EuroCASE conference

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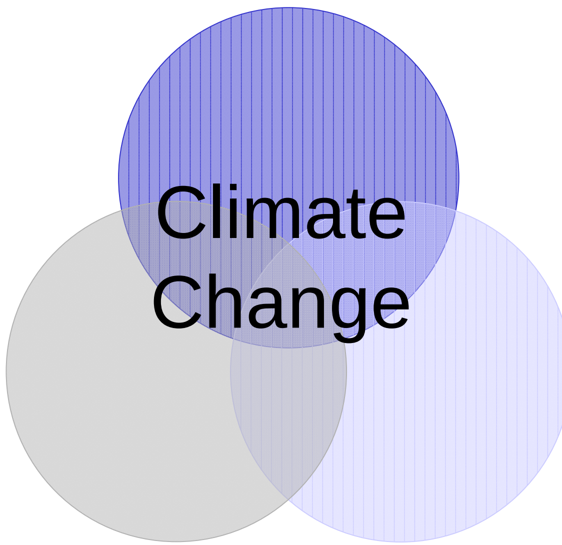
The Global Challenge

Energy →

- Energy efficiency
- Clean energy generation
- Security of supply



Water

Biofuels

↕ competition

Food

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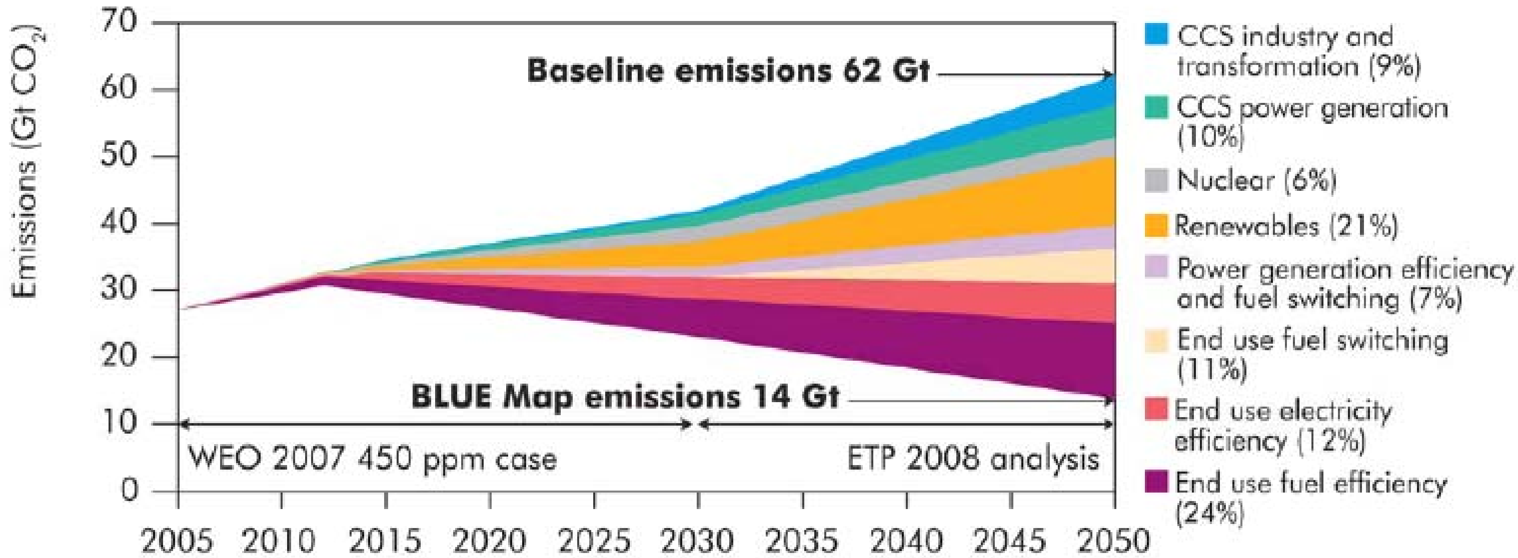
The Global Technology Challenge

Contribution of emission reduction options, 2005-2050



Policy drivers

- UK should aim to reduce greenhouse gas emissions by **at least 80%** (below 1990 levels) by 2050 (CCC recommendation, consistent with Stern)
- EU target to increase the proportion of its energy use provided from renewables to 20% by 2020.
- UK renewables consultation, closed in October 2008
- Energy Bill to strengthen Renewables Obligation

