



**FREIGHT** in the **CITY** **EXPO**

[www.freightinthecity.com](http://www.freightinthecity.com)

# Welcome to the Knowledge Zone



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#FITC2018

Seminar partner:





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**Venn Chesterton**  
**ULEV Innovation Lead**  
**Innovate UK**



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**Sarah Bee**  
**Projects Director**  
**Trakm8**



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# Fully Electric Delivery Van with Refrigeration and Cabin Heating

Sarah Bee

Projects Director

[Sarah.Bee@trakm8.com](mailto:Sarah.Bee@trakm8.com)

# Making EVs Viable for Delivery of Temperature Controlled Goods

## Technology Platform

Our goal is to achieve significant improvements in:

Range

Payload

Temperature Control

Demonstrator project funded by Innovate UK

Innovate UK

Sunamp

ROUTEMOKEY  
A trakm8 Company

Paneltex

LowC<sup>VP</sup>  
Low Carbon Vehicle Partnership



Trakm8

# Making EVs Viable for Delivery of Temperature Controlled Goods

## Project Partners:

### Sunamp (Project Lead)

- Innovative cold storage technology that can maintain the required ambient temperature in the vehicle's cargo area
- Heat batteries that support cabin heating in cold conditions
- Sunamp system has a better power-to-weight ratio and is more efficient than using Li-Ion batteries
- Transferring refrigeration and thermal loads from traction battery to the Sunamp system helps to increase the vehicle's payload and range capabilities

### Route Monkey (Parent Trakm8)

- Telematics, EV fleet optimisation and benchmarking

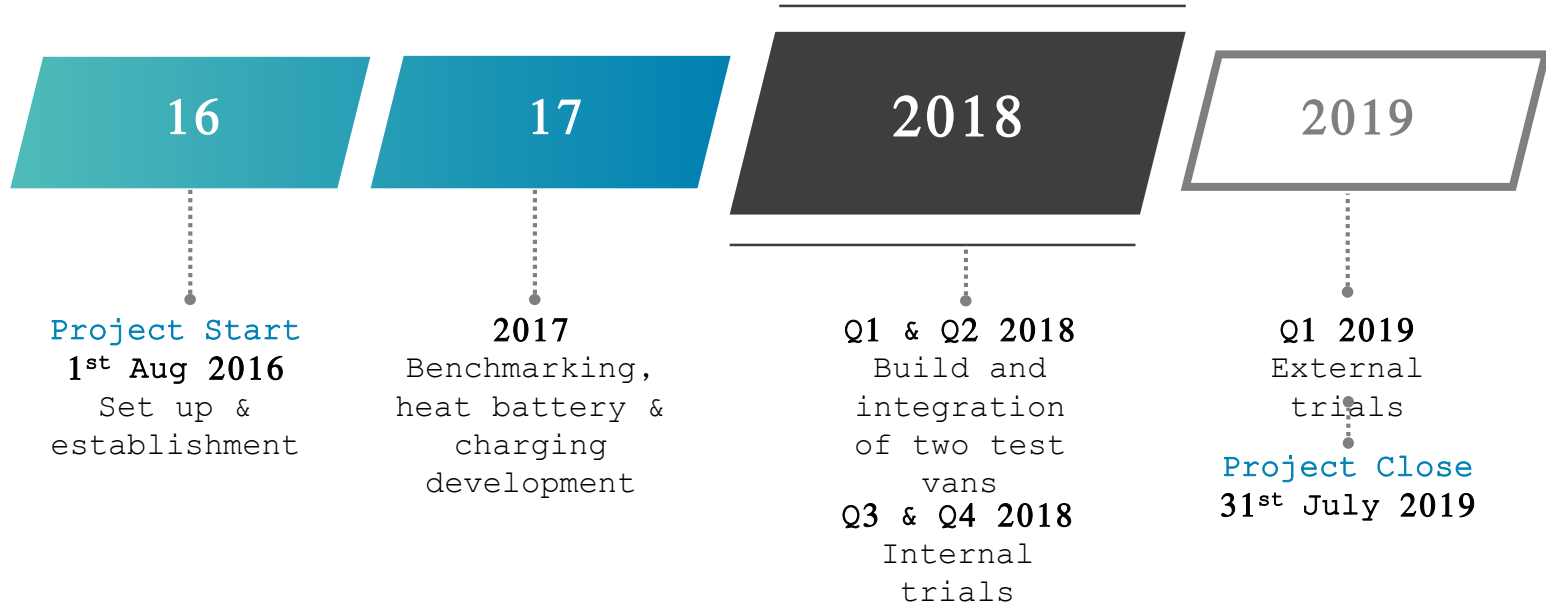
### Paneltex

- UK's leading supplier of commercial EVs and refrigerated vehicles

### Low Carbon Vehicle Partnership

- Dissemination of results

# Project Timeline...



# Improvements in Range and Payload



## Standard Vehicle

Current Performance

Range 85 to 95 miles

Includes 30 to 60 random “stops” of 2 mins each

Payload 1130kg

## Sunamp Vehicle

Current Performance

Working in combination with the vehicle system the Sunamp cold batteries are expected to deliver a full shift of operation

