

EP SRC LEADERS RESEARCH  
CAPABILITY LEADERS RESEARCH  
SIMPACT LEADERS RESEARCH  
FOCUS SKILLS LEADERS RESEARCH  
FOCUS FUTURE CREATIVITY LEADERS RESEARCH  
LEADERS CHALLENGES LEADERS RESEARCH  
PARTNERSHIP LEADERS RESEARCH  
EXCELLENCE UK

**STRATEGIC PLAN 2010**

# ABOUT US

The Engineering and Physical Sciences Research Council is at the heart of discovery and innovation.

Our research saves lives, creates prosperity, protects the environment and inspires future generations.

Our research ranges from physics, chemistry and mathematics to materials, computing, engineering and high value manufacturing.

EPSRC is pioneering research and skills for our future.

## KEY FACTS

WE SUPPORT AROUND

**8,000**

ACADEMIC RESEARCHERS.

**12,300**

WE HAVE SUPPORTED

HIGHLY SKILLED POSTGRADUATES TO INDUSTRY AND THE PUBLIC SECTOR OVER THE PAST DECADE.

OUR £4BN PORTFOLIO HAS LEVERAGED AN ADDITIONAL

**£700m**

IN BUSINESS AND COLLABORATOR CONTRIBUTIONS.

WE COLLABORATE WITH MORE THAN

**2,300**

COMPANIES AND MORE THAN

**100**

PUBLIC BODIES INCLUDING 12 GOVERNMENT DEPARTMENTS.

AROUND

**43%**

OF OUR PORTFOLIO IS MULTIDISCIPLINARY.

SECTORS DEPENDENT ON ENGINEERING AND THE PHYSICAL SCIENCES ACCOUNT FOR

**30%**

OF GDP AND

**88%**

OF MANUFACTURING EXPORTS.

# THE HEART OF DISCOVERY & INNOVATION

**Science and engineering drives the global economy in the 21st century, and EPSRC is at the heart of it. It is key to tackling challenges such as energy security, climate change, our ageing population, crime and economic resilience.**

**EPSRC is generating the fundamental knowledge and skilled people essential to business, government and other research organisations.**

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**Our strategy is to deliver greater impact than ever before. It will focus research on the needs of the nation and commit greater support to those scientists and engineers who are world-leading.**

We are building on strong tradition. EPSRC has fostered a UK research base that is a source of national pride and one that affords us a position of global responsibility.

The challenges we must tackle do not respect geographical, political or scientific boundaries – and our strategy will allow the UK research base to take a multidisciplinary and international approach to solving them.

Sustained investment in science and engineering provides the UK with the capability to tackle the challenges it faces today, and the unknown challenges it will face tomorrow.

Past investments are having impact today, in the form of new technologies such as renewable energy devices, improved medical diagnostics and faster digital communications.

Future investment is vital to sustaining the UK's great tradition of pioneering science, our ability to tackle grand challenges, and our capacity to develop and capitalise on new opportunities.

In addition to these direct benefits, EPSRC research sustains discovery and innovation across the entire research landscape. It fuels further investigation in bio-science, medicine and environmental sciences, within UK industry and within major national agencies such as the NHS.

The UK has the brilliant minds that can change the world. EPSRC fosters their ambition, innovation and adventure, and removes barriers to their success.

**OUR STRATEGY  
FOR THE NEXT THREE  
TO FIVE YEARS**

**EPSRC WILL DELIVER CHANGE THROUGH**

# **THREE CLEAR GOALS**

## **DELIVERING IMPACT**

**EPSRC will ensure excellent research and talented people deliver maximum impact for the health, prosperity and sustainability of the UK. We will build strong partnerships with organisations that can capitalise on our research and inform our direction. We will promote excellence and impact, and ensure it is visible to all.**

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# SHAPING CAPABILITY

**EPSRC will shape the research base to ensure it delivers high quality research for the UK, both now and in the future. Our research portfolio will be focused on the strategic needs of the nation, such as green technologies and high-value manufacturing, and will retain the capability to tackle future challenges and capitalise on new opportunities. We will set the bar high, stimulate creativity and reward ambition.**

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# DEVELOPING LEADERS

**We will commit greater support to the world-leading individuals who are delivering the highest quality research to meet UK and global priorities. We will create an environment that supports them throughout their careers and allows others to benefit from their ability. We will foster their ambition and adventure and ensure they are connected with the best, wherever and whoever they are in the world.**

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EPSRC's Strategic Plan 2006 provided a new strategic direction allowing us, in partnership with the research community, to address evolving 21st century challenges. It focused on building stronger partnerships, increasing international engagement, empowering those we fund and encouraging greater impact.

Through it we have developed significant capability in our priority themes of Energy, Next Generation Healthcare, Nanoscience and Digital Economy, and delivered on the ambition's set out in the Government's Science and Investment Framework 2004 - 2014.

| 2003

| 2004

| 2005

| 2006

| 2007

## 2003 A WAVE OF INSPIRATION

With EPSRC support, Professor Trevor Whittaker and Dr Matt Folley at Queen's University Belfast develop the innovative wave energy converter, Oyster. Aquamarine Power Limited formed in 2005 to commercialise the technology.

## 2004 OPENING THE IDEAS FACTORY

EPSRC's Ideas Factory began life with one aim – to provide a new dimension in problem solving. Now, it is the envy of the world. The intensive five-day workshops have created novel solutions to tackling gun crime, increasing UK productivity and giving mental health patients greater independence.

