

# Enabling the shift to zero emission HGVs – ZEHD

Dr Isabella Panovic  
Programme Manager – Zero Emission Road Freight



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# Innovate UK

- The UK's innovation agency, at the heart of delivering UK Research and Development funding to industry
- Works with the UK government to invest over £7 billion a year in research and innovation by partnering with academia and industry



**UK Research  
and Innovation**



## **Innovate UK Business Connect**

Innovate UK Business Connect exists to connect innovators with new partners and new opportunities beyond their existing thinking – accelerating ambitious ideas into real-world solutions.

# The ZEHID Innovate UK / IUK Business Connect Team



**Dr Alistair Barnes**  
Senior Programme Manager,  
Land and Maritime Transport



**Dr Isabella Panovic**  
Programme Manager, Zero  
Emission Road Freight



**Victoria Saunders**  
Innovation Lead – Zero  
Emission Transport



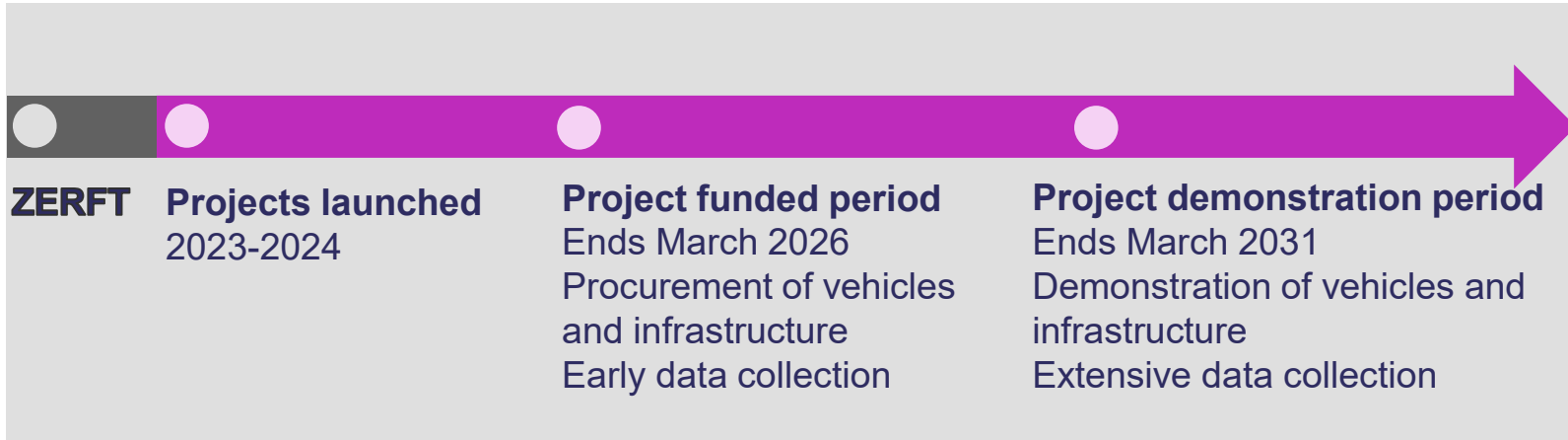
**Jesse Prendergast**  
Knowledge Transfer Manager,  
Transport Infrastructure



**Simon Buckley**  
Knowledge Transfer  
Manager, Zero Emission  
Mobility



# Zero Emission HGV & Infrastructure Demonstrator (ZEHID) Programme



## Main aims:

1. **Support commitment** to end the sale of new, non-zero emission HGVs by 2035/2040
2. **Understand** the costs and merits of various zero emission HGV technologies, based on large real-world operations (collect data and analyse)

# UK-wide zero emission HGV infrastructure locations

Discover the planned UK-wide electric charging and refuelling locations funded through the Zero Emission HGV and Infrastructure Demonstrator Programme, created in association with:

## **eFREIGHT 2030**

Demonstrating the feasibility and business case for electric HGVs and a nationwide 1MW charging hub network using British technology.