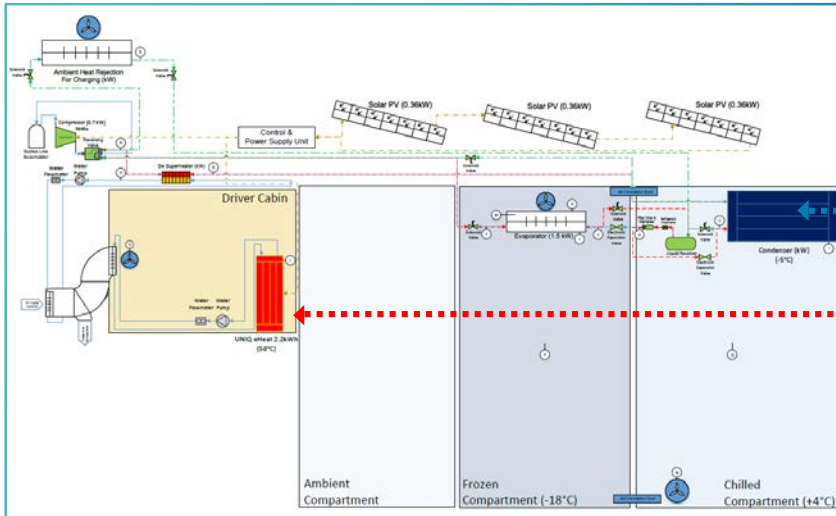
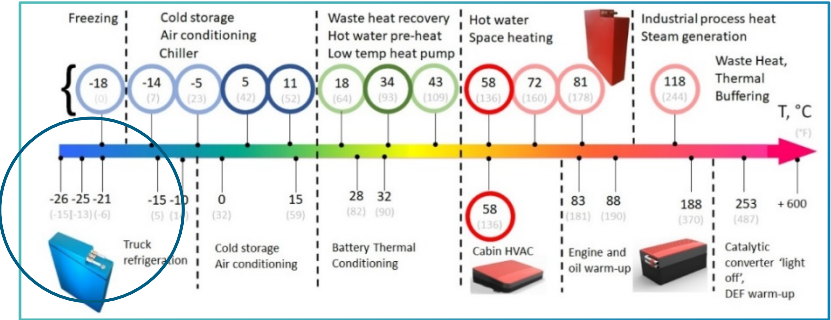
Payload 1080 to 1090kg

Further testing in progress



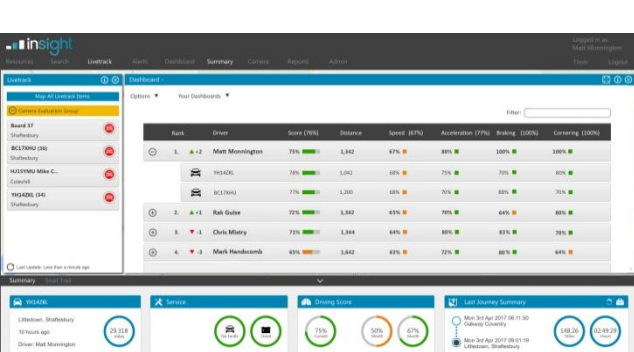
# Sunamp Cold Store Technology...

- Developing and manufacturing non toxic, non flammable phase change materials (PCMs) with temperatures down to -26C
- Proven simple and robust battery construction (Insulated plastic housing with integral heat exchanger immersed in PCM)
- Designed to improve the efficiency of EV refrigeration systems by integrating a cold battery into the refrigeration circuit



- Condenser combined with -5C cold battery. Pre-charged sequentially with pre-chilling prior to delivery
- Reduced compressor work = increased vehicle range
- Heat battery maintains driver comfort in winter

# Reporting with Trakm8 Insight



The report generation interface includes the following sections:

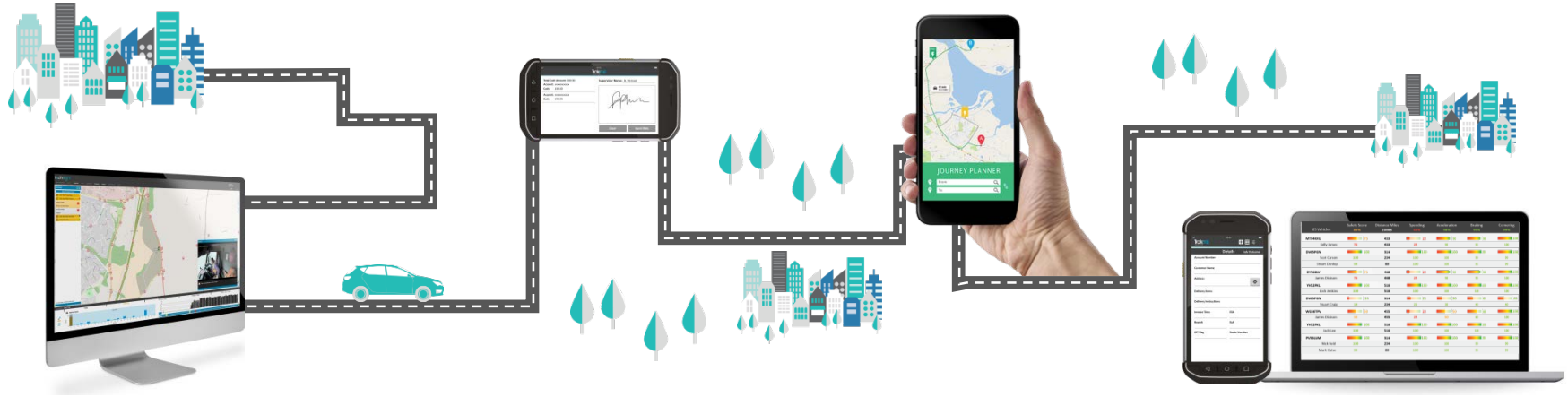
- Report**: Name (1914262-1914262), Choose Region (Vehicle/Company), Filter (All Journeys).
- Choose Timescale**: Timescale (Current Week), Start Date (Mon 20 Sep 2017), End Date (Thu 28 Sep 2017).
- Filters**:
  - Minimum Speed Filter**: Enable ☐ 0 mph
  - Minimum Total Distance Filter**: Enable ☐ 0
  - Percent Overspeed Filter**: Enable ☐ 10 %
  - Out Of Hours Filter**: Enable ☐ Start Time (08:00:00) End Time (16:00:00) Days (Mon, Tue, Wed, Thu, Fri, Sat, Sun) Within Time, Outside Time
- Buttons**: Run Report, Load Report, Schedule, Add to Dashboard.

