Emissions Trading: The UK's experience

November 2006




UK Department of Environment, Food & Rural Affairs

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Overview of Seminar

- The voluntary UK emissions trading scheme
  - Overview and lessons learnt
- The European Union emissions trading scheme
  - Implementation and lessons learnt
- Developments in international emissions trading
  - Clean development mechanism

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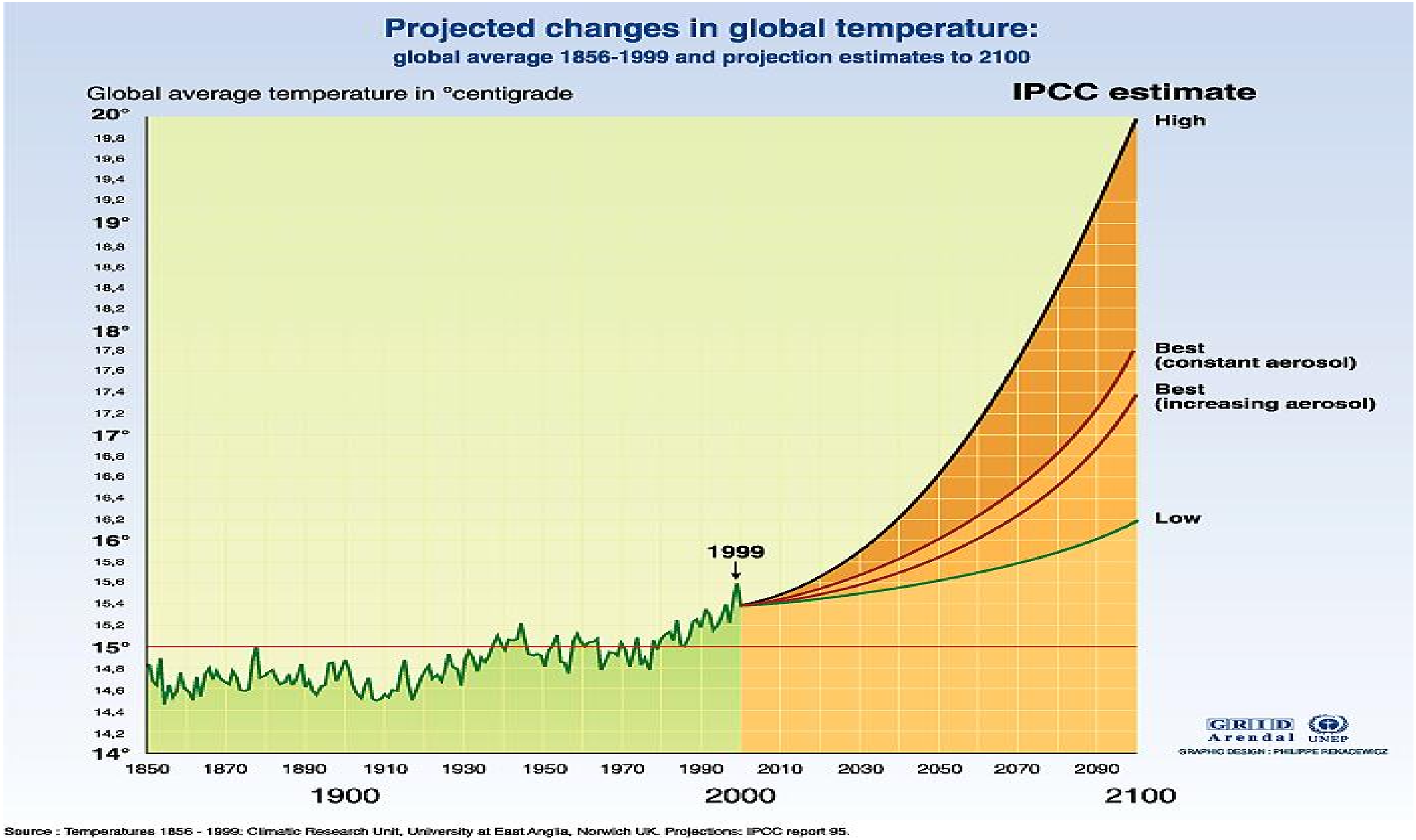
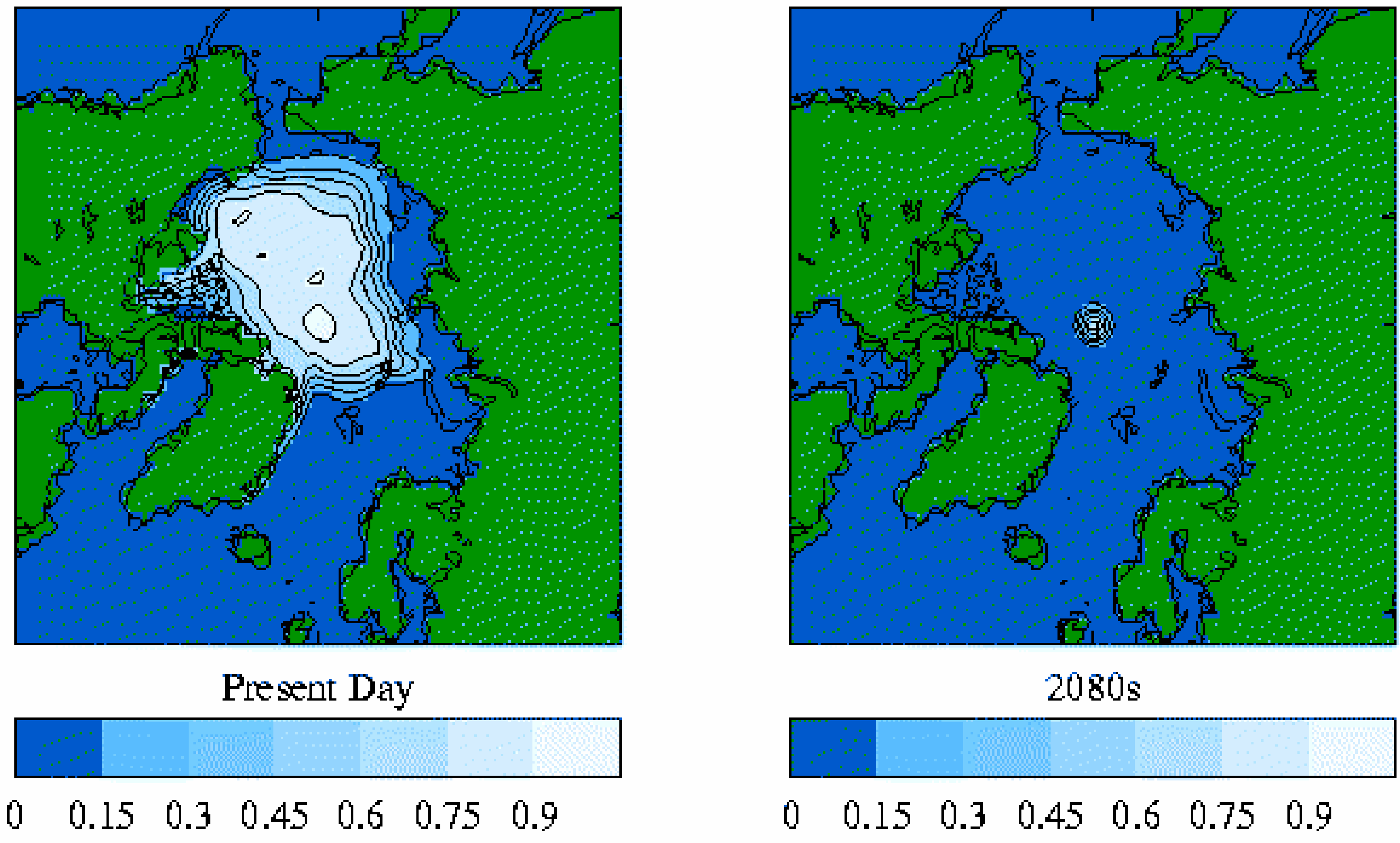
Why take action?



