Record funding uplift for UK battery research and development

- £211 million of government funding confirmed for battery research through the Faraday Battery Challenge
- battery industry could support 100,000 jobs by 2040 and is central to growth of key industries – such as electric vehicles and renewables
- Business Secretary visits government-backed UK Battery Industrialisation Centre in Coventry to see how battery research is being brought to market.

The UK's world-leading manufacturing industries will be boosted thanks to £211 million in new government funding for battery research and innovation, Business Secretary Jacob Rees-Mogg confirmed today (Friday 21 October).

The record funding uplift will be delivered through the Faraday Battery Challenge, which began in 2017 and supports world-class scientific technology development and manufacturing scale-up capability for batteries in the UK. It will help to seize on opportunities for private investment and economic growth in industries where powerful, fast charging batteries will be essential – such as domestic energy storage and electric vehicles.

The funding, from last year's settlement, will be delivered between 2022 and 2025 by UK Research and Innovation (UKRI) with support from the Faraday Institution, Innovate UK and the UK Battery Industrialisation Centre (UKBIC).

It will help the sector deliver 100,000 jobs in battery gigafactories and the battery supply chain by 2040. Supporting the scale-up of these technologies and unlocking further private investment supports the sustainable growth of the economy, which will boost tax revenues and put public services on a more secure footing for the longer term, helping improve life for people across the UK.

Speaking on a visit to the £130 million UKBIC, which is the UK's centre of excellence in battery manufacturing, Business Secretary Jacob Rees-Mogg said:

> Safe and powerful batteries are central to our plans to grow the industries of the future. From our world leading renewables industry, to our growing electric vehicle sector, secure supplies of batteries are key to delivering jobs and prosperity.
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> The Faraday Battery Challenge has brought the UK's greatest minds and best facilities together to develop the innovations that will help us achieve this goal. The work it has done since 2017 has laid the groundwork for our future economic success and I am pleased to confirm this work will continue, supported by record funding.

The Faraday Battery Challenge combines:

- research and capability development to reduce battery weight and cost, increase energy and power, and ensure reliability and recyclability;
- collaborative business-led innovation in the UK battery sector, development of the wider network and skills needed to manufacture batteries through Innovate UK; and
- manufacturing scale-up & skills development at the UKBIC the national battery manufacturing development facility.

The Challenge has supported over 140 organisations working across the UK, attracting over £400 million in further private sector investment. It has enabled the Faraday Institution, the UK's independent battery research body, to unite 500 researchers across more than 25 universities to improve current and develop future battery technologies.

Faraday Battery Challenge Director Tony Harper said:

> This new funding allows us to strengthen the foundation we've created by consolidating and building on the UK's position to become a battery science superpower. We now have an opportunity to ensure that our national industrialisation infrastructure remains world leading in this fast-evolving critical net zero technology.
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> With the support of the Challenge, the £130 million UKBIC in Coventry opened three years ahead of its nearest European competition. The Centre provides the link between battery research and successful mass production. So far UKBIC has supported over 140 UK battery developers, working on more than 80 research and innovation projects, to successfully scale their products to market.

Felicity Buchan, Exchequer Secretary to the Treasury, said:

> The battery industry will play a pivotal role in the growth of our future economy. That's why it's so important that we are making this record investment in cutting-edge research, supporting businesses to become more innovative and productive, and creating high-skill, high-wage jobs across the UK.

UKBIC Managing Director Jeff Pratt said:

> I am delighted with this announcement which demonstrates the government's sustained commitment to supporting the development of advanced battery technologies across the UK. Since the Faraday Battery Challenge was launched in 2017, we have seen rapid change in the battery industry as it develops increased capacity across Europe; and this will continue over the coming decade.

> For UKBIC, this additional funding will ensure that we retain our leading-edge manufacturing capability for the UK and can continue to support our industry in the next few years as novel chemistries and formats scale towards volume production.

