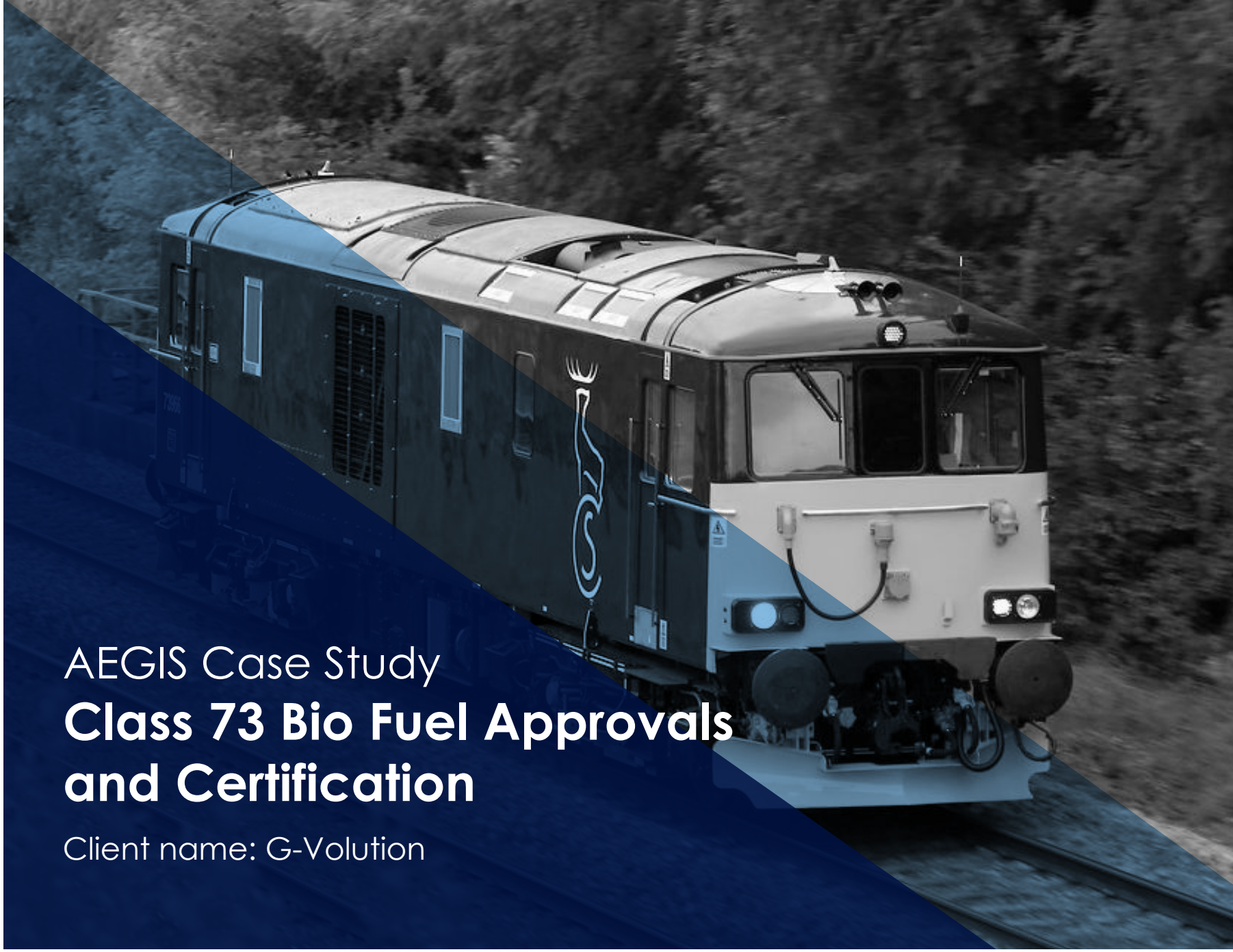
AEGIS Certification

The Positive Choice



AEGIS Case Study

# Class 73 Bio Fuel Approvals and Certification

Client name: G-Volution

**AEGIS Certification Services**
29 Brunel Parkway, Derby DE24 8HR
www.aegiscertification.com

info@aegiscertification.co.uk
+44 (0) 1332 384 302

# SCOPE/OBJECTIVE

AEGIS Certification Services Ltd have been selected by G-Volution for the certification and approvals of a Class 73 locomotive which is to be converted to run on Diesel and Bio LPG fuel.

The project is to modify a Class 73 freight locomotive to enable it to run as a dual fuel vehicle. The 'Decarbonising Rail Freight' project is administered by Innovate UK under their DfT funded 'First of a Kind' round 3 (FOAK3) competition.

# THE TECHNOLOGY

The project seeks to install a dual fuel system to a Class 73/9 "Ultra" locomotive for a trial period to investigate the reductions obtained in CO2, NOx and particulate emissions as well as reductions in fuel costs.

The locomotives are owned by Network Rail and operated by Colas Rail. The project will provide data to support the wider roll-out of dual fuel technology in the rail freight industry.

The implementation of the dual fuel trial on the Class 73 locomotive requires the installation of an additional fuel tank to hold the second fuel, in this case Bio Liquid Petroleum Gas (Bio LPG) and a fuel delivery system. The Bio LPG fuel system supplements the existing diesel fuel system – both fuels are used simultaneously in co-combustion.

# HOW WE HELPED

AEGIS Certification Services Ltd (ACS) are acting as the "Assessment Party" (as per RIS- 2700-RST) to verify compliance with the relevant standards and as an Independent Safety Assessor (ISA) to review the Risk Management Process associated with the conversion.

The objectives of the project are to demonstrate:

- Practical demonstration of dual fuelling by in-service operation;
- Demonstrate Nitrogen Oxide and Particulate Matter emissions reductions;
- Carbon reduction through reduced carbon fuels;
- Cost reduction via the use of a less expensive secondary fuel;
- Demonstrate the feasibility of installation to freight locomotives;
- Demonstrate the feasibility of secondary fuel provision track side;
- Comply with the railway approvals regime (RIS-2700-RST / ISA);
- Identify practical lessons learned from the trial;
- Provide real-world data for the purposes of producing a robust business case for wider application in the Railway Freight Industry.

# OUTCOME

This project aims to demonstrate the feasibility of dual fuelling in the British Freight market using technology that has already been proven in the road freight sector in the UK. It will help to develop the business case for dual-fuelling and demonstrate the carbon and cost saving advantages for freight locomotives. Demonstration in the GB market will also open the potential for this technology within the global freight market.

**AEGIS Certification Services**
29 Brunel Parkway, Derby DE24 8HR
www.aegiscertification.com

info@aegiscertification.co.uk
+44 (0) 1332 384 302