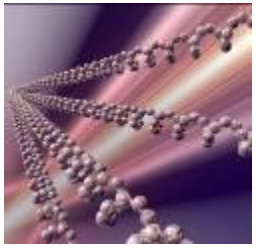





Research Councils UK

The Future of RCUK/ EPSRC Research Funding

Dr Clive Hayter, Associate Director Research Programmes, EPSRC

RESEARCH COUNCILS UK

Spending Review Allocation (1)

- Spending Review covers the period 2011/12 – 2014/15

- Research Councils **£10.4 BN** (resource)
- HEFCE **£6.7 BN** (resource)

- Total Science & Research **£18.3 BN** (resource)

RESEARCH COUNCILS UK

Spending Review Allocation (2)

- Spending Review covers the period 2011/12 – 2014/15

- Research Councils **£801 M** (capital)
- Total Science & Research **£1.8 BN** (capital)

- For EPSRC this means: **£3 BN** (resource) **£116 M** (capital)

RESEARCH COUNCILS UK

RCUK Strategic Vision

Working as individual RC and collectively we

- Provide leadership
- Shape the research landscape
- Incentivise collaboration & knowledge exchange
- Ensure that the UK gets maximum benefit
- Provide high level skills
- Develop and run the national research infrastructure

RESEARCH COUNCILS UK

Research to Address Societal Challenges

- Living With Environmental Change
- Energy
- Life-Long Health and Wellbeing
- Global Uncertainties
- Global Food Security
- Digital Economy

RESEARCH COUNCILS UK

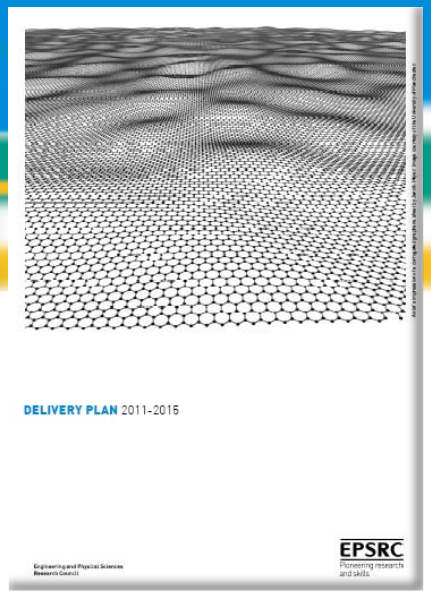
RCUK Strategic Vision

- **Relationship with the HE sector**
  - Wakeham review of fEC, Managing Demand, Allocating funding, efficiencies
- **Research**
  - Funding people, projects, training for skills, facilities and infrastructure
- **Impact**
  - Economic and societal benefits, choosing priorities, embedding impact, evidence
- **Partnerships**
  - Working with TSB, working with Government Depts., Global partnerships, Society

RESEARCH COUNCILS UK

Delivery Plans Articulate Direction

EPSRC Turning Strategy to Delivery



EPSRC
Pioneering research and skills

Transformative plans

Our Delivery Plan is based on EPSRC leadership to tackle ambitious changes in the UK research landscape to maximise the value of public investment in research.

- EPSRC will be a **research sponsor**;
- We will **shape the UK EPS research portfolio**;
- We will, where appropriate, **drive collaboration**, bringing **internationally leading** groups together to build critical mass to enable the tackling of key challenges;
- We will work with **universities to ensure they deliver impact** by embedding it into research activities;
- We will **focus on PhD quality.**

We set out three key goals that would guide us: **delivering impact**, **shaping capability**, and **developing leaders**.

EPSRC
Pioneering research and skills

Key priorities for our future: summary

Shaping research capability for the UK

- We will focus our support on the very best researchers in our areas of international strength and strategic importance to maintain the UK's outstanding research reputation and ensure we have the capabilities to respond effectively to future challenges and opportunities.

Developing skills and nurturing leaders

- We will generate high level STEM skills to support national priorities and knowledge based industries, nurturing future leaders and stimulating economic growth. We will increase the talent pool accessing our PhD support and focus on enhancing the training and development of the brightest PhD students and talented young researchers.