UKRI Chief Executive Professor Dame Ottoline Leyser said:

> Advanced battery technology will play a central role in our lives and the economy, reducing our reliance on fossil fuels, creating new jobs and opening up new opportunities.
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> The Faraday Battery Challenge is at the forefront of the clean technology revolution, catalysing collaboration and innovation that will benefit society.
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> This exciting work and the further investment announced today underlines the ways in which research and innovation can help to create a sustainable future while driving economic growth.

Along with the Challenge, the UK government is helping to deliver a world leading electric vehicle industry for the UK through the Automotive Transformation Fund (ATF). Through the ATF the UK has secured major investments in battery production, including Envision AESC expanding their existing plant in Sunderland.

A further £4 million is also being announced through UKRI's Driving the Electric Revolution Challenge to support skills, talent and training across Power Electronics, Machines and Drives (PEMD) manufacturing and supply chains. PEMD components are the parts that make things 'go', from cars to hairdryers, underpinning a wide range of high-value industries.

Business Secretary Jacob Rees-Mogg and UKBIC Managing Director Jeff Pratt inspect batteries being built

Faraday Battery Challenge

The Faraday Battery Challenge has been backed by £541 million since 2017. It is delivered by Innovate UK on behalf of UK Research and Innovation. It is making the UK a science superpower for batteries by supporting the UK's world-class battery facilities and growing innovative businesses that are developing the battery supply chain for our future prosperity. Its aim is to build a high-tech, high-value, high-skill battery industry in the UK.

Projects previously backed by the Challenge include:

Cornish Lithium

Backing for Cornish Lithium Ltd, in the first of four pilot plants that will extract lithium from geothermal waters near Redruth. The firm also intends to

recover lithium-laden mica deposits from old China clay pits in the county. Cornwall could produce a third of the UK's lithium requirement for electric vehicle (EV) batteries within five years.

Nexeon

Backing for Nexon Ltd's SUNRISE project, which looks to triple the energy density of Lithium-ion batteries, by using silicon-based anodes instead of conventional graphite ones. Nexeon is already supplying a number of Tier 1 global battery manufacturers and OEMs. Its latest investment funding round saw the firm secure $200 million to mass produce tens of thousands of metric tonnes annually of its silicon-based anode materials for use in rechargeable Lithium-ion batteries.

About the Faraday Institution

The Faraday Institution is the UK's independent institute for electrochemical energy storage research, skills development, market analysis, and early-stage commercialisation. Bringing together expertise from universities and industry, the Faraday Institution endeavours to make the UK the go-to place for the research and development of new electrical storage technologies for both the automotive and wider relevant sectors.

The Faraday Institution is funded by the Faraday Battery Challenge at UK Research and Innovation. Headquartered at the Harwell Science and Innovation Campus, the Faraday Institution is a registered charity with an independent board of trustees.

About the UK Battery Industrialisation Centre (UKBIC)

The UK Battery Industrialisation Centre (UKBIC) was opened in July 2021. The national battery manufacturing development facility provides the missing link between battery technology, which has proved promising at laboratory or prototype scale, and successful mass production.

Based in Coventry, UKBIC welcomes manufacturers, entrepreneurs, researchers and educators, and can be accessed by any organisation with existing or new battery technology – if that technology brings green jobs and prosperity to the UK.

In addition to funding from the Faraday Battery Challenge through UK Research and Innovation, UKBIC is part-funded through the West Midlands Combined Authority. The facility was delivered through a consortium of Coventry City Council, Coventry and Warwickshire Local Enterprise Partnership and WMG, at the University of Warwick, following a competition in 2018 led by the Advanced Propulsion Centre with support from Innovate UK.

Driving the Electric Revolution Challenge

Power Electronics, Machines and Drives (PEMD) technologies are what make things 'go'. They are found in a wide range of places from cars, to solar panels, to mobile phones and in hairdryers. High-tech, high-value industries rely on them and a workforce skilled in their design and creation.

The Driving the Electric Revolution Challenge supports projects that that build awareness of PEMD and fill gaps in the UK’s workforce talent and training capabilities.