- Over 80 reports to choose from
- Choose only the reports that are useful to you
- Efficiency reports
- Safety reports

- Vehicle utilisation reports
- Timesheets
- Breakdowns and summaries
- Personalised dashboards



# Trakm8 Route Optimisation and Scheduling



Plan schedules in minutes, at the click of a button

Increase delivery capability by **30%**

Complete tasks with the fewest vehicles and in the lowest

Reduce CO2 emissions

Save up to **20%** on fuel consumption

Integrates with existing back office software and



# Next Steps



## Our Plan

- Complete internal trials  
.....
- On-board external organisations to evaluate the two test vehicles  
.....
- Produce a product road map and commercial business plan

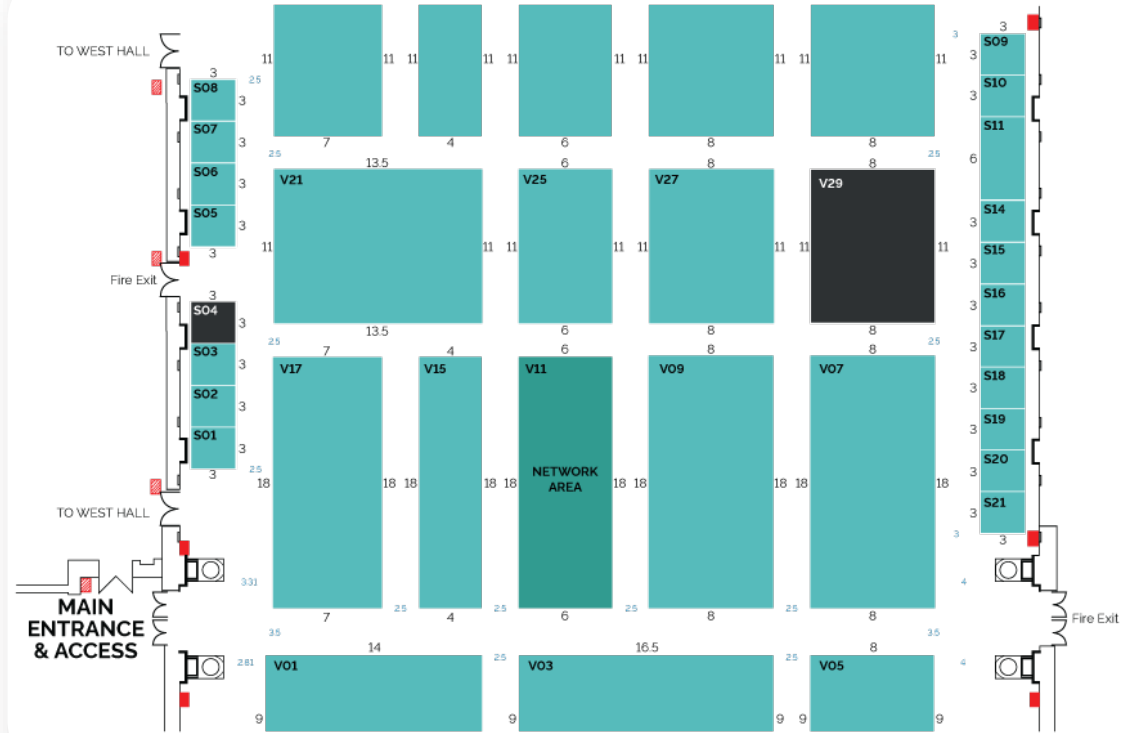
Please visit our stands...



so  
4

V29

To register an interest in being shortlisted to evaluate one of the vans in the New Year





+ Thank You

Sarah Bee

Projects Director

[Sarah.Bee@trakm8.com](mailto:Sarah.Bee@trakm8.com)