Delivering impact for society and the economy

- We will embed impact across all we do by integrating it into our support for excellent research and its leaders, challenging the people we support to ensure their work has the maximum benefit for the UK.

Solving global challenges

- We will focus more of our research on solving some of the biggest challenges facing the UK including building a strong, resilient economy, producing sustainable low-carbon energy, and creating a safe, healthy society. To do this, research and essential skills in manufacturing, energy and the digital economy will be our key priorities.

Delivering Impact

We will drive a cultural change within the UK science base to create a research and training environment that encourages and enables impact from excellence for the benefit of the UK

- Our targeted Strategic Partnership policy will continue for our major investments. We will require strong collaborative links which create opportunities for academic researchers, business & wider beneficiaries to work together;
- We will provide better access to the research we fund by opening up our data and knowledge and making it more accessible for accelerated exploitation;
- Research exploitation will become normal business.

We will not directly fund impact ourselves; there will be no separate funding schemes for exploitation activities.

Shaping capability

To ensure high quality research now and into the future given global competition and increased investment elsewhere:

- Reduction of the breadth of our portfolio in favour of areas of strength or national importance;
- Where appropriate, more of our investments will maximise the benefits of having a critical mass of people and/or research resources tackling key challenges;
- Co-location of both upstream and downstream research activity;
- More coordination and collaboration between universities rather than competition;
- Continuity of support for the very best people and teams, with more UK researchers being highly cited;
- Our decision making to be based on excellence, strategic importance and capacity.

EPSRC
Pioneering research and skills

Developing Leaders

We will develop leaders, increasing the number of world-leading scientists and engineers working in the UK to maintain the national capability to respond to future challenges and opportunities

- We will commit greater support to **people not projects**, encouraging yet more creativity and developing critical mass/teams around leaders;
- We will increase the share of resources held by leading researchers, and maintain/increase the number of those leaders;
- Focus development on a subset of those researchers with the strongest potential to be leaders – we will identify them at an early stage and support them as they develop.

EPSRC
Pioneering research and skills

Work in progress

- Addressing the challenges (especially cultural) of moving from a 'funder' to a '**sponsor**';
- **How** we get an appropriate balance between **different kinds** of leaders;
- Agreeing **selection criteria** and **evidence** to identify leaders;
- **How** we will shape capability – the process will involve **peer review**, **community/international advice** & **evidence** such as research landscapes, international reviews and a variety of metrics;
  - Shaping capability will need to involve **actively stopping** things, not just growing/stimulating areas - decisions on what to stop will not be taken in isolation from national need or other RCs;
  - Shaping must happen at an **appropriate level** in order to produce strategic effects;

EPSRC
Pioneering research and skills

Solving global challenges

Engineering and the physical sciences are **the key to solving the biggest challenges** facing the UK and the rest of the world. We need a strong, resilient economy, sustainable low-carbon energy, and a safe, healthy society. To create this, EPSRC is pioneering new ideas in manufacturing, energy and the digital economy together with a wide range of partners including RCUK, the Technology Strategy Board, government, business and the third sector.

Manufacturing the future

- **Create a strong, resilient economy** by supporting UK industry sectors such as aerospace, pharmaceuticals, electronics and high performance engineering. *"Without EPSRC funded students, the Trent 900 engine wouldn't have flown."* – Colin Small, Director of Engineering, Rolls-Royce.
- **Pioneer sustainable manufacturing** moving to a whole lifecycle systems approach which is low carbon, low pollution, low waste, and uses fewer natural resources. *A new carbon-negative cement is now close to market thanks to Novacem, a spinout from EPSRC funded research at Imperial College London.*
- **Develop manufacturing at the frontier of** transformative technologies that will define future industrial competitiveness such as synthetic biology, nanotechnology and advanced ICT. For example, *EPSRC supported plastic electronics from discovery through to market.*
- Our future priorities include: **building national capability** in growth areas through our *Centres for Innovative Manufacturing* and advanced technology skills, developing **manufacturing leadership** with more researchers that have a global profile and greater influence on industry practice and policy, and increasing **technology translation** and **impact** through strategic partnership with business and the TSB.