Extent of Arctic summer sea-ice - high emissions scenario



UK Climate Change Targets

- Kyoto target – all greenhouse gases
  - 12.5% below 1990 levels by 2008-12
- National goal – CO_2
  - 20% below 1990 levels by 2010
- Long-term goal – CO_2
  - 60% below current levels by 2050

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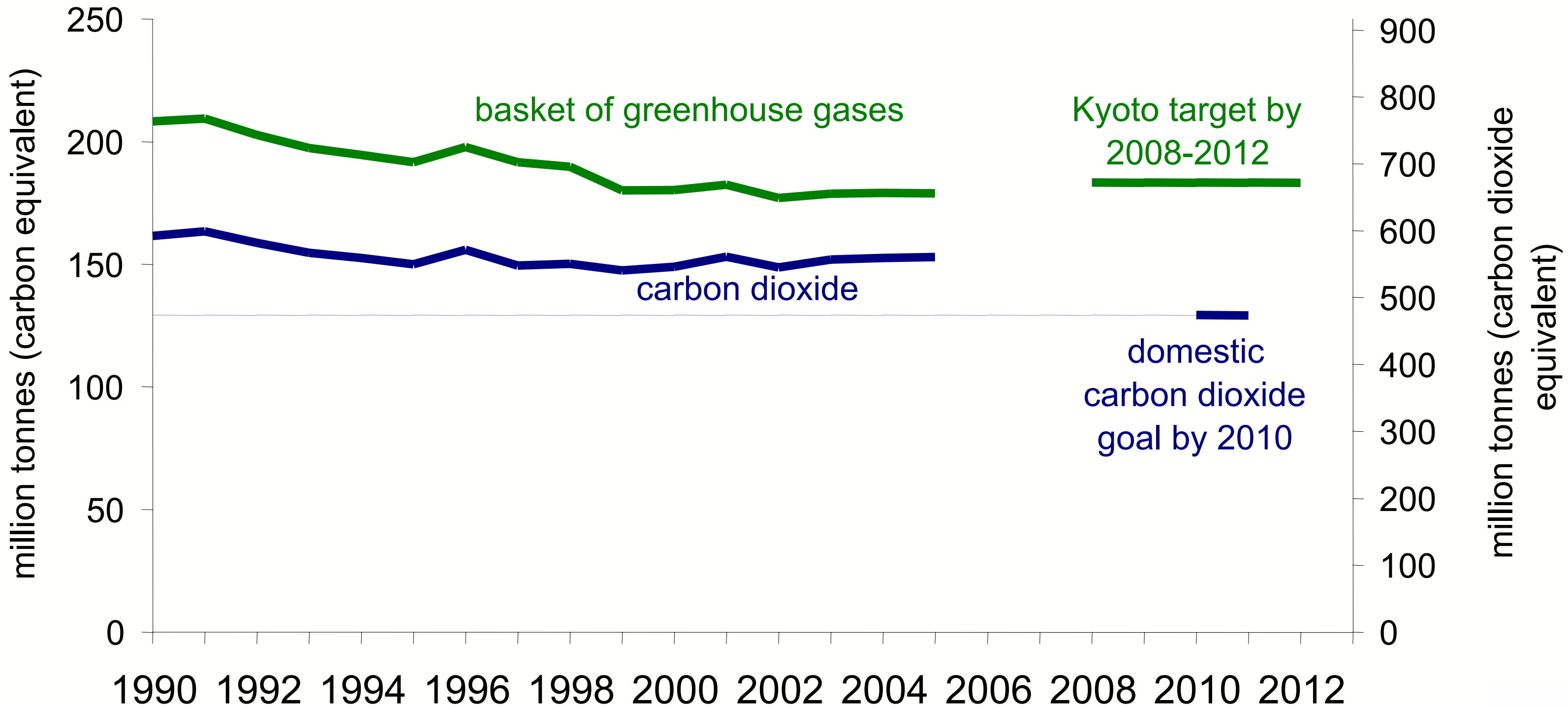
UK GHG Emissions 1998-2012

Figure 1: Emissions of greenhouse gases: 1990-2012 United Kingdom



Note: Estimates for 2005 are provisional

Source: netcen

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UK voluntary emissions trading scheme

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Why UK developed UK ETS

- To secure significant emissions reductions at low cost
- Early experience of emissions trading in advance of the EU scheme
- UK first mover advantage for City of London and other service providers

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Key features of UK ETS

- Voluntary Scheme (2002-2006)
- 31 Direct Participants
- Participants receive share of incentives
- Covers 6 greenhouse gases
- UK ETS allowance = one tonne CO_2-equivalent
- Includes indirect emissions (i.e. electricity use)

