



NEWS RELEASE
22 MAY 2019

Decarbonising UK rail today:

Demonstration of a Dual Fuel Multiple Unit (DFMU) Train – cost effective, lower carbon rail

Grand Central and G-volution, supported by RSSB, will showcase a Dual Fuel Multiple Unit (DFMU) for the first time on the GB rail network towards the end of 2019.

The project will involve modifying one vehicle on a Grand Central Class 180 Diesel Multiple Unit to be powered by dual fuel. Using G-volution's dual fuel optimiser technology - which has 50 million kilometres of road use - the modified vehicle will run on a combination of diesel and Liquefied Natural Gas (LNG). This can help reduce fuel costs, particulate matter, and CO₂ emissions.

As diesel-powered vehicles make up over 25% of the fleet in the UK, this project could help support the Government's long-term decarbonisation ambitions, including the aim to remove all diesel-only powered trains from the network by 2040.

One of the aims of the trial is to demonstrate the path to market and effectiveness of a dual fuel solution, helping to facilitate an industry uptake of the technology. It is expected that the actual vehicle modifications will be straightforward, which will be validated by the trial.

This trial builds on the work of a 2016 RSSB-funded feasibility study that investigated the potential benefits of dual fuel in rail and concluded that fuel cost savings of approximately 30% were achievable. This study is being expanded through further



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modelling and analysis to include all types of diesel train and rail routes in the UK, with the development and operational demonstration of the DFMU being used to validate the model outputs.

Richard McClean, Managing Director at Grand Central, said: "At Grand Central we are committed to innovation and excellence on the railways and we are committed to delivering improvements for the benefit of our customers and the communities in which we serve.

"This trial, which involves one of our Class 180 Adelante trains, has the potential to demonstrate the very real and important environmental and cost benefits of dual fuel technology to the wider rail industry. We are looking forward to seeing the results of the study and discovering how dual fuel technology can be developed in the future."

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Notes to the editor:

- Greenhouse gas emissions from transport represent more than 25% of total UK domestic emissions (source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/776083/2017_Final_emissions_statistics_one_page_summary.pdf)
- The challenge to remove diesel only traction from the UK rail network was made by the then rail minister Jo Johnson in February 2018.
- The Class 180 is a British diesel-hydraulic multiple-unit high-speed train built by Alstom. Grand Central's Class 180s are leased from Angel Trains.
- G-volution, Project lead are a British SME providing the Dual Fuel technology.
- RSSB are providing funding from DfT to the DFMU project.



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About RSSB

Through research, standards and analysis, we help our members deliver a better, safer railway.

We work in close collaborative partnership with our members: infrastructure managers, passenger and freight train operators, suppliers and contractors.

Through our independent, evidence-based approach, built on strong technical capability, we help our members to ensure that all areas of operation are as safe and efficient as possible.

Website: www.rssb.co.uk

Twitter: [@RSSB_rail](https://twitter.com/RSSB_rail)

About Grand Central

- Grand Central Railway Company Limited is an established train operator which provides direct rail connections from towns and cities in Yorkshire and the North East England with London.
- Established in 2007, Grand Central celebrated its 10th anniversary in 2017. Customer satisfaction levels are consistently high and the rail company has just been named Britain's best value rail operator for the seventh time.
- Grand Central operates West Riding Services between Bradford Interchange, Low Moor, Halifax, Brighouse, Mirfield, Wakefield Kirkgate, Pontefract Monkhill, Doncaster and London King's Cross. The rail operator also operates North East services between Sunderland, Hartlepool, Eaglescliffe, Northallerton, Thirsk, York and London King's Cross.
- Grand Central is part of the Arriva group, one of the leading providers of passenger transport in Europe. Arriva employs more than 60,000 people and delivers over 2 billion passenger journeys across 14 European countries each year.

About G-volution Ltd

- Established in 2008, G-volution Ltd are a British SME who specialise decarbonising transport by deployment of its patented dual fuel technology (The Optimiser) for the Road, Rail and Marine sectors.



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- The main principles of the technology are to lower both operational costs and emissions outputs from large diesel engines by displacing some of the primary fuel (Diesel) with a secondary cleaner and more cost-effective fuel (Natural Gas in this case)
 - Website www.g-volution.com

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