Role of UK government

- Clear and stable regulatory environment for investors
- Facilitating technology demonstration and reduce risk of investment in technology and supply chain
- Leadership and influence in the development of new technologies
  - Promoting innovation, catalyse and accelerate commercialisation of technologies
- Removing supply chain barriers
- Reforms of the planning system, improve grid access

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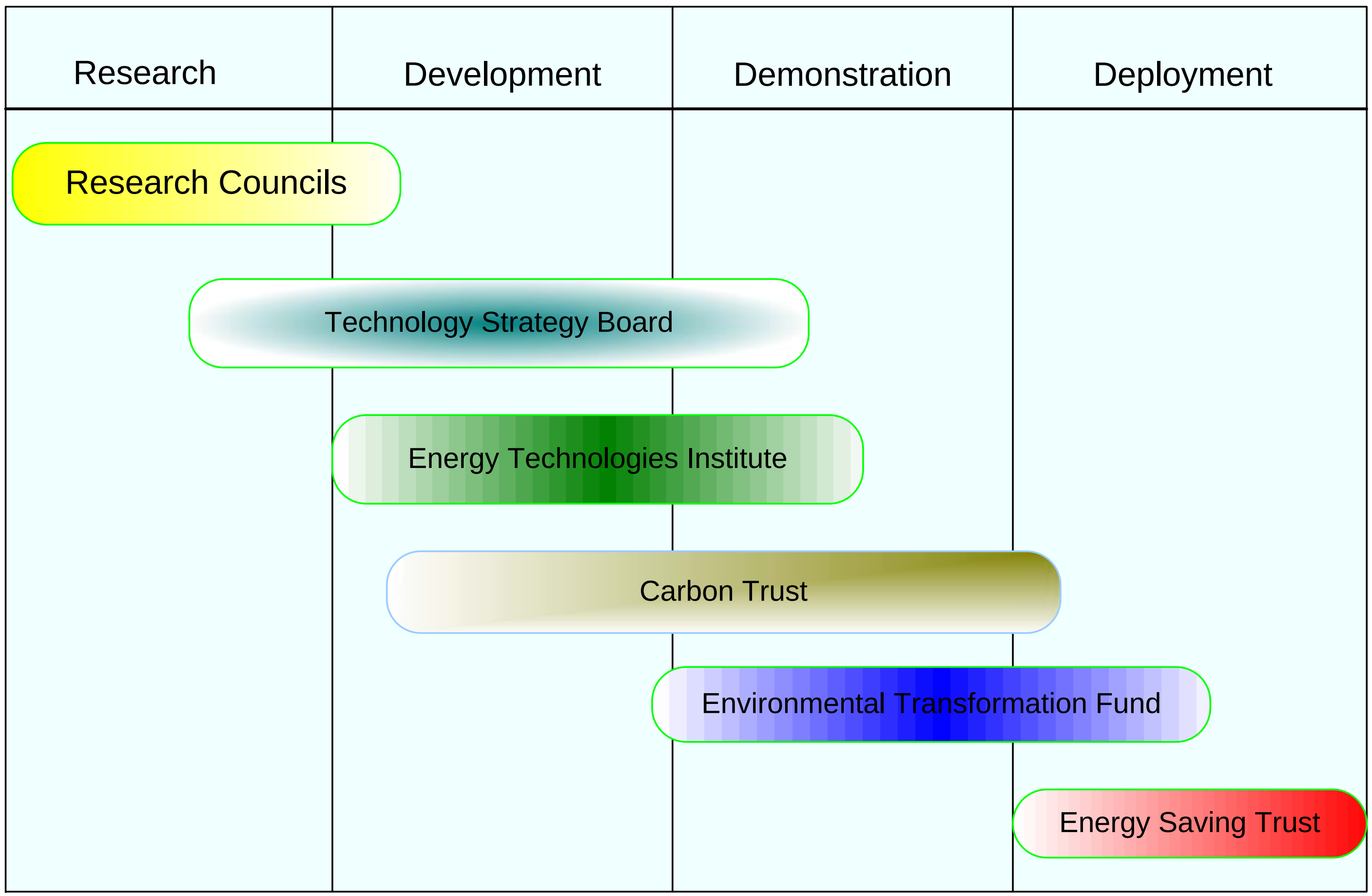
The National Energy Innovation Landscape