## **ZENFreight**

Demonstrating electric and hydrogen powered HGVs for the UK haulage industry through a data driven approach.

## **Project Electric Freightway**



Project Electric Freightway will help pave the way for the wider adoption of electric-powered HGVs to replace existing diesel fleets and help resolve both environmental and efficiency issues across the sector.

## **HyHAUL**

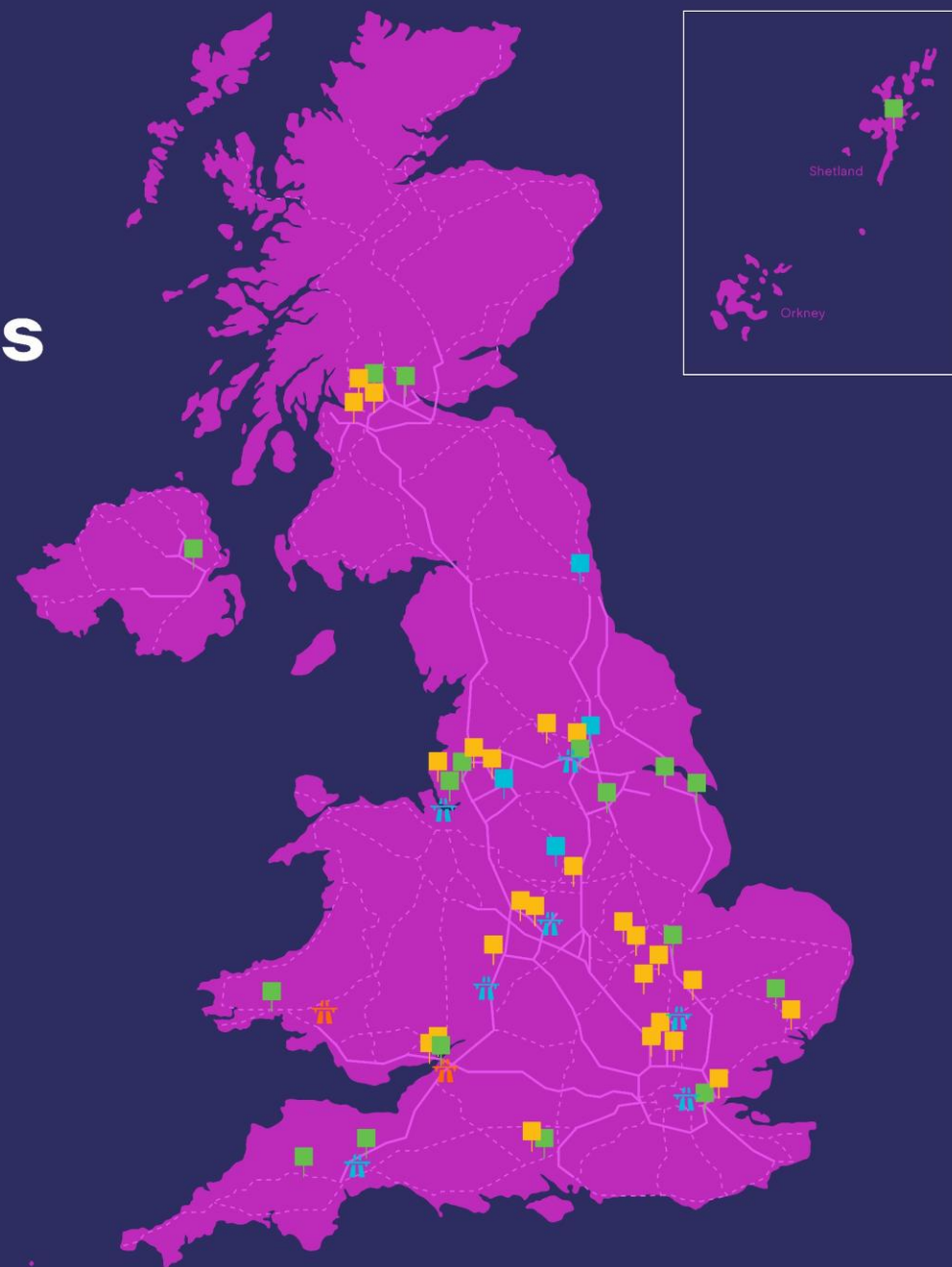
Developing a hydrogen supply chain and hydrogen refuelling infrastructure along the M4 corridor and beyond.

