



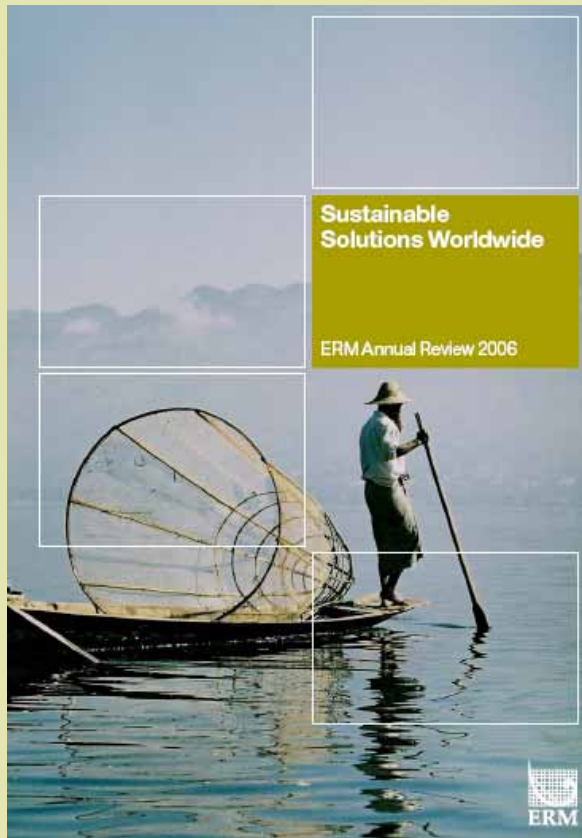
Emissions Trading as a Bankable Incentive

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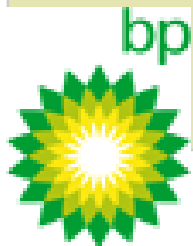
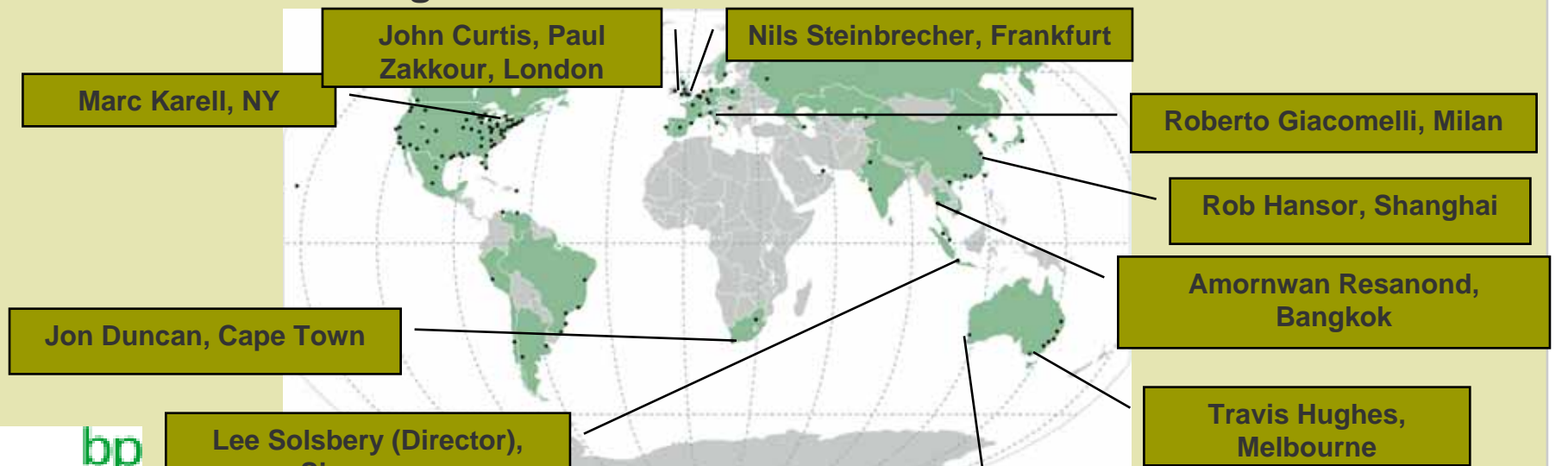
Introduction to ERM