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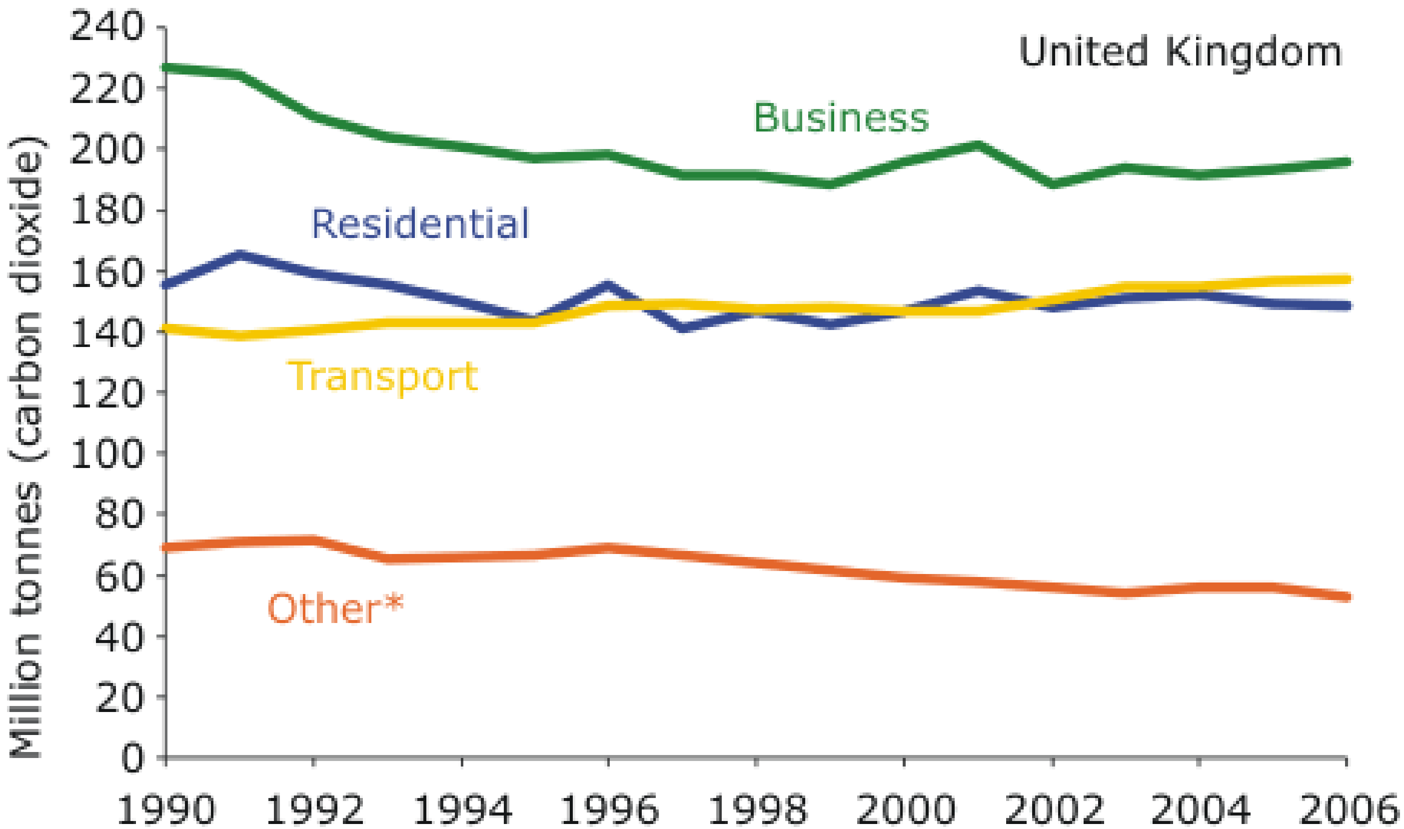
Carbon emissions

