

# Grant Funding Success Stories: Automotive Sector

Since 2007, Innovate UK has invested around **£2.5bn** to help businesses across the country to innovate, with match funding from industry taking the total value of projects above **£4.3bn**.

Innovate UK has helped **8,500** organisations create around **70,000** jobs and added an estimated **£18bn** of value to the UK economy. In the period 2019/2020, Innovate UK received **5,794** applications for grant funding and made **949** awards. **£645,886** was awarded in terms of grant funding, **24%** of the total amount applied for.

## **Involution Technologies Limited** **Industry Sector: Electric drivetrain** **technology**

Involution Technologies Limited is a company based in Warwickshire that supplies a range of gearbox drivetrain design and consultancy services focusing on delivering innovative, epicyclic, flexible pin gear transmissions to the Wind, Tidal, Industrial and Transportation markets.

The company applied for grant funding for a collaborative R&D project that seeks to retro fit **INVO-CVT** technology into new and existing heavy vehicles. Large heavy commercial vehicles are responsible for **39%** of the worlds global emissions and even more significant is the impact of heavy diesel engines in city centres on air quality.

Involution Technologies aims to use the **INVO-CVT** electric drive train on the largest HGV's enabling full electric, zero emissions operation. Adopting this transmission on HGV's means that the large construction tipper lorries on building sites, vehicles delivering container freight, inter-city coaches



delivering people to the city can operate **100%** electrically, on zero emissions.

Involution states that the transmission is always connected to the vehicle wheels without interruption in drive, to give the optimum traction. Power associated with slowing the vehicle down in overdrive is fully recovered by the electric drive system. These features significantly reduce the total duty cycle energy requirements of the vehicle, by an anticipated 20%.

The application was successful and the project has received **£111,007** by way of funding.

## **Oxto Limited** **Industry Sector: Electric vehicle charging and energy storage**

Oxto Limited is an innovative, agile and growing energy storage company based in Guildford, Surrey.

Oxto has formed a consortium with Hobuka Limited, Gamma Energy Limited and Plenol Limited to build a project of an electric charging point for electric motorbikes and other types of electric vehicles in a rural area of Rwanda, connected to one of a mini-rural grid in Rwanda.

The technical architecture will be composed of an innovative flywheel energy storage system (FESS) developed by OXTO and second life battery packs extracted from EVs, a bidirectional AC/DC converter, an EV charger connected to the mini-grid where the system will be deployed during the phase two.

This project will, in phase one, study how adding a transport electrification component to rural mini-grids will improve economically and environmentally lives of local populations.

The energy storage system composed of flywheels & batteries will improve the energy efficiency of mini-grids and reduce waste of energy.

This decarbonisation of transport will clearly reduce air and noise pollution. It will also

reduce the risk of fuel leakage in supply chain and maintenance of gas motorbikes, a large source of water contamination.

The project addresses several UN Sustainable Development Goals (SDG), especially the Sustainable Cities and Communities and Climate Action.

The project has received **£61,448** by way of funding.



# CLARITAS

## **Advanced Insulation Systems Limited** **Industry Sector: Electric vehicle charging** **and energy storage**

Advanced Insulation Systems Limited, a global leader in the engineering, manufacture and application of insulation products and systems to the offshore and onshore oil and gas industry, has applied to Innovate UK for grant funding for a collaborative R&D project within the electric transport sector.



Advanced Insulation is an expert in the field of developing cost-effective destructive testing for the oil and gas industry and with this expertise, the company has acquired world class knowledge in designing and carrying out tests, acquiring and analysing test data.

This particular project is being developed for the electric transport sector and will benefit society when completed.

Car manufacturers are carrying out intensive development work to gain a competitive advantage with lighter and longer-range battery packs.

A key aspect of this work is that the battery packs must pass certain national test standards to gain type certification so that the vehicles can be placed on the market.

Advanced Insulation is developing a comprehensive test service that will include clear evidence of the actual outcomes of the test such as high-speed photography, very precise thermocouple data acquisition and post-test analysis of the samples. This data will ultimately help car manufacturers to improve the safety of electric vehicles.

The application was successful and **£47,738** has been received for this R&D project.

## **Meet the Claritas Team:**

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