

# University of Birmingham wins Guardian University Award for 'Business Collaboration of the Year' for transformative decarbonised rail project

November 25, 2020



A project to develop the UK's first hydrogen-powered train (**HydroFLEX**) has been named 'Business Partnership of the Year' in the 2020 Guardian University Awards.

The partnership between **Birmingham Centre for Railway Research and Education** (BCRRE) at the University of Birmingham and **Porterbrook** to develop the world's first retro-fitted hydrogen train has been recognised by the Guardian as 'an outstanding university partnership with a business or an industry – regional, national or international – where knowledge is applied, and resources shared for the benefit of the broader economy.'

Beginning life as a student-led project into a narrow-gauge hydrogen-powered locomotive to contribute to UK decarbonisation goals, the HydroFLEX project has developed with BCRRE and Porterbrook establishing a major collaborative research and innovation project to develop the UK's first operating mainline

hydrogen train. An agreement was formalised in Autumn 2018, in which the University of Birmingham and Porterbrook agreed to invest in close collaboration and work to a tight deadline of just nine months to convert an old Thameslink electric train into a hydrogen-powered one.

The working demo train made its public debut in June 2019 at Rail Live when more than 500 people journeyed on HydroFLEX, including the Chairman and Chief Executive of Network Rail, the Secretary of State for Transport and the Shadow Transport Secretary and international media.

With the working demonstrator train, the University secured £350,000 funding from Innovate UK and the Department for Transport's First of a Kind competition, for mainline testing, which took place in September 2020.

Porterbrook has also announced plans to start putting HydroFLEX into production in response to customer demand.

Alex Burrows, Director of the Birmingham Centre for Railway Research and Education, says: "The whole project team is absolutely thrilled to have won this award. This is fantastic recognition of the partnership we developed and the approach we took of establishing a diverse team from the University and Porterbrook. The HydroFLEX project has been a real career highlight for everyone involved and this award is hugely pleasing in recognising the efforts of everyone on the team."

Stuart Hillmansen, Reader in Railway Traction Systems and HydroFLEX lead at the University of Birmingham, says: "We are delighted that the pioneering research work on Hydrogen Fuel Cell Trains at BCRRE has been translated into a real world application which can deliver real benefits in terms of decarbonisation and air quality. We are honoured to win this award. It has been an amazing team effort, with all our partners and we are looking forward to the next stage where we roll out this hydrogen fuel cell technology to the wider rail industry and play our part in the industry's decarbonisation plan"

Alongside this, Mary Grant, CEO of Porterbrook, said: "We are delighted that our University of Birmingham partners have won the Guardian's Business Collaboration Award for our pioneering hydrogen train, HydroFLEX. The work we have done together has been ground-breaking in terms of zero-emissions transport. At Porterbrook we take our responsibility for de-carbonising the railways very seriously and this award only bolsters our motivation to keep innovating."

Work on the next stage of HydroFLEX is already well advanced at the University with a hydrogen and battery power module in development that can be fitted underneath the production version of the train to create increased capacity for passengers in the train's saloon area.

The University of Birmingham is also at the forefront of innovation in the hydrogen supply chain in the UK, an area forecast to grow to worth of £1.6m per day, with global impact and its application to the rail sector.

### **About Birmingham Centre for Railway Research and Education**

Birmingham, is Europe's largest academic-based group delivering railway science and education. With

over 145 academics, researchers and professional support staff, BCRRE provides world class research and thought leadership within railways, and offers an expanding portfolio of high-quality education programmes, including Rail and Rail Systems Level 6 and 7 degree apprenticeships. In 2018 BCRRE became lead partner in the £92m UK Rail Research and Innovation Network (UKRRIN) and in 2019 it absorbed the activities of the Rail Alliance into its offering, increasing its breadth of support for innovation and growth in the rail industry. Contact: BCRRE at [railway@contacts.bham.ac.uk](mailto:railway@contacts.bham.ac.uk).

### **About Porterbrook**

- Porterbrook Leasing Company Limited ("Porterbrook") is a leading participant in the rail leasing market and has a rolling stock fleet of over 4,500 vehicles.
- Since privatisation, Porterbrook has invested over £3bn in the UK rail market. The company is looking to invest more than £1bn in Britain's railway over the coming years.
- Porterbrook has successfully introduced over 2,500 new vehicles into passenger service. The company continues to invest across its existing fleets to ensure they remain attractive to operators and passengers. Porterbrook also provides ongoing train maintenance services.
- In October 2014, the Porterbrook Group of companies was acquired by a consortium of investors including Alberta Investment Management Corporation ("AIMCo"), Allianz Capital Partners ("ACP") on behalf of certain insurance companies of the Allianz Group, EDF Invest and a consortium of Utilities Trust of Australia ("UTA"), The Infrastructure Fund ("TIF") and Royal Bank of Scotland Group Pension Fund ("RBS").

*Photo credit: BCRRE*

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