## **Strategic Hub**

 **Motorway**

 **A Road**

**Disclaimer:** This map should be used as an illustration of the planned charging and refuelling points funded through the Zero Emission HGV and Infrastructure Demonstrator Programme.



Data Partners

Imperial College  
London

D | DYNAMON

CATAPULT  
Energy Systems

HITACHI  
Inspire the Next

greencollar  
valuing the environment

OEMS & Financing

SCANIA

Novuna<sup>®</sup>  
Vehicle Solutions

DAF

VOLVO  
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Reynolds  
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Freight Operators

MARITIME

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W  
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Gregory  
Delivering winners

WS  
Transportation

M&S

Royal Mail

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TVS

DFDS

Menzies  
DISTRIBUTION

Samworth Brothers  
QUALITY FOODS

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distribution

Fergusons  
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ALWAYS EVOLVING

a.f. blakemore  
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cloudbass  
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currys

FENN  
LOGISTICS SOLUTIONS

PRAGMACHARGE

Global Transport and Logistics

Wincanton

TARMAC  
A CRH COMPANY

for farmers

Yusen Logistics

voltloader  
CHARGED FOR TOMORROW

Campeys  
of Selby Ltd

I.J. McGill  
TRANSPORT

ADM

XPO Logistics

explore

GXO

KUEHNE+NAGEL

anchor icon



# Programme Vehicles



Vehicles planned

330

Vehicles ordered

>300

Vehicles delivered

>50

- Mostly 4x2 tractor units
- Estimated range 290 – 490km (BEVs) or 400 – 850km (HFCEVs)



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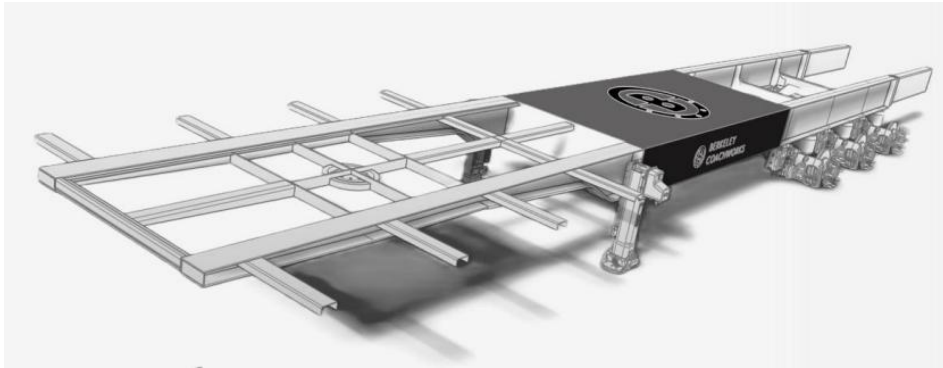


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# Ancillary Equipment



BERKELEY  
COACHWORKS



**Range extension trailer developments –**  
enabling cross-border freight into mainland Europe



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**Refrigerated trailer units –** A F Blakemore solar powered Titan trailer systems

