

Decarbonising through innovation

The development of HybridFlex at Arriva

What was Arriva's challenge?

Train operating companies throughout the UK still have a high number of diesel trains in their fleets because they operate on lines which have not yet been electrified. Electrification of railway tracks is the responsibility of Network Rail, which is owned by the UK Government.



Leading the way

Sustainability is at the core of Arriva's vision to help shape a future where passenger transport is the best choice.

This means creating an environment where communities can thrive with less congestion, good air quality and attractive, reliable, and sustainable public transport systems.

By starting to reduce emissions from diesel trains operating on non-electrified tracks, Arriva can progress its environmental goals while helping communities by reducing noise and pollution. Electric trains are significantly better for the environment – they currently emit 60 per cent less carbon than diesel trains

Innovating in partnership

The development of a new train, known as HybridFLEX, is the result of a four-year partnership between Chiltern Railways, Porterbrook (the train owner) and the industrial technology giant, Rolls-Royce.



The companies worked together to convert a diesel train into one that now runs on both diesel and battery power by retrofitting an mtu Hybrid PowerPack made by Rolls-Royce, allowing quieter journeys and a reduction in CO₂ of up to 25 per cent.

The future

With passenger services now running, Arriva continuously monitors the data being collected so we can analyse the performance of the vehicle alongside our partners involved in the development of the HybridFlex. This will help us as we consider how we adapt additional train units in the future.



100mph

HybridFlex is the first battery-diesel hybrid train capable of reaching speeds of 100mph to operate on the UK's national rail network.



Pollutants cut by 70-90%

Nitrogen oxide and pollutants are cut by 70 and 90 per cent respectively.



Faster journeys

The train could achieve faster customer journeys in the future because it can accelerate away from a station more quickly.



Noise reduced by 75%

The HybridFlex train substantially cuts fuel usage and reduces noise by up to 75 per cent in and around stations and urban areas.



Up to 25% reduction in CO₂

The train has been retrofitted with an mtu Hybrid PowerPack from Rolls-Royce which means quieter and quicker journeys and up to 25 per cent reduction in CO₂ emissions on every journey it makes.