EPSRC
Pioneering research and skills

Solving Global Challenges

Energy

- EPSRC leads the RCUK Energy Programme, working with **over 500 partners,** including EDF, E.ON, and DECC, to address the whole energy system. We supported the research behind the **world's first fully operational hydro-electric wave energy device**, and pioneered new research centres tackling challenges such as **wind, solar** and **power networks.**

- Our future priorities are to support research and training integrated with business to: accelerate the availability and deployment of **renewable energy**; make **carbon capture and storage** available for large scale usage; maximise **energy efficiency,** and support **nuclear fusion research** for our long term future.

Healthcare Technologies

- A growing, ageing and increasingly overweight UK population presents challenges to the public health bill. Our Health care technologies theme, building on previous investment, will aim to build critical mass and strengthen translation pathways against this backdrop.

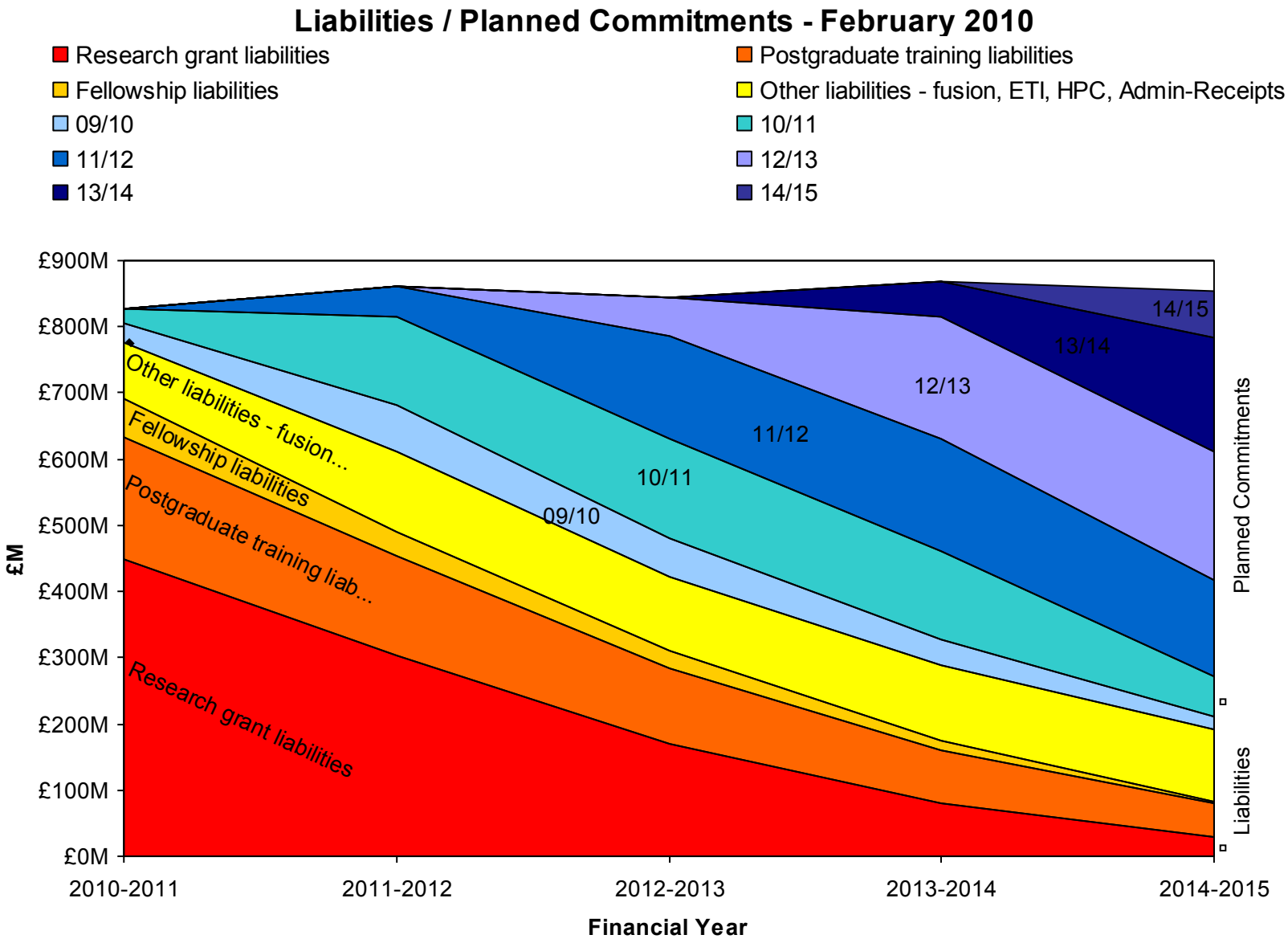
Digital economy

- The UK must exploit **digital technologies to build our future economy**, develop services, and create an inclusive and participative society. The RCUK Digital Economy Programme, led by EPSRC, has created the research foundation for this, building partnerships with **over 400 organisations**, including **Aardman, Microsoft, First Group, BT, NHS Direct, Jaguar Land Rover, and IBM.**

- Our future priorities will **influence policy in crucial areas** where services can be transformed by digital innovation, **develop new business models**, **grow emerging industries**, and enable a **proactive** and **participative society**.