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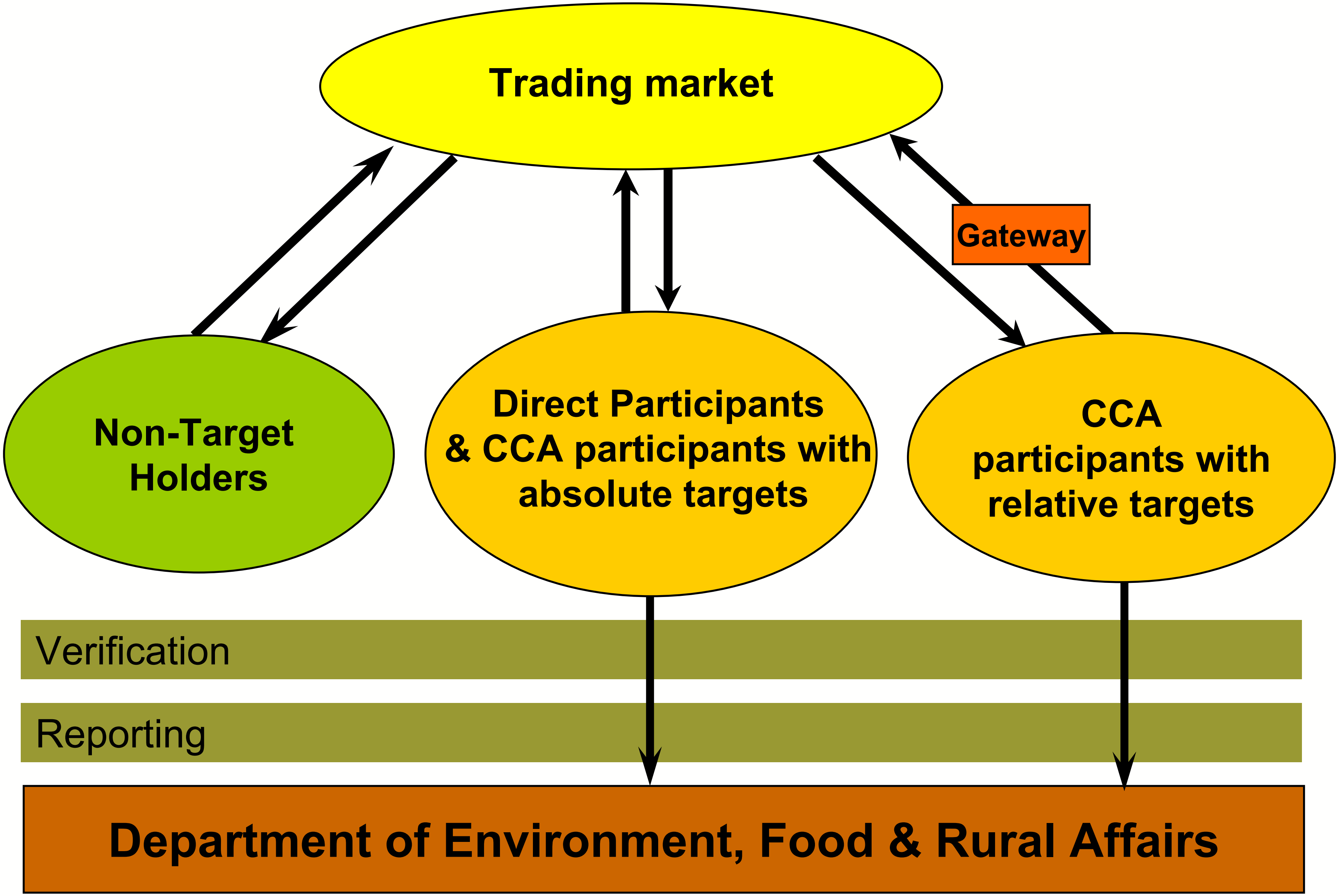
Trading market
Gateway
Non-Target Holders
Direct Participants & CCA participants with absolute targets
CCA participants with relative targets
Verification
Reporting
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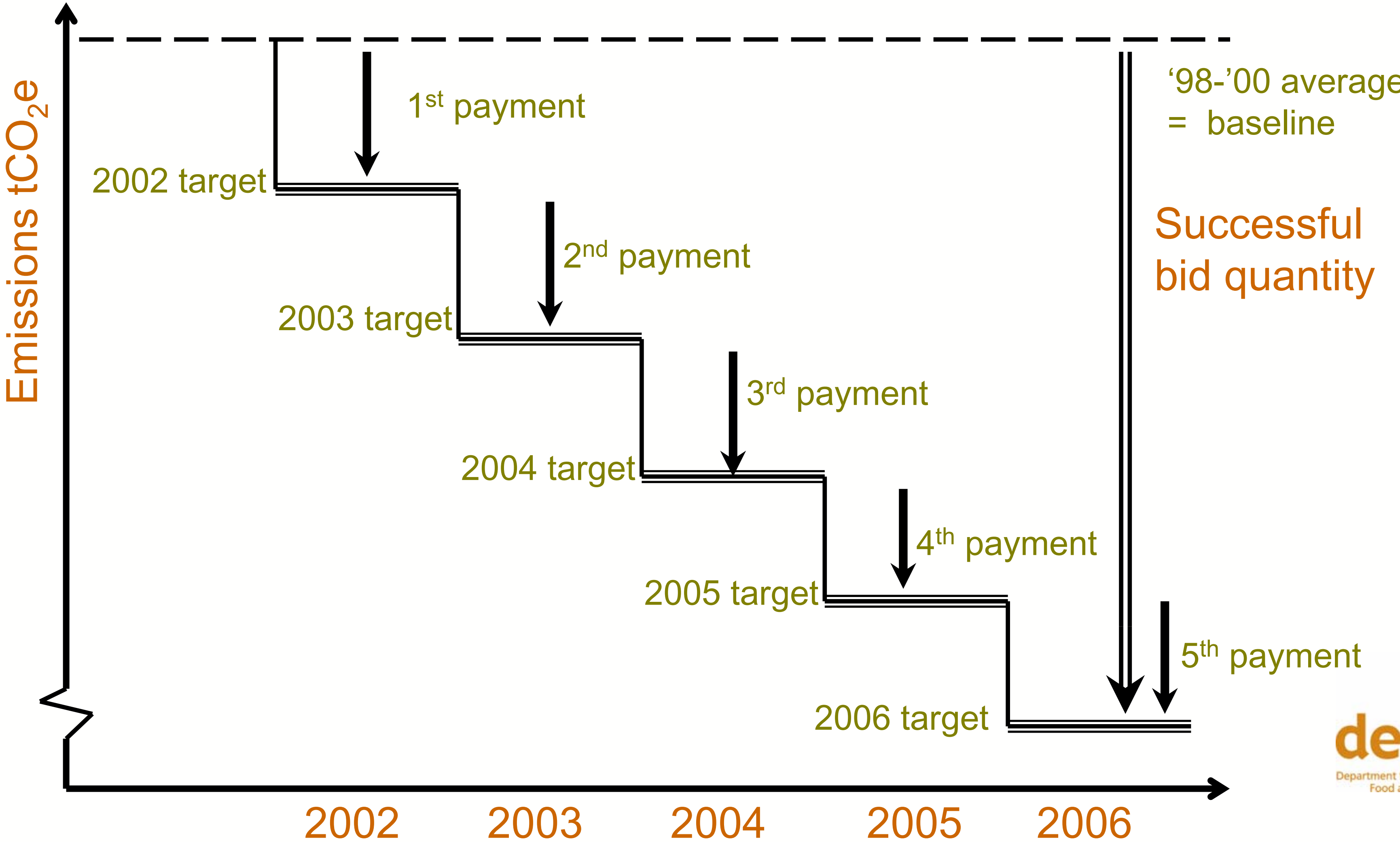
Incentive Payment Design



