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# Supporting a greener rail sector



Our vision is to support the rail industry in meeting the 2050 Net Zero target. We will do this through accelerating the uptake of hydrogen refuelling technology and delivering innovative solutions that fuse digitalisation and decarbonisation. We will unlock the lowest emissions and cost options in running a blended fleet.

## Fuel cells systems for rail

**tpgroup** is an integrated hydrogen fuel systems provider delivering solutions that are proven, reliable and cost effective – while offering industry-leading performance.

We can provide consultancy, solution engineering, and integration support as well as the fuel cell hardware. We are currently developing fuel cells systems for a UK ROSCO.

Our customers benefit from:

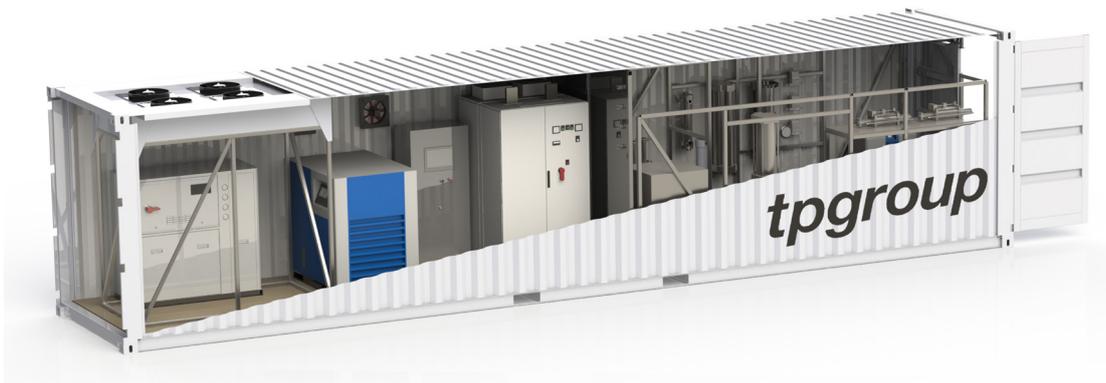
- Modular - scalable and expandable solutions, adaptable across a wide-range of platforms and applications
- Proven pedigree of fuel cells successfully integrated and operational across a broad range of platforms and applications
- Extended operational life

## HyGen™ - hydrogen refuelling solutions for rail

**tpgroup** has a 50-year heritage in producing a high purity of hydrogen for highly-regulated industries, safely and with high reliability.

Our HyGen™ Series solution has been developed to meet the future hydrogen requirements of the rail sector, offering a self-contained, modular deployable hydrogen (H<sub>2</sub>) electrolyser. Our entry level 250kW electrolyser system produces 100Kg of hydrogen per 24hrs / day and is ideal to support the early roll out of the technology into the rail market.

The exceptional build standard means our systems always outlast the 35-year platform life on which they are installed and integrated.



*HyGen™ refuelling system for the rail industry*

### Rail digital asset optimisation

Achieving net zero emissions by 2050 is a challenge that impacts rail operators globally. This target needs to be achieved with a blended fleet as overnight replacement to green technology is simply not possible. Operators need to run safe and reliable services at a cost that doesn't impact the passenger.

We offer a novel approach of fusing big data, artificial intelligence (AI), and hardware with real-time and historical data to optimise a blended fleet of diesel and green energy (battery/hydrogen) trains – helping an operator to unlock the lowest emission options and costs. This includes using telemetry on hydrogen-production equipment to demonstrate how digital technologies, coupled with the latest green energy technologies, will revolutionise the transport market.

We bring extensive, safety-critical asset management experience built within the rigorous and challenging defence environment where reliability is of paramount importance.

### Why **tpgroup**?

**tpgroup** is a provider of mission-critical and business-critical solutions for a safer world.

We are engaged in projects across rail, aviation, defence, road, carbon capture/zero-carbon projects and delivering green energy to remote sites/ locations.

We are world leaders in gas management and are one of a few companies globally that can create system-level electrolyser hydrogen generation solutions with relatively low barriers to entry. Our digital technologies complement our specialist gas systems by optimising the availability and performance of assets using our artificial intelligence and machine learning technology to provide decision support - helping to keep systems operational and maximise uptime.



### For further information

If you would like to find out more about our capabilities within the rail sector, please go to [www.tpgroupglobal.com](http://www.tpgroupglobal.com) or contact us at [energy@tpgroup.uk.com](mailto:energy@tpgroup.uk.com).