

Hitachi Rail unveils cutting-edge battery hybrid train that will reduce emissions across Europe

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Hitachi Rail's new 'Blues Train', one of the most advanced trains in the world, is being unveiled today (21 September) in Berlin at the world's largest rail transport fair, InnoTrans. Built for Trenitalia, the battery hybrid train will reduce carbon emissions and fuel consumption by 50 per cent and has the ability to arrive and depart from stations completely under battery power. The train will be the first ever tri-mode (using battery, electric and diesel power) fleet to enter passenger service in Europe, later this year.

The train's launch comes ahead of its introduction into passenger service in Italy later this year. The train is derived from Hitachi's Masaccio platform. The total Blues Train framework agreement with Trenitalia includes the supply of up to 135 trains worth €1.2 billion.

The tri-mode Blues Train represents a significant breakthrough in the market said Hitachi, with its ability to operate seamlessly on electrified and non-electrified lines.

On electrified routes, it uses pantographs to draw power from the overhead lines. However, when it moves

to non-electrified lines, usually smaller regional routes, a combination of battery and diesel power takes over.

When it is near a station the batteries power the train completely, eliminating emissions including harmful NOx and reducing noise pollution. The battery is able to recharge while the train is in operation, both in diesel and electric mode.

The fleet's top speed is 100mph (160km/h) and Hitachi said that crucially the extra power offered by the on-board batteries means the Blues Train's acceleration and performance is superior to existing diesel trains, allowing it to offer reduced journey times for passengers.

The Blues Train is equipped with European Rail Traffic Management System (ERTMS) digital signalling. This system supports the reduction of the railway's energy and emissions footprint by regulating the speed, acceleration and braking of trains. ERTMS also boosts safety by enabling the automatic activation of train safety functions, including emergency braking in case of danger or if trains exceed the track's line speed. ERTMS is recognised as the European rail standard, making the Blues Train highly interoperable and suitable for operation across Europe.

Andrew Barr, group CEO, Hitachi Rail, said: "The Blues Train, with its pioneering battery hybrid technology, is a hugely important way for railways across Europe to reduce their carbon emissions, while improving passengers' journeys.

"We're thrilled to unveil this technology here in Berlin and to begin passenger service in Italy later this year. We know that decarbonising transport is a vital mission around Europe, so we're delighted to provide our customer with effective solutions that lessen the impact on the planet."

Hitachi Rail is committed to becoming a climate change innovator and is already a global leader in battery train technology. Six years ago, Hitachi Rail introduced the DENCHA train in Japan, the world's first battery-powered passenger train. It is also progressing a battery hybrid intercity train trial in the UK.

The new four-carriage Blue Trains have been manufactured at Hitachi Rail's factories in Pistoia and Naples and accommodate up to 300 people seated. The fleet has been designed to accommodate families and leisure travellers, as well as regular commuters, with features including greater capacity for luggage and bikes, air conditioning, more USB and power sockets for greater connectivity, and an area entirely dedicated to children. The fleet has been designed with platform level door access to increase the ease of entry and departure for wheelchair users or passengers with buggies or large bags. It also boasts the latest in passenger information screens (24 inches), passenger counting technology and excellent access for people with limited mobility.

In a further boost for sustainability, the Blues Train is made with 93 per cent recyclable materials, with 96 per cent recoverable. The product is accredited with the Environmental Product Declaration and reflects Hitachi Rail's commitment to the Circular Economy.

Hitachi said that the Blues Train takes advantage of Japanese technology from Mito Works and Italian technologies to deliver a unique and enhanced design.

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Photo credit: Hitachi Rail