- The world's leading provider of environmental and sustainable development consulting services
- ERM delivers innovative solutions to leading business and government clients helping them to manage their environmental, and related, risks
- 3,000 professional staff in 40 countries worldwide
- Over 30 years of experience
- Annual turnover of approx. US\$500m

ERM Energy & Climate Change Services

- Climate change risk/exposure advice
- Corporate carbon management
- Policy and regulatory advice
- Carbon due diligence
- Project-based advice – CDM/VERs
- CO₂ capture and storage
- ERM Energy



Stabilising atmospheric concentrations of GHGs at 'non-dangerous' levels is the goal

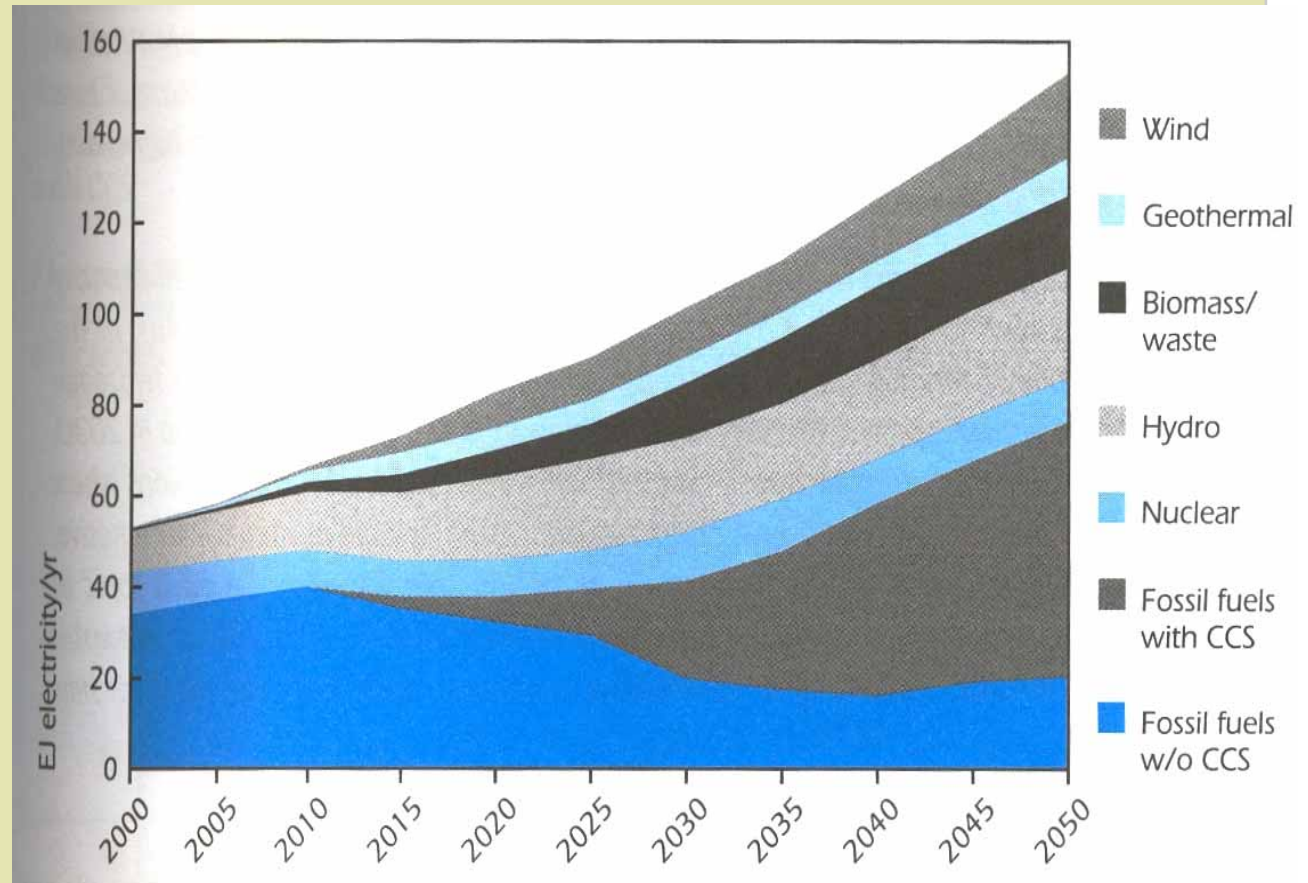
- Stern Report documents cost of inaction greater than cost of action, but the latter very visible, the former not
- Consumers must recognise we either pay a little now or suffer massive consequences later (but soon)
- Action with UNFCCC negotiations & govts, but the energy world, the WTO and the investment community need to be fully involved alongside UNFCCC & govts
- Climate change dictates our energy future if we are to survive, but relatively low traded GHG prices do not reflect full value of avoided emissions (eg, via CCS)

