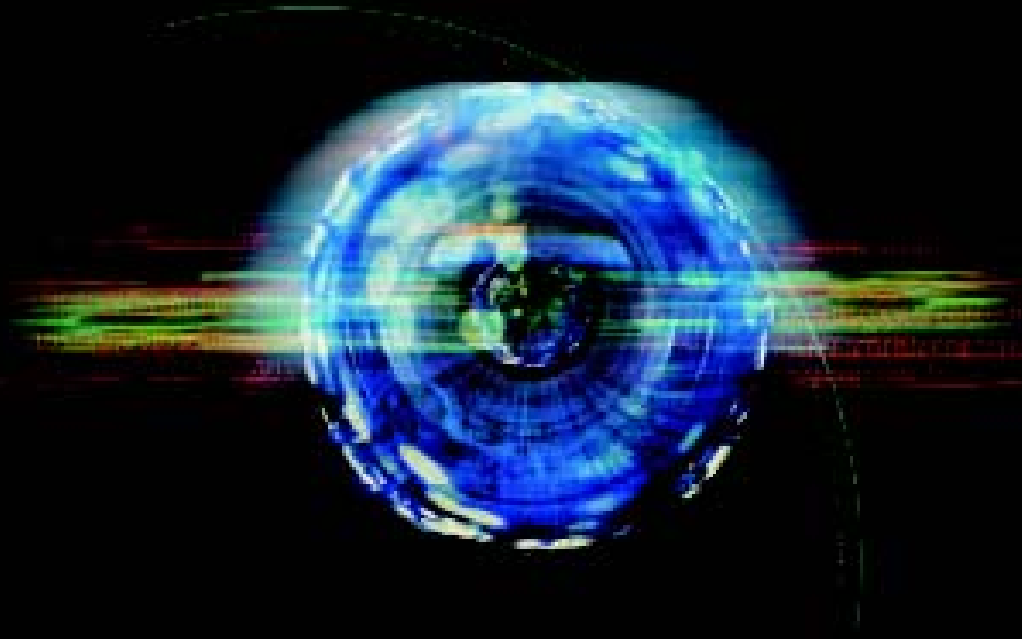


# Technology Strategy Board



David Way  
Director of Operations

APGTF Workshop on Carbon Abatement Technologies  
27 February 2007

## Content

- Overview of Technology Strategy Board
- Our position in the UK Energy Innovation Landscape
- Carbon Abatement Technologies
- Looking Forward





Technology Strategy Board

# Overview of the Technology Strategy Board



## Our vision

***‘for the UK to be seen as a global leader in innovation and a magnet for technology-intensive companies, where new technology is applied rapidly and effectively to create wealth’***

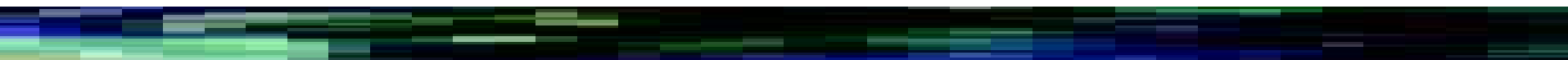


## Our vision

*‘for the UK to be seen as a **global leader in innovation** and a magnet for technology-intensive companies, where new **technology** is applied **rapidly** and effectively to **create wealth**’*



## Key facts

- Non-Departmental Public Body guided by a business-led Governing Board
  - Sponsored by Department for Innovation, Universities and Skills
  - Budget – around £230m this year (£1Bn over CSR period)
  - Staff of around 75 people
  - Based in Swindon (with desks in London)
- 



## What we do

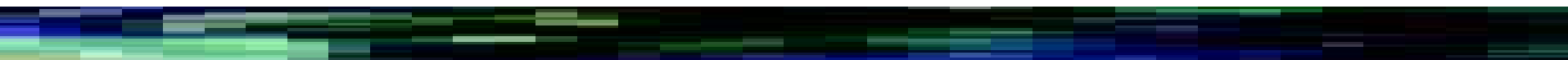
- We **promote and support** research, development and exploitation of science and technology
  - We **deliver** a programme of **financial support** to encourage business investment in technology
  - We provide **insight** into the process of turning technology into money and knowledge support for those who dare
- We **provide leadership** to Government Departments and agencies and work with RDAs, DAs and the Research Councils on technological innovation of importance to UK business
- We **advise** Government on barriers to the exploitation of new technologies - and make recommendations for removing them

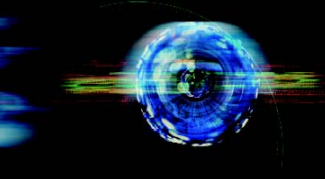
## Technology Strategy Board outcome based criteria for support

- **Can the UK do it?**
  - Does the UK have the capacity to develop and exploit the technology?
- **Is the idea “ready”?**
  - Is the science developed enough to underpin the technology and its implementation in the market, and can the competitive activity be overcome?
- **Will it sell enough?**
  - What is the size of the global market opportunity?
- **Can we make a difference?**
  - Is there a clear Technology Strategy Board role?



