

Research Councils UK Energy Programme

Valuing Natural Capital in Low Carbon Energy Pathways Programme - Ideas Brokerage Workshop

21st - 22nd July 2014

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For a Low Carbon Energy Future

Our Mission

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

- Launched with investment announced in 2002.
- Continues to be a major investment strand (£540m over 4 years from 2011-15 Spending Review period).

Key UK Targets:

- 80% reduction in GHG emissions by 2050.
- 15% of energy from renewable sources by 2020.
- Increases in energy efficiency.

Drivers:

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



Key Objectives

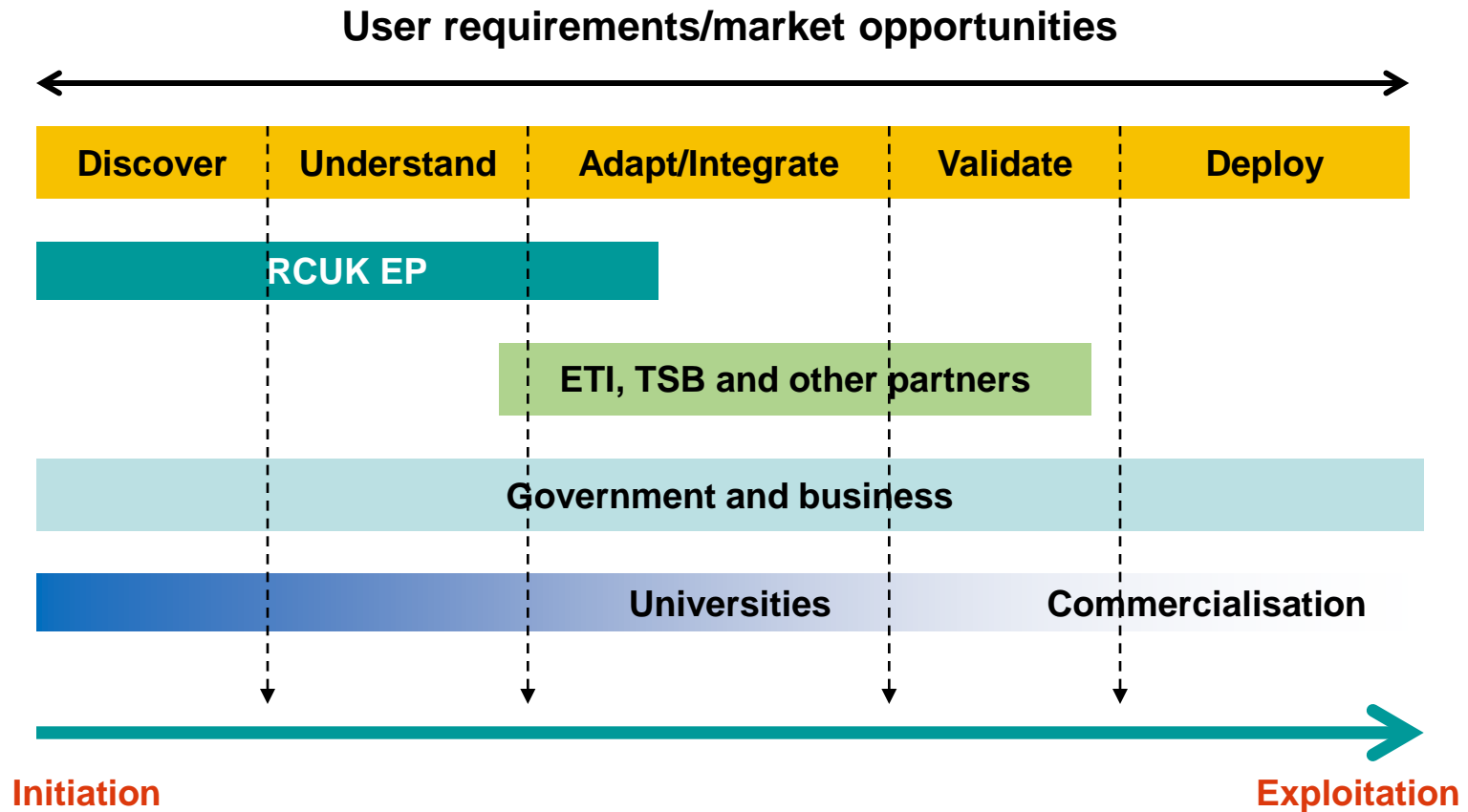
To support a **full spectrum of energy research** to help the UK meet the objectives and targets set out in the 2007 Energy White Paper.

