Research Councils UK
Energy Programme

EPSRC Energy Team
Dr Andrew Macdonell

IMAGES Annual Project Progress Meeting
November 2016

For a Low Carbon Energy Future

Contents

Energy Theme Overview

Key Programme Objectives

Research Councils UK Energy For a Low Carbon Future

As RCUK, we invest around **£3 billion** in research each year. About **£160 million** (**5.3%**) of this is in Energy.

The goals of the energy theme are:

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

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

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.

EPSRC Engineering and Physical Sciences Research Council

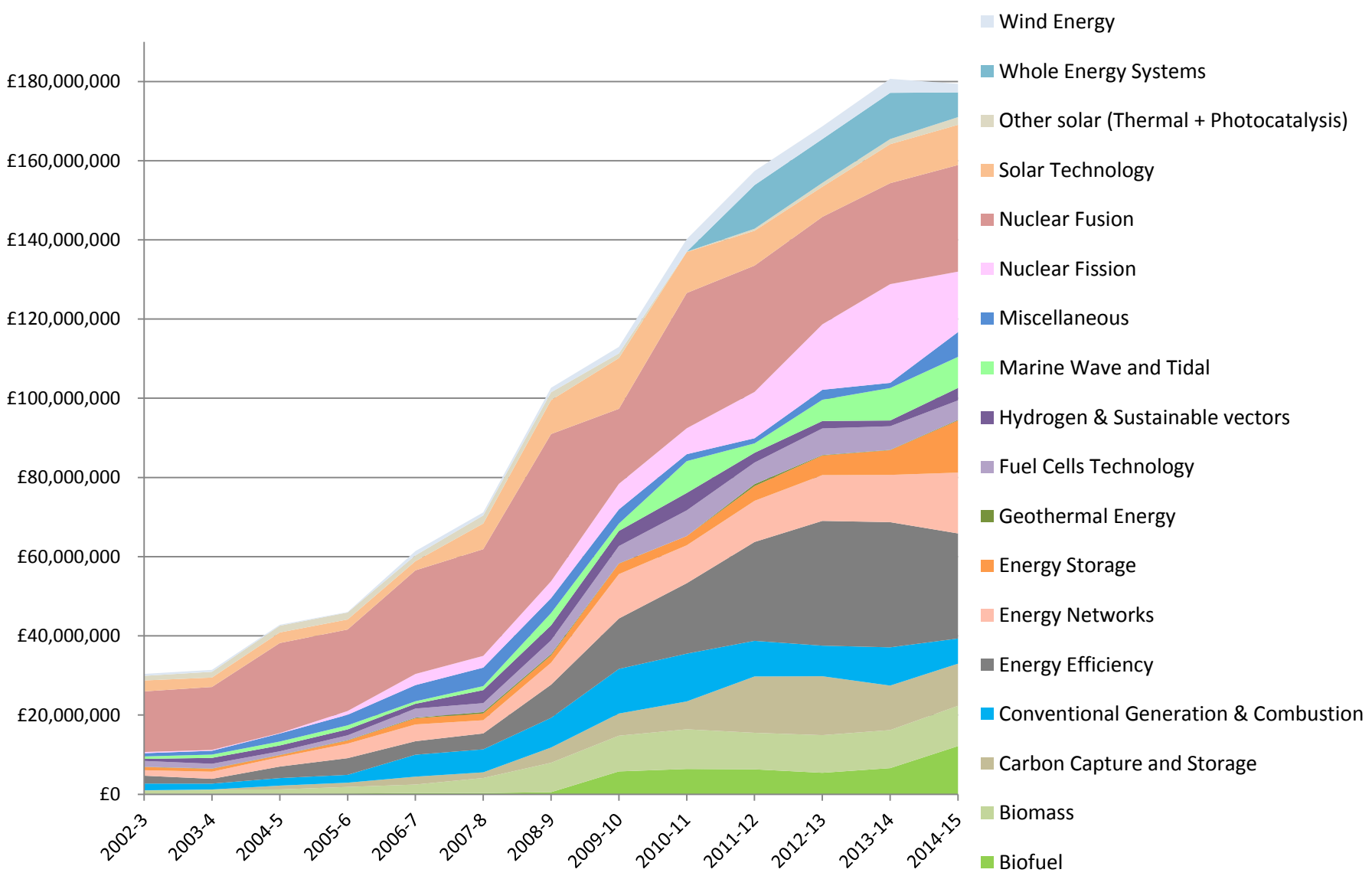
NERC SCIENCE OF THE ENVIRONMENT

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

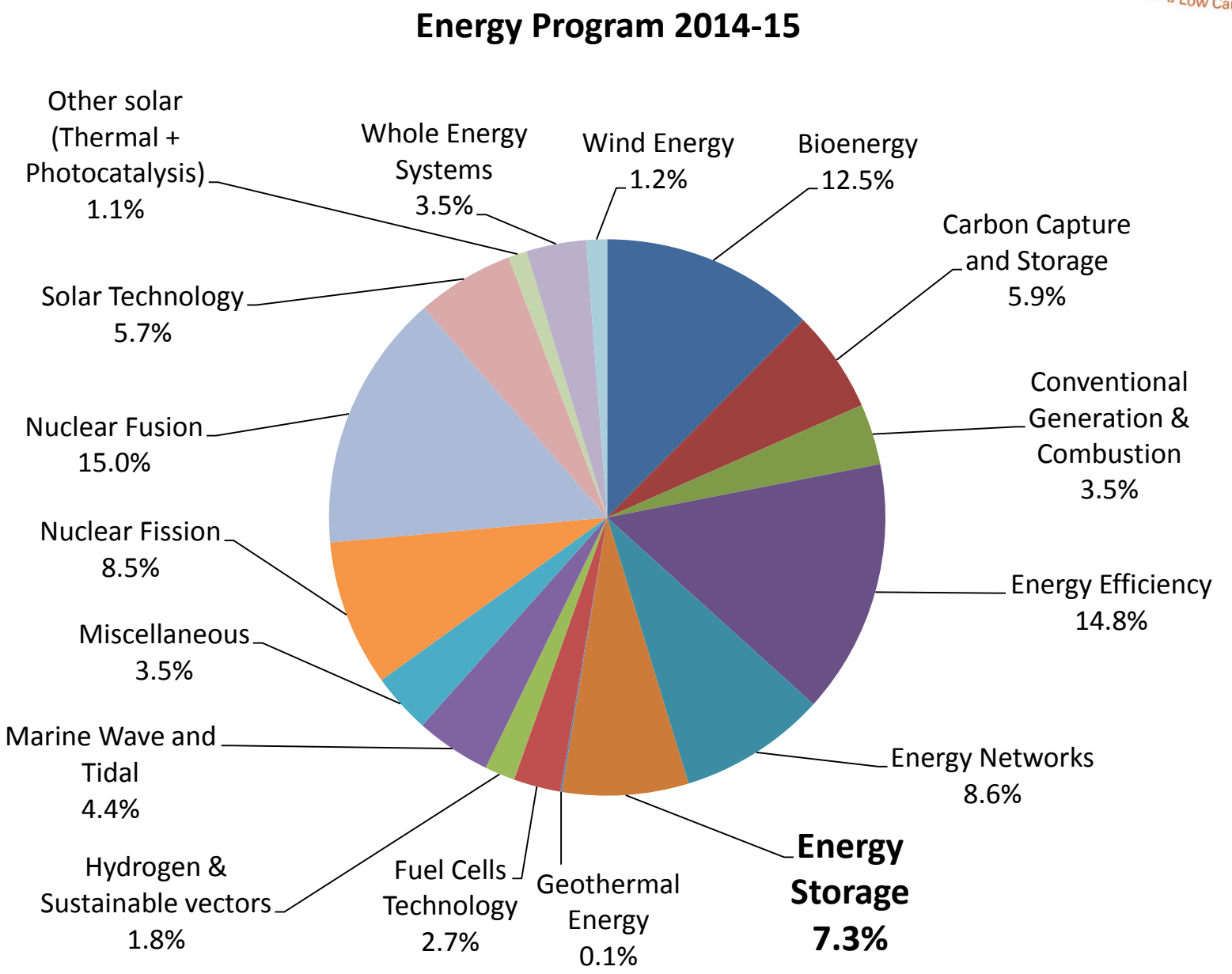
BBSRC bioscience for the future

Science & Technology Facilities Council

Annual Expenditure on energy



Energy Programme Data



Energy Storage Investments

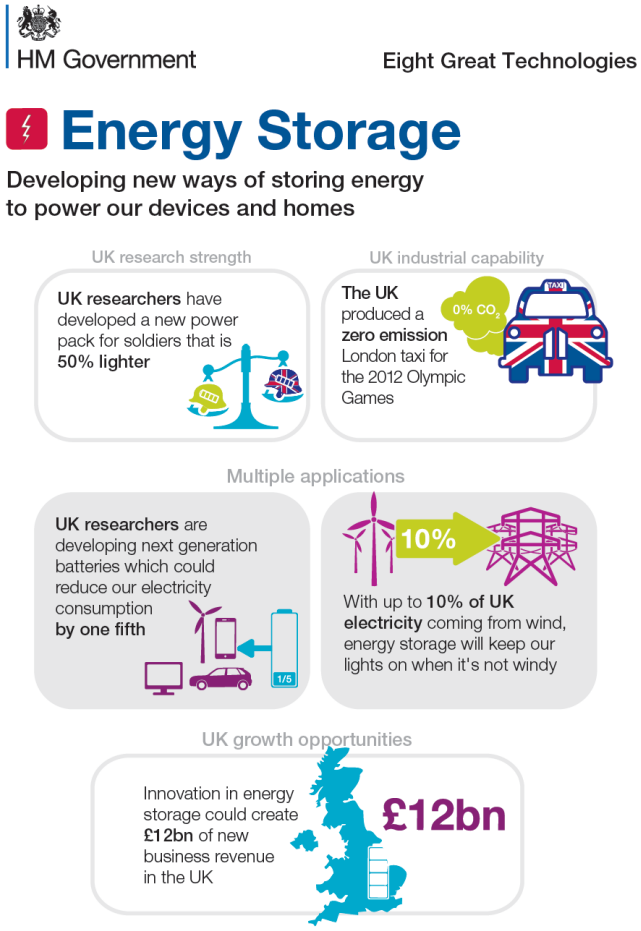
Research Councils UK Energy For a Low Carbon Future