# + Questions & Answers



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# Chris Polack

## Rail Freight Forum

### CILT



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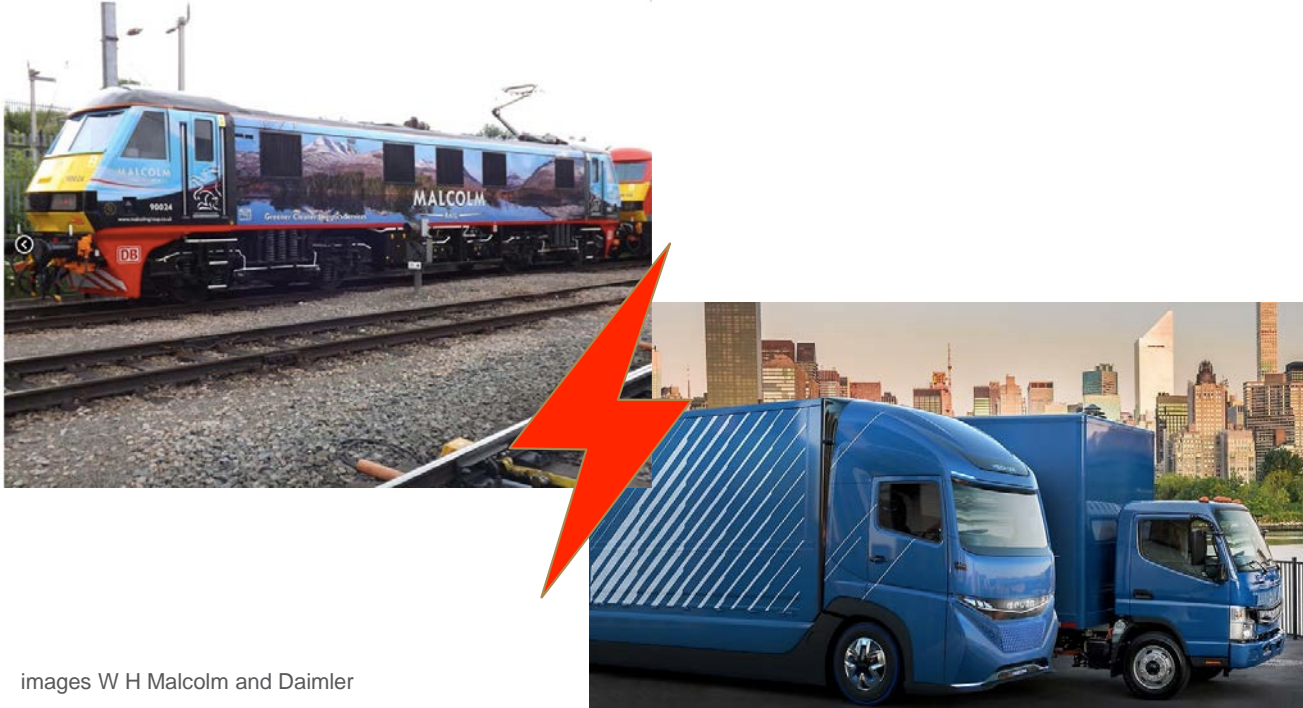
**The Chartered  
Institute of Logistics  
and Transport**

# Freight in the City 6th November, 2018

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Chris Polack, CEng      Rail Freight Forum

# An all electric supply chain.....



images W H Malcolm and Daimler

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# Requirements

- electrified rail network
- electric locomotives
- rolling stock
- inner city interchange
- electric road vehicles
- management information

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# The future is electric!