## 2005 MEASURE FOR MEASURE

Building on two decades of excellence, Strathclyde University and King's College London, are awarded further EPSRC support to establish a centre for nanometrology research – the ability to measure and characterise molecules – and explore its use in healthcare.

The Oyster™



EPSRC's new Strategic Plan 2010 has been developed following broad consultation with our partners and communities. It has been informed by government strategy, the wider international research landscape and the global economic situation. It will allow us to continue to deliver the leading science and engineering research and skills to sustain UK innovation.

In 2010/11, we will develop a more detailed Delivery Plan in conjunction with our partners. This will set out how our strategy will be delivered across our portfolio, providing a blueprint for continued success.

2008

2009

2010

2020

2030

## IMPACT/2010 PLASTIC FANTASTIC

Plastic Logic launches an eReader based on its plastic electronics technology. Lightweight, flexible and robust, the QUE proReader moves the world closer to digital paper. With facilities in Cambridge and worldwide, Plastic Logic is keeping the UK at the cutting edge of plastic electronics technology – a market estimated to grow to \$30bn by 2015.

## IMPACT/2008 CAPTURING THE LIMELIGHT

Professor Colin Humphreys appears on the world's media, including the BBC and in the New York Times, to talk about a lighting revolution. His EPSRC-supported team are developing a £2 light bulb that could slash energy consumption and cut carbon emissions by 23m tonnes in the UK alone.



## IMPACT/2010 MARINE ENERGY MILESTONE

The award winning Oyster – developed by Aquamarine Power Ltd and based on EPSRC research – is connected to the grid. Once testing of the wave power technology is complete, it is hoped commercial 'Oyster farms' will be powering homes by 2013.

## IMPACT/2008 TACKLING GUN CRIME

New tagging technology is developed to tackle gun crime. Tiny pollen tags, invisible to the naked eye, are designed to be coated onto gun cartridges and then attach themselves to the hands of anyone handling them – establishing a robust forensic link between a cartridge fired during a crime and whoever handled it. The research team, from Brighton, Brunel, Cranfield, Surrey and York Universities, was created at an Ideas Factory.

## IMPACT/2009 SMART TATTOOS

Smart tattoos that allow diabetics to monitor blood glucose levels move closer to reality thanks to EPSRC-supported research at Strathclyde and King's College London. The sensor, inserted beneath the skin, increases in fluorescence intensity in the presence of glucose and a user could measure accurate levels with a pocket-sized reader.

2008

## BRITAIN'S BRIGHT FUTURE

EPSRC creates 52 new PhD training centres to tackle the biggest problems facing Britain – such as climate change, strengthening industry and combating cyber-crime. The £300m investment is a bold, new approach to training and will provide the research leaders with the skills, knowledge and confidence to tackle the evolving challenges of the 21st century.

# OUR STRATEGY

will keep the UK at the heart of global research and innovation. It will provide the knowledge and skills vital to a healthy, sustainable and prosperous society.

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**Our plan is ambitious. We will increase the number of world-leading scientists and engineers working in the UK and will encourage them to be more adventurous than ever before. We will create a research environment that gives UK talent the freedom, flexibility and tools to succeed.**

We begin on a strong footing. In international bench-marking, EPSRC research is judged to be world leading. We will at least maintain, and seek to increase, the UK's international research standing as judged by a set of measures of excellence.

Our plan is also a commitment. We will deliver a research base and a skills portfolio that allows the UK to meet challenges head on, both now and in the future. In a time of economic uncertainty, we will deliver greater value from our investment than ever before. We have already pioneered new ways to stimulate research and removed barriers to multidisciplinary collaboration. Our Ideas Factory concept has applied new thinking to issues such as gun crime, security and productivity.

In future, we will increase the number of leading research groups working on strategic challenges facing the UK and deliver new technological solutions to these issues. We will increase the levels of both multidisciplinary research and international collaboration involving the UK's leading research groups. We will ensure a greater proportion of our portfolio supports transformative research.

We will be more active in shaping the research landscape - our new Centres for Doctoral Training (CDTs) are one example of this - and we will take more action like this in future. Launched in 2008, CDTs represent a new model of PhD training that will create researchers with the confidence, the breadth of knowledge and the creativity to lead the world - whether that be in a university, a leading company or political office.

We will deliver a balanced skills portfolio to avoid systemic skills shortages in the UK and increase the satisfaction of both students and their employers.

We are under no illusion about the task ahead of us and success will not be achieved by EPSRC alone. We will build stronger partnerships with universities, industry and others, and we will work together with a shared sense of purpose to develop priorities.

We will face, and we will take, the difficult decisions required to achieve success.

Now, we must move forward with a determination to build on the past, deliver change for the future and create a stronger, healthier and prosperous UK.

**EPSRC's Delivery Plan is set to be launched in 2010/11. It will be developed in consultation with the research community and our partners and will set out how EPSRC's strategy will be implemented across our portfolio.**

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EPSRC is the main UK government agency for funding high-quality basic, strategic and applied research and related postgraduate training in engineering and the physical sciences, to help the nation exploit the next generation of technological change. It invests more than £800 million a year in a broad range of subjects – from mathematics to materials science and from information technology to structural engineering.