

£9 million fund opens to railway innovators and inventors

- First of a Kind competition offers share of £9 million prize to rail ideas of tomorrow
- previous investment has driven forward UK's first hydrogen train, live seat rebooking and technology to remove age-old challenge of 'leaves on the line'
- Rail Minister launches competition with speech at the [Rail Innovation Exhibition](#)

A new £9 million competition to find cutting-edge ideas set to transform the future of the railways has opened today, as Rail Minister Chris Heaton-Harris and [Innovate UK](#) launched the [2021 First of a Kind \(FOAK\) competition](#).

Focused on developing pioneering technology and exceptional ideas that can improve journeys for passengers and decarbonise the rail network, FOAK is now entering its fifth round, with a particular focus on supporting innovations that make the network cleaner, greener and more passenger-friendly.

To date, the competition has seen the Department for Transport (DfT) and Innovate UK invest around £25 million to develop projects including:

- HydroFLEX – the first mainline testing of a hydrogen train
- inspection drones capable of rapidly assessing the safety of rail infrastructure
- controlled water addition to remove the notorious problems caused by leaves on the line
- concrete slabs that automatically heat up to prevent icy platforms and passengers slipping
- a 'sound-bending' wall to minimise the noise of passing trains in urban areas
- hydrogen-based steam turbines to drive zero-emission, low-noise rail freight

To mark the launch, Rail Minister Chris Heaton-Harris addressed the Rail Innovation Exhibition and reaffirmed the continued efforts that are being made to drive innovation within the rail industry and establish new technologies to build the railway of tomorrow.

Rail Minister Chris Heaton-Harris said:

This country pioneered the railway, and that spirit of innovation and ingenuity has never been more vital as we look to build back better from this pandemic.

Our railways will underpin this country's economic recovery and help realise our ambitions of a carbon-neutral future. Through

initiatives like the First of a Kind competition, we are investing today to build the railway of tomorrow.

Simon Edwards, Deputy Executive Chair and Chief Business Officer at Innovate UK, said:

A greener railway, easier for everyone, with a better experience for users is the aim of this competition.

Delivered by Innovate UK on behalf of the DfT and through the [Small Business Research Initiative](#), it seeks the best and brightest ideas.

Innovative companies all over the UK have proved their mettle in previous rounds of this scheme. Now we call again for even more fresh thinking to help deliver a better and greener railway that delivers for passengers and freight users.

Organisations have until 10 March 2021 to bid for funding. In 2020, 25 projects received a share of £9.4 million of funding.

Past winners who have benefitted from investment include HydroFLEX, who used funding received from FOAK in both 2019 and 2020 to develop the UK's first full-size hydrogen-powered train to be run on the mainline railway. Transport Secretary Grant Shapps visited the site in September 2020 to see the project, which is now developing the first hydrogen-powered passenger train.

Another previous winner is Seatfrog for their project 'Train Swap', enabling passengers to quickly and remotely update their seat reservation to an alternative service, and giving train operating companies the ability to move passengers proactively, managing load across the network. This innovation could help the industry adapt to the pandemic and ensure appropriate social distancing on services.

Dr Stuart Hillmansen, HydroFLEX's Technical Lead, said:

It is fantastic to see our early fundamental research on the application of fuel cells in the railway sector being implemented and delivering real benefits for today's railway.

James Eyton, Seatfrog's Chief Financial Officer, said:

The DfT and Innovate UK are incredible supporters of technology start-ups and scale-ups in the UK, providing funding to drive innovation that enhances passenger experience.

At Seatfrog, this funding has enabled us to fast-track our product development of Train Swap, delivering the fastest and easiest way

to change your train in the UK.