European Institute of Innovation & Technology

The EIT

A Knowledge and Innovation Community in Climate Change Adaptation and Mitigation

Professor Julia King
Vice-Chancellor, Aston University Birmingham UK
EIT Governing Board member

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 CO_2 '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 CO_2 per annum from motoring alone

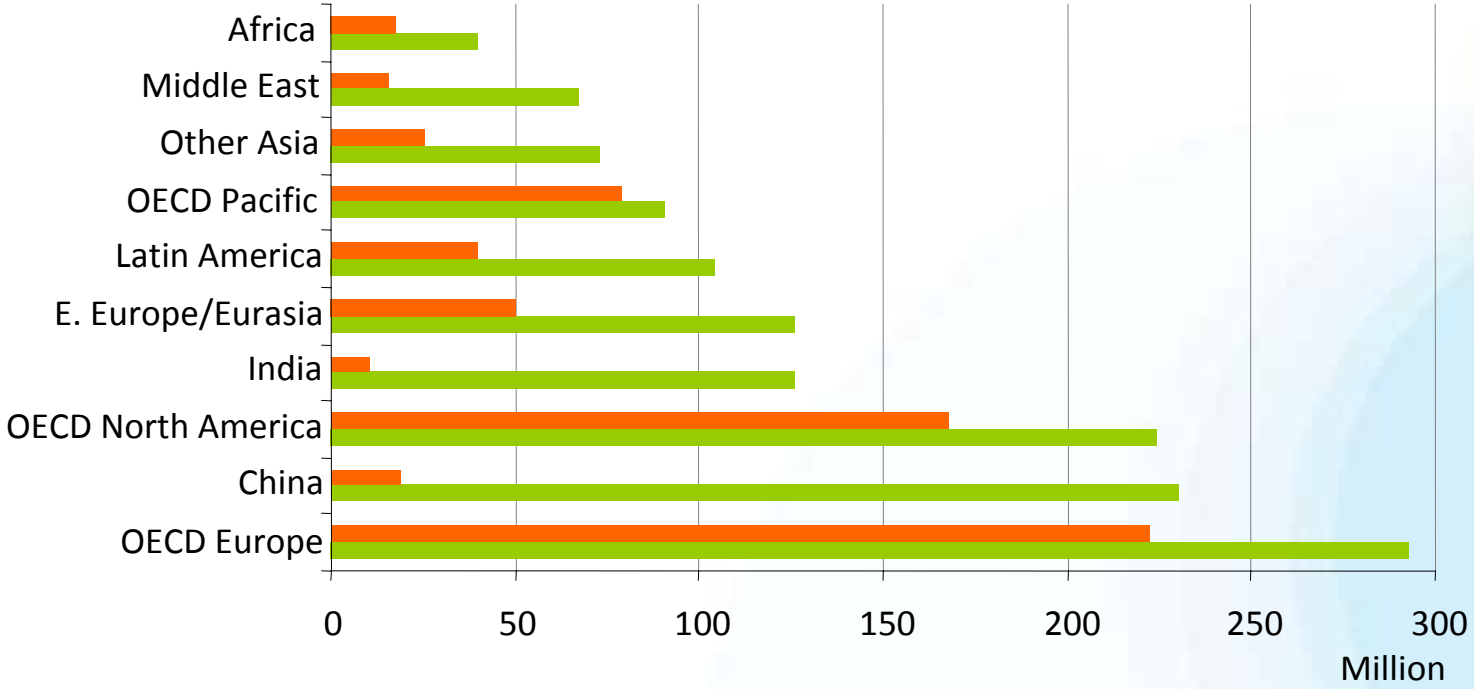
- And a major opportunity
  - Huge new international markets for innovative 'low carbon' products and services
  - For example…