Energy Storage was named one of the 8 Great Technologies in 2012

In 2013, we funded over **£30M** worth of Energy Storage infrastructure.

One of these was a **£5.9M** CAES project at the University of Birmingham, now led by Prof. Yulong Ding.

In 2016, we funded the **£4M** MANIFEST project, which operates across these infrastructure investments (led by Dr Jonathan Radcliffe).



Energy Storage Investments

CDT in Energy Storage and its Applications
Peter Hall – Sheffield – **£4.1M** (EP/L016818/1) – April 2014

SUPERGEN Energy Storage Hub
Peter Bruce – Oxford – **£3.9M** (EP/L019469/1) - June 2014

Energy Storage for Low Carbon Grids (Programme Grant)
Goran Strbac – Imperial – **£5.6M** (EP/L016818/1) – October 2012

ELEVATE (ELEctrochemical Vehicle Advanced TEchnology)
Rob Thring – Loughborough – **£3.3M** (EP/M009394/1) – January 2015

Integrated, Market-fit and Affordable Grid-scale Energy Storage (IMAGES)
Jihong Wang – Warwick – **£3.0M** (EP/K002228/1) – September 2012

Changes to Funding

Changes to balance of managed vs responsive

- Energy, as a Challenge theme, have typically dispersed funding through running managed calls.
- Large facilities funding is distorting the 60%-responsive/40%-managed funding balance.
- Less funding will be disbursed through targeted calls.
- The Energy Theme budget will remain about the same but a significant amount will now be disbursed through standard/responsive mode.

Implications for the research community

- Energy Theme focus:
  - Maintain large core activities.
  - Honour international commitments.
  - Significantly reduce managed calls.