Climate Change Agreements

- Climate Change Levy (CCL) is a tax on the business use of energy (applied since 1 April 2001)
- **80% discount** from CCL tax, in return for commitment to binding target
- CCL Agreements contain **mainly relative targets** on energy use or emissions reduction
- Targets negotiated between Sector Associations and Government

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UK ETS Results

- April 2002 – registry open and first trade
- > 2,000 transactions & > 7m allowances transferred in 1st yr
- 22 of 31 Direct Participants exceeded emissions reduction targets in 1st & 2nd years
- Nov 2004 - voluntary agreement made to improve market liquidity
  - Six companies restated their commitment to UK ETS by offering an additional 8.9 Mt CO_2e emissions reductions
- 1.2Mt CO_2e over-achievement at end of 4th year

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Views of UK ETS

- Public Accounts Committee- *“The market approach can be a useful alternative to additional command and control regulation”*
- National Audit Office - *“Pioneering initiative… significant achievements”*
- Shell - *“Helped us raise the profile of emissions management at all levels”*
- ENDS - *"Voluntary schemes do not offer secure emissions reductions“*

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Lessons Learnt from UK ETS

Benefits for participants

- Early experience of monitoring, reporting and verification & using the Registry
- Board level awareness of financial impact of emissions reductions

Benefits for government

- Experience in regulation of trading scheme: operating the auction, production of monitoring and reporting protocols, registry development
- Scheme participants as scheme ambassadors

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Lessons Learnt from UK ETS

- The importance of incorporating emissions projections into baseline setting, to ensure “real and additional” emissions reductions
- Trading has delivered more emissions reductions than anticipated
- NAO: The problems of attracting participants, auction design, undemanding targets “stem from the voluntary nature of the scheme”
- Stakeholder workshop feedback (Sept 2006):
    - Simplicity of scheme worked well
    - Insufficient incentives !!!
    - Lack of additionality

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Future of UK ETS

- UK ETS finishes for Direct Participants at end of 2006
- UK Government committed to reduce emissions from large non energy intensive organisations by 1.2MtC / year by 2020
- Proposed mandatory scheme – EPC
    - Permits distributed through auction process
    - Revenue neutral
    - Stimulate green growth
    - “Light-touch” administrative approach
    - “Safety valve” to EU ETS
    - Avoids overlap with existing schemes

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Why have both UK ETS & EU ETS?

- To target sectors and gases outside EU ETS in a cost-effective way
- Possible objectives of a new UK ETS:
  - Provide net benefits to participants
  - Minimise administrative costs whilst maximising environmental benefits
  - Help the UK progress towards its 2010 and 2050 CO2 targets, by focusing effort on emissions reductions within the UK
  - Raise awareness of need to address climate change within organisations

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For further information

Email:

- uk.ets@defra.gsi.gov.uk

Website

- www.defra.gov.uk/environment/climatechange/trading/uk/index.htm

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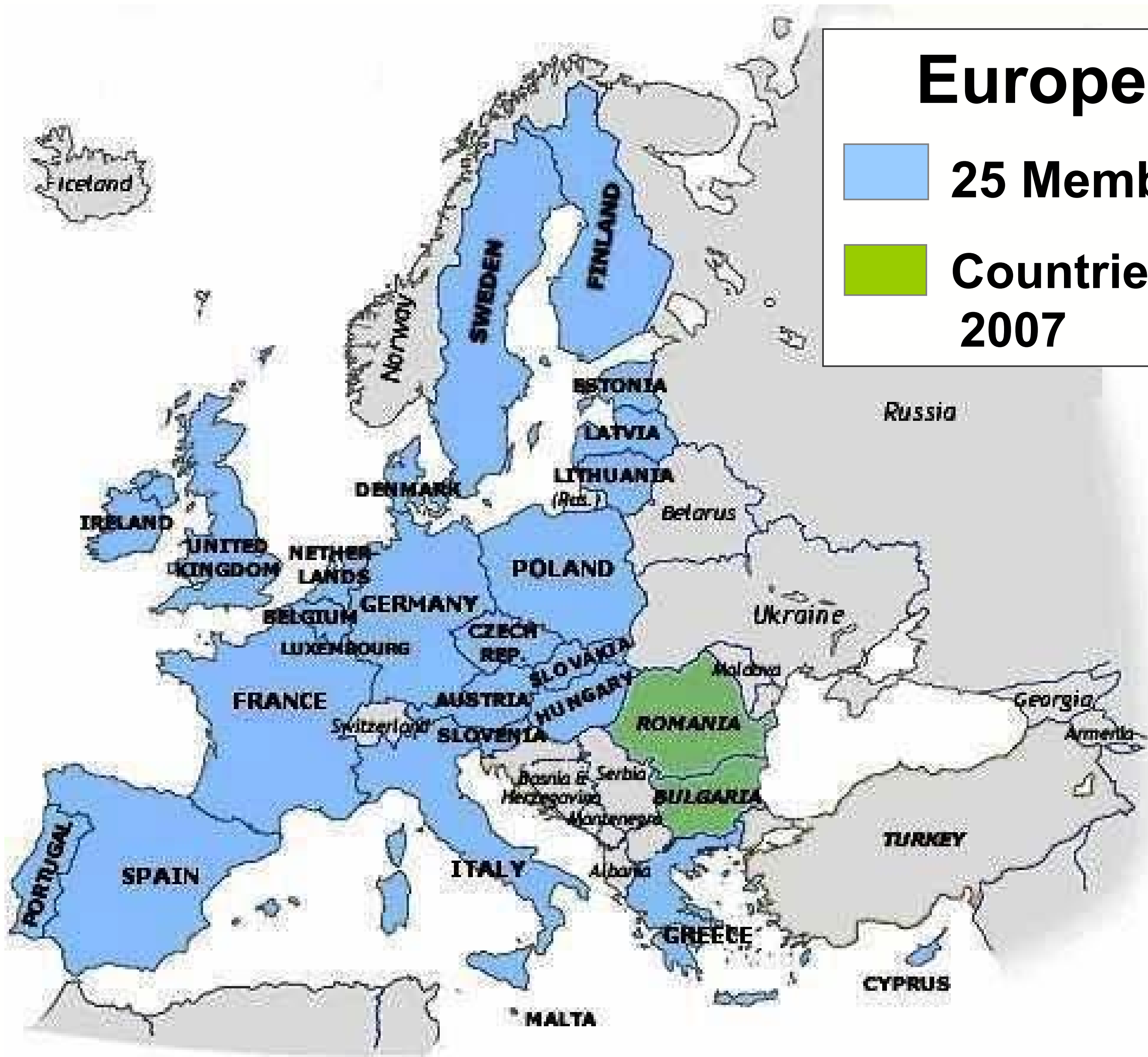
European Union Emissions Trading Scheme

