



Methane to Markets

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Department for Environment
Food and Rural Affairs



Carbon Markets and Methane: the Clean Development Mechanism

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Methane and Carbon Markets



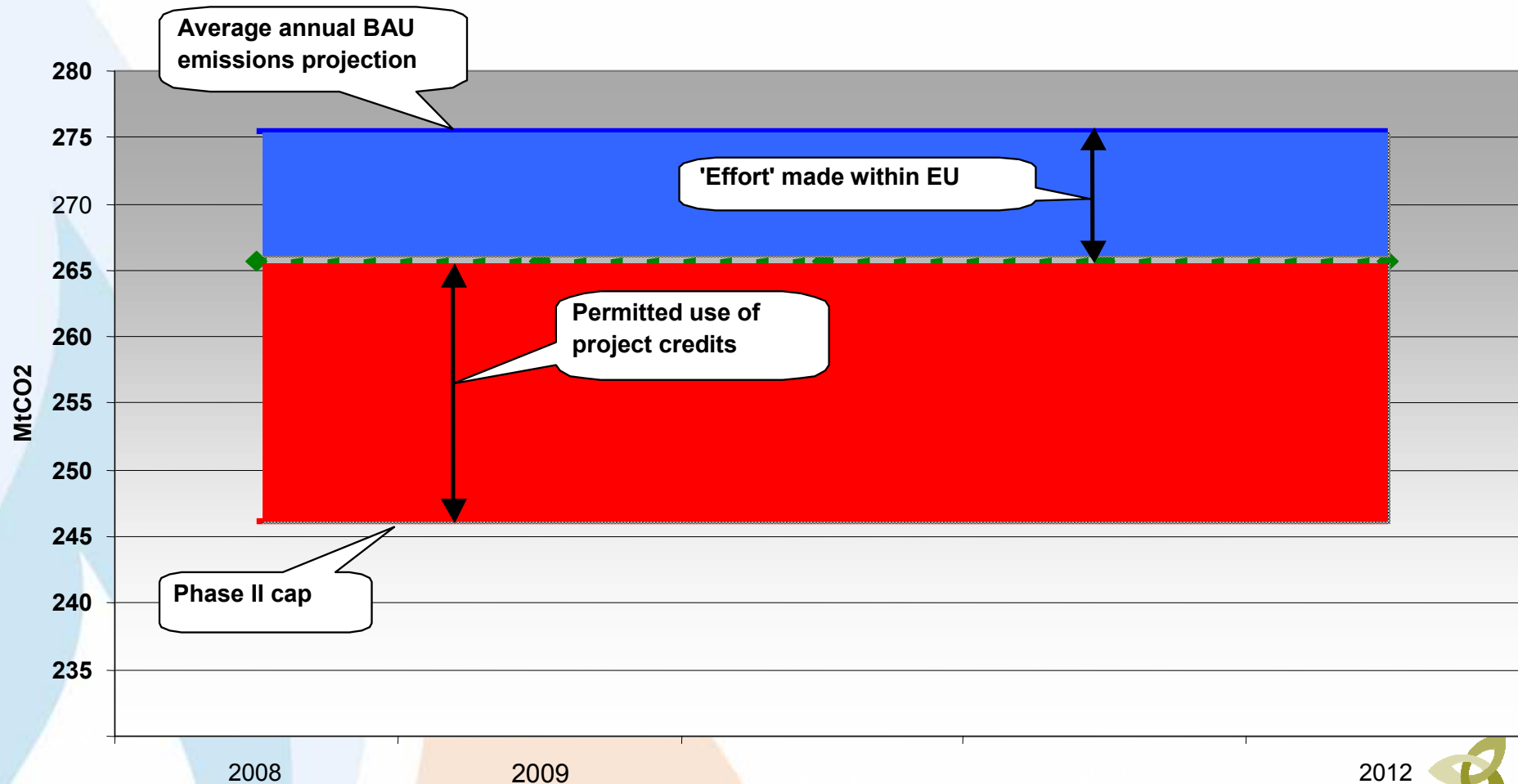
- Climate Change is a market failure, but the remedy is creating a Carbon price
- Methane x21 global warming potential of CO₂
- Methane accounts for 16% of Global GHG emissions
- Livestock account for about one-quarter of the methane emissions from human activities, totalling some 100 million tonnes a year.
- Represents a significant market opportunity

