

£73.5 million to boost green economic recovery in automotive sector

- Automotive sector receives £73.5 million investment for advanced technology to cut carbon emissions
- businesses from Newport to Newcastle will research and develop recyclable batteries and state-of-the-art motors for electric taxis, cars and vans
- grants will contribute to the recovery of the automotive sector and the UK economy, safeguarding 14,000 jobs

Britain's automotive industry is set to benefit from a £73.5 million government investment to develop green technologies and safeguard jobs, Business Minister Nadhim Zahawi announced today (Tuesday 23 June).

Ten projects across the UK will receive a share of this new investment to develop cutting-edge technology for the next generation of electric taxis, cars and vans – including recyclable batteries, advanced electrical systems and ultra-lightweight components.

This funding will contribute to the automotive sector's recovery from the coronavirus pandemic by safeguarding more than 14,000 UK research and manufacturing jobs. It will also enable the manufacture of a greater volume of low emission cars, commercial vehicles and components right here in the UK.

Business Minister Nadhim Zahawi said:

Whether it's researching future battery design or creating a lightweight version of the Ford Transit, companies in every part of the United Kingdom are leading the world in advanced automotive technology.

Not only will this funding ensure automotive companies can play their part in keeping us on the path to net zero emissions by 2050, it will also support thousands of jobs and be a welcome step towards the industry's economic recovery.

The funding boost will aid the development of highly efficient and ultra-lightweight components and help drive the automotive industry further away from its reliance on fossil fuel technologies.

Companies set to benefit include Ford Technologies, BMW Motorsport, Jaguar Land Rover and the London Electric Vehicle Company, manufacturer of electric taxis. The move towards electric transport will be vital in helping the UK meet its target of net zero carbon emissions by 2050, while growing the economy and creating jobs in greener industries.

The successful projects were chosen by the Advanced Propulsion Centre (APC), which seeks to maintain the UK's position as a centre of excellence for the research and development of low carbon vehicle technology.

Transport Minister Rachel Maclean said:

As we look to kickstart our green transport recovery, new technologies and cleaner fuels are going to play an even greater role in achieving our aim of a greener and more prosperous economy.

From recyclable batteries to state-of-the-art motors, not only will this funding create thousands of jobs, it will also bring us one step closer to achieving our net zero target within 30 years.

Jon Beasley, Director of Technology & Projects at the APC, said:

It's an exciting time for the UK automotive industry – we are on the precipice of an innovation landslide. The technology we invest in now is set to make an impact on the next generation of vehicles.

The 4 projects chosen to receive funding will all develop the next iteration of electrification solutions, showing that it is fast becoming the technology of choice for a wide range of vehicles and that it is vital to ensuring a sustainable low carbon future.

Paul Warton, President of the Automotive Structures & Industry business unit, Constellium, said:

The APC's funding was instrumental to ensuring the ALIVE project will be developed in the UK and we are delighted to have received their support and confidence.

Constellium and its project partners expect to deliver the most cost effective solution available for the production of structural aluminium battery enclosures providing far greater design freedom and modularity than exists today to support our OEM partners on the journey to vehicle electrification.

The successful projects are:

- LEVC – Electric Vehicle Evolution (Coventry): The London Electric Vehicle will develop a new battery designed specifically for its vehicles for higher performance and also to be reused and recycled
- Constellium Ltd – ALIVE (Slough): This project will develop the manufacturing processes for light weight, crash-resistant battery enclosures. These will be used in ultra-low emission vehicles
- Cummins Turbo Technologies Ltd – TRIDENT (Huddersfield): This project will look to develop and manufacture an all-new electrical turbo that

- has greater efficiency and is for use in fuel cell electric vehicles
- Ford Technologies Ltd – eSHADOW (Warwick): This project will determine the technical, financial and environmental challenges of using advanced, lightweight materials in vehicle manufacturing
 - Jaguar Land Rover – Hi-VIBES (Coventry): A consortium of academics and industry will create a new electronic system that will be easier to build, as well as being lighter and cheaper
 - Avid Technology Limited – REVO (Cramlington, near Newcastle): It will help deliver improvements in electric and hybrid vehicle efficiency
 - TEVVA – SANGREAL (Chelmsford): This project will bench-test an innovative design of axle for 7.5 to 14-tonne commercial vehicles. It will improve safety through better impact robustness
 - Magnetic Systems Technology Ltd – Magtec (Sheffield): Magtec aims to become the UK's only complete electric drivetrain Tier 1 supplier for commercial vehicles
 - BMW (Motorsport) Ltd – FutureBEV (Warwick & Newport): This project aims to deliver better powertrains that are more cost-efficient
 - Jaguar Land Rover – ZEUS (Coventry): This project will develop a high-performance four-wheel drive 400kW Fuel Cell Electric Vehicle (FCEV)

Business Minister Nadhim Zahawi announced the 10 projects at the Society of Motor Manufacturers and Traders' virtual International Automotive Summit today.

The winning projects selected through the APC's rigorous assessment programme create opportunities to secure jobs in research and manufacturing across the UK as well as sharing knowledge across industry and academia.