European Union

25 Member States

Countries to join EU in 2007



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Key features of EU ETS

- “Cap and trade” scheme covering energy intensive industries
- Direct emissions approach - liability placed on the entity responsible for emissions and therefore most able to take action
- Currency is European Union Allowances (EUA)
  - One EUA = one metric tonne of CO_2
- Allowances freely tradable throughout EU states

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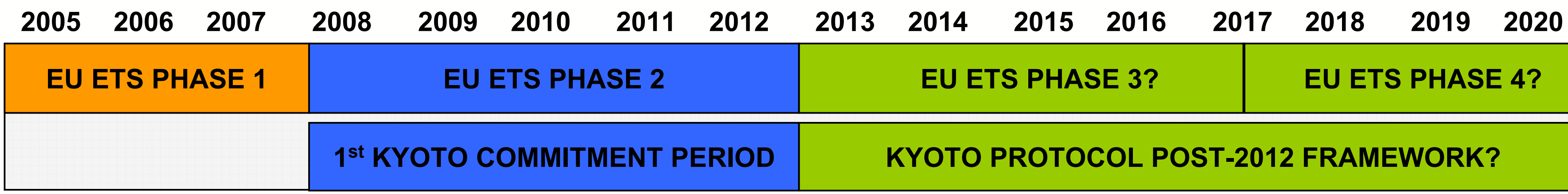
EU ETS Timeline



March 2000 - EU announces decision to develop scheme

October 2003 - ‘EU ETS Directive’ enters into force

January 2005 - EU ETS commences

- Phase 1 EU ETS– 2005-2007 ‘learning phase’
- Phase 2 EU ETS– 2008-2012 ‘Kyoto Commitment Period’
- Phase 3 and beyond….

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Sector Coverage

- Covers CO_2 emissions from combustion processes (approximately 50% of EU CO_2 emissions, 30% of EU greenhouse emissions)
- Covers approx 12,000 installations across the EU from these sectors:
  - Electricity generators
  - Other combustion installations (heat & steam production)
  - Mineral oil refineries
  - Iron and steel production and processing
  - Cement & lime
  - Glass & ceramics
  - Pulp & paper sector

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Allocation of Allowances

- National Allocation Plan (NAP) sets out the total number of allowances to be issued and distributed to national installations
- Member States may auction up to 5% of allowances for Phase I, up to 10% for Phase II
  - Only 4 Member States planned to auction in Phase I, more States likely to in Phase II
- Majority of allowances allocated for free
  - Member States used a range of methods for allocation – including historical emissions, projected emissions, sector benchmarks etc

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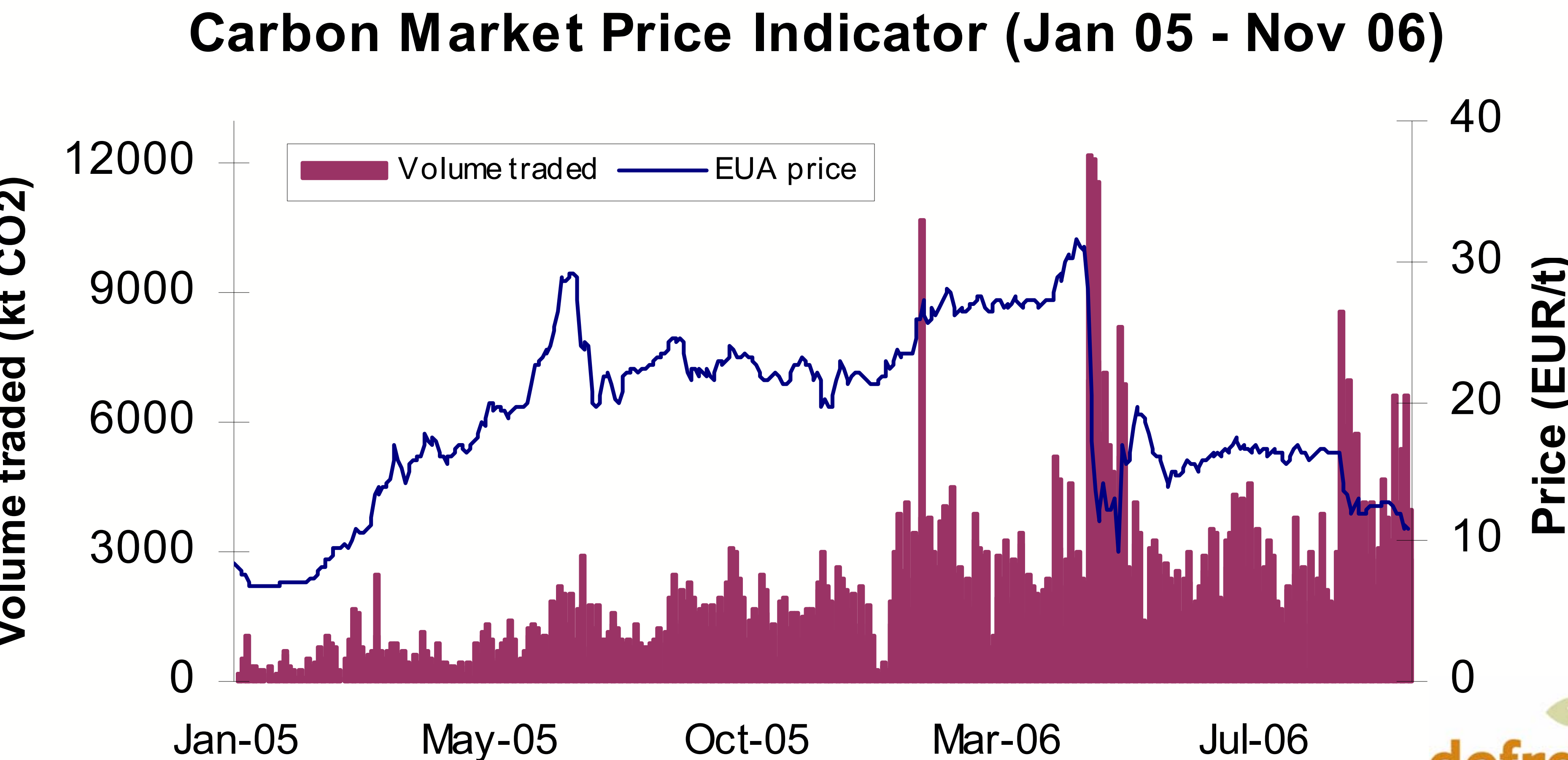
EU ETS Allowance Price