New Paradigm: Climate Change & Energy

- **Trillions of dollars in energy sector investment can not consider cost of carbon as immaterial**
- **Investor expectation that cost of carbon is real, will stay real and will grow substantially over time should serve to shift energy investment patterns**
- **Carbon trading markets send key economic signals if caps are serious & markets unfettered**
- **Govts must set right framework conditions; consumers must open their wallets; value of CO2 capture and storage must be recognised in market**

CCS key to CO₂-friendly future energy mix

- **CCS has major role post-2020**
- **How to ensure CCS used with fossil fuels:**
 - Agree CCS accounting & liability rules
 - Ensure CCS tonnes are tradable!



CCS deployment under a \$50/tCO₂ scenario

Source: IEA Prospects for CO₂ capture and storage

Many views on a GHG-sensitive energy future

- Renewables advocates feel their day has come
- Nuclear proponents are of course optimistic too
- ‘Hydrogen’ economy seen as key (but production, water resource, public acceptance key issues)
- Meanwhile, fossil fuel economy keeps on rolling; energy security/economic growth biggest drivers
- Carbon capture and storage is a critical interim solution given the built-in fossil fuel use near-term
- But – who pays? how do we get on the right path?

Market Drivers for Carbon Prices/Volumes

- Demand/supply changes due to actual emissions, level of government constraint and longer-term signals (market seen as tighter or looser in future)
- Higher gas prices relative to coal mean more coal use, hence need for more CO₂ allowances/offsets
- Weather: cold winters/hot summers trigger energy demand, hence more CO₂ allowances/offsets
- Economic growth: Energy/CO₂ demand increases with economic activity; markets anticipate growth
- Industry seeking CO₂ emission offsets as element in 'license to operate' ('carbon footprint' offsets)

Schemes define *nature* of units traded

- Carbon market segmented between jurisdictions
- Annex I Parties to KP (EU, Japan, Canada, Russia, Ukraine, NZ) can trade Assigned Amount Units (AAUs) & CDM/JI credits (CERs/ERUs) > 2008
- EU ETS allowances defined under internal cap, KP units from CDM/JI also eligible in the EU ETS
- Voluntary credits not eligible for KP compliance – their value is ex-Kyoto (Australia, USA) or general ‘reputation’ (eg, carbon neutral voluntary actions)
- Australian GHG units do not exist yet in global markets, nor in a Commonwealth-wide market

Carbon markets are a new business reality

- Carbon trading markets offer new business opportunities – not only for no/low carbon options but also carbon-intensive activities seeking lower/least cost GHG reductions
- Avoiding emissions (eg, carbon capture & storage) should earn tradable GHG credits
- To trade Australian reductions, must use int'l carbon accounting norms & agree how such reductions are treated compared to other GHG units inside & outside Australia

