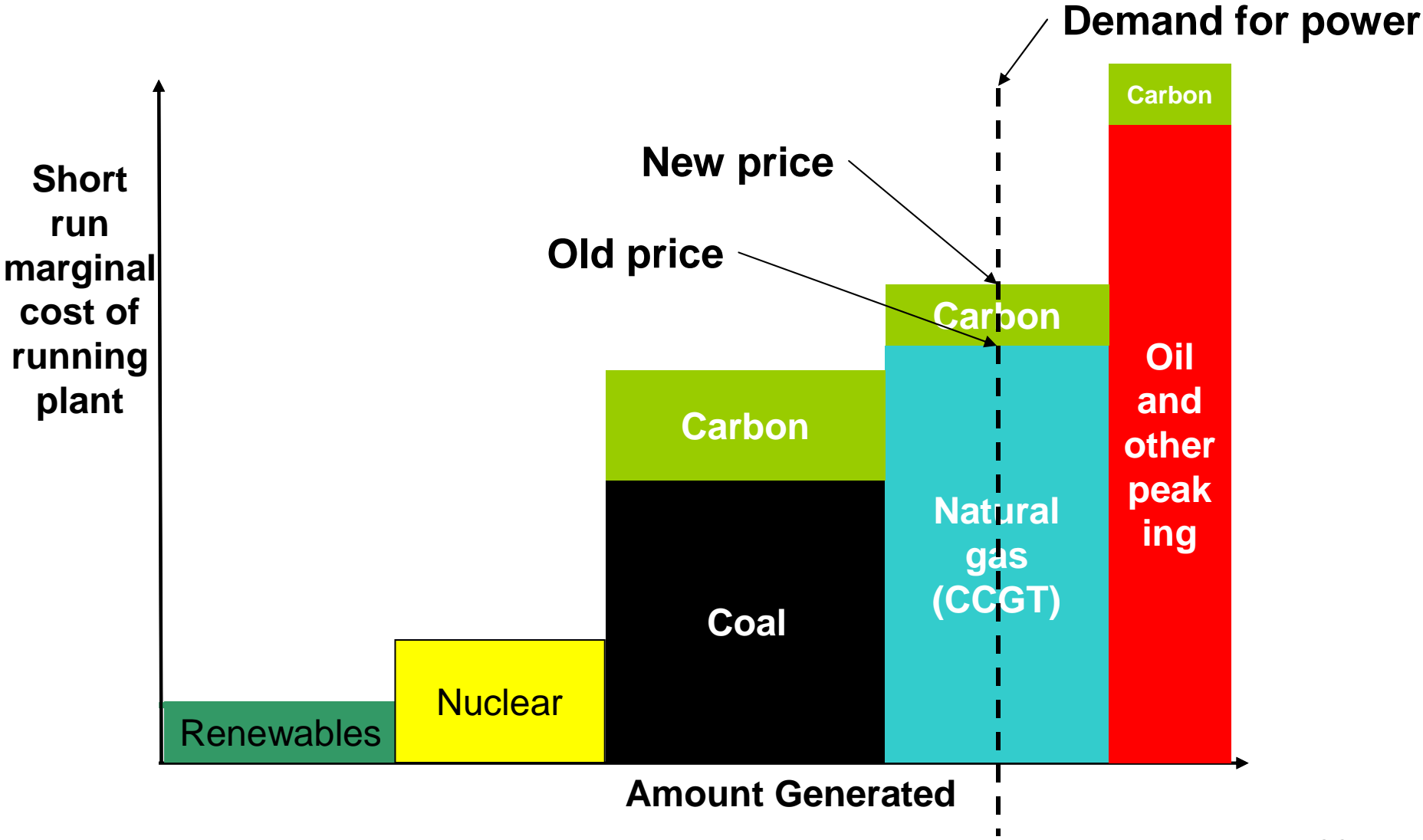
Agreeing the Proposals



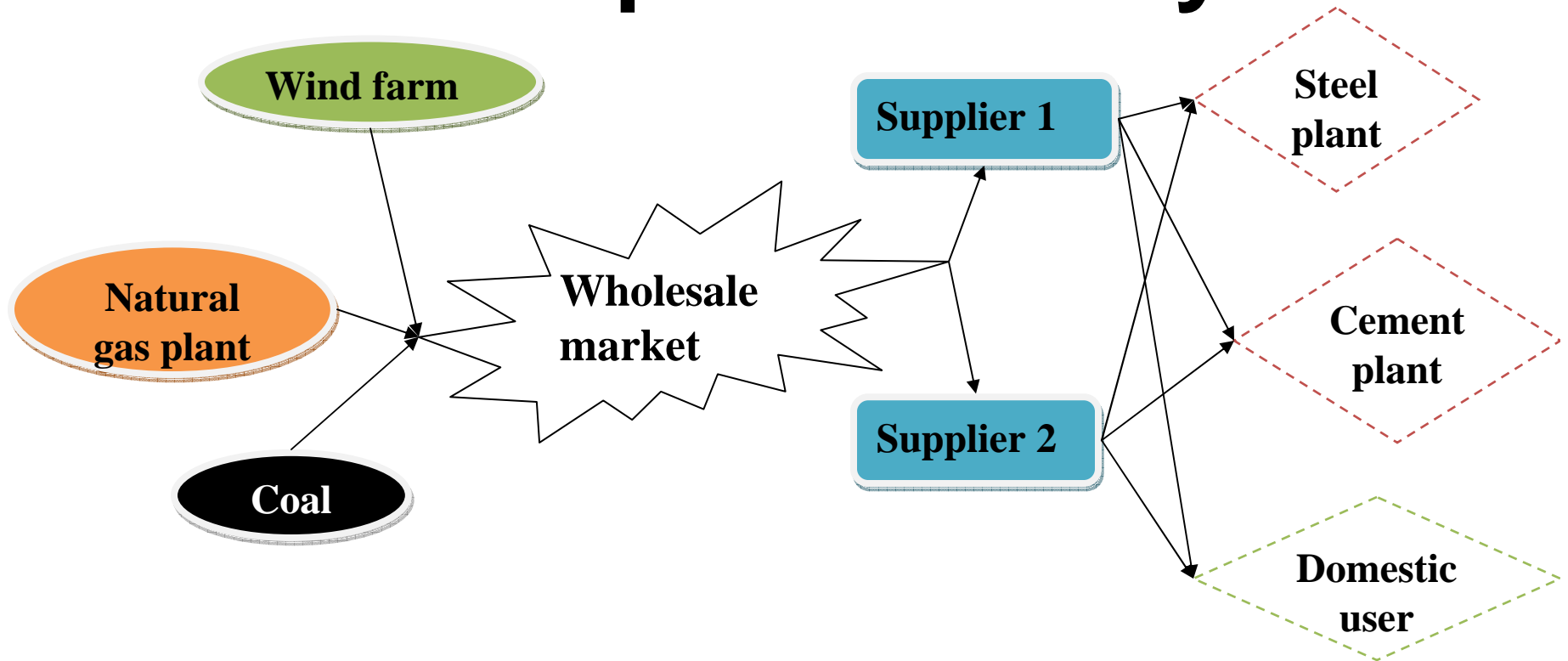
The Next Challenge: Aviation

- International aviation not covered by Kyoto
- EU Parliament agreed to include in EU ETS from 2012
- Growing source of emissions, with very limited substitution options
- Impact is greater than suggested by CO₂ alone