To **work in partnership** to contribute to the research and postgraduate training needs of energy-related business and other key stakeholders.

To increase the **international visibility** and **level of international collaboration** within the UK energy research Portfolio.

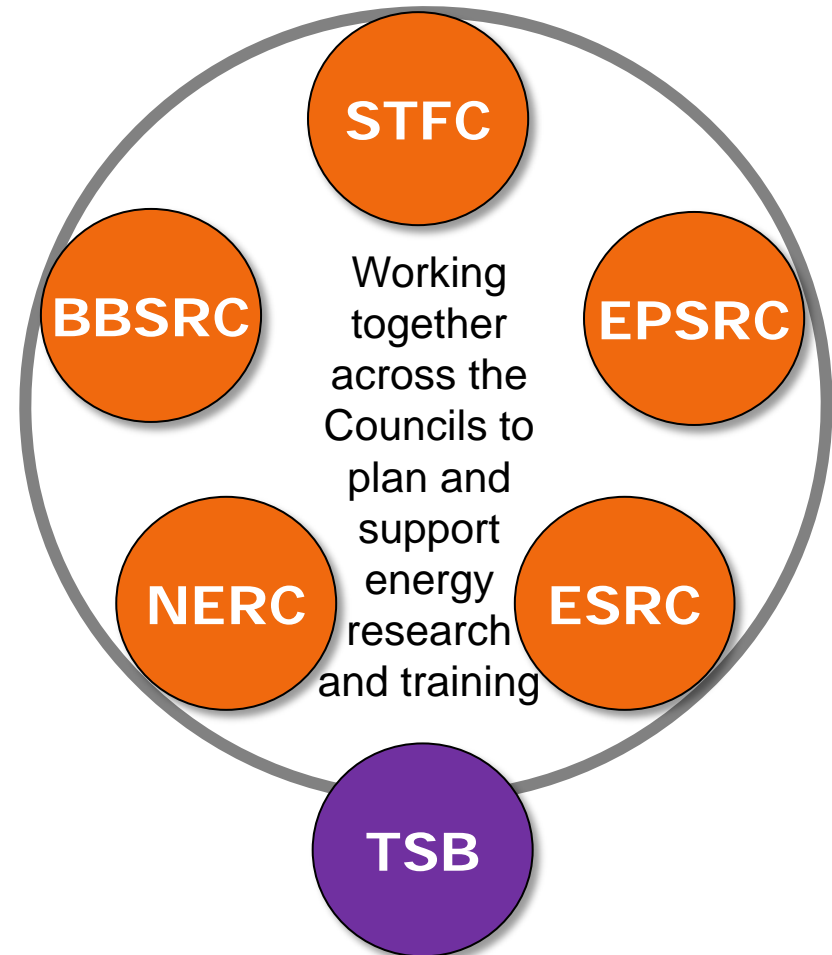
To expand **UK research capacity** in energy-related areas.