GHG Emissions Trading: Market for Carbon

- **Emissions trading is a *means to an end, not an end in itself***
 - Trading *increases the efficiency (and decreases the cost)* of meeting emission targets – targets set the environmental benefit
- **Emissions trading reduces *cost of achieving GHG targets***
 - By allowing participants to reduce emissions where and when it is least expensive within a system's total reduction goal, targets can be met with less pain and ramped up more quickly over time
- **Wide differences among emitters in *cost of reducing emissions***
 - *Environment equally improved wherever GHG reductions occur*
 - Emissions trading means cheapest reductions are made first

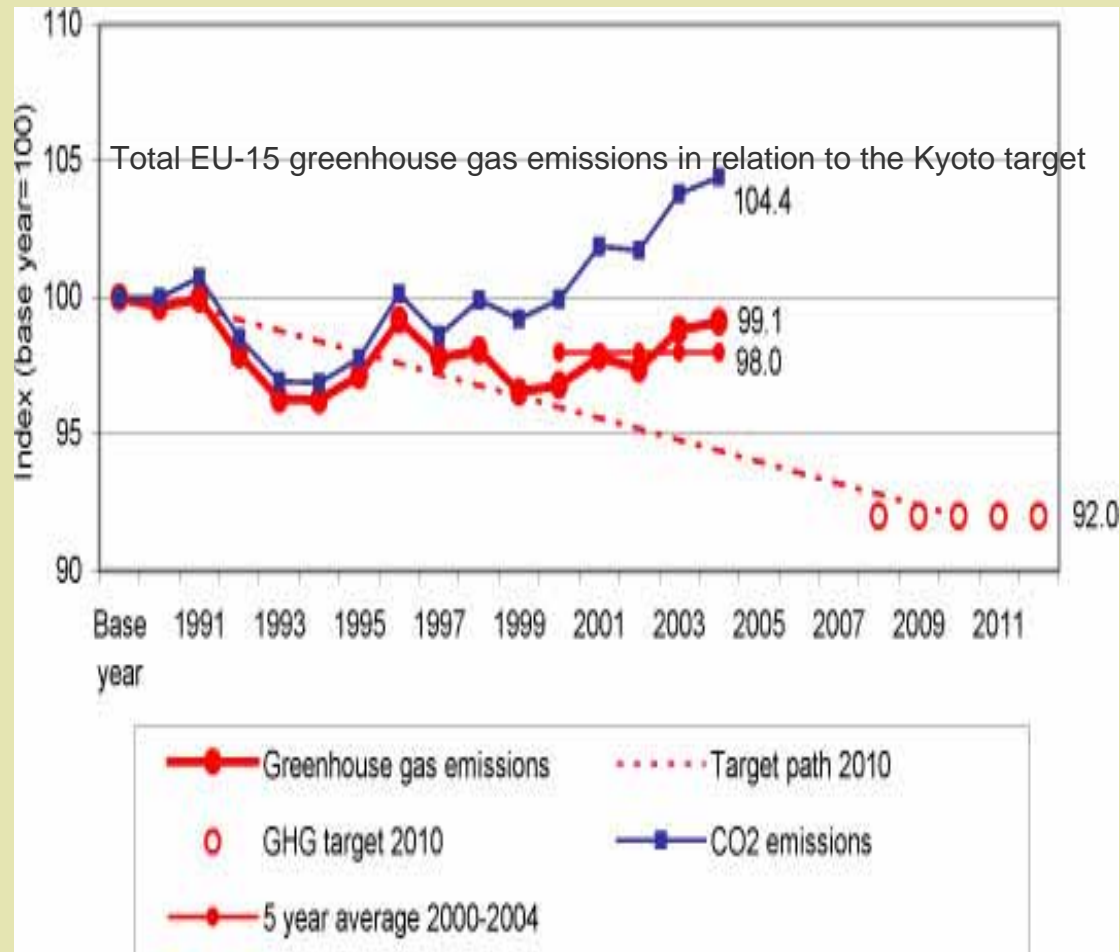
GHG Emissions Trading: How does it work?