image Youtube

**Alina Tuerk**  
**Delivery Planning Manager**  
**Transport for London**



# Direct Vision Standard & HGV Safety Permit

**Alina Tuerk**  
**Delivery Planning Manager**  
**Transport for London**



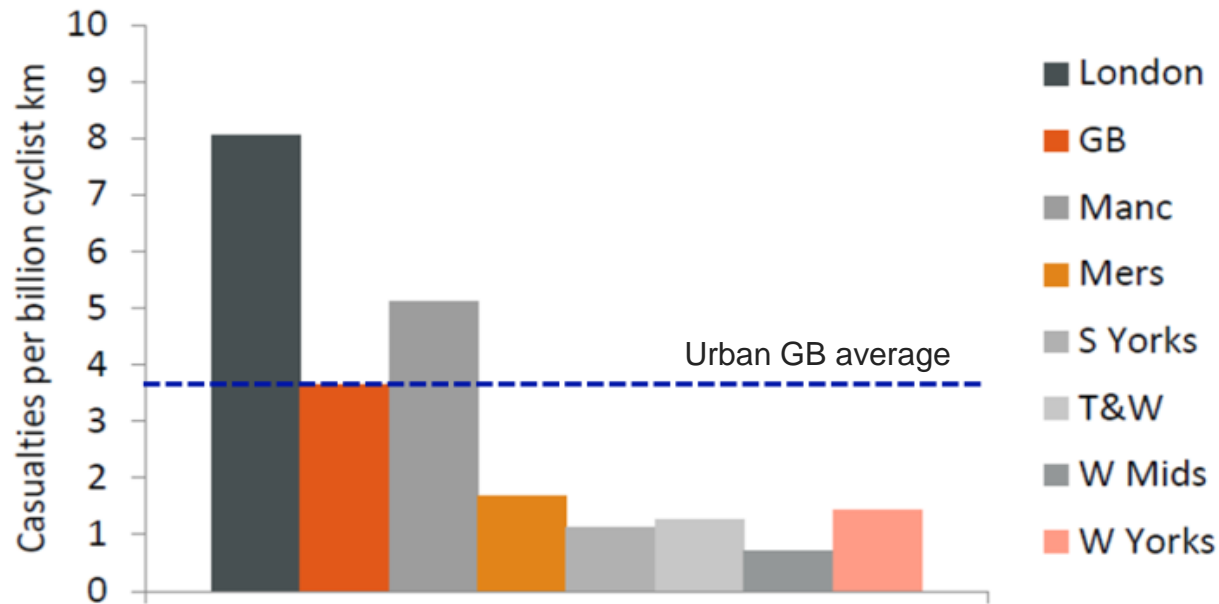
**EVERY JOURNEY MATTERS**

# WHY





# London has a particular problem with HGVs and VRUs



Cyclist casualties from collisions with HGVs – London v GB regions 2006-2015



# Why Direct Vision?



None of these cyclists can be seen  
through the vehicle windows



# WHAT



# A measure



# A rating



# Proposal for London: HGV safety permit

**2019:** Permit issuing commences  
Scheme 'go-live'

**2020:** all zero star HGVs banned unless  
they prove a 'safe system'

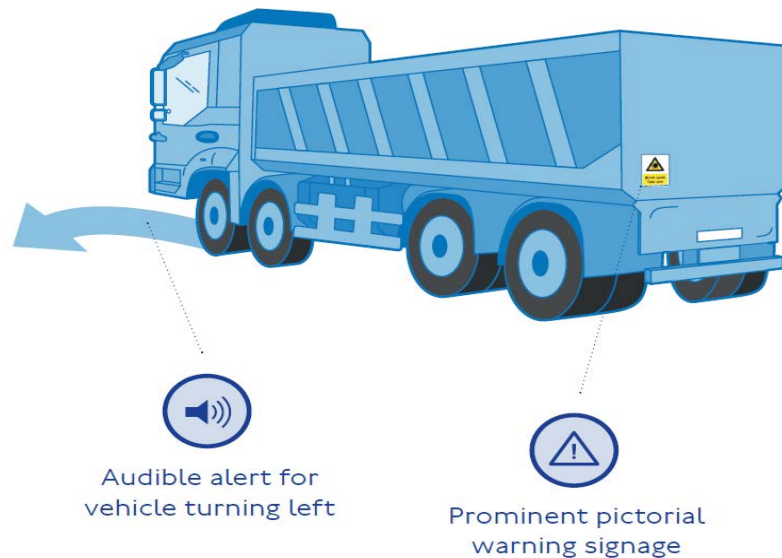
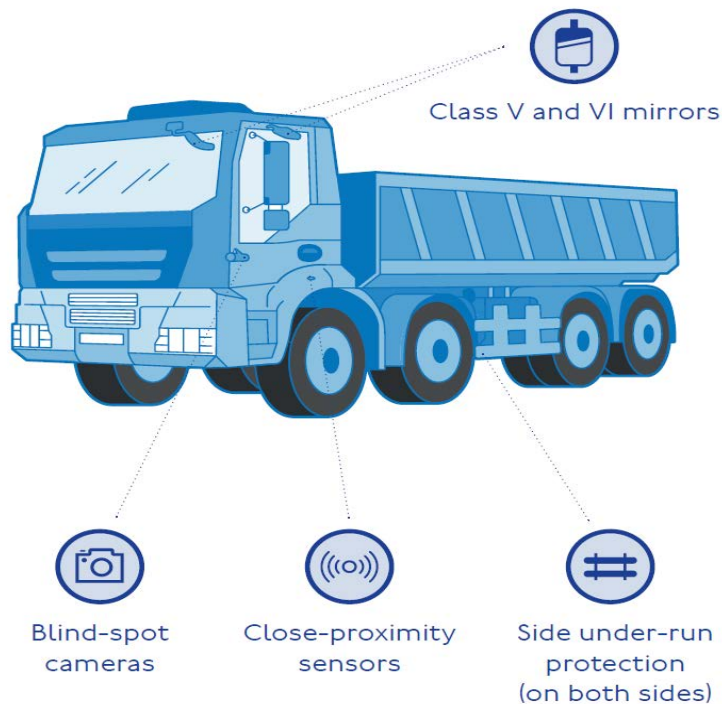
**2024:** all zero - two star HGVs banned unless  
they prove a 'progressive safe system'