The Energy Market Place

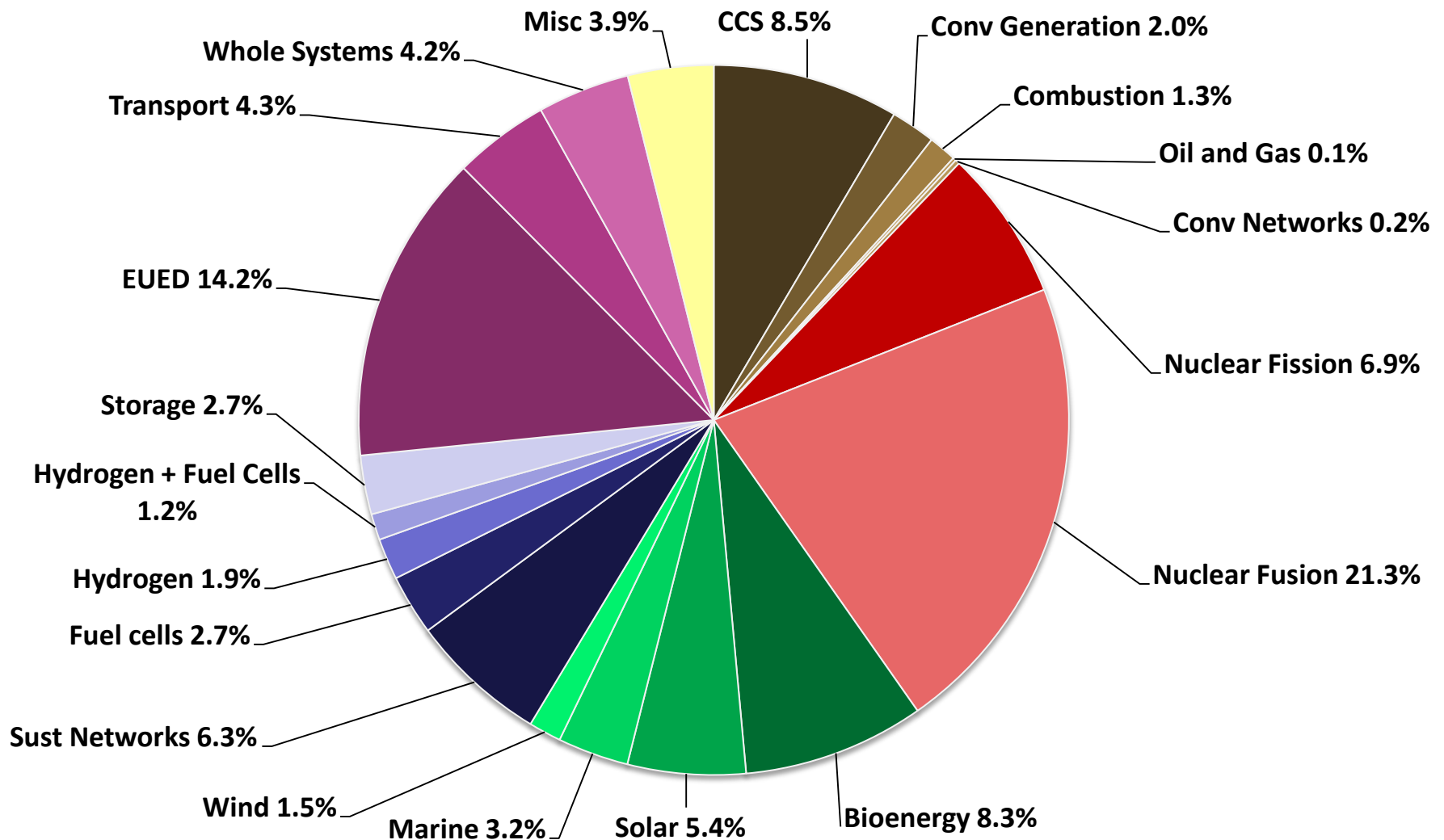


Strategy Planning and Management

- The Councils working together strategically over the last three spending reviews.
- Brings together all our energy-related activities.
- High level input from a Scientific Advisory Committee: industry, academic, TSB, DECC & BIS representation.
- Links to other Research Council priority themes such as Living with Environmental Change and Global Uncertainties.