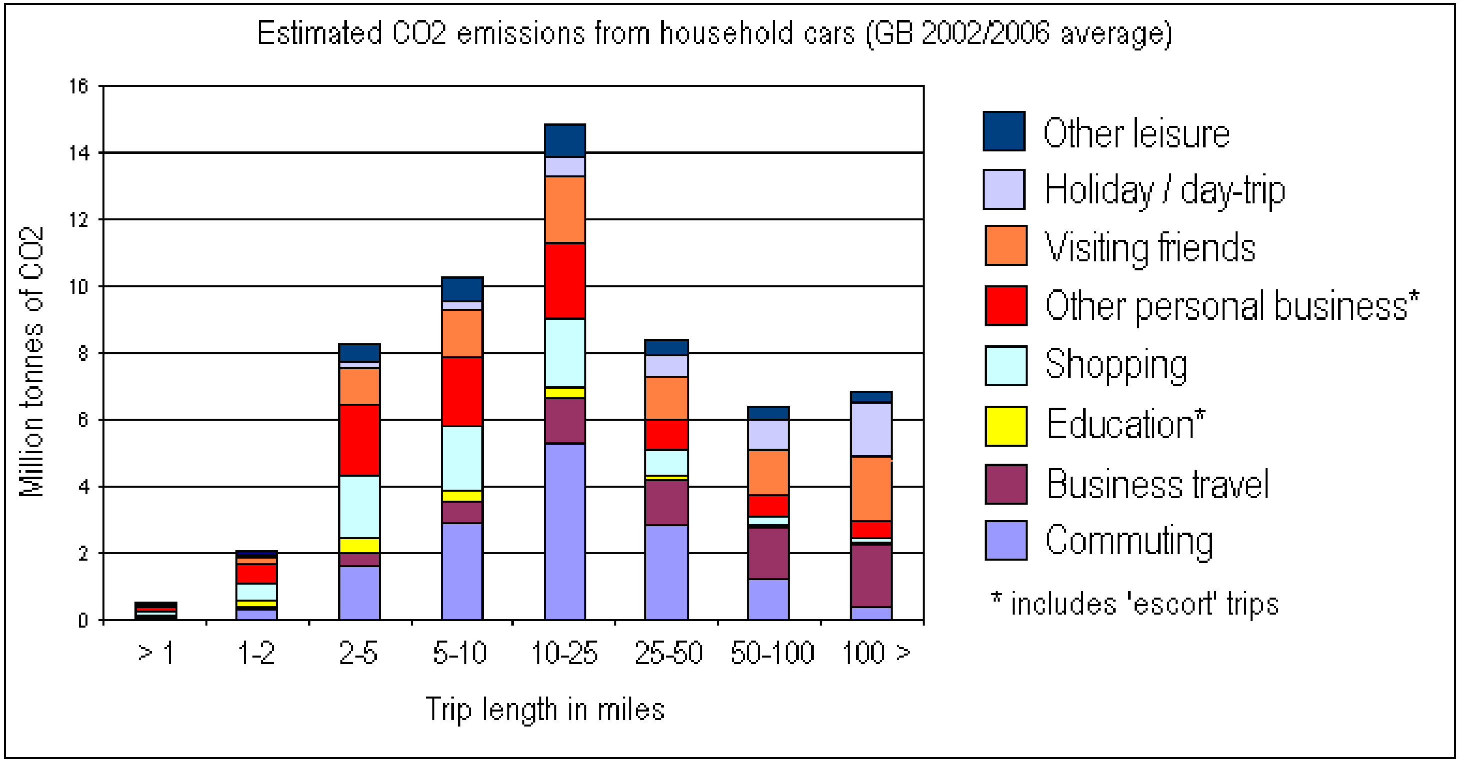


*Mostly of public, industrial and agricultural sectors

Notes: Data from 1990 are presented as National Communications categories and therefore not comparable with previous years.

Source: AEA Energy and Environment

Transport - Carbon reduction pathway work



- Which trips generate the CO_2?
- Which policy interventions give us the biggest reduction in CO_2 for the smallest adverse impact on other goals?
- What CO_2 reduction can we achieve
  - **from cross-cutting measures?**
  - **on the city & regional, national and international networks?**

Example - Low carbon transport

- Mode of transport (enabling low carbon choices and more efficient transport infrastructure)
- Energy efficiency (driving style, downsizing engine, lighter weight vehicles, engine efficiency)
- Non-fossil fuel power sources (biofuels, hydrogen, electricity)

Examples:

- Technology Strategy Board's **Low Carbon Vehicles Innovation Platform** - to help the UK's automotive sector benefit from growing public and private sector demand for lower carbon vehicles.
- **Cenex** - centre of excellence for low carbon and fuel cell technologies, encouraging the early market adoption, showcasing UK expertise and assisting the UK automotive supply chain to compete in global markets.