Key short term drivers of carbon price

- Relative fuel prices (natural gas vs coal)
- Weather
  - Drought reduces hydro-electricity production
  - Unusually hot/cold weather increases energy demand
- Policy and regulatory issues
  - Announcement of National Allocation Plans
  - First year compliance results (indicates market long/short)
- Future trades

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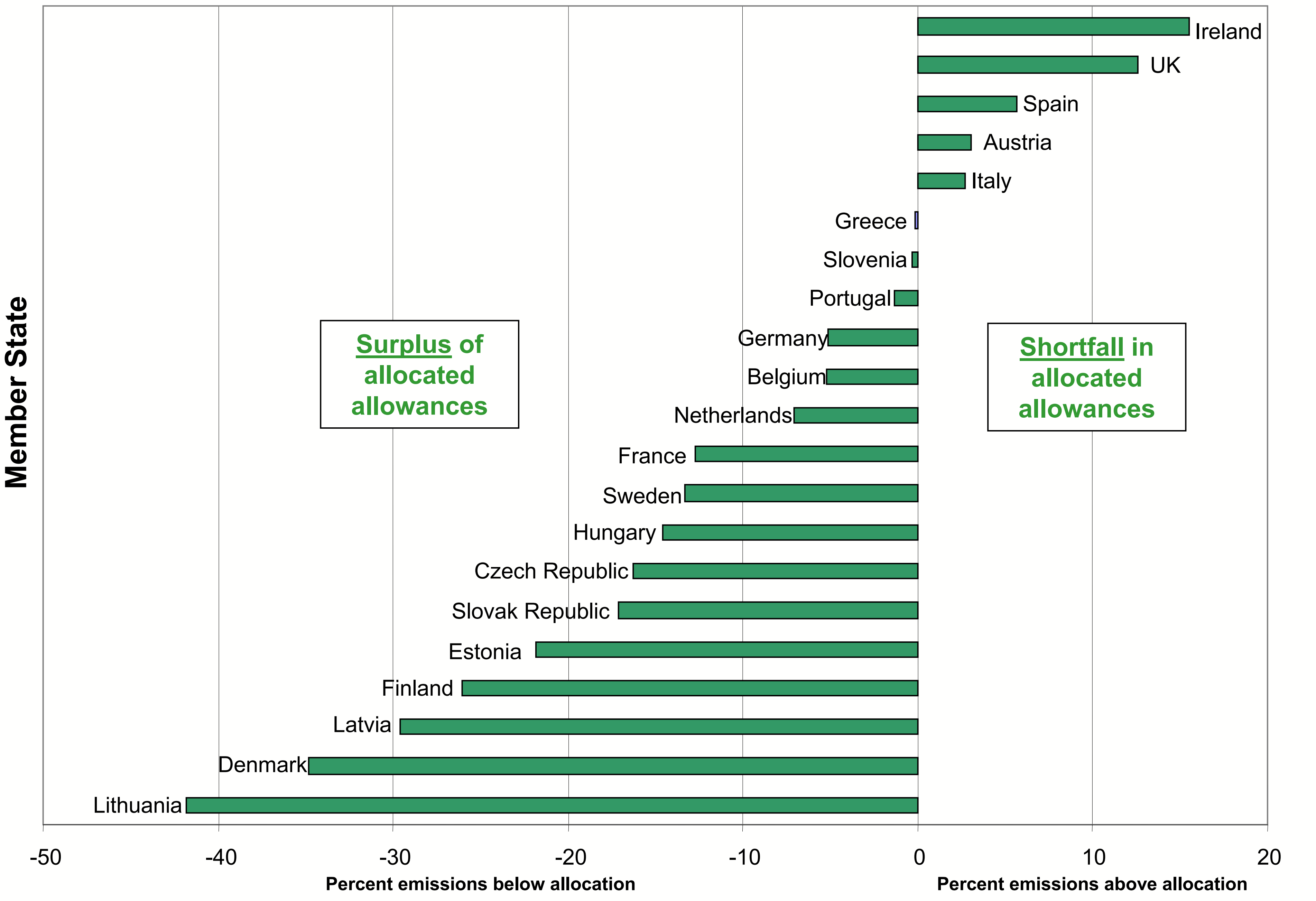
Percentage difference between Member State allowance allocations and actual emissions in 200



Impact of EU ETS to date

- Very high compliance in first year
- Improved emissions data across Europe
- Internalising cost of carbon in price of electricity generation
- Driving investment in Kyoto project credits (CDM)
- Behavioural change – mainstreaming?

"Carbon dioxide has moved out of the domain of the environmental officer at a company to the boardroom and the chief financial officer and the chief executive officer"

Head of Director General Environment, European Commission

Future of the EU ETS

- Phase II begins 1 January 2008
- Expanding the scheme to additional gases or sectors
  - Aviation
  - Surface transport
- Increasing use of auctioning and benchmarking in allocation of allowances

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Summary

- Emissions trading potentially effective in reducing emissions and will form core of UK and EU climate change policy into the future
- Allocation methodologies need to recognise that businesses have better information than public officials on their emissions reduction potential - and emissions reductions often easier to achieve than anticipated by either
- Impacts on market of including non-CO2 greenhouse gases need to be carefully considered

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International emissions trading scheme

