

# Press release: Lift off for electric planes – new funding for green revolution in UK civil aerospace

- UK to be at forefront of next revolution in electric and hybrid planes – benefiting passengers and the planet
- £343 million government and industry investment for research and development and productivity improvements to transform the future of civil aerospace and continue the UK's status as a pioneering aerospace nation
- the government launches negotiations with industry on a new Aerospace Sector Deal, as part of the modern [Industrial Strategy](#)

The UK's world-leading aerospace sector will be propelled into a new era of cleaner, greener flight through industry and government investment, the Business and Energy Secretary announced today at the 2018 Farnborough International Airshow.

From the total investment, £255 million – supported by the Aerospace Technology Institute (ATI) and UK Research & Innovation (UKRI) – will go towards 18 new research and technology projects, including the development of cleaner and greener hybrid aircraft. To support small and medium-sized companies, £68 million of the funding will be made available to increase research and development opportunities, with £20 million to drive improvements in long-term productivity across the sector.

The projects will not only help maintain the UK's existing strengths in aerospace but also position the UK as a world leader for some of the most technologically advanced aircraft that will transform the face of aviation including electric aircraft, hybrid-electric propulsion systems, and future materials for aircraft manufacturing.

A major beneficiary of the latest research and development funding is the revolutionary E-Fan X project. The project brings together Airbus, Rolls-Royce and Siemens to develop a flying electrical demonstrator which will form the foundation for future electrical aircraft and help the aerospace sector to manufacture cleaner, quieter aircraft and grow the industry sustainably. Rolls-Royce's ACCEL project will also lead a UK programme to accelerate the electrification of flight which will contribute to the UK's aim to cut emissions through its [Clean Growth Strategy](#).

Business and Energy Secretary Greg Clark said:

The UK has a rich heritage in civil aviation as the home of the jet engine and the wings factory of the world. Technology is driving revolutionary changes in aviation that have not been seen since the 1970s and today's investment is foundational to the future of

commercial aviation and ensuring the UK remains at the cutting-edge of the sector. This revolution in civil aerospace will bring significant benefits to UK industry, passengers and the environment.

Through our modern Industrial Strategy, we are working with industry to lead the world as we embark on this journey into the new age of air travel.

This funding will also support a number of projects on the next generation UltraFan® aero engine, led by Rolls-Royce, which will contribute to their biggest shift in engine architecture since the 1970s. It will transform flight, setting new benchmarks in fuel efficiency, CO2 reductions and significant cut backs in engine noise.

Aviation Minister Baroness Sugg said:

The development of quicker, quieter and cleaner aircraft will transform the UK's transport market and open up new and more sustainable ways for passengers to travel between our cities and regions and across the globe. Developing innovation, technology and skills is a core part of the government's Aviation Strategy and this funding will help us to ensure that the UK aviation sector continues to be a world leader in this area.

Backing our world-leading aerospace sector, the Business and Energy Secretary also announced the start of formal negotiations for an Industrial Strategy sector deal that will further increase business investment in the UK, with discussions expected to conclude before the end of the year. The deal will:

- explore investment opportunities around electrification and high-value design
- raise productivity levels in the supply chain
- and boost skill levels in the sector

The latest wave of projects to win the competitive funding underlines the significant importance of the £3.9 billion joint research and development funding commitment in the sector as part of the Industrial Strategy.

The government also welcomed the completion of Bombardier and Airbus' Joint Venture; a partnership that will support the development and manufacture of structures for the A220 jet at the Bombardier facility in Belfast.

Further information about BEIS' Farnborough commitments.

## **Research and development investment**

Projects supported by joint government and industry investment include:

## **Airbus, Rolls-Royce, Siemens**

- E-FAN X (ELECTRIFICATION), £58 million project

A partnership between Airbus, Rolls-Royce and Siemens to develop a flight demonstrator for hybrid-electric propulsion for commercial aircraft. Hybrid-electric technology will deliver improved environmental performance that is cleaner, quieter and introduce re-evaluations of the entire design of aircraft.

## **Rolls-Royce**

- series of projects on ULTRAFAN®, and ACCEL, worth a total of £70 million

4 projects on engine technologies for UltraFan involving multiple partners including universities and smaller companies. A new generation of aircraft engine that aims to transform flight, setting new benchmarks in efficiency, environmental performance and precision engineering. ACCEL is intended to accelerate the adoption of electrical technology in aviation through the design build and flight test of a high performance electric powertrain.

## **Bombardier**

- Competitive Composite Manufacturing Process (CoCoMaP), FANTASTIC (Nacelle) and OptiComp (Wing project), £32 million project

3 research projects exploring more efficient manufacturing processes, new technology for engine covers (nacelles) and the application of composite material to large aerospace structures, such as wings and fuselage. All 3 projects will be led by Bombardier Belfast (Shorts).

## **GKN**

### **Airbus**

#### **National Composite Centre Operation Limited**

- £44 million for 3 projects

3 projects with National Composite Centre, part of High Value Manufacturing Catapult, to develop new, more efficient ways of producing large composite aerostructures. The research will explore the use of new composite materials as well as the manufacturing process.

#### **University/Research Organisations projects – total £26 million for 3 projects**

- University of Oxford

Infrastructure for the University of Oxford Osney Thermo-fluids Laboratory (OSNEY Upgrade). The Oxford Thermofluids Institute is part of Oxford University's strategic investment in the UK's science base. The laboratory is a global centre of excellence for turbomachinery research which has made significant contributions to the technology of jet engines over the last 3 decades. This grant will be used to achieve a step change in capability to measure and research the cooling performance and hot stage technologies essential for the operation of high pressure (HP) turbine stages of Large Civil Engines.

- University of Sheffield

PERFORM (Disruptive Textile Technology for Aerospace Applications): Perform is a project with the University of Sheffield's Advanced Manufacturing Research Centre (AMRC), part of the High Value Manufacturing Catapult. The research will develop new composite material and efficient manufacturing processes.

- The Welding Institute Limited

OAAM (Open Architecture Additive Manufacturing): the Welding Institute, an engineering research and technology organisation, is taking the lead in the Open Architecture Additive Manufacturing (OAAM) project to demonstrate the ability to manufacture large metallic components via Additive Manufacturing (AM) (also known as 3D printing) for the benefit of UK Aerospace.

## **Government and industry support for SMEs**

£68 million joint industry and government investment for new research and development opportunities targeted to support small and medium-sized businesses. An open competition supported by UKRI will back SMEs to carry out new research on high risk, high reward solutions that will help UK companies grow their capability for the long-term.

There will also be further rounds of the successful National Aerospace Technology Exploitation Programme to help SMEs develop new technologies. SMEs will also be able to increase their productivity through a new improvement programme that will increase their ability to win new work with new and existing customers. A new partnership between the UK and Sweden will also see the 2 countries collaborate on technological research.

## **Defence Enterprise Export Partnership**

The Defence Enterprise Export Partnership (DEEP) is a joint government, industry and academic initiative led by the Defence Growth Partnership (DGP) to ensure that the UK generates the skilled personnel able to lead successful international defence export campaigns. The initiative will support the Industrial Strategy by driving export-led growth and ensuring that the UK retains vital skills.