## A balanced approach

- We help **Maintain** the competitive position of our leading businesses against global competition
  - We identify and **Grow** sectors and businesses with the capacity to be among the best in the world and stimulating them to fulfil that potential
  - We **Nurture** today's emerging markets and technologies into the growth sectors of tomorrow
- 



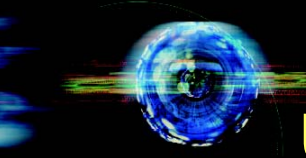
## **Focusing and targeting through:**

- Innovation Platforms
- Key Technology and Application Areas
- Emerging Technologies

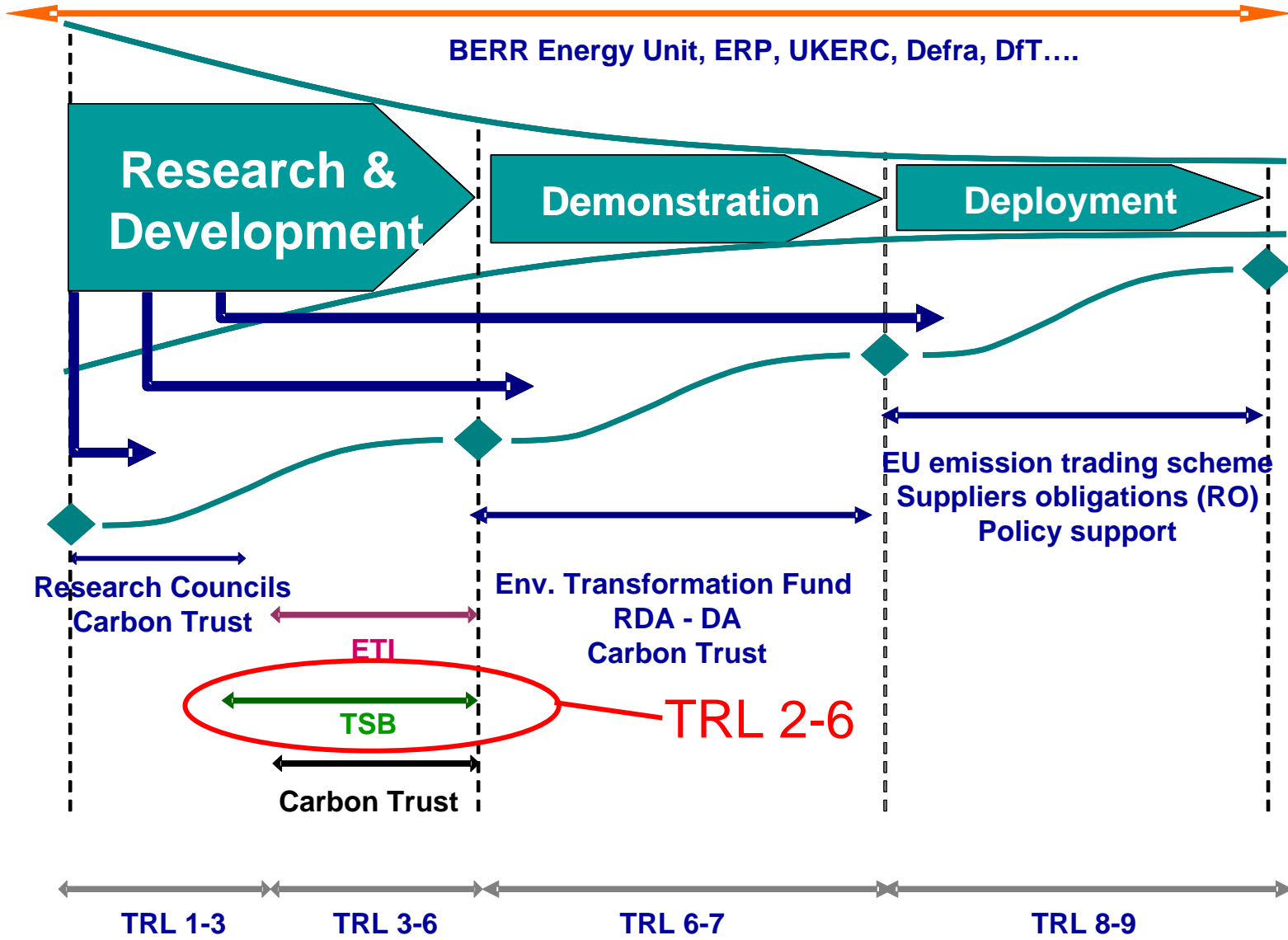
## **Currently delivering the strategy through:**

- Collaborative R&D Competitions
- Knowledge Transfer Networks
- Knowledge Transfer Partnerships





## UK Energy Innovation Chain



BERR Energy Unit, ERP, UKERC, Defra, DfT....