Electricity prices and carbon

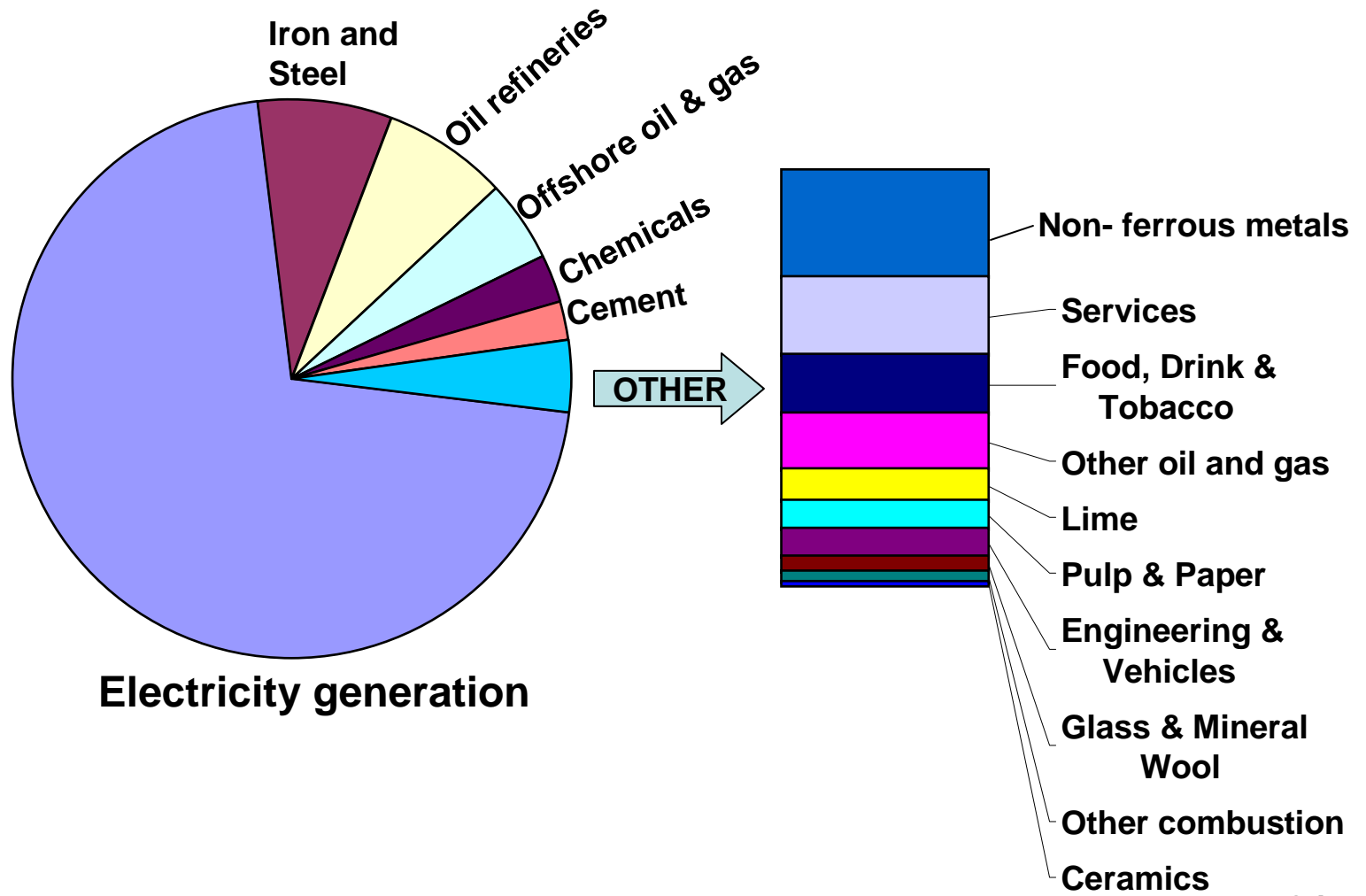


Windfall profits – why?



- In competitive market, generators compete to produce electricity as cheaply as they can
- So – wholesale electricity price is opportunity cost of producing marginal unit of electricity

Which Sectors are Covered?



Source: UK Department of Environment (DEFRA)