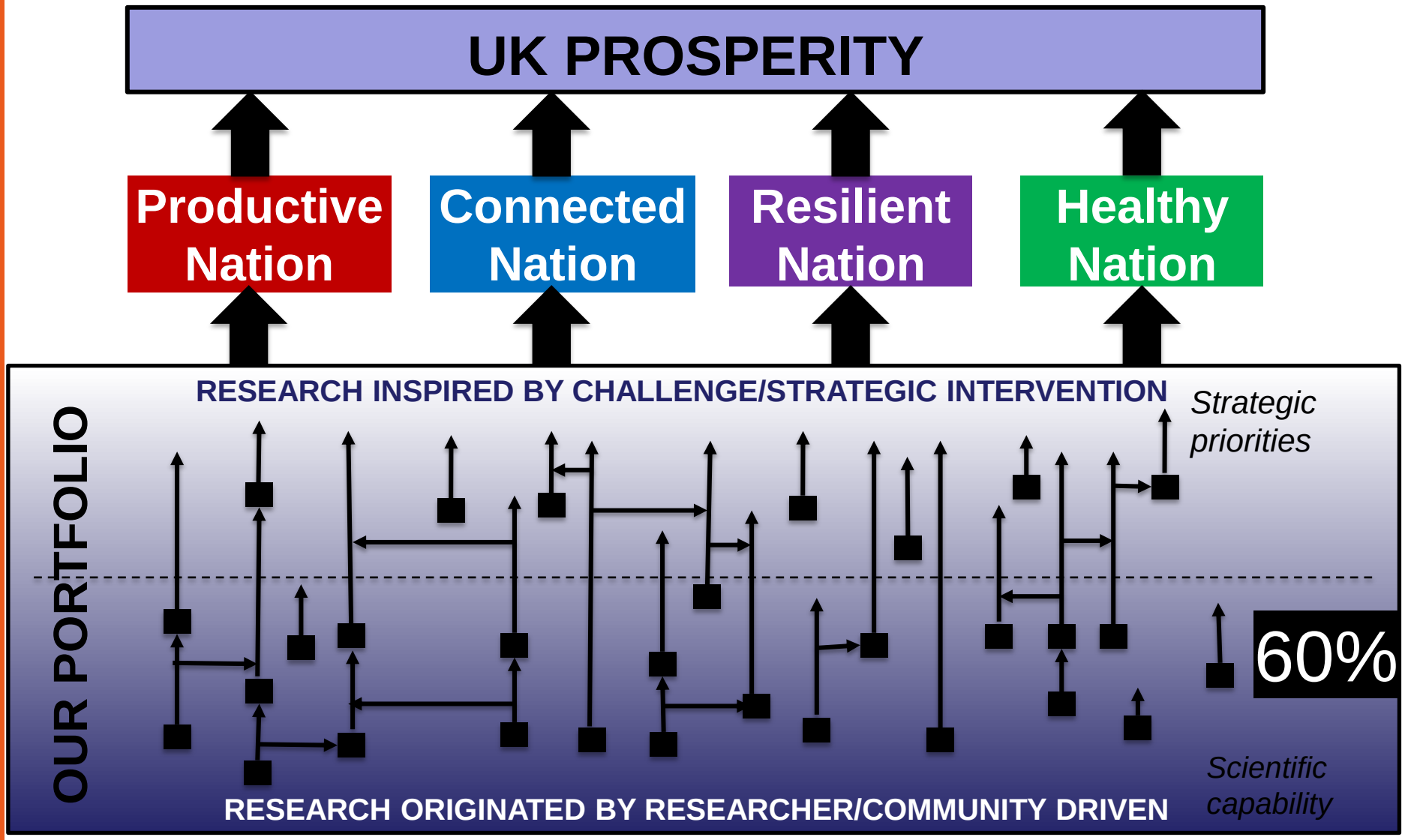
DISTINCTIVE

Centre on Innovation and Energy Demand

Implications for the research community

- Research community:
  - Plan how to build strategic research programmes through standard/responsive applications.
  - Increase demand for standard/responsive mode grants, fellowships and programme grants.
  - Engage with balancing capability to target high-priority areas.

60% community-driven ideas



Funding Opportunities

Standard/Responsive Mode

The key features of standard grant funding are:

- No closing dates - applications may be submitted at any time.
- No set limit on the value or length of the grant.
- No constraint on the field of research, providing the majority of it falls within our remit.
- International excellence and national importance, as defined by independent peer review, are the main criteria against which proposals are assessed.

Energy Fellowship Areas

Post-doctoral Fellowships	Early career Fellowships	Established career Fellowships
Bioenergy	Bioenergy	
End-use Energy Demand	End-use Energy Demand	End-use Energy Demand
	Carbon Capture and Storage	Carbon Capture and Storage
	Hydrogen and Fuel Cells	Hydrogen and Fuel Cells
Energy Networks	Energy Networks	
Energy Storage	Energy Storage	Energy Storage
	Marine Energy	Marine Energy
Nuclear Fission	Nuclear Fission	
	Offshore Wind Energy	Offshore Wind Energy
Solar Energy	Solar Energy	

Programme Grants

Programme Grants are a flexible mechanism to provide funding to world-leading research groups to address significant major research challenges.

The funding is to be used more flexibly and should be adapted in response to the evolving needs of the project.

Clearly stated research challenges, strong management structures and excellent risk-mitigation are key to a successful programme grant.

Balancing Capability

Balancing Capability

Balancing Capability aims to set priorities for the research areas we support.

In addition to the grow/maintain/reduce labels, each area will have a full strategy plan.

Our grow/maintain/reduce labels are NOT a primary criteria for standard mode applications, but should align naturally with National Importance considerations.

Je-S and Refereeing

If you have not done so recently, please consider updating your Je-S profile.

We use the information you provide to select appropriate reviewers.

Up-to-date information makes sure you get relevant reviews and your proposals get quality reviewers.

EPSRC Energy Theme

- **Dr Kathryn Magnay**
  Head of Programme
- **Dr Dan Emmerson**
  Senior Energy Manager, End Use Energy Demand (Industrial & Transport), User Engagement strategy
- **Dr Neil Bateman**
  Senior Energy Manager, Nuclear Fusion, International Strategy, Communications lead
- **Dr Louise Anderson**
  Nuclear Fission, Whole Energy Systems
- **Dr Glenn Goodall**
  SUPERGEN scheme, Marine Energy, Wind Power, End Use Energy Demand (Buildings)
- **Dr Andrew Macdonell**
  Energy Storage, Hydrogen and other Alternative Energy Vectors and Fuel Cell Technology
- **Dr Celia Yeung**
  Bioenergy, Solar, Carbon capture and storage, Conventional generation, Unconventional hydrocarbons, Geothermal.
- **Dr Kate Bowman**
  Energy Networks, Nuclear Fission