

Hitachi and GCRE see the opportunity to make the site a hub for digital rail technology by testing both

digital signalling and infrastructure monitoring solutions.

Hitachi has developed digital solutions that can automate track, overhead lines and vegetation monitoring, to pinpoint faults and reduce costs. GCRE can support next stages of development, which include using Artificial Intelligence (AI) to predict areas at risk of a fault and worthy of preventative maintenance.

Hitachi has 187 intercity trains in passenger service with European Train Control System (ETCS), this creates an opportunity to test future upgrades of ETCS to ensure a seamless transition in digital signalling.

GCRE to accelerate technology adoption

Currently, testing new technology takes place on the existing UK rail network. Understandably, track access and testing time is restricted so passengers are not affected. The GCRE facility increases flexibility and opportunities to conduct testing, shortening the timeline to improve and validate new innovations. GCRE will help modernise the railway by closing the gap between development and adoption.

Furthermore, testing Hitachi's cutting edge rail technology will help create a new digital skills-base at Welsh site, and support jobs in the wider supply chain.

The GCRE is a purpose built rail innovation centre being constructed in south Wales that will provide a site for world class research, testing and certification of rolling stock, infrastructure and innovative new rail technologies.

The site will provide services for a UK and European market. Currently, there is no dedicated, purpose built facility for rail infrastructure testing in Europe, nor is there a railway test loop of this scale anywhere in the UK.

Hitachi Energy's world-leading energy security expertise coming to Wales

Traction supplies for railways can present unique challenges to the electrical network. The use of Hitachi Energy's static frequency converters (SFC) eliminates these challenges and provides a stable supply to the rolling stock. It also enables the use of renewable energy and supports the GCRE project to become the United Kingdom's first net-zero railway.

For more than 40 years, Hitachi Energy's technology has been the reference for railway applications with a proven solution for railway grids. Its pioneering technology and innovative control algorithms have enabled the transition towards a modern railway grid fed by SFC, granting its stability and performance.

The converter hardware and control software of the SFC, which was selected by GCRE, cover the special needs of railway applications. In fact, the mechanical design and containerized housing ensure the reduction of footprint, onsite risks, and installation time, while at the same time making sure components are easily accessed to facilitate maintenance and trouble shooting. In addition, it provides flexibility of layout to optimize the site parameters.

Industry and Economic Security Minister, Nusrat Ghani MP said: "Hitachi's partnership with the Global

Centre of Rail Excellence marks a real vote of confidence in our rail industry and an important step forward in the race to net zero rail in the UK.

“The GCRE will be vital to decarbonising our rail network, helping cut rail costs and creating new jobs and skills through the partnerships it secures like this one with Hitachi.”

Wales’ Economy Minister, Vaughan Gething MS said: “This exciting new partnership between Hitachi and the Global Centre of Rail Excellence is great news for Wales. It highlights the important and high calibre commercial partners that are interested in testing and innovating at what will be a genuinely world class facility.

“This demonstrates why the Welsh Government was right to invest in GCRE and to help develop this exciting concept. Hitachi can see the potential and unique added value this facility will provide. I very much hope to see more creative partnerships being developed with GCRE in the future.”

Secretary of State for Wales, Rt Hon. David TC Davies MP said: “The UK Government welcomes the partnership between Hitachi and the Global Centre of Rail Excellence. It shows what GCRE can do to support our rail industry and the added value of having such a capability based here in the UK – highlighting why the UK Government has invested £20 million in the facility and also provided £7.4m through Innovate UK for Research and Development.

“The Global Centre of Rail Excellence has the potential to create new jobs, encourage growth and spread prosperity in Wales. It’s through partnerships like this one with Hitachi which will enable that vision to become a reality.”

Jim Brewin, Head of UK & Ireland at Hitachi Rail, said: “This partnership reinforces Hitachi’s commitment to UK innovation and supply chain, which has already has seen us spend over £2.6 billion in the UK since 2015.

“Through this initial agreement, we’re proud to help GCRE realise its potential and ambition to become a global hub for rail innovation. Being able to test British trains and technology at the test loop in Wales will ultimately benefit both rail passengers and the UK economy.”

Laura Fleming, Country Managing Director UK and Ireland at Hitachi Energy, said: “Hitachi Energy is proud to contribute as part of the One Hitachi Partnership with its well-established rail static frequency converter technology – a robust, pioneering solution that provides reliable long-term service and significant advantages in terms of improved power quality and proven control behaviour to the Global Centre of Rail Excellence (GCRE) in Wales. It is a great example of collaboration and innovation to accelerate the energy transition.”

Chief Executive of the Global Centre of Rail Excellence Simon Jones, said: “It’s fantastic to agree this partnership with Hitachi. The Global Centre of Rail Excellence that we are constructing in south Wales will be a site for world class rail and infrastructure innovation, somewhere that will be very well equipped to support both Hitachi Rail and Hitachi Energy in the cutting edge work it does. This partnership is a strong, strategic fit for both parties.

“Agreeing this deal with Hitachi is a big moment for the Global Centre of Rail Excellence. To secure such an important and globally significant partner to undertake their testing and research on site clearly demonstrates the calibre and the quality of clients that we will be working with at our facility.

“What is particularly pleasing is the message that this sends to the whole industry about the credibility and attractiveness of the GCRE offer.

“As part of this agreement, it’s also very pleasing to announce that Hitachi will provide the Static Frequency Convertor needed to condition the energy which we need to electrify what will become the UK’s first net the zero operation railway. It’s a critical piece of infrastructure for our site, is representative of the type of technology which will be needed to electrify the UK’s railway more easily and we are delighted to be working with Hitachi to secure it.”

Photo credit: GCRE