Final consultation: January 2019

> 12t GVW



# Proposed safe system requirements

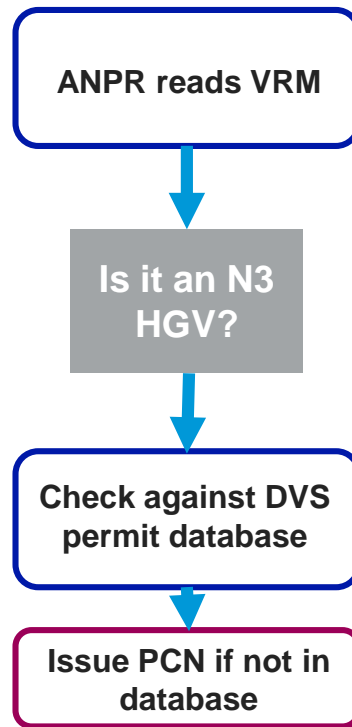
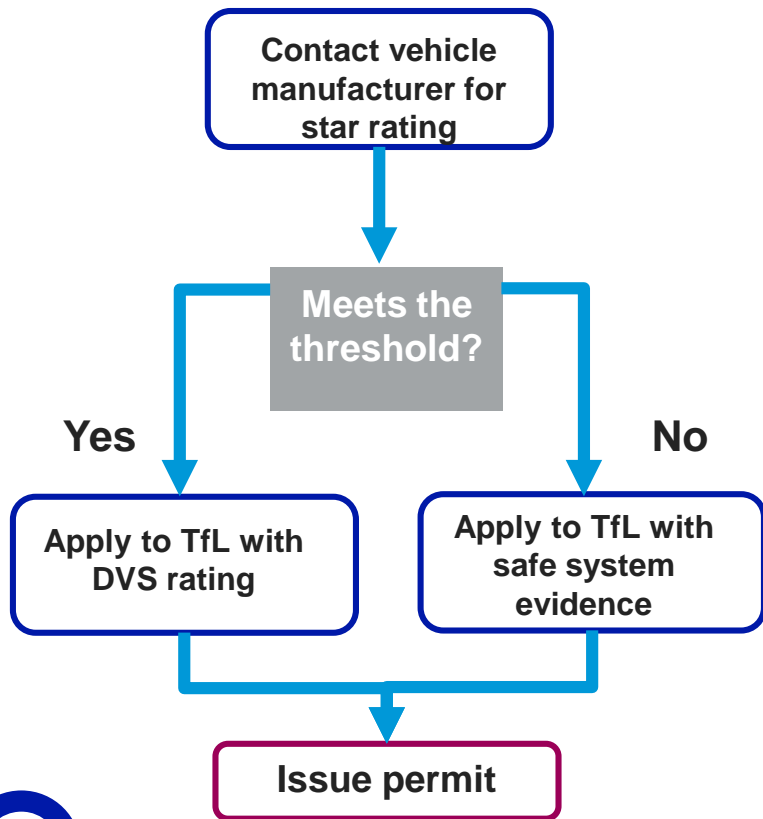


# HOW





# Permit application & enforcement



On-street enforcement collaborations

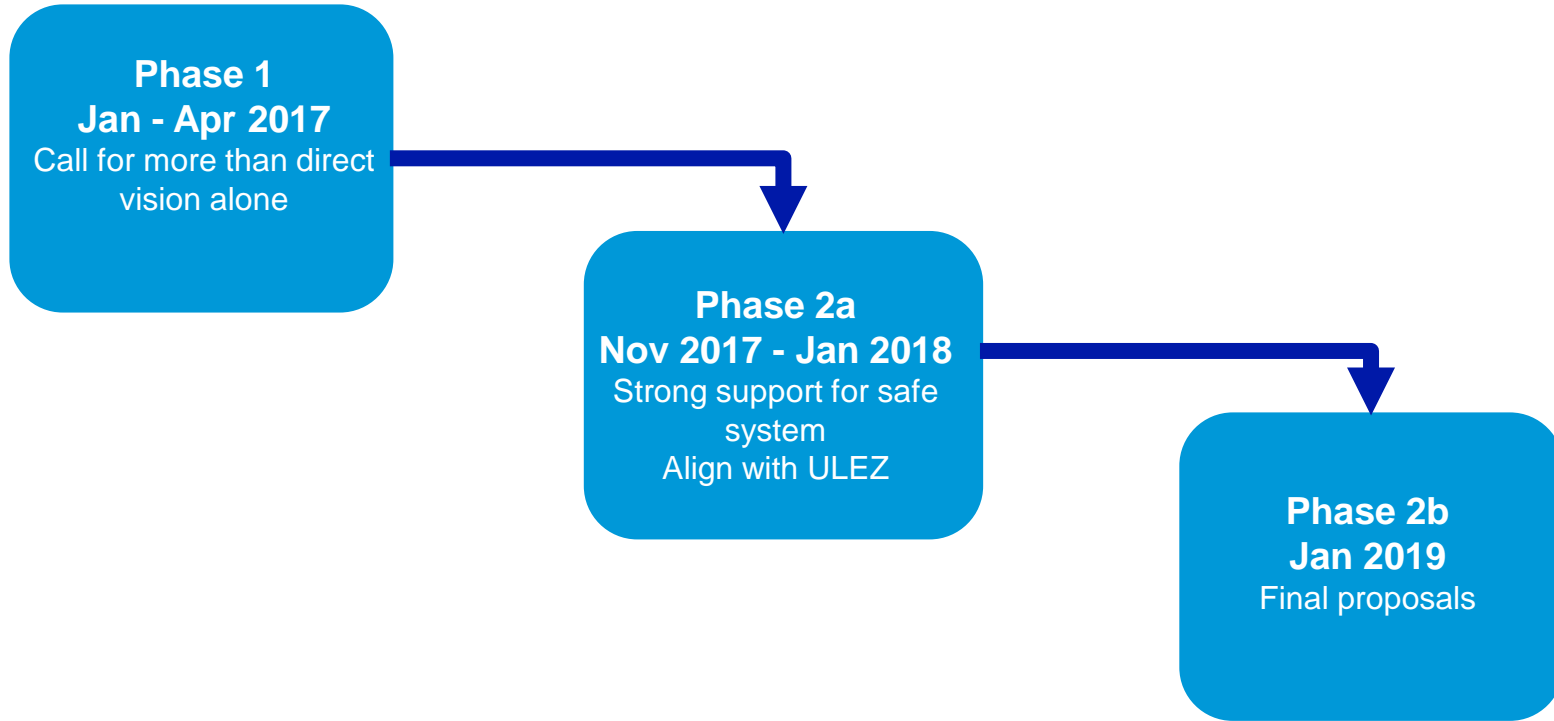




**UNECE**



# Public consultation



# Contact

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0207 027 9583



EVERY JOURNEY MATTERS



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**Phil Rootham**  
**Pre-Sales Technical Manager**  
**Scania GB**