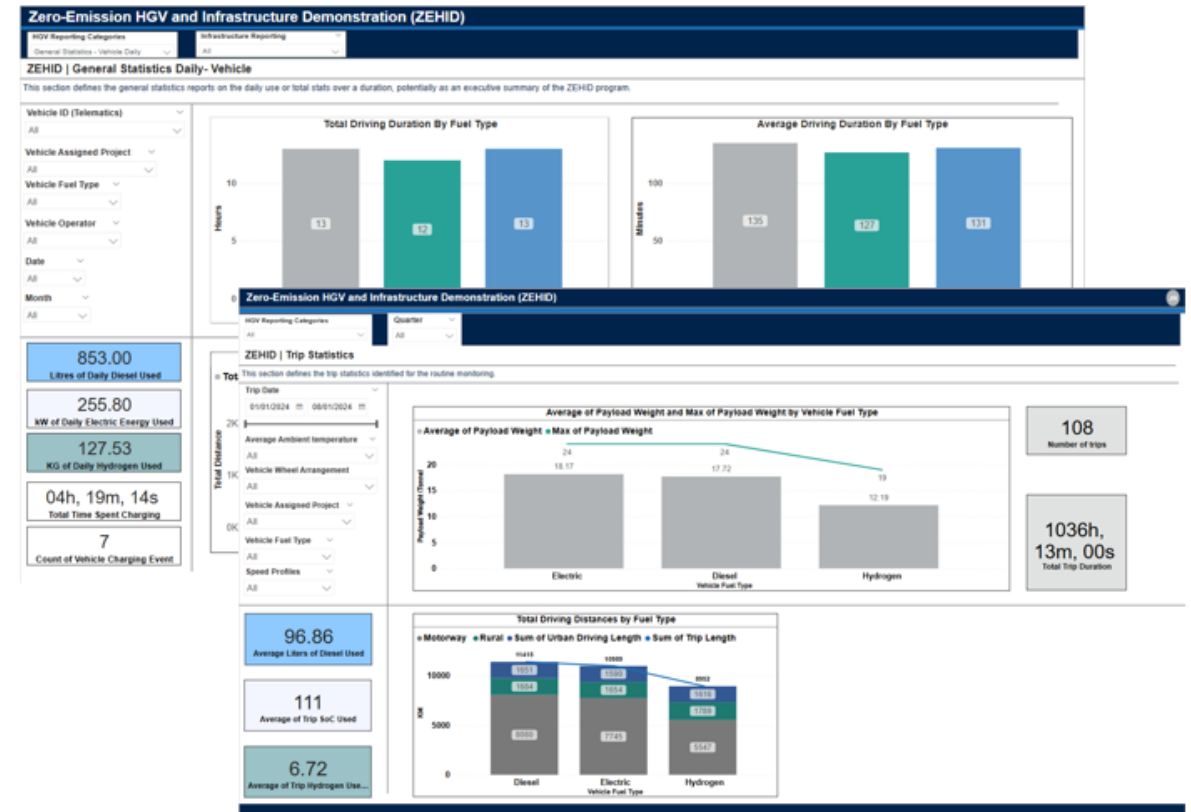
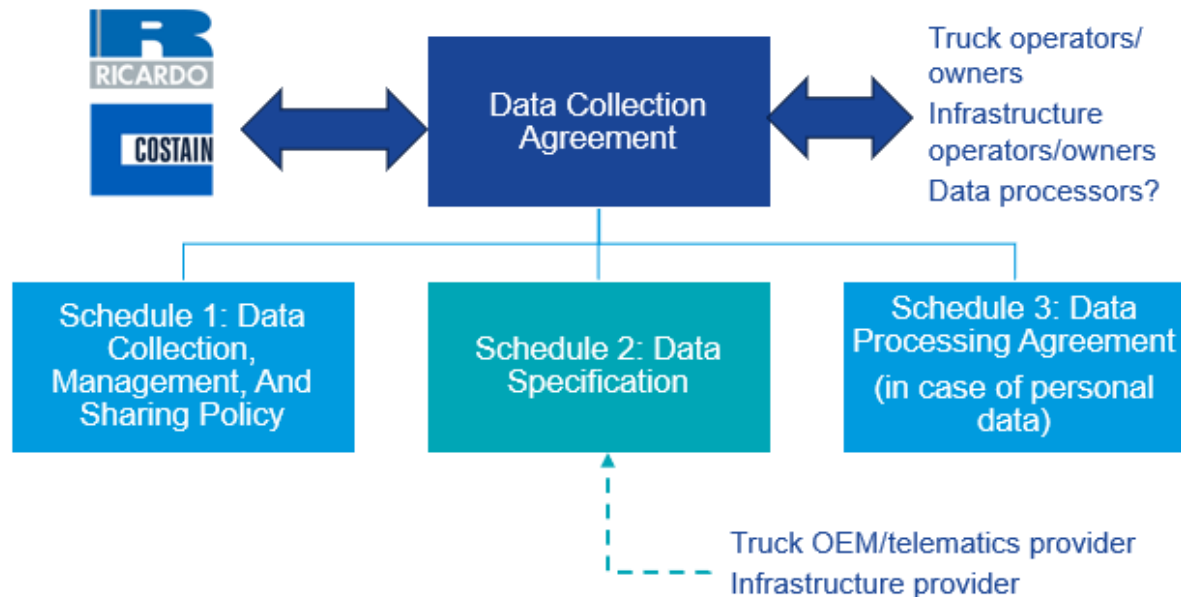