Research & Development

Demonstration

Deployment

EU emission trading scheme  
Suppliers obligations (RO)  
Policy support

Research Councils  
Carbon Trust

Env. Transformation Fund  
RDA - DA  
Carbon Trust

ETI

TSB

TRL 2-6

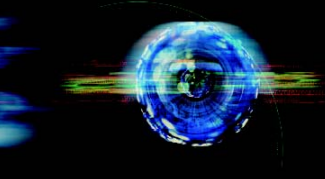
Carbon Trust

TRL 1-3

TRL 3-6

TRL 6-7

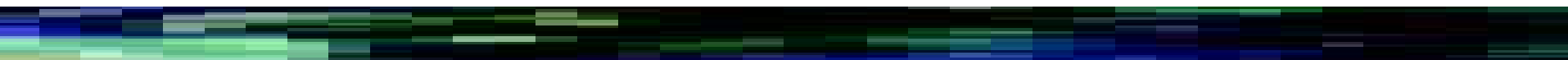
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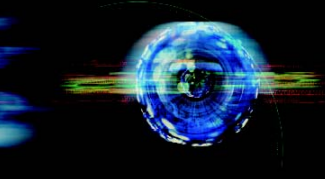
## Existing TSB 'Energy' Portfolio

- **Energy Generation & Supply**
  - **Low carbon technology** (Historically ~£20M pa committed)
    - Offshore wind, wave & tidal, Intelligent grid management, Microgeneration/solar pv, Carbon abatement, Bio-energy, Hydrogen & fuel cells
  - **Oil & gas extraction** (Historically ~£5M pa committed)
- **Underpinning technologies**
  - **Materials, electronics/photonics, high value manufacturing, ICT, bioscience, environmental sustainability**
- **Energy Saving**
  - **Innovation Platforms on low impact buildings & low carbon vehicles.**
  - **Major collaborative R&D programmes, mainly transport focused**

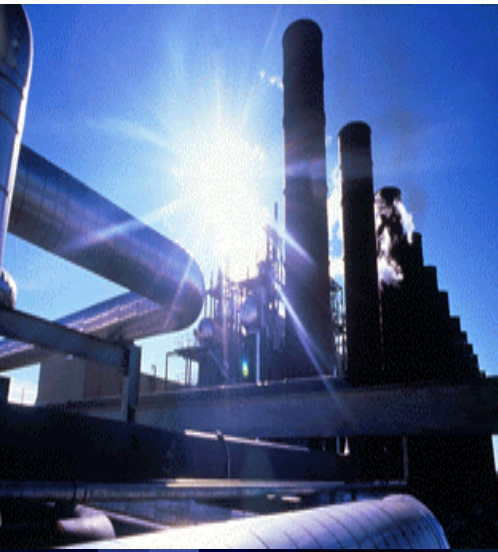
## Working with ETI

- We fund with EPSRC the public investment in ETI (up to £20M pa)
  - Active participation at all levels
  - Support through access to TSB experience in running collaborative programmes, knowledge of broader business communities
  - Include energy interests in broader TSB knowledge exchange (KTN) and people transfer (KTP) activities
- 





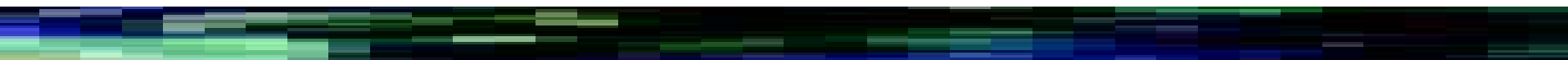
# Carbon Abatement Technologies





## 16 CAT projects- total value ~£11m (2004-07)

### Examples include:-

- Retrofitting Carbon Abatement Technologies to existing fossil plant
  - 700°C steam power plant developments (supporting participation in EU programme)
  - Advanced burners for coal-fired boilers
  - Biomass co-firing
  - Oxyfuel firing
  - CO<sub>2</sub> separation & storage
  - Hydrogen combustion
- 

## Carbon Abatement Technologies:

Developing clean fossil fuel based technologies in the transition to a low carbon economy

Fit with TSB criteria

UK capacity	Global opportunities	Timeliness & impact	Added value
High	High	High	High

Opportunities include:-

- Improving efficiency of existing and developing technologies
- More efficient, cheaper CO<sub>2</sub> capture technologies capable to handle large volumes of emissions
- Novel technologies for low to zero emissions
- Technologies for CO<sub>2</sub> compression and handling