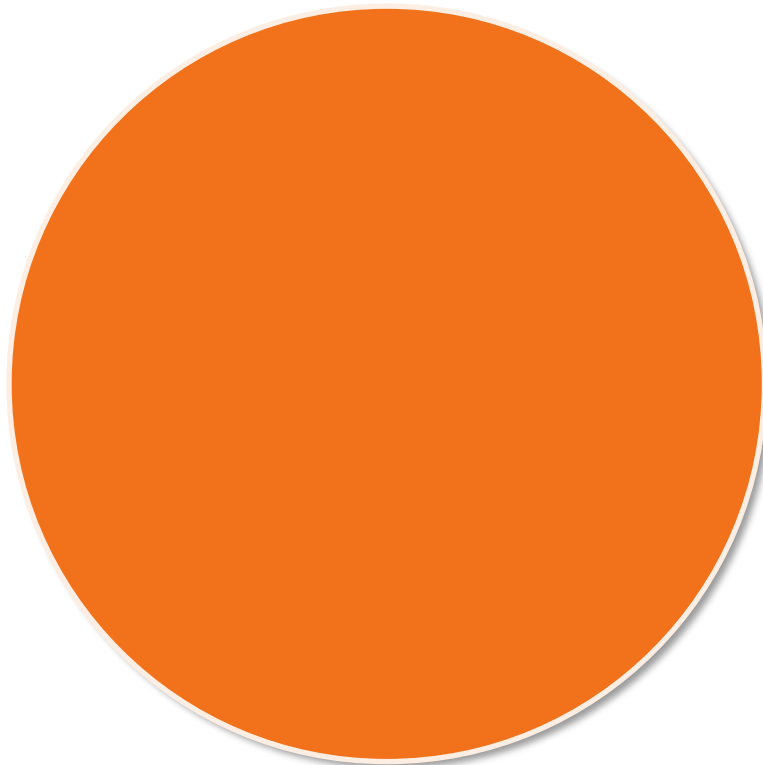
Energy Portfolio Breakdown



Total: £807M

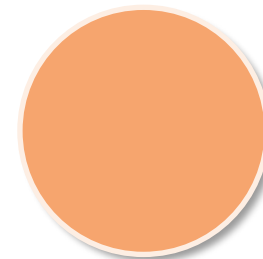
Research and Training

£869M invested in skills, research and knowledge transfer



£785M

for research grants



£84M

for doctoral training

Key Priorities 2010-15



- Reducing Energy Consumption and Demand
- Speculative Research
- Understanding Future Energy Options
- Accelerated Deployment of Alternative Energy Technologies
- Building Capacity
- Build on our major international links

Theme objectives

- **Shaping Capability** – gaining maximum value from existing investments and prioritising new research in key areas
- **Developing Leaders** – in critical areas of energy and transformative research
- **Universities** – building critical mass in areas of national importance
- **Impact/user engagement** – input into policy and regulation and co-location of upstream and downstream research
- **Overall portfolio** – potential to meet UK 2050 climate change targets

Shaping our portfolio

Action categories to shape the trajectories of our research areas

Research Area	Action
Bioenergy	Maintain
Carbon Capture Storage (CCS)	Maintain
Energy Efficiency	Grow
Hydrogen and Alternative Vectors	Reduce
Marine	Maintain
Nuclear	Maintain
Solar	Maintain
Storage	Grow
Whole Systems	Grow
Fuel cells	Maintain
Wind	Maintain
Conventional and Combustion	Reduce
Power Networks	Maintain

- £42m of support from the Energy Programme.
- Focal point for UK research on sustainable energy.
- Independent, whole-systems approach.
- Bridge between energy research and business, policymakers and international energy research community.
- Phase 3 started in May 2014