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**CALOR**



**David Wood**  
**Enforcement Policy Manager**  
**Driver and Vehicle Standards Agency**



**David Wood**

**DVSA Enforcement  
Policy Manager**





Driver & Vehicle  
Standards  
Agency

# Our vision

Safer drivers

Safer vehicles

Safer journeys for all





Helping you through a lifetime  
of safe driving



Helping you keep your vehicle  
safe to drive



Protecting you from unsafe  
drivers and vehicles





**674,000**

HGV driving tests

**2.2 million**

driving theory tests

**2 million**

practical driving tests

Reduced average  
waiting time for  
vocational tests to under

**3 weeks**

**97%**

of theory test  
candidates got an  
appointment at their  
preferred test centre  
within 2 weeks

Reduced average  
car test waiting time  
from 12 weeks to under

**6 weeks**

Source : DVSA Annual review 2016-2017



## Helping check your vehicle is safe to drive

**964,000**

vehicle tests

**37.8 million**

MOT certificates issued

**99%**

availability of MOT  
testing service

**99.6%**

of confirmed reservations  
honoured at ATFs

**64,000**

MOT testers completed  
their annual assessment

Source : DVSA Annual review 2016-2017



## Protecting you from unsafe drivers & vehicles



Source : DVSA Annual review 2016-2017





# Damaging our health





# Driving without a break







# Dangerous vehicles





# DVSA Earned Recognition Scheme

**DVSA**  
**earned recognition**







**Andrew Goodwin**  
**National Bunker Manager**  
**Certas Energy**

# Shell GTL Fuel: An Introduction

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**Andrew Goodwin**  
**National Bunker Manager**

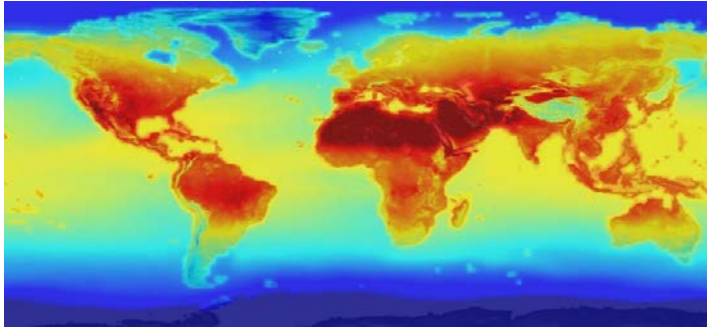
[andrew.goodwin@certasenergy.co.uk](mailto:andrew.goodwin@certasenergy.co.uk)

Shell GTL Fuel is a liquid fuel that is a cleaner burning alternative to diesel.

*As the world transitions to lower emission mobility, Shell believes that GTL Fuel will be part of the fuel mix that will be needed to power the future, alongside e-mobility, biofuels, LNG, hydrogen, CNG, LPG, diesel, and gasoline.*



# The emissions challenge



## Global Climate Change

**Impact:** Global economy

**Timeline:** Small effects in the short term  
grow more severe longer term

**Cause:** Greenhouse gas emissions



## Local Air Quality

**Impact:** Human health

**Timeline:** Immediate

**Cause:** Predominantly NO<sub>x</sub> and  
particulate  
emissions from combustion  
engines  
and burners

# UK recognized issue

Poor air quality in the UK kills around 40,000 people each year\*, est. 10,000 in London. The two pollutants of most concern are microscopic airborne particles, known as particulate matter (PM2.5 and PM10), and nitrogen dioxide (NO2).

Non road mobile construction and demolition activities can result in elevated PM10 and PM2.5 concentrations; and increased concentrations of nitrogen dioxide from the exhaust of diesel powered machinery and vehicles, both static and non-road mobile machinery (NRMM).

