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

User requirements/market opportunities

<table>
<thead>
<tr>
<th>Discover</th>
<th>Understand</th>
<th>Adapt/Integrate</th>
<th>Validate</th>
<th>Deploy</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCUK EP</td>
<td>ETI, TSB and other partners</td>
<td>Government and business</td>
<td>Universities</td>
<td>Commercialisation</td>
</tr>
</tbody>
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Initiation ➔ Exploitation
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.
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

<table>
<thead>
<tr>
<th>Research Area</th>
<th>Action</th>
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</thead>
<tbody>
<tr>
<td>Bioenergy</td>
<td>Maintain</td>
</tr>
<tr>
<td>Carbon Capture Storage (CCS)</td>
<td>Maintain</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>Grow</td>
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<tr>
<td>Hydrogen and Alternative Vectors</td>
<td>Reduce</td>
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<tr>
<td>Marine</td>
<td>Maintain</td>
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<tr>
<td>Nuclear</td>
<td>Maintain</td>
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<tr>
<td>Solar</td>
<td>Maintain</td>
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<tr>
<td>Storage</td>
<td>Grow</td>
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<tr>
<td>Whole Systems</td>
<td>Grow</td>
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<tr>
<td>Fuel cells</td>
<td>Maintain</td>
</tr>
<tr>
<td>Wind</td>
<td>Maintain</td>
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<tr>
<td>Conventional and Combustion</td>
<td>Reduce</td>
</tr>
<tr>
<td>Power Networks</td>
<td>Maintain</td>
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</table>
UK Energy Research Centre

- £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

- 40-45% Structured Research Programme
- 10-20% Networking
- Flexible Research Budget
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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