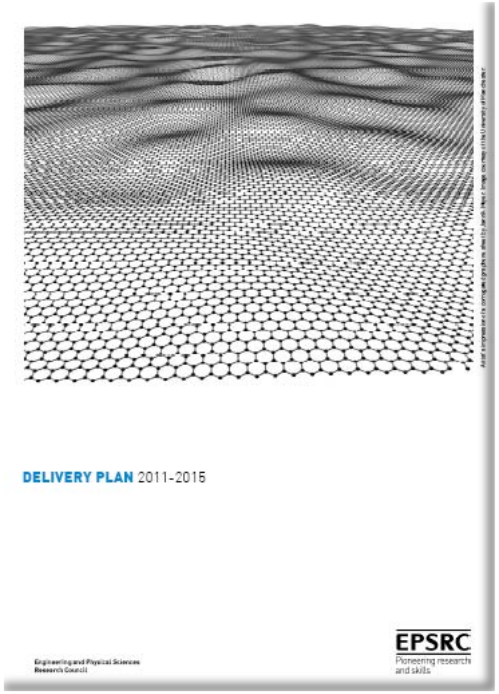
EPSRC
Pioneering research and skills

The realities of long term commitments



Planned Expenditure by Theme 2011/12 – 2014/15

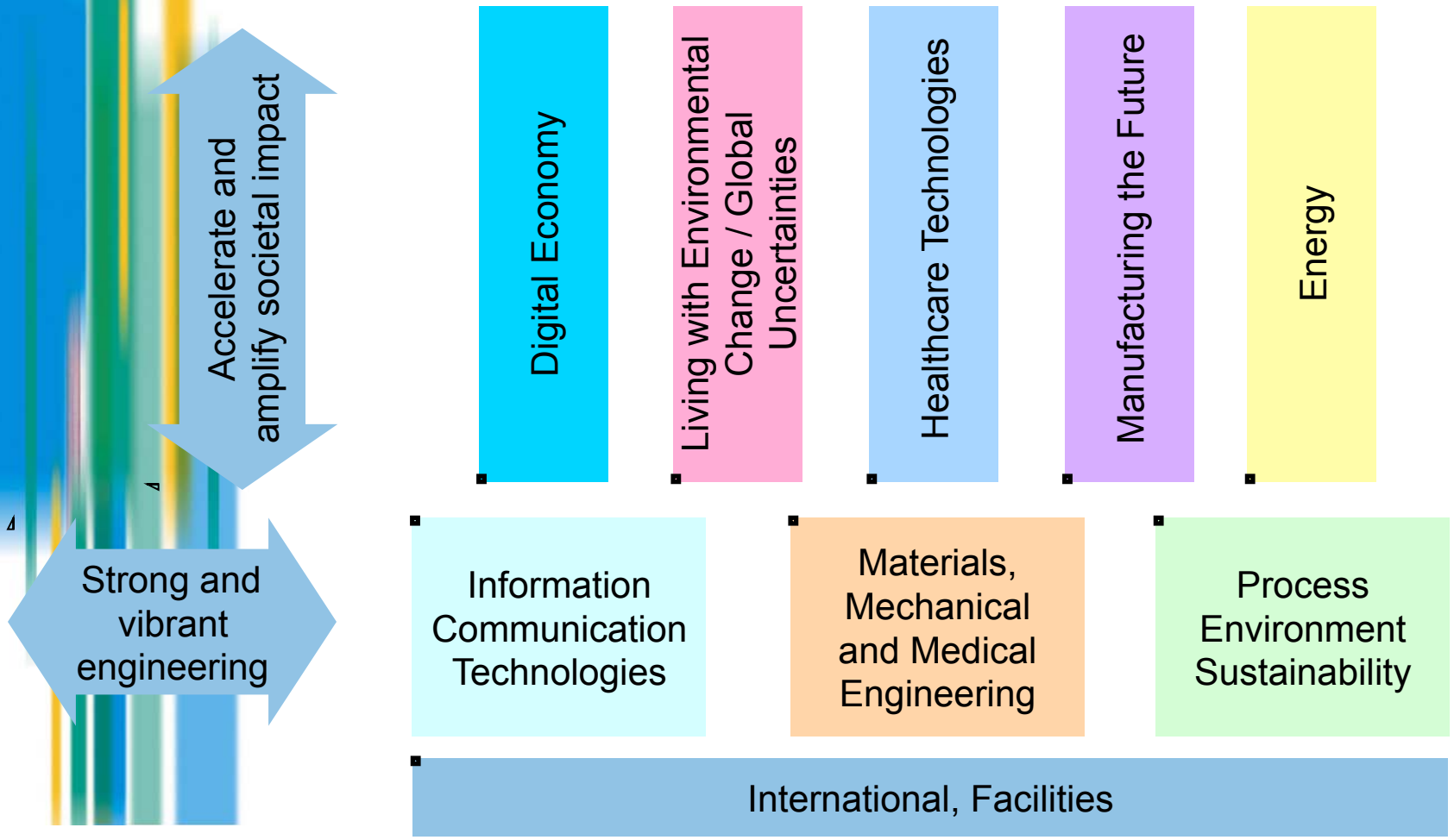
Resource	Allocation / £m
Manufacturing	322
Energy	439
Digital Economy	106
Healthcare Tech.	304
Others (LWEC, GU)	68
National Capability	1645
Total Programme*	3172



EPSRC
Pioneering research and skills

*Total includes, programme depreciation, ETI and operations expenditure
For full notes see p 21-22: http://www.epsrc.ac.uk/plans/approach/deliveryplan/Pages/default.aspx

EPSRC Support for Engineering



EPSRC
Pioneering research and skills

Shaping Engineering Capability

- **Review of Ground & Structural Engineering (2009)**
  Implementation: call for networks in the grand challenge areas identified in the review
- **ICT Research - The Next Decade (2010)**
  Workshop held in October 2010, with funding allocated for proposals which build on this and help shape the portfolio
- **Systems Engineering Review (2010)**
  Community workshop 15 February 2011
- **Review of chemistry/chemical engineering interface (Current)**
  impact of prior initiatives and the current health of the interface
- **Review of Mechanical Engineering (Current)**
  Inviting opinions from UK researchers, industry and overseas researchers.
  Gathering factual evidence eg on recruitment/retention from heads of departments.
- **Challenging Engineering & Dream Fellowships**

EPSRC
Pioneering research and skills

Thank you for listening

EPSRC
Pioneering research and skills