

UK embraces hydrogen-fuelled future as transport hub and train announced

September 30, 2020



The first-ever hydrogen-powered train has run on the UK mainline in a big step forward towards the UK's net-zero targets, Transport Secretary Grant Shapps announced, visiting the start of trials in Warwickshire.

The trials of the train, known as HydroFLEX, which have been supported with a £750,000 grant from the Department for Transport (DfT), follow almost 2 years' development work and more than £1 million of investment by both Porterbrook and the University of Birmingham.

Unlike diesel trains, hydrogen-powered trains do not emit harmful gases, instead using hydrogen and oxygen to produce electricity, water and heat. The ground-breaking technology behind the trains will also be available by 2023 to retrofit current in-service trains to hydrogen, helping decarbonise the rail network and make rail journeys greener and more efficient.

The Transport Secretary also announced the ambition for Tees Valley to become a trailblazing Hydrogen Transport Hub. Bringing together representatives from academia, industry and government to drive forward the UK's plans to embrace the use of hydrogen as an alternative fuel could create hundreds of jobs

while seeing the region become a global leader in the green hydrogen sector.

Transport Secretary Grant Shapps said: “As we continue on our road to a green recovery, we know that to really harness the power of transport to improve our country – and to set a global gold standard – we must truly embed change.

“That’s why I’m delighted that, through our plans to build back better, we’re embracing the power of hydrogen and the more sustainable, greener forms of transport it will bring.”

To kick-start this exciting development in Tees Valley, the DfT have commissioned a masterplan to understand the feasibility of the hub and how it can accelerate the UK’s ambitions in hydrogen. The masterplan, expected to be published in January, will pave the way for exploring how green hydrogen could power buses, heavy goods vehicles (HGVs), rail, maritime and aviation transport across the UK.

The aim would then be for the region to become a global leader in industrial research on the subject of hydrogen as a fuel, as well as research and development (R&D) hub for hydrogen transport more generally, attracting hundreds of jobs and boosting the local economy in the process.

Through our £23 million Hydrogen for Transport Programme, the plans announced today also include £6.3 million of funding for a green hydrogen refuelling station and 19 hydrogen-powered refuse vehicles in Glasgow, a world-first for the size of the fleet. This will give a post-COVID boost to local economies through the creation of green jobs while also decarbonising the transport network.

The next stages of HydroFLEX are already well underway, with the University of Birmingham developing a hydrogen and battery-powered module that can be fitted underneath the train, which will allow more space for passengers in the train’s carriage.

Mary Grant, CEO of Porterbrook, said: “Porterbrook is committed to innovation and the delivery of a carbon-neutral and sustainable railway. Today’s mainline testing of HydroFLEX achieves another important milestone on this journey. I’m also delighted to be able to announce our intention to start producing HydroFLEX trains, creating the world’s first electric and hydrogen-powered bi-mode rolling stock, as well as generating significant opportunities for the UK supply chain.”

The department is developing even more ways to slash emissions across transport, as work to create the transport decarbonisation plan continues. The plan will develop a first-of-a-kind approach to decarbonise every mode of transport and is due to be published before the end of this year.

Julian David, tech UK’s CEO said: “The announcement today on the further progress of the Hydrogen for Transport Programme is a demonstration of the UK government’s commitment to developing a hydrogen infrastructure as part of its efforts to decarbonise transport and encourage the shift to zero-emission vehicles.

“With the growing demand to switch to a net-zero economy, the advancement of R&D means we can further demonstrate this innovative technology for road, rail, and freight and logistics as an efficient and economic solution. techUK is excited to work together with the tech community and the government to

spearhead the market offering for green hydrogen.”

Professor Stephen Jarvis, Head of the College of Engineering and Physical Sciences at the University of Birmingham, said: “The University of Birmingham is setting the pace for rail innovation both in the UK and globally. The HydroFLEX project is a great example of how world-class R&D, together with the right industry partnerships, can deliver decarbonisation technologies that are both innovative and practical.

“Successful mainline testing is a major milestone for HydroFLEX and is a clear demonstration of the important role hydrogen has to play in the UK’s rail industry. Through the University and Porterbrook, we’re looking forward to delivering this technology into the UK transport market, ensuring a cleaner future for our railways.”

Photo credit: HydroFLEX, the University of Birmingham and Porterbrook

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