- **Govt sets the environmental objective for the overall scheme**
 - Emissions cap or allowances for gasses in covered sectors
- **Govt sets the environmental objective for individual operators**
 - Each covered operation has a cap that creates trading demand
- **Companies then meet targets wherever reductions are cheapest anywhere in the trading system & import offsets from outside**
- **Environmental benefit**
 - guaranteed by the cap set by government & must reduce over time
- **Lowers cost of meeting targets via trading = greater compliance, less economic impact, even incentive to over-achieve targets**
- **Trading creates incentives for global action, *if* caps behind the system are tough enough & mkt expects them to reduce over time**

Key issue is *access* to emissions trading

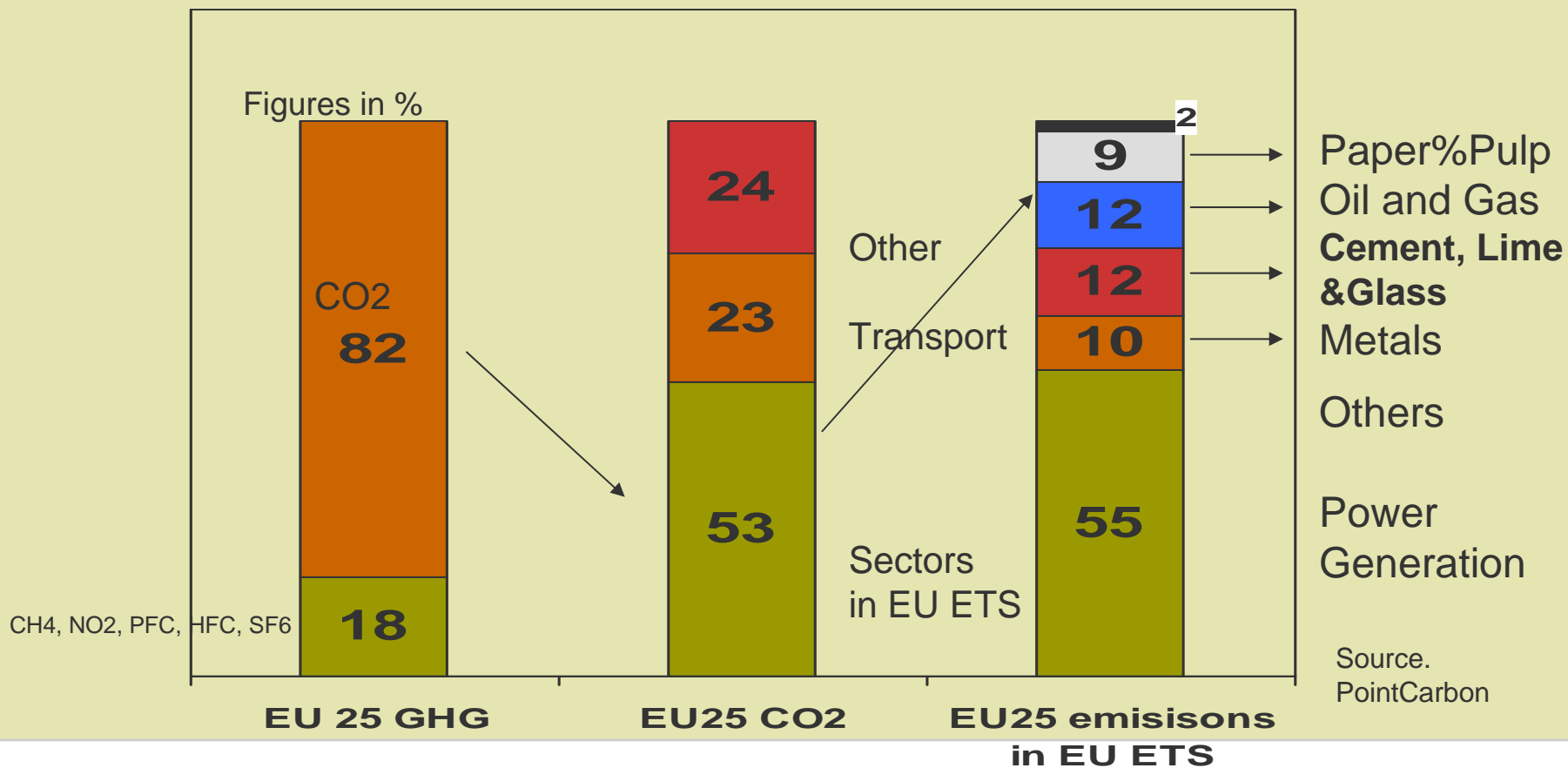
- **Keys to valuing avoided emissions will be:**
 - market recognition of all valid reductions (eg, tradability of avoided emissions from CCS)
 - trading of offsets and linkage of segmented GHG markets achieved for all valid reductions
 - fossil fuels not 'demonised' as long as clean coal / high efficiency / CCS are applied and their benefits are recognised in emission trading market
 - separate emissions markets become global over time through unification and/or fungibility

