

Research Councils' Energy Programme and CAT/CCS

Dr Alison Wall
Associate Director, Mission Programmes

EPSRC Heads of Programme: Jason Green and
Rachel Bishop
CCS lead: Jacqui Williams

Mission

To position the UK to meet its energy and environmental targets and policy goals through high quality research and postgraduate training.



Drivers:

- Tackling climate change by reducing carbon dioxide emissions both within the UK and abroad.
- Ensuring energy security.
- Ensuring energy affordability.



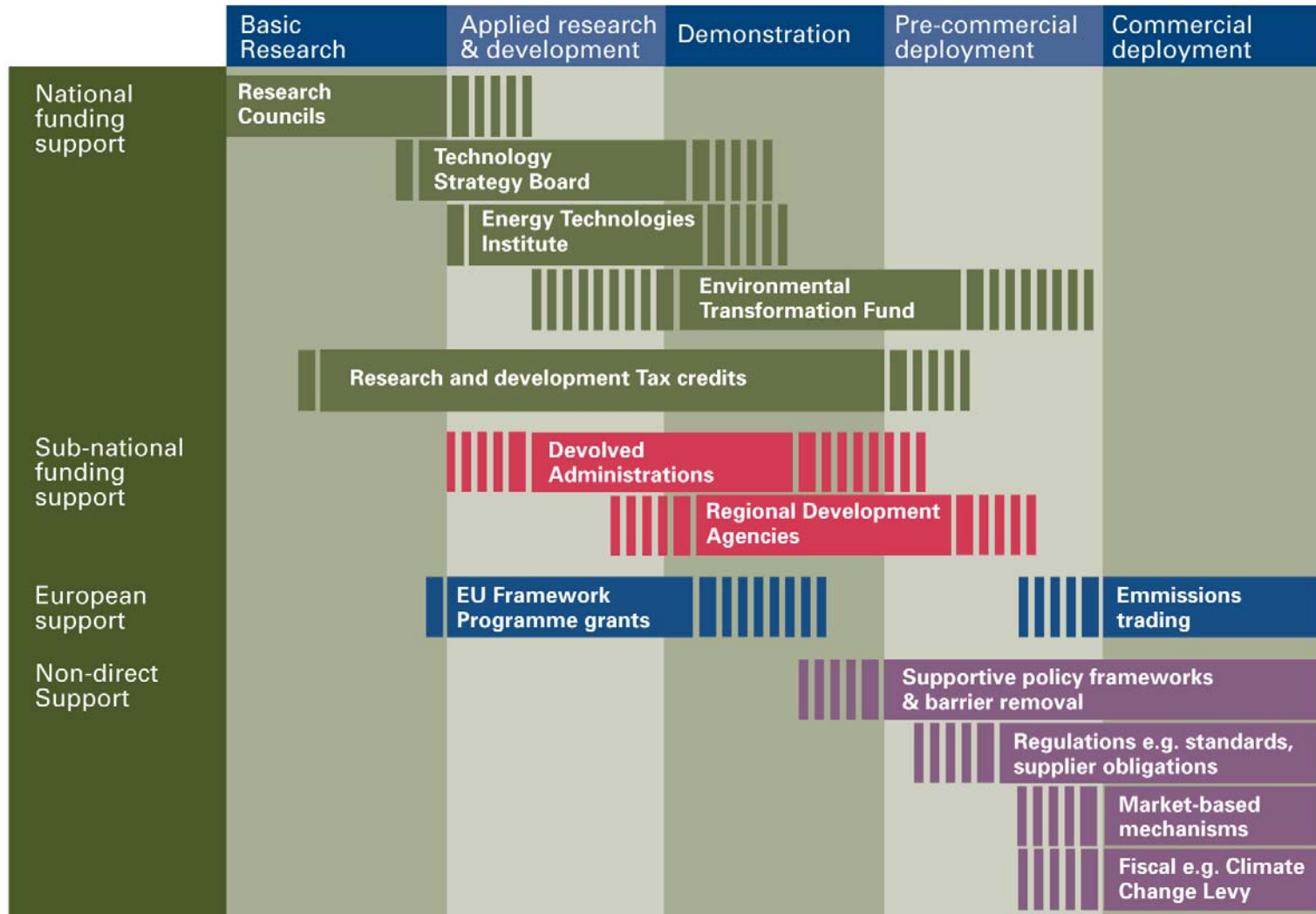
Priorities 2008-11

£319m planned investment by the Research Councils

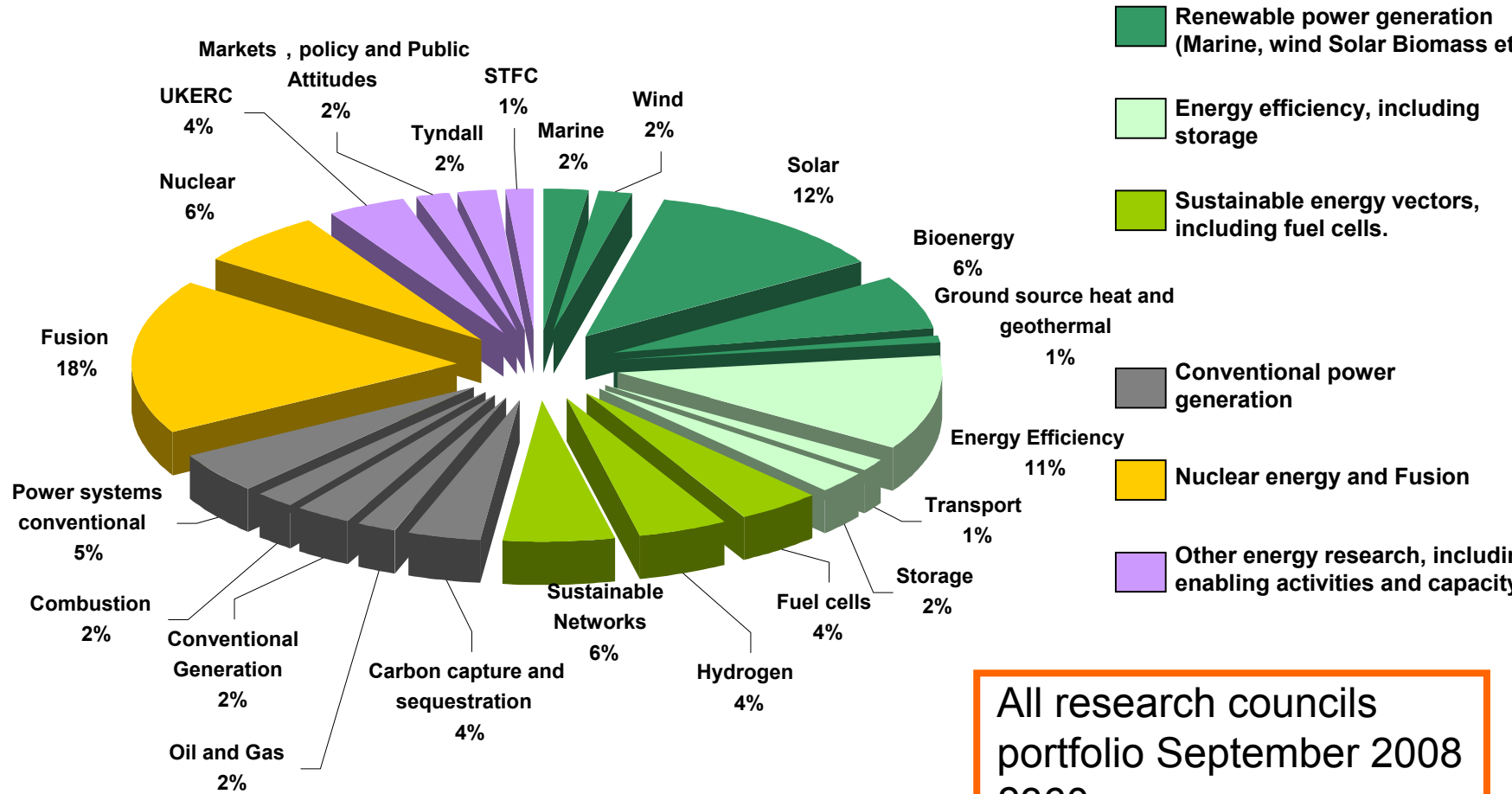
- A whole system approach to energy options, supply and usage.
- Rapid exploitation through collaboration with ETI.
- Growing portfolio in demand reduction and transport.
- Focused postgraduate training in energy themes.
- Continue research in sustainable power generation & supply/alternative sources.