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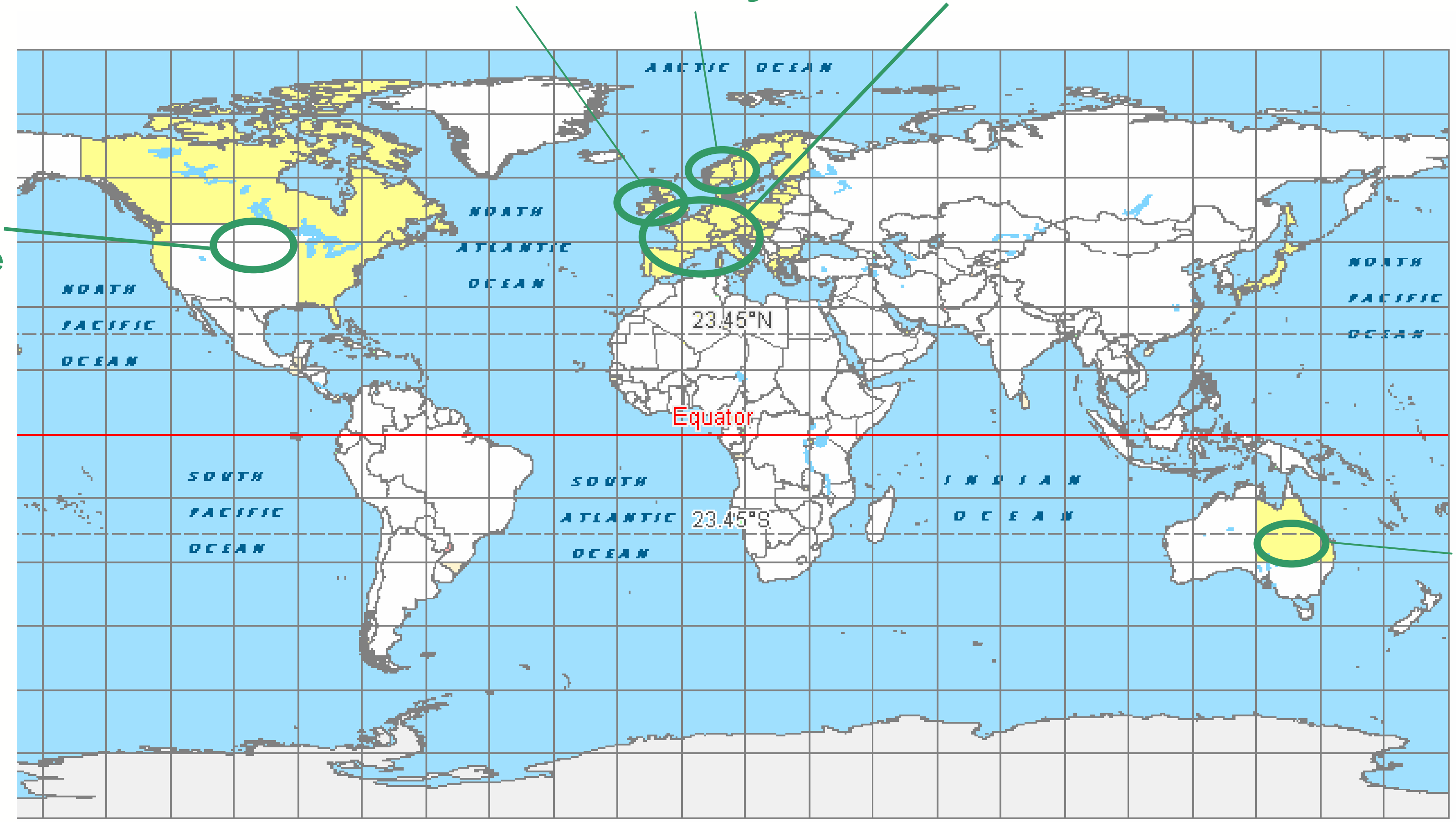
Domestic Emissions Trading Schemes currently operating…



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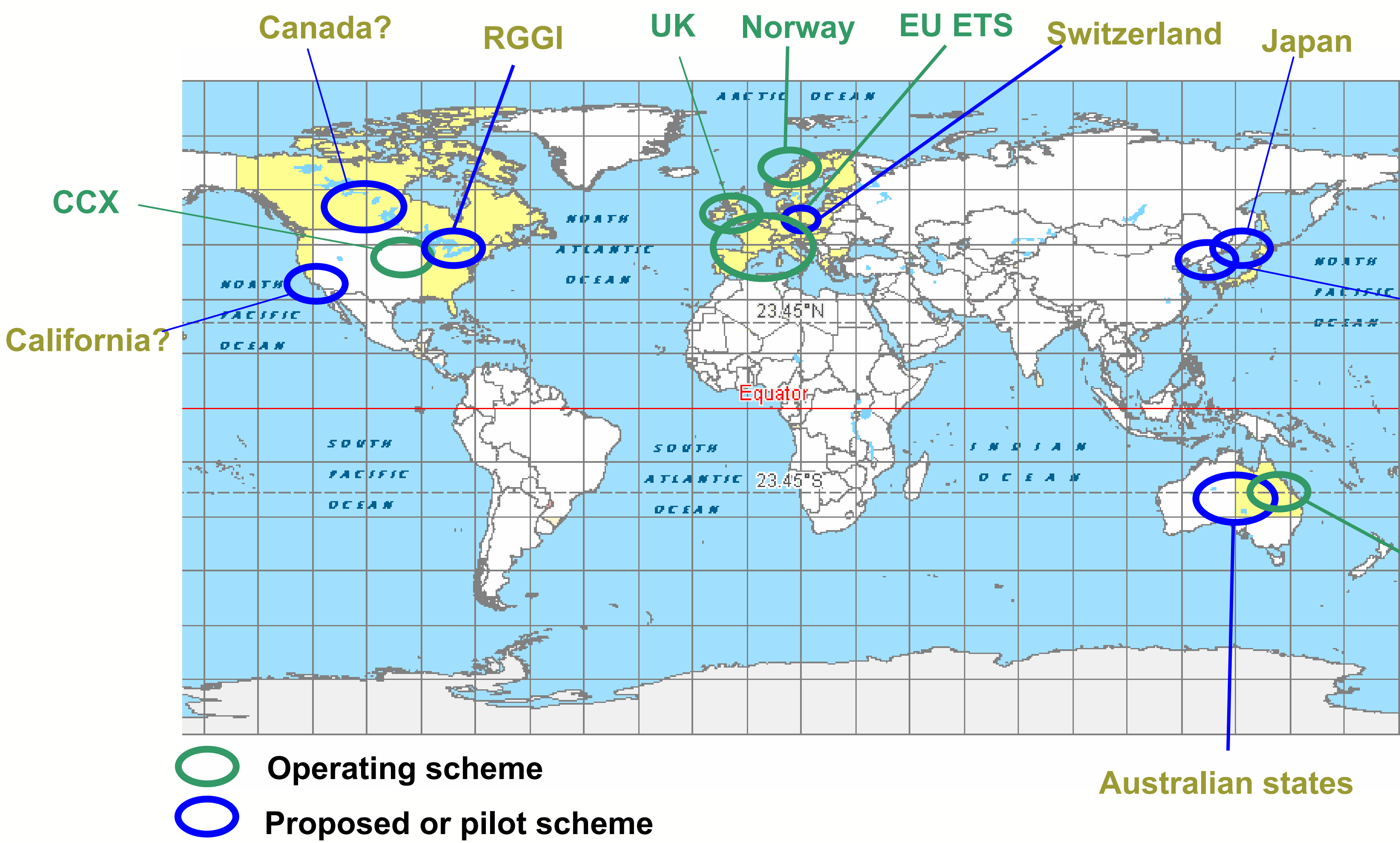
Domestic Emissions Trading Schemes being proposed or piloted…