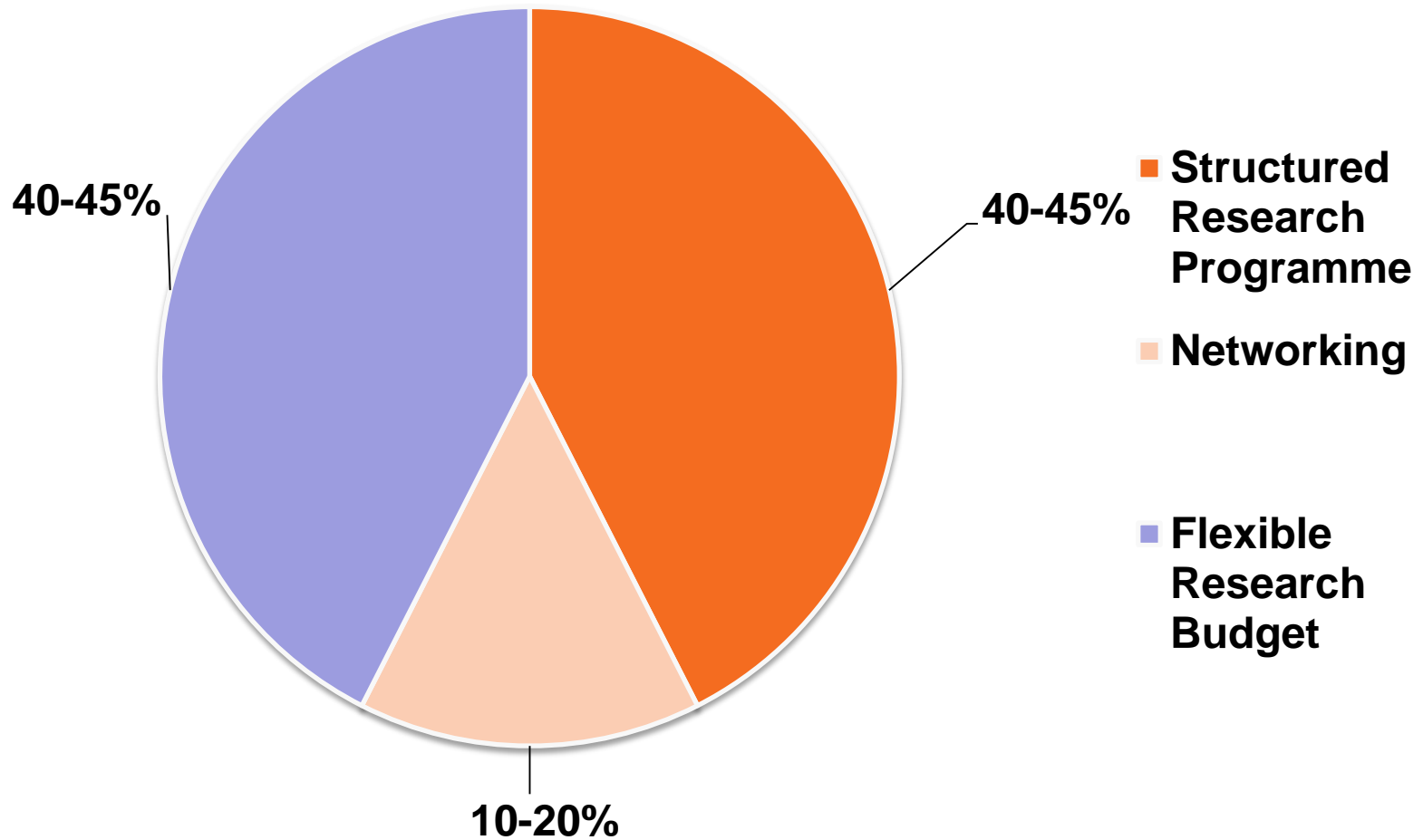


UKERC phase 3



- Strategic review of UKERC phase 2 carried out in April 2012 by the Research Councils.
- Review recommended that there should be a continuation of UKERC to phase 3, through a central hub which incorporates whole system energy research activity.
- Additional research challenges to follow on from the hub call – *Valuing Natural Capital in Low Carbon Energy Pathways Programme*
- Phase 3 award commenced May 2014

Supergen Hub model



Vision and mission for phase 3

Vision for UKERC Phase 3:

- ☞ *Whole energy systems and capabilities in an uncertain world – challenges, trade-offs and delivery.*

Updated mission:

- ☞ *UKERC – The UK Centre for excellent, interdisciplinary, whole-systems energy research and capabilities, providing an independent evidence-base for policy and business.*

UKERC phase 3 programme



UKERC programme is supported through a hub structure:

- **core function:** including core staffing, leadership and central functions to provide focal point for the whole-systems energy research community. ~20% of the available funds
- **structured research programme** ~40% of available funds
- **flexible research budget** that can be deployed quickly as the need arises ~40% of available funds

Key elements identified for phase 3



- A strongly **visionary and integrating whole-systems** work programme encouraging interdisciplinary research on the affordable, equitable and sustainable supply and use of energy
- **Authoritative and independent** research and research synthesis, providing a strong evidence base to inform policy debate, businesses and civil society within the UK and internationally
- A strong element of **research capacity building**, particularly inter-disciplinary working, to help build and strengthen whole-systems energy research in the UK
- **Co-design and co-production** of research with research users

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