European Institute of Innovation & Technology

Global light-duty vehicle fleet

World Energy Outlook 2008

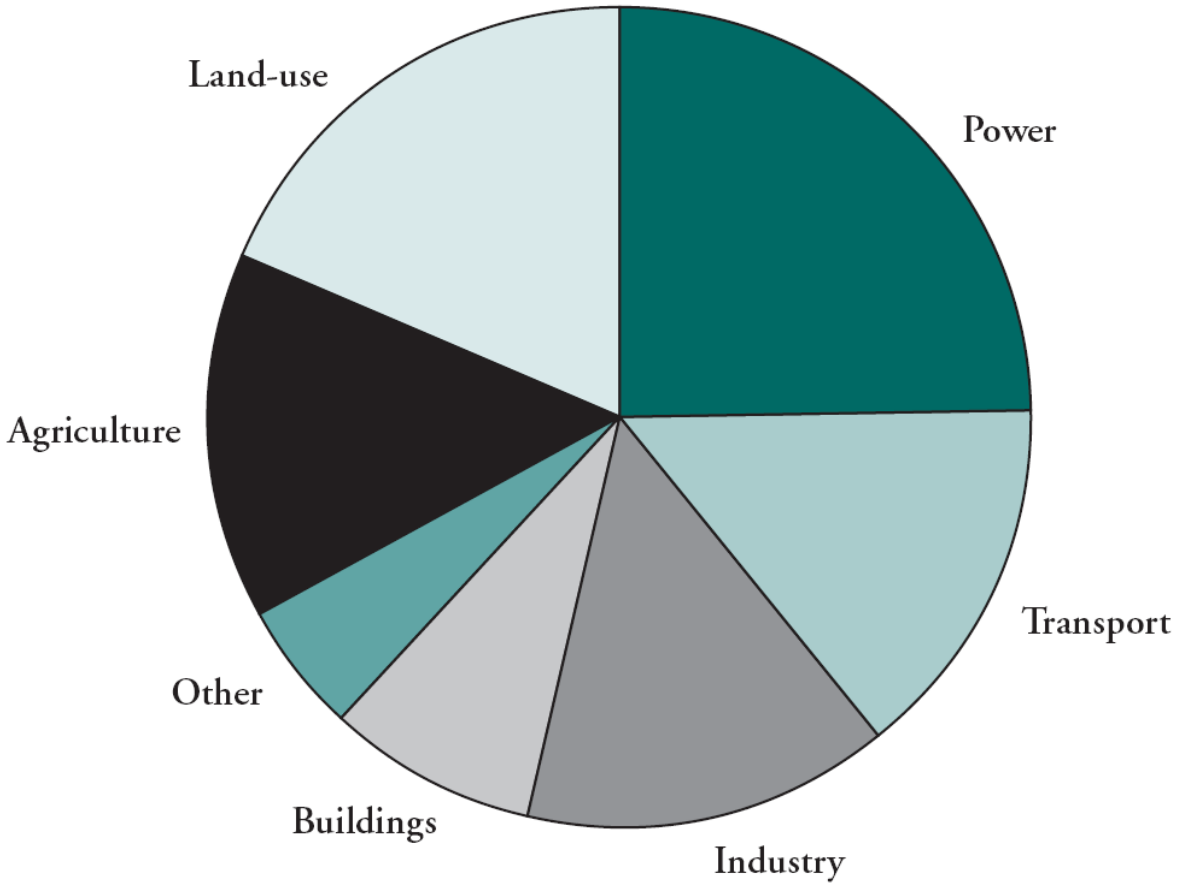
WEO Reference Scenario



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

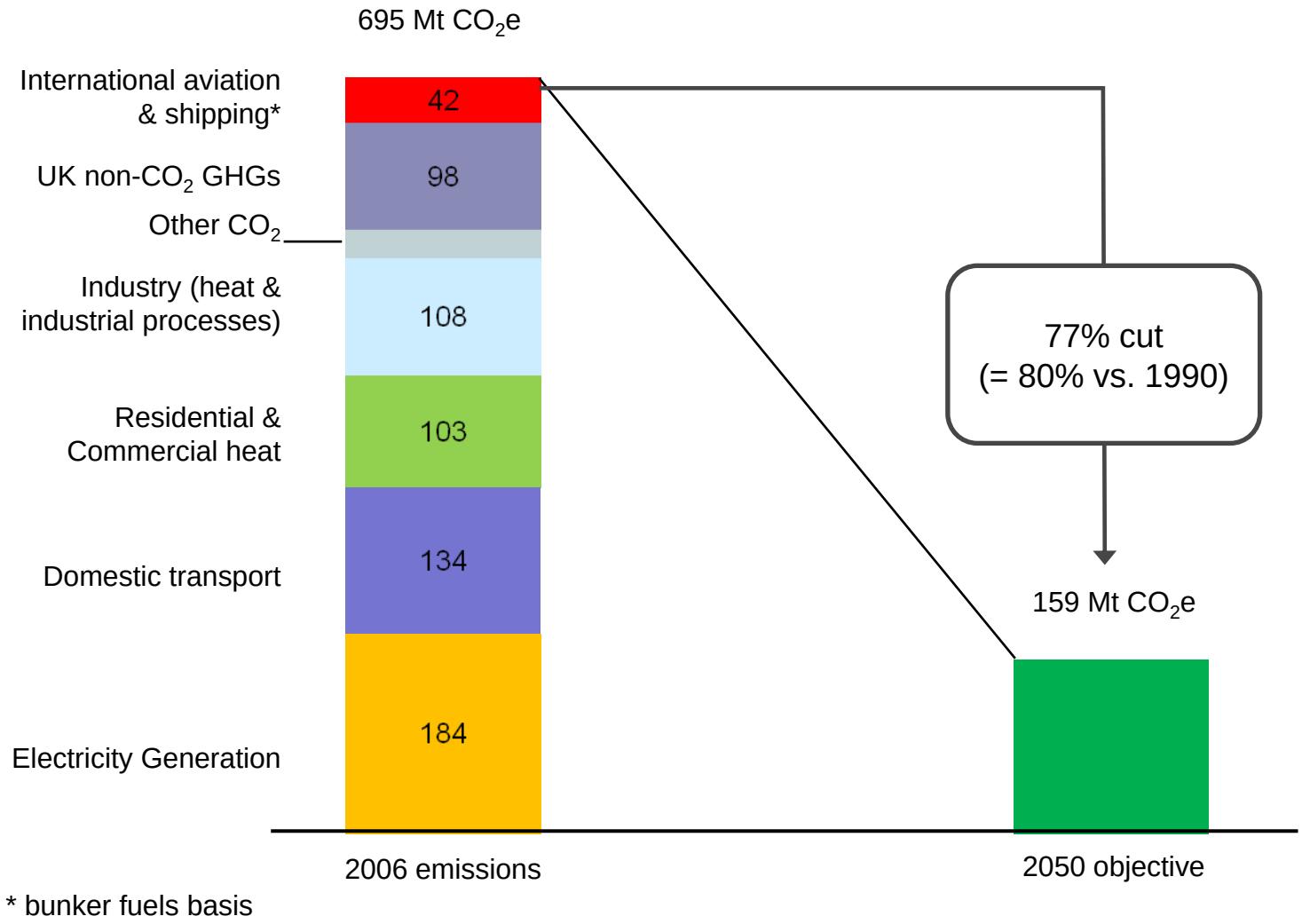
European Institute of Innovation & Technology

Global CO_2 emissions: 2000



Source: WRI (2006)

The scale of the CO_2 challenge: a European example



The UK CO_2 emissions reduction targets

KICs in Sustainable Energy and in Climate Change Mitigation and Adaptation

- 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-CO_2 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…