The EIT

A Knowledge and Innovation Community in Climate Change Adaptation and Mitigation

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An urgent challenge

➢ Challenge

➢ New predictions reported last week suggest we may already lose 40% of the Amazon rain forest by 2050
➢ By 2050 the CO₂ ‘allowance’ per person could be around 2.4 tonnes per annum
➢ A driver in the UK with an average new car (160g/km) driving 15,000km, emits 2.4 tonnes of CO₂ per annum from motoring alone

➢ And a major opportunity

➢ Huge new international markets for innovative ‘low carbon’ products and services
➢ For example…
The global light-duty vehicle stock rises from 650 million in 2005 to about 1.4 billion by 2030: it will be essential that these are low emissions vehicles.
Global CO\textsubscript{2} emissions: 2000

Source: WRI (2006)
The scale of the CO$_2$ challenge: a European example

2006 emissions

- International aviation & shipping*: 42 Mt CO$_2$e
- UK non-CO$_2$ GHGs: 98 Mt CO$_2$e
- Other CO$_2$: 108 Mt CO$_2$e
- Industry (heat & industrial processes): 103 Mt CO$_2$e
- Residential & Commercial heat: 134 Mt CO$_2$e
- Domestic transport: 184 Mt CO$_2$e
- Electricity Generation: 695 Mt CO$_2$e

2050 objective

- 77% cut (= 80% vs. 1990)

The UK CO$_2$ emissions reduction targets

* bunker fuels basis
Significant areas of overlap exist between the two topics for example:
- Carbon capture and storage
- Energy efficiency
- Alternative fuels
- Energy storage
- The electric economy: heating, vehicles etc;
- The hydrogen economy…

This is positive – there is so much to do in this area.

Strong relationships between the KICs will be encouraged.

KIC applications must identify the core topic area (Energy or Climate Change) for the assessment process.
Climate Change Mitigation and Adaptation: potential scope

Mitigation
- Low carbon transport: land, aviation and shipping
- Forestry and farming: plants, soils, livestock…
- Waste and landfill: reduction and management of non-CO₂ GHGs
- Energy efficiency devices: low energy electronics, appliances, electric motors
- Low energy/low emissions processes: new industrial processes
- Small scale carbon capture and storage
- …

Adaptation
- Prediction and planning
- Weather and flood
- Crops and farming
- Infrastructure impact
- Resilient water sources
- …
Sustainable Energy: potential scope

- Sustainable Power Generation
  - Solar, wind, marine, biomass, fossil fuels with carbon capture and storage, nuclear, hydro...

- Electricity generation and distribution systems for sustainable energy systems
  - Local plus centralized generation, intermittency, energy storage...

- Heat for homes, business and industry
  - Combined heat and power, district heating, biomass, heat pumps...

- Energy efficiency in homes, business and industry
  - Insulation, smart metering...

- Alternative fuels
  - Biofuels, the hydrogen economy...