The rising trend in EU GHG emissions makes it necessary for EU to import overseas emission credits (CDM/JI)



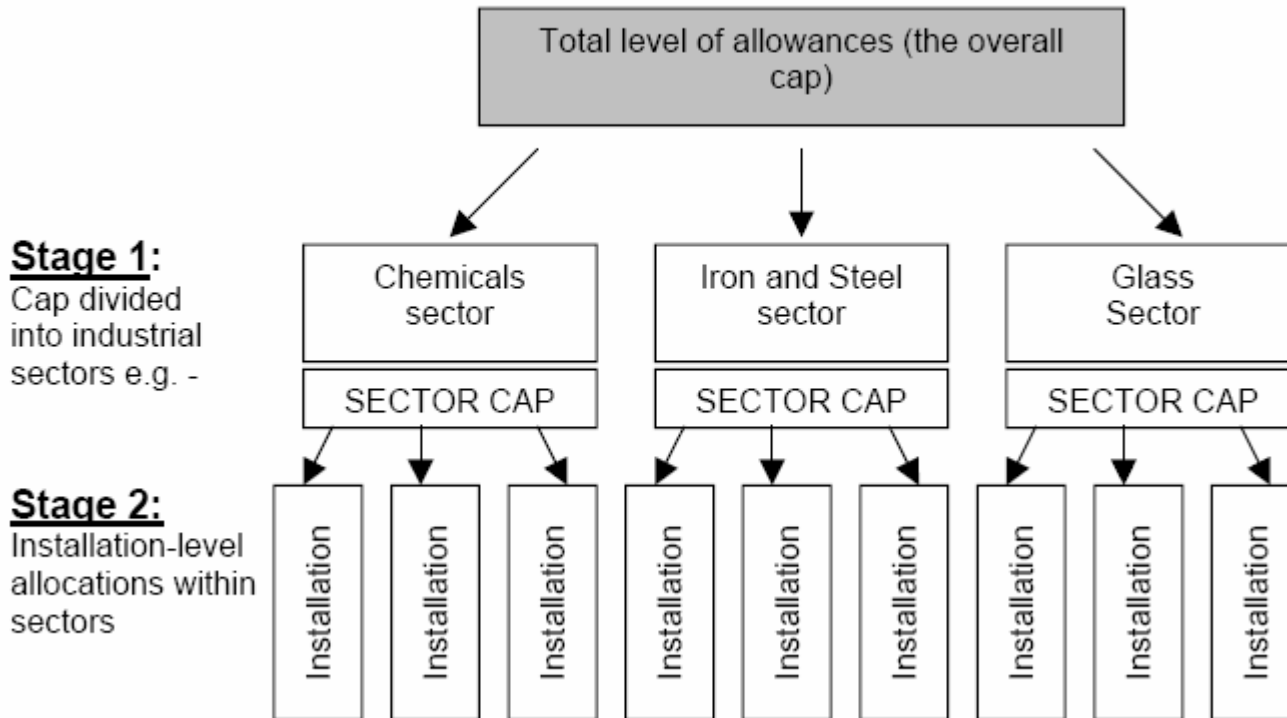
The table give details, for the EU-15, of trends in emissions of the six greenhouse gases up to 2004. Emissions from international aviation and shipping, and emissions from/removals by land use change and forestry, are not covered.