 **SUNSWAP**



# Programme Technical Evaluation

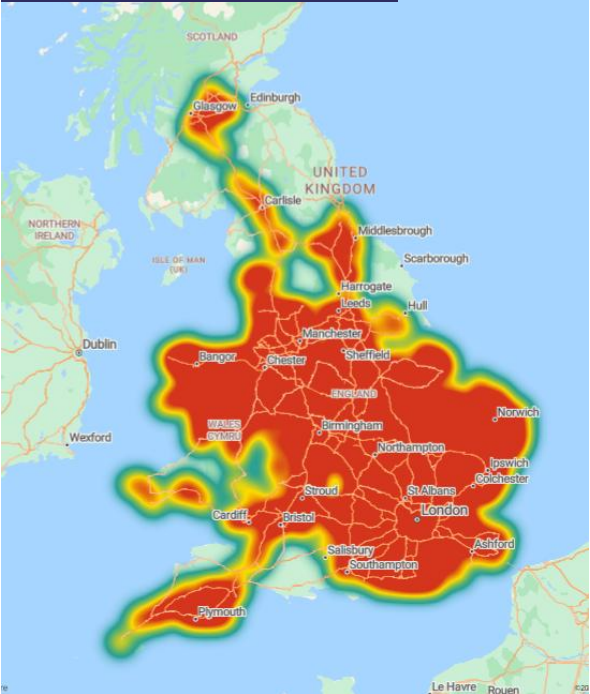
- Ricardo engaged to independently evaluate all projects
- Learning will be public and fed to the Department for Transport



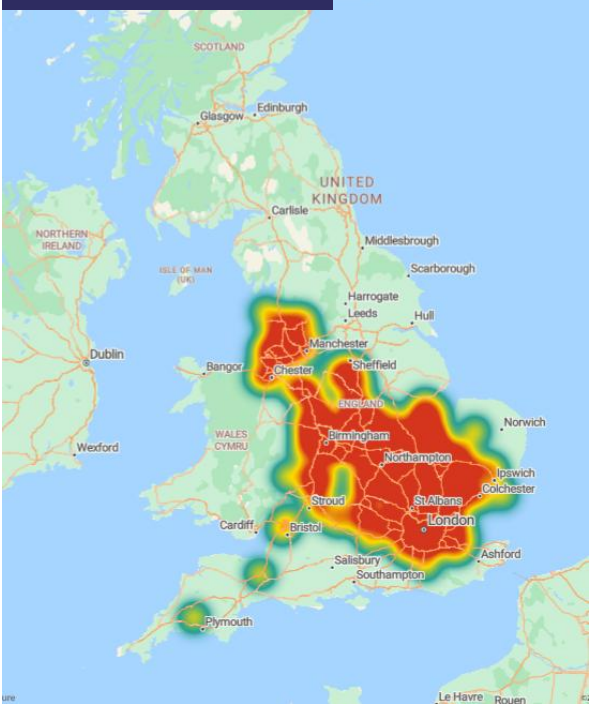
# HGV Deployment Statistics



Diesel + BEV operations



BEV only operations



- Diesel trucks covered a greater distance and wider geographical deployment
- BEV operation is currently limited – mostly testing phase, commissioning and driver training

