

Hitachi and Eversholt Rail to develop GWR intercity battery hybrid train – offering fuel savings of more than 20%

- **Batteries replacing an engine to cut fuel usage and reduce carbon emissions**
- **First time a modern UK intercity train, in passenger service, will use alternative fuel**
- **Tri-mode train can improve air quality and reduce noise across South West route's non-electrified stations**

In a UK-first, Hitachi Rail and Eversholt Rail have signed an exclusive agreement aimed at bringing battery power – and fuel savings of more than 20% – to the modern Great Western Railway Intercity Express Trains that carry passengers between Penzance and London.

The 36 longer, faster trains – with their iconic sleek design – have already transformed journeys for passengers in south west England, since their introduction by GWR in August 2018. Now the partnership between Hitachi, the train builder and maintainer, and Eversholt Rail, the trains' owner, will develop a plan to install batteries on a modern Intercity Express Train. The trial will demonstrate that the innovation meets passenger service and safety standards.

The line between the South West and London is only partially electrified, with the majority of the 300 mile journey requiring diesel power. The partnership is looking at batteries replacing a diesel engine as a power source on an existing Hitachi-built five-carriage train – currently known as a bi-mode for its ability to switch seamlessly between electric and diesel power.

Adding a battery creates an electric-diesel-battery hybrid train (tri-mode). On non-electrified sections of the route, the batteries will supplement the power of the engines to reduce fuel usage and carbon emissions by more than 20%. Whereas when travelling in and out of stations and surrounding urban areas, the train would rely on battery power only. This has the benefit of improving air quality and dramatically reduce noise levels, creating a more pleasant environment for passengers and people living nearby.

GWR's Intercity Express Train fleet currently calls at 15 non-electrified stations on its journey between Penzance and London, all of which could benefit from trains running on battery-only power.

Hitachi Rail will draw upon market-leading expertise in Japan, and the support of its battery partner – Hyperdrive Innovation. The two North East-based companies reached

an agreement in July 2020 to create and develop battery packs for mass production at Hyperdrive's HYVE facility in Sunderland, the UK's first independent battery pack manufacturing facility.

The projected improvements in battery technology – particularly in power output and charge – create opportunities to replace incrementally more diesel engines on long distance trains. With the ambition to create a fully electric-battery intercity train – that can travel the full journey between London and Penzance – by the late 2040s, in line with the UK's 2050 net zero emissions target.

Installing battery technology on trains can complement electrification and helps to improve the business case for upgrades that can level-up the South West and provide a low emission alternative to domestic air travel.

Rail Minister, Chris Heaton Harris, said:

“This is an exciting partnership to develop technology that can make rail travel more sustainable across the UK's network. Battery powered trains will support us in our battle against climate change and poor air quality, and improve the overall passenger experience. As we continue to build back better, developments like this are major stepping stones towards achieving the UK's 2050 net-zero emissions target.”

Jim Brewin, UK & Ireland Country Lead, Hitachi Rail said:

“This partnership is an exciting opportunity to unlock new greener trains for passengers, reduce running costs for operators and cut carbon. At Hitachi Rail we share the UK's ambition for a net zero emission future. Britain is in a unique position to become a global leader in battery trains, we want support the UK's green economic recovery and levelling-up.”

Mary Kenny, Eversholt Rail Chief Executive Officer said:

“We are delighted to continue working in partnership with Hitachi to investigate the conversion of our Class 802 fleet to tri-mode by introducing battery technology. Eversholt Rail is committed to ensuring our fleets meet the UK Railway's decarbonisation commitments.”

Matthew Golton, Interim Managing Director, GWR said:

“We are committed to reviewing emerging technologies such as battery power and assessing feasibility for services and rolling stock on the GWR network. This is a really exciting development and we look forward to working closely with both Hitachi Rail and Eversholt Rail on this trial.”

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About Hitachi Rail

Hitachi Rail is a fully integrated, global provider of rail solutions across rolling stock, signalling, service & maintenance, digital technology and turnkey. With a presence in 38 countries, across three continents and over 12,000 employees, our mission is to contribute to society through the continuous development of superior rail transport solutions. We are proud of our global achievements, from our world famous 'bullet trains', to our signalling solutions and turnkey projects, state of the-art traffic management and digital solutions. Drawing on the wider Hitachi Group's market-leading technology and research-and-development capabilities, we strive for industry leading innovations and solutions that can deliver value for customers and sustainable railway systems that benefit wider society. For information about Hitachi Rail, visit www.hitachirail.com.

About Eversholt Rail

Eversholt Rail owns UK passenger and freight rolling stock and has more than 25 years' experience in the rail industry. Eversholt Rail has invested more than £3bn in new trains since privatisation and continually invests in existing fleets to maintain quality and reliability to deliver a better passenger experience. Eversholt Rail has a proud history of innovation and plays an integral role in the growth and modernisation of the UK rail sector by introducing new products and technologies into the market.

Further information can be obtained on www.eversholtrail.co.uk

About GWR

Great Western Railway (GWR) provides high speed, commuter, regional and branch line train services. We help over 100 million passengers reach their destinations every year - across South Wales, the West Country, the Cotswolds, and large parts of Southern England. We're currently seeing the biggest investment in the network since Brunel so we can offer more trains, more seats, and shorter, more frequent journeys and continue the network's heritage of helping connect more businesses to new and prosperous markets. Through a series of initiatives we aim to be a good neighbour to the communities we serve and are committed to making a positive social impact in those regions. Learn how we're Building a Greater West at GWR.com. GWR is a FirstGroup company.

Information contained in this news release is current as of the date of the press announcement, but may be subject to change without prior notice.
