The Industrial Strategy Challenge Fund

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[Official]
Overview

1. Industrial Strategy & “the money”
2. First wave of challenges
3. Latest challenges just announced
4. Next steps
Creating an economy that boosts productivity and earning power throughout the UK.
Industrial Strategy Grand Challenges

- AI and Data Economy
- Healthy Ageing
- Clean Growth
- Future of Mobility
£31bn National Productivity Investment Fund (NPIF) increased in Autumn Budget 2017

- £7bn R&D Funding (over four years to FY21/22)
- Industrial Strategy Challenge Fund (£TBC over four years to FY21/22)
- Innovation, Applied Science & Research (£TBC over four years to FY21/22)
NPIF Skills

• **£250M** over the next four years to continue to build the pipeline of high-skilled research talent
  • Including £30m for Knowledge Transfer Partnerships

• **1,000 PhD** places and support for new fellowships for early and mid-career researchers aligned to the Industrial Strategy

• Supplemented with targeted investment to attract global talent from overseas to the UK, helping to maintain the UK’s position as a world-leader in science and research
  • **Ernest Rutherford Fund** – supporting fellowships from early-career and senior researchers from the developed world and from emerging research powerhouses such as India, China, Brazil and Mexico
Industrial Strategy Challenge Fund

• Builds on the UK’s world-class research base and delivers the science that business needs to transform existing industries and create new ones

• Accelerates commercial exploitation of the most exciting technologies the UK has to offer the world to ensure that scientific investment truly delivers economic impact, jobs and growth right across the country

• Programmes delivered by the fund will be industry-led and powered by multi-disciplinary research and business-academic collaboration

• Delivered by Innovate UK and Research Councils UK, and eventually UK Research and Innovation, the single voice for the UK’s research and innovation landscape
First wave of challenges
First Wave of Challenges (1 of 2)

- £181M to develop first-of-a-kind technologies for the manufacture of medicines to accelerate patient access to new drugs and treatments
- £93m to develop AI and Robotic systems that can be deployed in extreme environments such as occur in off-shore energy, nuclear energy, space and deep mining
- £246m to develop world leading batteries, designed and manufactured in the UK, to fully exploit the industrial opportunity of vehicle electrification

Delivered by Innovate UK
First Wave of Challenges (2 of 2)

- £38M to develop the AI and control systems need to drive vehicles autonomously through complex environments
- £26M to develop the next generation of affordable light-weight composite materials for use in aerospace applications
- £99M to develop next generation launch technologies and manufacturing and testing capabilities that will allow the UK to construct satellites and deliver payloads into orbit
Example: Faraday Battery Challenge

- EPSRC: Application-Led Research, £80m
- Innovate UK: Collaborative Research and Development, £88m
- APC: Demonstration and Testing Capabilities, £78m

Industrialisation and Secure overseas investment in the UK

Delivered by Innovate UK
Latest challenges
[Stop Press]
[£725m funding just announced!]
The next wave of the Challenge Fund

- Transforming construction
- Data to early diagnosis & precision medicine
- Transforming food production
- Next generation services
- Energy revolution
- Healthy ageing
- Audience of the future
- Quantum technology

Delivered by Innovate UK
How the ISCF challenges fit with the Industrial Strategy Grand Challenges

**Clean growth**
- Energy revolution
- Transforming construction
- Transforming food production

**Healthy ageing**
- Medicines manufacturing
- Data to early diagnosis and precision medicine
- Healthy ageing

**Future of mobility**
- Faraday battery challenge
- Extreme robotics
- National space test facility

**Artificial intelligence and data economy**

Audience of the future / Next generation services (pioneer) / Quantum technology (pioneer)
Data to early diagnosis and precision medicine –

The challenge is to combine the wealth of data created by UK researchers with real world evidence from our health service. That will allow industry to create new products and services that will diagnose diseases earlier and help clinicians choose the best treatment for individual patients. This will save lives and set the UK at the forefront of a growing global market in diagnostics worth $217bn in 2016.
Healthy Ageing

The challenge is to develop new products and services that offer choice, meet their aspirations and through better, more effective care, support an independent lifestyle as they age. By working together, the government and industry can address the challenges of ageing whilst capturing a growing global market.
The challenge is that our food needs to be much more efficient and sustainable. By using precision technologies we can make that a reality: transform food production while reducing emissions, pollution, waste, and soil erosion. By putting the UK at the forefront of this global revolution in farming, we will delivering benefits to farmers, the environment and consumers while driving growth, jobs and exports.
Pioneer funding for Quantum

A new set of products from medical devices to sensors and safer communication systems may be possible using the emerging physical science known as quantum technology. The potential is huge but still largely in the lab environment. Pioneer funding will bring new disruptive companies together with existing businesses to understand how this emerging technology can be turned into products that will underpin industry in the future.
Next Generation Services

Pioneer funding will help service industries to identify how application of these technologies can transform their operations. This will help to set UK service industries at the forefront of developing and using innovations.
Audience of the future

The challenge is to bring creative companies, researchers and technologists together to create striking new experiences that are accessible to the general public. This can create the next generation products, services and experiences that will capture the world’s attention and position the UK as the global leader in immersive technologies.
Prospering from the energy revolution

For the majority of our energy to be clean and affordable, we need much more intelligent systems. Smart systems can link energy supply, storage and use, and join up power, heating and transport – to dramatically increase efficiency. By developing these world-leading systems in the UK, we can cut bills while creating high value jobs for the future.
Transforming construction (up to £170m)

The challenge is to transform construction so that we can create affordable places to live and work that are safer, healthier and use less energy. By taking a lead in the UK, we can increase our ability to export. Global demand for efficient buildings is rising rapidly, driven by the pressures of urbanisation, affordability, and the need to cut emissions.
The future
Engagement workshops

Industrial Strategy consultation closed

Jan-Mar 2017

Apr-Jun 2017

Jul-Sep 2017

Oct-Dec 2017

Jan-Mar 2018

Apr-Jun 2018

Announced first challenges in March

First Wave of funding Announced

Competitions for for first wave of challenges

Engagement about future years

Second wave Challenges

Scaling first wave of challenges

Second wave competitions for FY18/19

UK Research and Innovation

UK Research and Innovation

Delivered by Innovate UK
What is a challenge?

• It is a very specific, quantified industrial challenge and will unlock benefit elsewhere.

• An example of a clear articulated challenge could be:

To deliver a 30% increase in agricultural productivity, double growth and exports in the advanced agriculture technology sector by 2025 and significantly reduce environmental impacts.

• This is focused on a clear goal. Success should be obvious when achieved and could be delivered through progress in a range of technologies (e.g. quantum computing). The challenge has an easily explainable real world impact and a future market.
What is a challenge?

• A bad example of a challenge would be:

  To fund SMEs to work with universities to increase the transfer of technical expertise in agricultural sciences to business around the UK

• This is not specific about the outcome and instead focuses on knowledge transfer in a specific technology. The impact of the challenge would not be obvious to a ‘person on the street’ and there is no relation to the specific market this challenge would open up.
Making the case for future challenges

• A compelling, focused challenge articulated in a way that anyone will understand and see the benefit of solving

• Not ‘business as usual’ or already funded through other means

• Business-led, improving productivity and economic benefit across the UK

• Not just a bid for more money – clear milestones to success by 2021/2022

• Think: “Not what ISCF can do for you, but what you can do to help ISCF.”
[End]