The Energy Landscape: Public Sector Funding



A Full Spectrum of Research



All research councils portfolio September 2008
 £360m

Carbon Capture and Storage: Current Support

Current £15M CCS portfolio includes:

Capacity building

- UKCCS consortium
- CO₂ capture from power plant and atmosphere
- Centre for Innovation in CCS at the University of Nottingham
- Doctoral training centres at Leeds and Nottingham/Birmingham/Loughborough

Carbon Capture and Storage: Current Support

Project support

- CRIUS project - kinetics of fluid-rock interactions in reservoirs, Cambridge
- UK policy for CCS and the financing of demonstration plant(s) - Sussex Energy Group
- CASSEM project - CO₂ Aquifer Storage Site Evaluation and Monitoring led by industry, and including research on public acceptance (with TSB)
- Public engagement project - University of Edinburgh

Carbon Capture and Storage: Current Support

Current £15M CCS portfolio includes:

Capacity building

☛ **UKCCS consortium**

£2m jointly funded by NERC and EPSRC; led by Imperial College with 13 other organisations; engineering, technological, environmental, social and economic scientists. The Consortium was a way to rapidly expand UK research capacity. To February 2009.

Carbon Capture and Storage: Current Support

- **£1m Centre for Innovation in CCS at the University of Nottingham**

Challenging Engineering award to Professor Mercedes Maroto-Valer - interdisciplinary research and postgraduate training to bring ideas from basic science and develop them into new products, processes and services. To 2012.

- **£4.7m CO₂ capture from power plant and atmosphere**

Science and Innovation award - 6 new lectureships in CCS to Edinburgh and Heriot-Watt universities; just started. New technologies for CO₂ capture from power plant and biomass to capture CO₂ from the atmosphere. Partners include Doosan Babcock, Mott MacDonald, Air Liquide, C-Questor, Scottish Enterprise and WWF. To 2013.

Carbon Capture and Storage: Capacity Building

New CCS Centres for Doctoral Training (**£11m+ investment**)

- University of Nottingham with Birmingham and Loughborough: **Efficient Power from Fossil Energies and Carbon Capture Technologies Industrial Doctorate Centre.**

Developing engineering research leaders with considerable time spent in industry. Includes: Welsh Power, Alstom, Doosan Babcock, Corus, Air Products, Rolls-Royce, RWE, Corus, CPL, Innospec, E.ON.

- University of Leeds: **Technologies for a Low Carbon Future.**

Innovative technologies for a low carbon future. 20 project partners including Alstom, E.ON and Doosan Babcock.

9 other CDTs within energy portfolio.

Carbon Capture and Storage: Current Support

- **£2.9m CRIUS project** at Cambridge, Leeds, BGS and Manchester which seeks to evaluate the kinetics of fluid-rock interactions in reservoirs to model geological carbon storage. To 2013
- **£1.7m CO₂ Aquifer Storage Site Evaluation and Monitoring (CASSEM)** TSB/EPSRC project led by industry, and including research on public acceptance. Heriot-Watt, Edinburgh, BGS, Manchester with ScottishPower, AMEC, Marathon Oil, Schlumberger and Scottish and Southern Energy. To 2010
- **£2.8m Sussex Energy Group** includes work on CCS and policy e.g. report “UK policy on carbon capture and storage: Squaring coal use with climate change?” To 2010
- **£93k Carbon Capture and Storage Interactive: CCSI - Edinburgh** Public engagement project using an interactive demonstrator of CO₂ linked to climate change and CO₂ capture from power plant and from the atmosphere. To 2010

Carbon Capture and Storage: Planned activities

Planned activities over the next few months:

Projects

- ☛ Joint call with E.ON for consortia proposals in carbon capture and transport (proposals currently being assessed) (£5m).
- ☛ Call for cleaner fossil fuels projects in collaboration with China (proposals currently being assessed) (£4m).
- ☛ Call being planned in carbon storage, environmental impact and CCS whole systems (£2.5m).

Coordination and networking

- ☛ Plans for a network to take forward the work of UKCCS and bring together the different activities in CCS (£1m).

Exploitation

- ☛ One of the public sector funders of ETI.

Where next?

- **Looking for world-class research with national and international impact.**
- Is UK research competitive internationally?
- How well are the projects we support integrated with industry? Is it having an impact or likely to have an impact?
- What are we missing?

We welcome your input.

Contacts

- Alison Wall, alison.wall@epsrc.ac.uk
- Jacqui Williams, jacqui.williams@epsrc.ac.uk