

# Light Rail (UK) Group

H2, The Tram Fuel of the future



## Liverpool City Region Cruise Liner Terminal - City Tram Circular Shuttle

A moderately hilly route Shiplside to Lime Street Railway station via Liverpool One Loop route , approximately 4.8 km long

MRV3; 100 passengers x 1 Driver

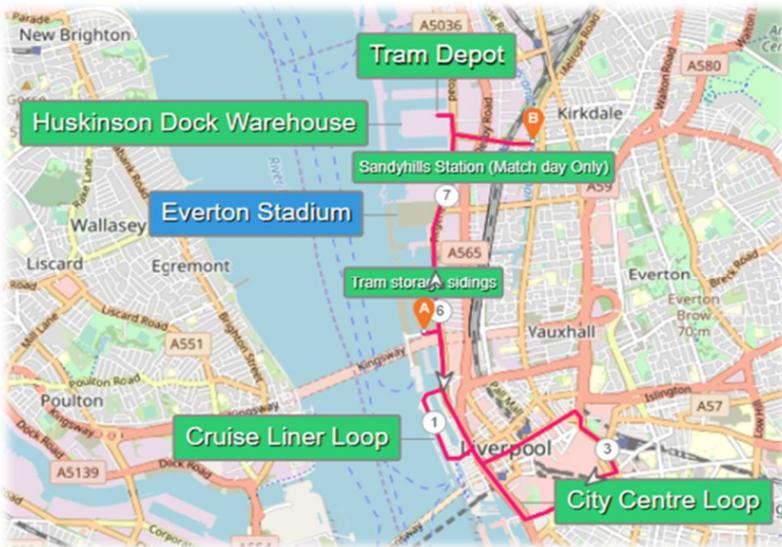
The first public demonstration of a Hydrogen Electric Passenger Vehicle in North America, October 2018

2017 - Award Winner  
Cleanest and Greenest

April 2024



Podcast in plain Scottish @ <https://www.railindustryconnect.co.uk/rail-industry-connected-hydrogen-trams-as-a-service-with-jim-harkins-light-rail-uk/>



Direct access from/to the City Centre transport Hubs. Link to Lime St. Railway Station and Bus Station and Liverpool One Retail Centre.

Frequent and Flexible Service, Additional timings for Cruise Liner's arrivals and departures  
200,000 passengers in 2024 and will exceed 300,000 once the new infrastructure works are completed.  
IOM Steam Packet Company terminal 623,037 pax  
Mersey Ferries Pierhead terminal 1,200,000  
Everton Stadium estimate 1,004,872 fans to events  
**Estimated traffic 2,123,037 potential passengers**

Tourist and City tramcars for all weathers.

Tourist spends captured in LCR

A 2<sup>nd</sup> generation working tram museum line.

A Clean and Green Gateway to the North West

No Road/Tyre/Brake Particulates (NEE)

(A genuine zero emission vehicle).

**No Air Pollution at Point of Use!**



Self-powered new build tradition summer tram cars



City Cars (3) autonomously coupled, 300 passengers

## Why Green Hydrogen Trams? ©

Liverpool City Region, The North West showcase doorway demonstrator



A Coventry VLR example.

Trams have a proven record of getting people out of their cars whilst producing zero emissions and particulates at point of use and that these very light rail\* (VLR) offers significant potential for enabling these benefits to be realised on a significant larger scale.

\* VLR trams are built to International Light Rail Standards and are a low cost starter line. Less than £10 per track Kilometre and are a significant Public Transport Legacy.

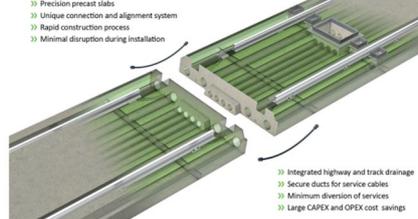
The national delivery of an integrated transport system will often involve initiatives that span local authority and county boundaries and mechanisms for coordination at regional levels are needed to help promote and deliver this project.



The proposal for a demonstrator line to Liverpool city centre from the Liner Terminal for very light rail, a system involving vehicles on much lighter rails compared to current tramways with a dramatic reductions in construction costs, faster construction and less disruption.

### Legal utilities are left in place

#### 3D Image of PCAT LRT On Street Slab



\*Installation less than £10M per Km

\*Data from UKTram, Coventry VLR Project, Stefcron Plc, TigM Doha

The new track is laid just 30cm within the road's surface, minimising the need to relocate pipes and cables which is time-consuming and expensive.

This is achieved by taking advantage of cutting-edge materials, while still making use of standard rail parts

The largest share of transport emissions comes from cars, accounting for 38% a 20% reduction by 2030!...Transport Scotland Jan 2022

**As Trams have a high modal switch circa 25% - 32%, this demonstrator line can achieve that target along this corridor**

Statistics in Tram integrated Nottingham show that LEZs are not required

Light Rail (UK)

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### Sample of road space reallocation



Light Rail Consultants, Transport Engineers, Private Enterprise, Politicians, Academics, Environmentalists and others.

Hydrogen/electric buses can only be seen as a welcome interim solution in the short term with no transport legacy, they still remain a source of significant particulate pollution (\*NEE) arising from the friction between tyres and road surfaces while steel wheels running on steel rails create zero emissions of this type.

**\*All UK Governments are aware of this (Greenwash) NEE pollution**

**\*39,000 folk died from Particulates**

Commercial specialists in low cost, VLR, affordable & sustainable tramways