# Technology Strategy Board



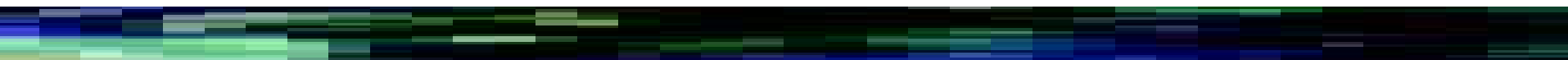
## Looking Forward

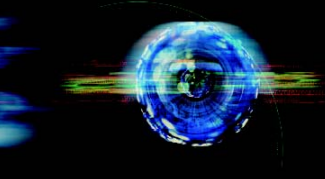


## High Level Strategic Issues (Energy)

- Coordinated approach by UK funding agencies to provide integrated innovation and technology programme across full innovation chain (all TRL's) whilst:-
  - Acknowledging differing criteria for support
  - Building on existing infrastructures, strengths and contacts
  - Optimising benefit to UK businesses and Energy policies

**All public sector agencies (eg TSB, BERR, DfT, DEFRA, Carbon Trust) are working together & with ETI to develop a coherent & complementary low carbon energy programme for the UK**

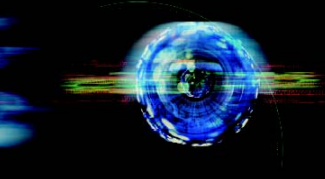




**TSB Strategies are being developed in consultation with stakeholders, in the Key Technology/Application Areas of:-**

<b>Underpinning Technologies</b>	<b>Application Areas</b>
<ul style="list-style-type: none"><li>• High Value Manufacturing</li><li>• Advanced Materials</li><li>• Bioscience</li><li>• Electronics, Photonics &amp; Electrical Technologies</li><li>• Software Applications, Systems &amp; Services</li></ul>	<ul style="list-style-type: none"><li>• Environmental Sustainability</li><li>• Energy Generation and Supply</li><li>• Healthcare</li><li>• Transport</li><li>• Creative Industries</li><li>• High Value Services</li><li>• Built Environment</li></ul>

**‘Energy’ relevant to many of the TSB key technology and application areas and remains a high priority**



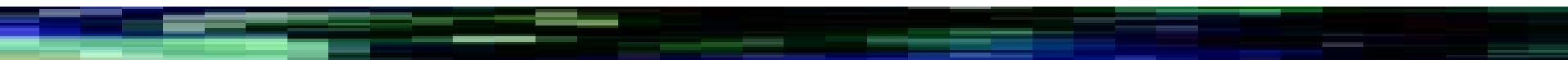
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 = Energy related areas

**‘Energy’ relevant to many of the TSB key technology and application areas and remains a high priority**

## Innovation Platforms

- Intelligent Transport Systems & services
  - Network Security
  - Assisted Living
  - Low carbon vehicles
  - Low impact housing
  - More under consideration
- 

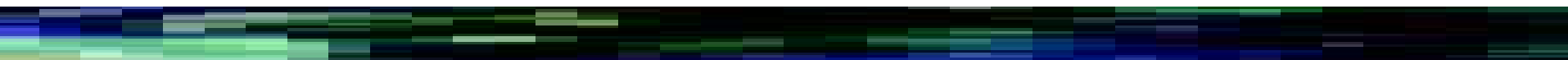


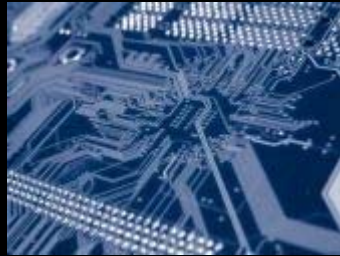
## Innovation Platforms

- Intelligent Transport Systems & services
- Network Security
- Assisted Living
- Low carbon vehicles
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- More under consideration

## **Technology Strategy Board future positioning in Energy**

**Working with ETI, BERR, Carbon Trust, Research Councils and other stakeholders to deliver a coherent strategy for Energy in the UK:**

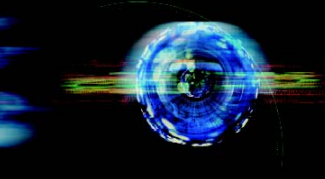
- Support ETI (up to £20M pa)
  - Support Energy Generation & Supply as a Key Application Area (in line with TSB criteria)
  - Continue investment in technologies underpinning energy generation & supply (eg materials, manufacturing)
  - Support Energy Conservation managed through Innovation Platforms and other Key Technology/Application Areas
- 



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## Low carbon energy technologies portfolio supported through the TSB Collaborative R&D from 2004 to 2007 (~£75M TSB investment).