EU ETS: 2.1 billion allowances/per year in 2005-08
Covers 53 % of total EU CO2 emissions; power sector
represents 55 % within the EU ETS = largest sector.



UK Govt Approach to EU ETS

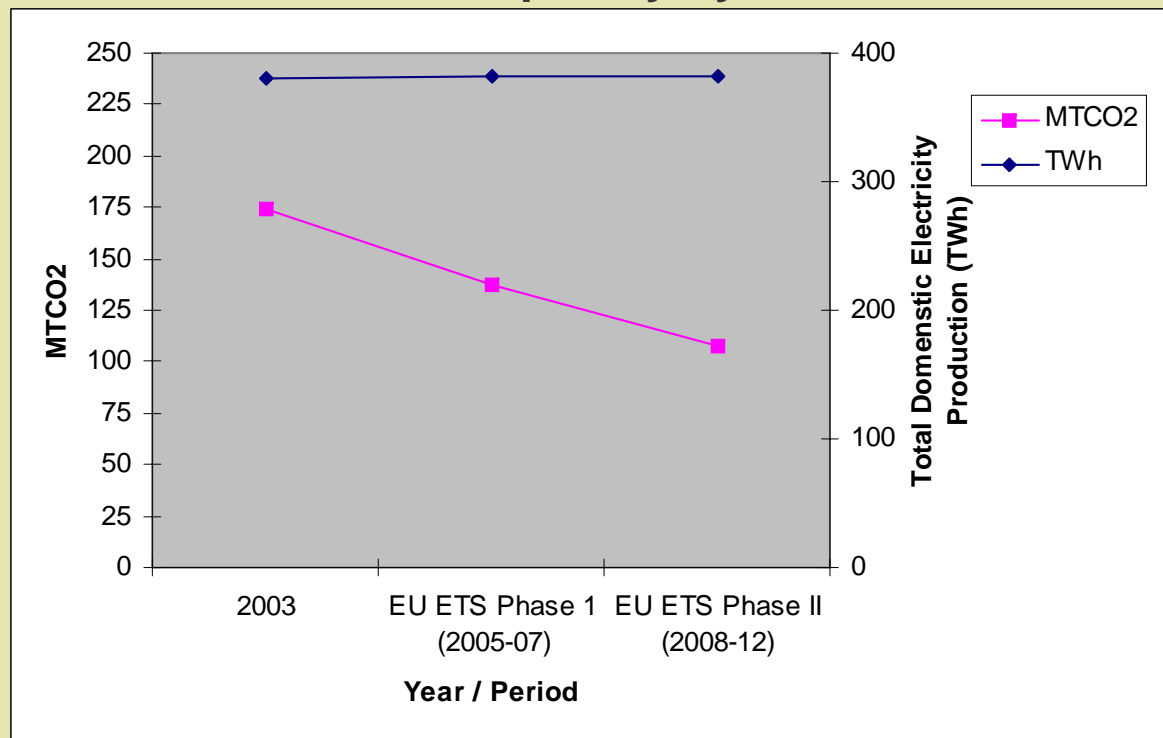
Figure 1: Allocation methodology approach for Phase I



- Source: EU ETS Trading Scheme Regulatory Impact Assessment

Sector Allocations

- Allocations at a sector level based on BAU from 2008 – 2012
- Exception Large Energy Producers: Reduction in emissions relative to BAU borne completely by this sector



How?

- **Increase in renewable energy (2.8 – 8.4%)**
- **Reduction in coal (34.7 – 29.8%)**
- **Carbon intensity of electricity from:
458 gCO₂/KWh to 282 gCO₂/KWh**



Thank you!

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