Further background on projects

LEVC – EVE (Electric Vehicle Evolution)

This is a collaborative project involving specialist UK-based companies and academia in which a new battery will be designed specifically for LEVC's vehicles. The battery will offer higher performance and will be designed for re-use and recycling. It will build on the success of the current 'eCity' technology that has already helped to cut over 30,000 tonnes of CO₂. The investment in this new technology ensures LEVC will continue to lead the development of innovative green mobility products.

Jaguar Land Rover – Hi-VIBES

Jaguar Land Rover is leading the development of cutting-edge electrified propulsion technologies. The Hi-VIBES project will support the growing portfolio of electrified products across the company's range. Bringing together a consortium including academics from Nottingham University and industry partners Lyra Electronics and Pektron, the project will create an innovative and fully integrated high voltage electronics system. Offering significant cost, weight and installation benefits, the system will be used to control the batteries in Jaguar Land Rover's future Battery Electric Vehicles. It will include features such as 2-way charging, thermal management and interface to a 12V power supply system.

Avid Technology Limited – REVO

Partnering with Warwick University and The Welding Institute, this project is led by Avid Technology Limited. The aim is to help improve the power to weight ratio of Avid's EVO electric motor by 25%. The project will also develop design and manufacturing processes so that the company is able to make 100,000 motors per year whilst reducing costs by 75%. It will also help deliver improvements in electric and hybrid vehicle efficiency.

TEVVA – SANGREAL

This project will bench-test an innovative design of axle for 7.5 to 14-tonne commercial vehicles. Further developing and commercialising Tevva's existing battery module and pack design, this will improve safety through better impact robustness. It will also add active thermal management. A substantial part of the investment will develop a system to ensure safe and reliable performance for both on and off-road applications. This enables predictive and preventative servicing that intelligently controls the range extender so that its use is minimised overall, and is avoided entirely in urban environments.

Constellium Ltd – ALIVE

Constellium has developed innovative high strength aluminium alloys and novel processing, joining and assembly technologies for use in battery enclosures. These enclosures are light weight and crash resistant and are for use in ultra-low emission vehicles (ULEVs). The project will further develop the technology so it can be manufactured at different volumes and can be exported as a kit of parts for local assembly.

Cummins Turbo Technologies Ltd – TRIDENT

Energy recovery from the air flowing in a vehicle's motor is a key technology for increasing efficiency. Cummins Turbo Technologies is looking to develop and manufacture class leading air handling platforms to align with car manufacturer roadmaps, which is important because they determine the timetable of the introduction of Fuel Cell Electric Vehicles. The project will result in more components being designed and manufactured in the UK.

Magnetic Systems Technology Ltd – Magtec

There is a niche market for high-value commercial vehicles, which can be fulfilled by Magtec. It aims to become the UK's only complete electric drivetrain Tier 1 supplier for commercial vehicles. It will be supported by expertise from two High Value Manufacturing Catapults that include direct customer insight from four Original Equipment Manufacturer customers. The project will develop techniques around the motor build stage and will redesign the production system to be agile. This will include a method to automate coil winding and insertion, and define materials and methods of assembly.

BMW (Motorsport) Ltd – FutureBEV

This project aims to deliver competitive powertrains in function and cost. The team will develop a new UK supply chain for subcomponents. It will also deliver new designs for the full integration of an inverter within the powertrain. This will be targeted to optimise the system's cost, weight and volume. This technology will help to drive battery electric vehicles (BEV) from niche to mainstream and will work with the Compound Semiconductor Applications Catapult in Newport.

Jaguar Land Rover – ZEUS

This project will develop a high-performance 4-wheel drive 400kW Fuel Cell Electric Vehicle (FCEV). It will be manufactured within an SUV platform. The project parameters include zero tailpipe emissions, a range greater than 370 miles, charging within five minutes, and a battery and motor weight that's 200kg lighter than the equivalent battery electric vehicle (BEV). It brings together the latest in Delta's battery technology and is supported by the UK Battery Industrialisation Centre. The project will deliver four prototype SUVs that will prove the technology can satisfy customer and legal requirements for vehicle attributes.

Ford Technologies Ltd – eSHADOW

This project is to determine the technical, financial and environmental challenges of high-volume production of hybrid structures. Hybrid structures mix materials, including traditional metals and lightweight composites. This reduces weight by using the most appropriate materials in the right places. It will focus on commercial vehicle body and chassis frames. The Ford Transit is engineered in the UK and the project targets a weight reduction of around 40% (80kg) over the current design of the vehicle. Initially it will support UK supermarket fleets but it has the aspiration to apply the technology across SUV and Pick-Up vehicles. The project will deliver a hybrid vehicle frame structure design that is capable of being manufactured at high volume from advance strength steel, aluminium and composite materials.

About the Advanced Propulsion Centre

The APC's job is to ensure the UK remains competitive in the research, development and production of low carbon automotive technologies, anchoring and growing UK capabilities.

Over an initial 10-year lifespan, the APC has a goal to save 50 million tonnes of CO2 emissions from the automotive industry, supporting the UK government's net zero plans. It is therefore investing in technologies that help lower emissions and protect the environment. The APC facilitates the relationship between UK government and the companies leading UK-based projects aimed at advancing low carbon automotive technology.