Kyoto Protocol

- Annex I Countries Reduction Commitments
 - International Emissions Trading
 - Clean Development Mechanism
 - Joint Implementation
- EU Emissions Trading Scheme
 - National Allocations
 - Provision for use of CDM and JI



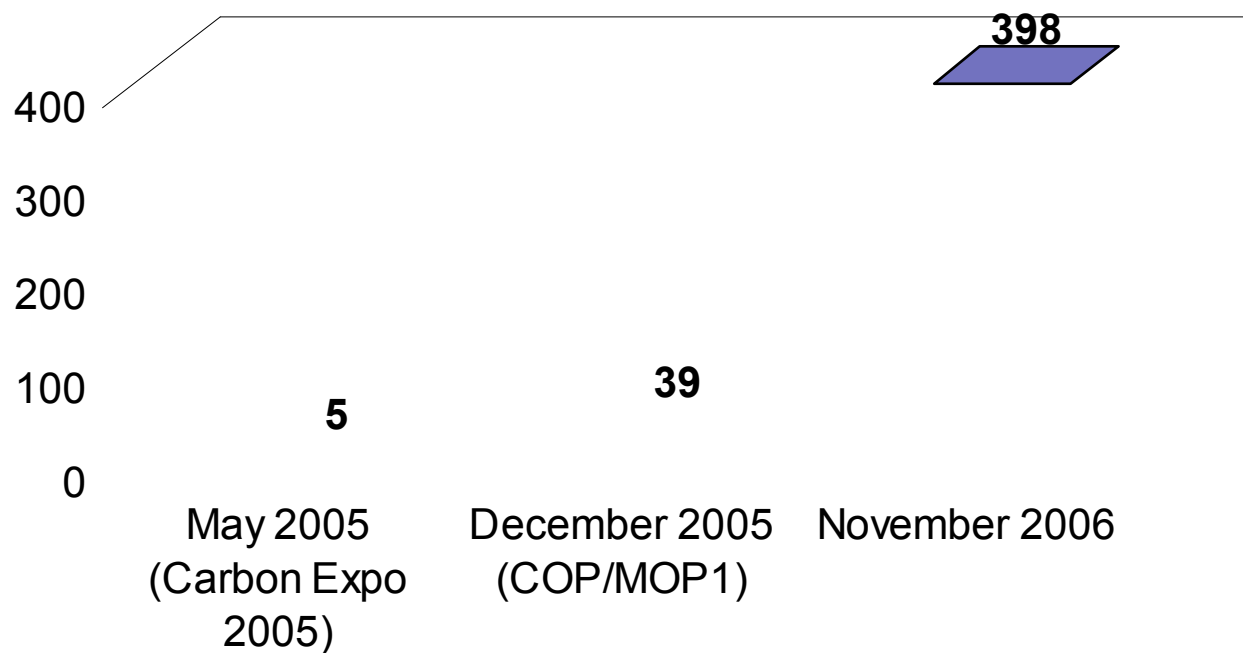
Use of project credits in EU ETS



Clean Development Mechanism (CDM)

- Promote sustainable development in developing countries
- Allow developed countries (Annex 1 parties) to earn emissions credits from their investments in emission-reducing projects in developing countries (non-Annex I parties).
- To earn credits under the CDM, the project participant must prove and have verified that the GHG emissions reductions are verified and additional to what would have occurred in the absence of the project.