Data snapshot 15/08/25

Data Collection from HGVs by Consortium	BEV	Diesel
Electric Freightway	22	17
ZEN Freight	4	0
eFREIGHT	1	2
HyHAUL	-	-
Total	27	19

Overall Statistics	BEV	Diesel
Total Distance (km)	652,157	1,631,993
Total Driving Time (h)	13,492	47,529
Average Speed (km/h)	33.6	50.4
Total Energy/Fuel Consumed	756,900 kWh	426,000 Litres



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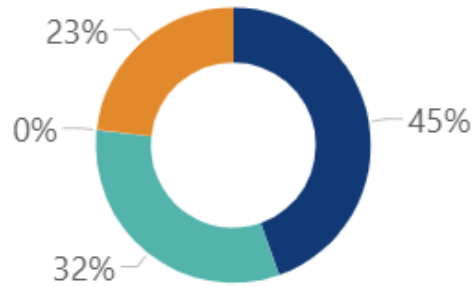
Location data is restricted to a 10km resolution to protect commercially sensitive route information

# HGV Deployment Statistics

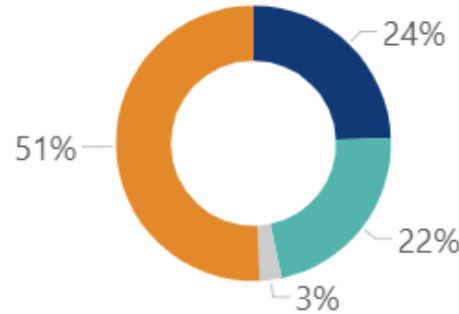
Data snapshot 15/08/25

● Motorway (> 80 kph) ● Rural (50 to 80 kph) ● Urban (1 to 50 kph) ● Stationary (Speed < 1 kph)

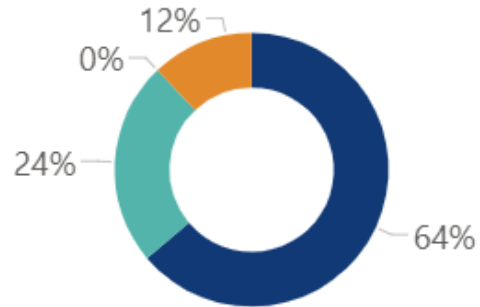
BEV - Distance Share (km)



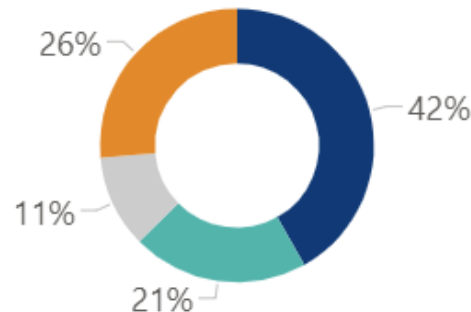
BEV - Duration Share (hour)



Diesel - Distance Share (km)



Diesel - Duration Share (hour)



Currently, the two vehicle types are being utilised in distinct operational patterns

- Diesel HGVs did most of their driving on motorways compared to BEVs
- BEVs did more of their driving in urban areas compared to diesel
- BEV payload data indicates lots of cab only activity (14% of distance share)

Observations likely reflect BEV driver training, limited deployed charging infrastructure or types of routes BEVs have been deployed on.



# Recent Programme Highlights



# ZEHID @ CENEX



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# Stay involved



- Website and quarterly bulletin
- Report publications from Ricardo and projects
- UK open access infrastructure
- Upcoming webinars and future events



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