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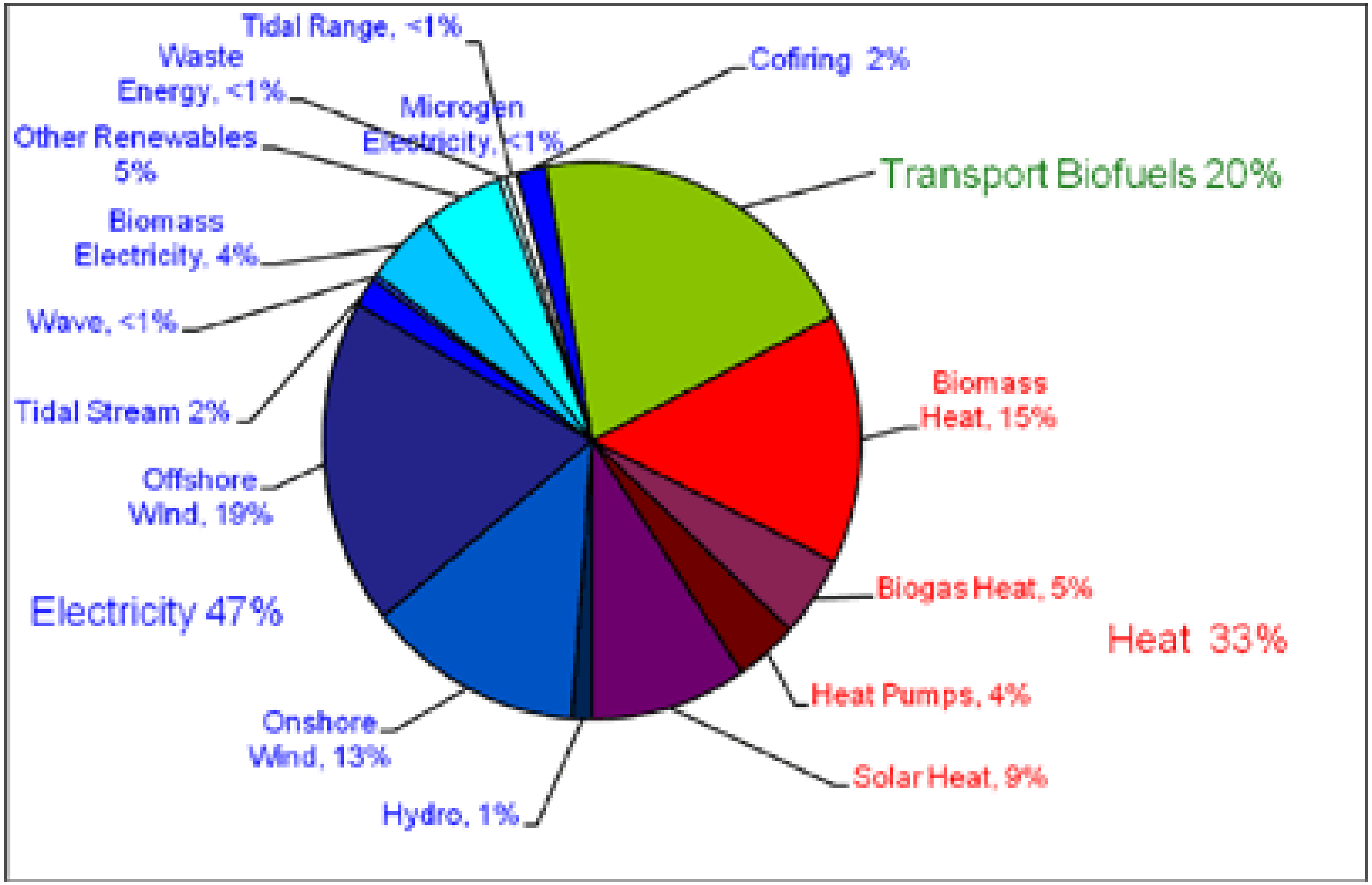
Scenario for renewables supply in 2020



Source: Based on modelling by Redpoint-led consortium. Nera consultants and DfT estimates – figures adjusted to represent UK figures.

Long term market potential

Example - off shore wind:

- UK govt plans for massive expansion of offshore wind power in UK waters, up to another 25GW capacity by 2020, in addition to the 8GW provided under Rounds 1 and 2.
- public-private sector partnership through the Energy Technologies Institute, which is providing £40m of funding for offshore wind projects.
- Carbon Trust recently announced a £30m Offshore Wind Accelerator, to support further projects to deliver up to 45% cost reductions by 2020

Challenges and opportunities for the renewables sector

- Step change needed in the deployment of renewable energy
- Challenging target
  (costly in the short term, long term benefits)
- Government role to remove barriers and reduce cost of implementation
- Role of technology and UK expertise – scope for further innovation and acceleration commercialisation of low carbon renewable energy