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Kyoto Protocol Flexibility Mechanisms

- International Emissions Trading
- Joint Implementation
- Clean Development Mechanism
  - Over 1.2 billion tonnes to 2012
  - Worth over $15.25 billion @ $13 per tonne

	Projects	Credits Mt CO_2e year
CDM pipeline	>1200	300
Registered	388	100
Credits Issued	?	18

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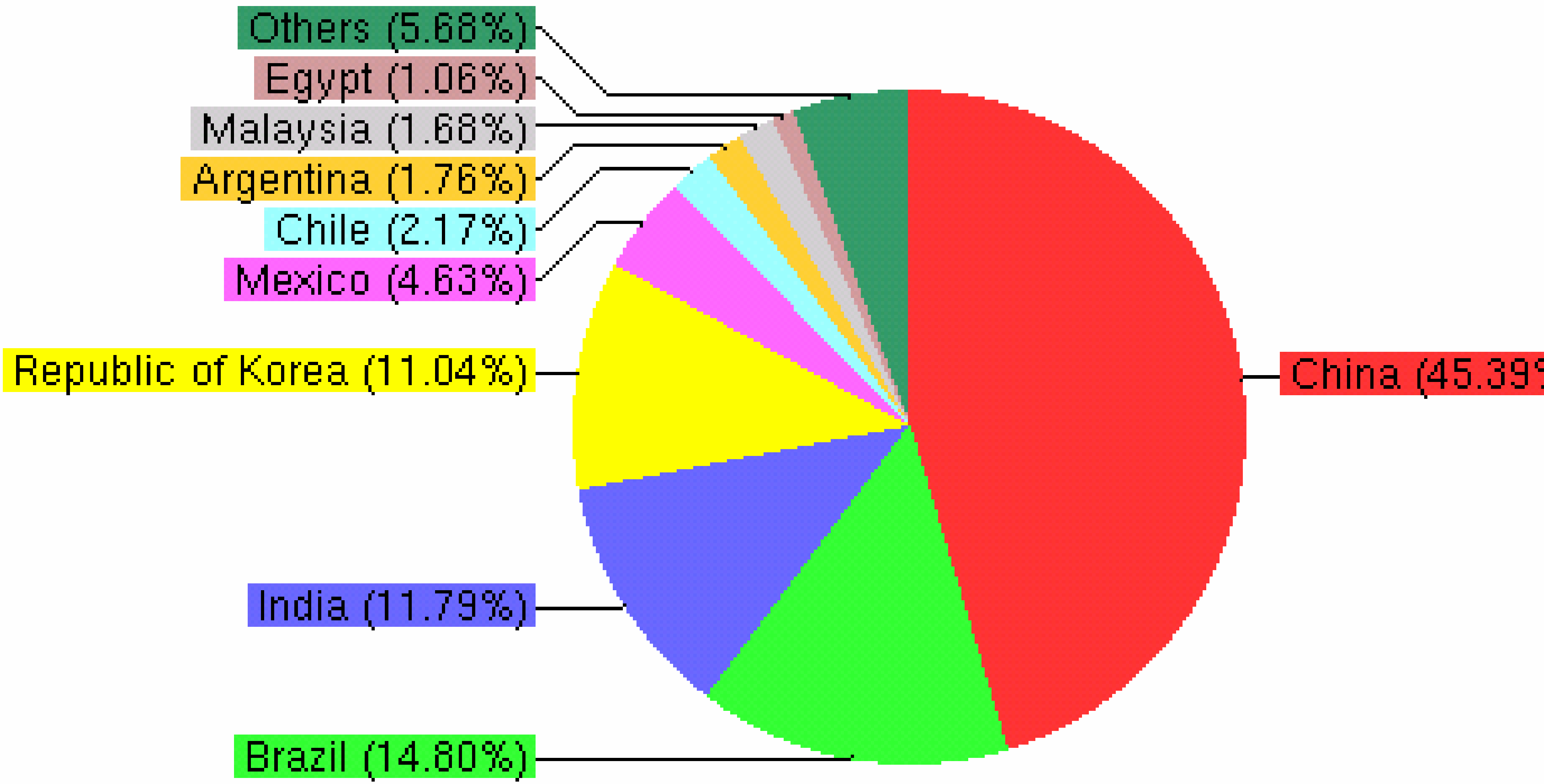
Expected average annual CERs from registered projects by host country



Use of CDM & JI in EU ETS

- EU ETS installations allowed to use CDM and JI credits for compliance purposes
- Except for credits from nuclear and carbon sink projects
- Domestic emissions reductions key - limits on use at installation level
  - Phase 1: discretionary
  - Phase 2: limit based on supplementarity principle
    (UK will allow 2/3 effort or 8% of installations allocation)
- Use of CDM/JI credits a safety valve on cost - prefer this to a price cap

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US entities can access CDM

- UK government allows non-UK entities to participation in CDM projects under our authority
- Any company wherever situated can open an account on UK registry
- Any company can participate and deliver credits to UK accounts
  - CCX has already accepted an EUA for compliance by providing for cancellation on UK registry in compliance CCX
- UK can provide a route for access to CDM, JI and EUAs for overseas schemes (e.g. RGGI, California etc)

Linking emissions trading schemes

Why link emissions trading schemes?

- Increase the size and liquidity of the market and the number of low-cost abatement options available
- Consistent with multi-lateral approach to tackling climate change
- Schemes do not have to be identical to link - a degree of harmonisation should be encouraged

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Linking emissions trading schemes

How could we link schemes?

- Direct linking: trading can occur both *within* and *between* different schemes
  - Bilateral linking: two way linking - mutual recognition of allowances between trading schemes
  - Unilateral linking: one-way linking – where units from one scheme can be used for compliance in another scheme, but not vice versa.
- Indirect linking: linking domestic schemes to registries/mechanisms and systems that generate credits from projects (e.g. CDM) etc

If the aims and designs of two different schemes vary significantly unilateral or indirect linking might be more acceptable.

For further information

Email:

- eu.ets@defra.gsi.gov.uk

Website

- www.defra.gov.uk/environment/climatechange/trading/eu/index.htm