Exponential Growth of CDM

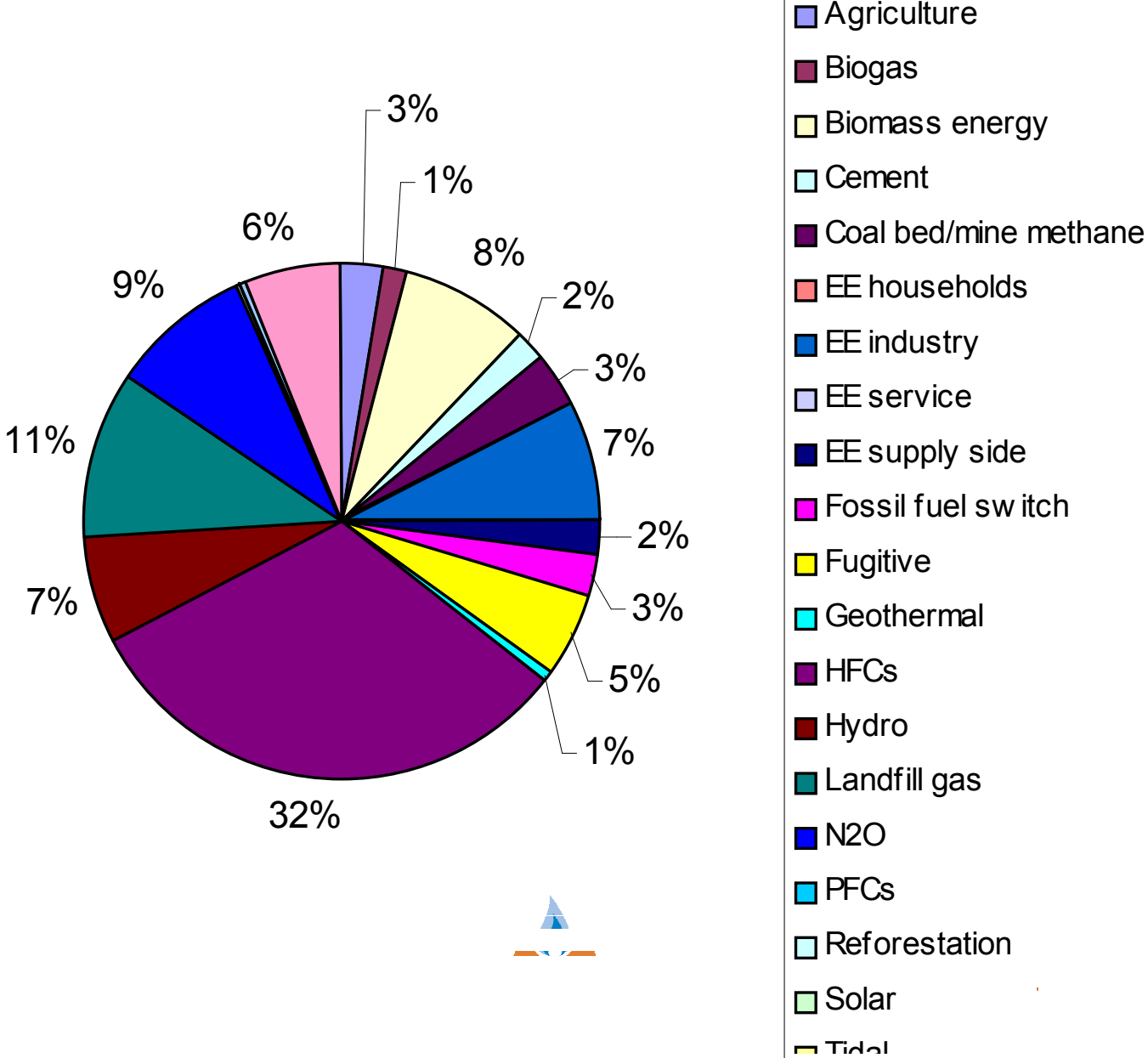


...and there are even more projects in the pipeline

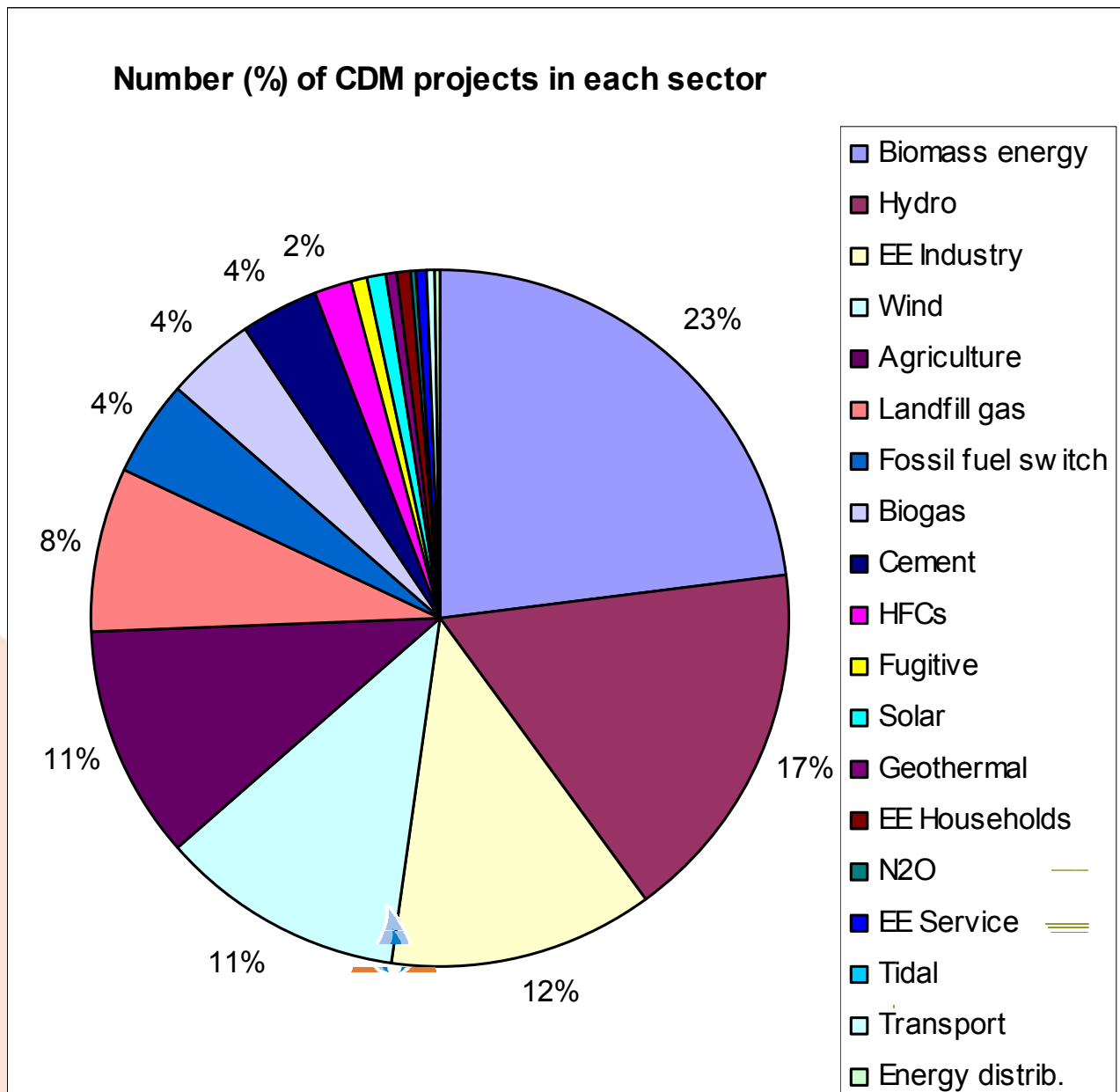
Exponential Growth of CDM - methane

- Currently ~ 71 registered CDM projects involving methane
- 15% of projects in the pipeline (incl registered) involve anaerobic digestion of methane
- Approximately saving 1.1 MtCO₂e per year
- This equates to €11m -16.5m
- These projects are mainly located in Mexico, Brazil, Philippines and India
- 83% of Mexican CDM projects are in the Agricultural and Biomass sectors.

Growth of CDM projects in Agriculture sectors – Feb 2006



Growth of CDM projects in Agriculture sectors – Nov 2006



UK Participation

- London is emerging as the centre for CDM investment – over \$2 billion worth of funds aimed at the international carbon market
- UK leading investor country in CDM – ranked 1st in world in terms of projects with UK approval or participation
- UK has approved participation of 162 CDM projects in 18 countries to 32 companies
- 27 of these projects are in the Agriculture sector



Methane recovery CDM projects



- Types of Methane Recovery projects:
 - Pigs Slurry
 - Landfill gas recovery
 - Waste water treatment
- Other Agriculture CDM projects include:
 - sugar biomass; bagasse; biofuels; rice husks, mustard crop residue

Pig Power



- Approved 32 projects using methane recovered from pig waste at piggeries in Mexico from one UK company
- Projects support producers and local workers, improve local environment and reduce GHG emissions
- Mitigate 310,000 tonnes of CO₂ equivalent a year
- Pork production is increasingly shifting to developing countries
- Mexico is becoming a major supplier

Methane Recovery and Electricity Generation Project, Mexico

- Previously pig waste water from piggeries transported to a lagoon and digested under anaerobic conditions – producing significant amounts of methane
- Now, transport pig waste water to a new covered in-ground anaerobic reactor to produce biogas.
- Biogas then captured in the anaerobic digester to generate electricity on-site

Outcomes of AD project

- Electricity generation for the farm – eliminating demand from the national grid
- Prevents methane release into the atmosphere – GWP is 21 x CO₂
- Will save 7109 tonnes of CO₂e per year
- Prevents hazardous wastewater reaching aquatic ecosystems
- Sustainable Development benefits – investment to the farmer, generation of jobs etc
- Investor gains CER's for its compliance or to sell on the market

Thank you for listening

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