\*<http://www.nhs.uk/news/2016/02February/Pages/Air>

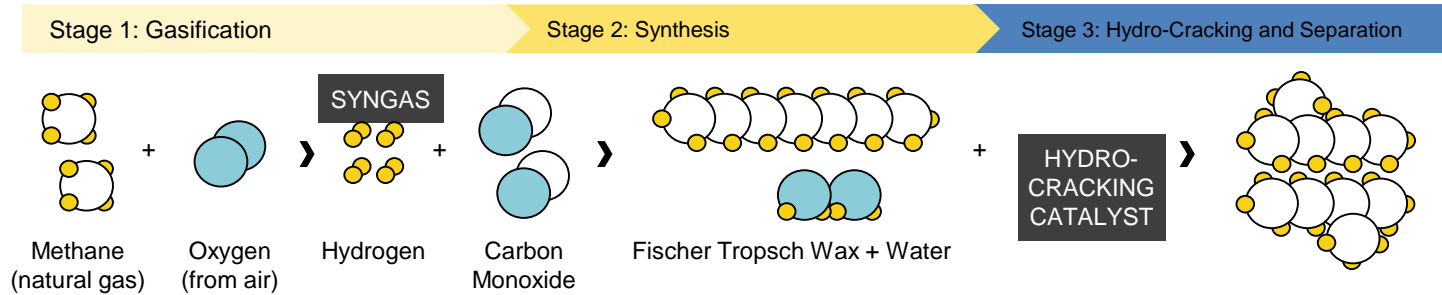


Pollutant	Health effects at very high levels
Nitrogen Dioxide, Sulphur Dioxide, Ozone	These gases irritate the airways of the lungs, increasing the symptoms of those suffering from lung diseases
Particles	Fine particles can be carried deep into the lungs where they can cause inflammation and a worsening of heart and lung diseases
Carbon Monoxide	This gas prevents the uptake of oxygen by the blood. This can lead to a significant reduction in the supply of oxygen to the heart, particularly in people suffering from heart disease

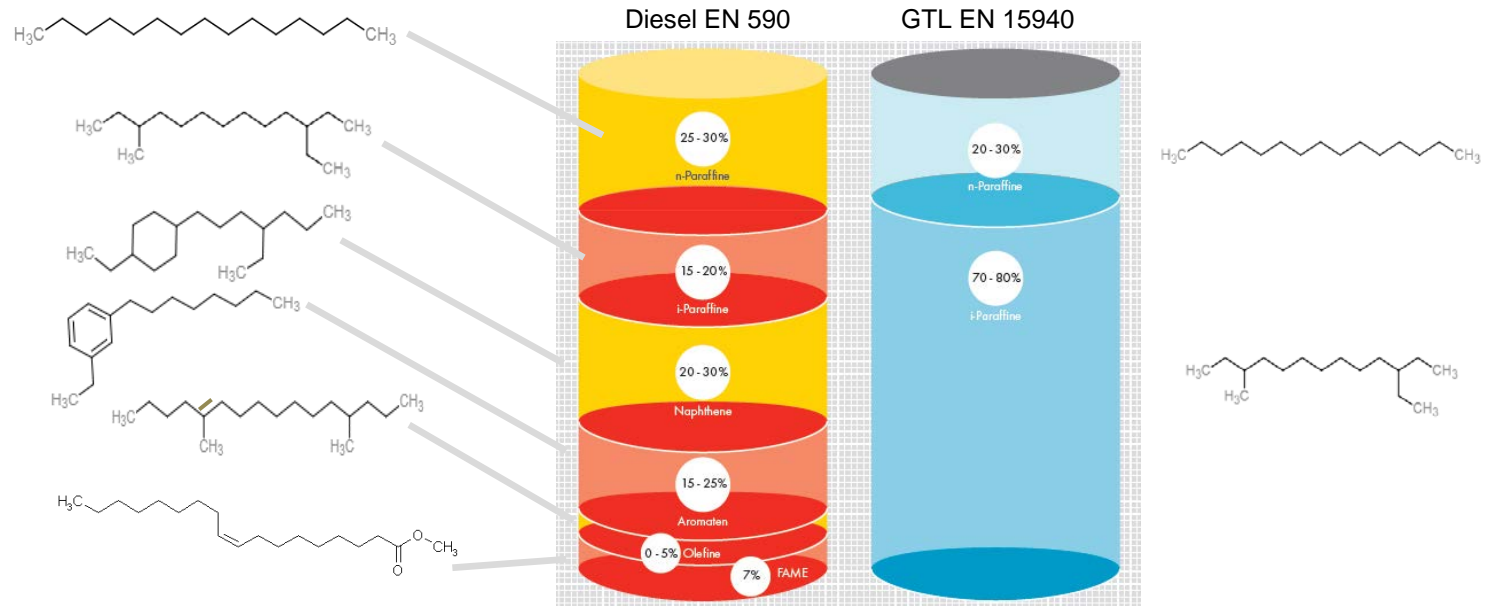


# Gas-to-Liquid technology

## Catalytic process to convert gas to oil products



# Composition of Diesel and GTL Fuel





# What is Shell GTL fuel?

## Key benefits above conventional diesel

- Derived from natural methane gas.
- 'Drop in Fuel' – direct replacement for conventional diesel fuels EN590 / BS2869.
- Suitable for unmodified diesel engines in any blend ratio from 0 to 100% (fully miscible in any proportion)
- Colorless – virtually transparent.
- Almost odorless (zero aromatics)
- Higher Cetane number than diesel – better combustion efficiency.
- Virtually sulfur free
- FAME free – no water pickup in storage
- Bio-degradable - environmentally 'friendly'.
- Higher Flash point – safer storage & handling.
- Identical Hazchem code.
- Higher Calorific Value (CV) compared to EN590 diesel - 44.1 MJ/kg versus 42.9 for EN590 gasoil.





# Shell GTL fuel has many advantages



## Drop in fuel

Easy to utilize with new and older on-road diesel engines. No infrastructure investment required



## Lower emissions

Lower regulated emissions (PM, NOx, CO, & HC)



## Can reduce noise

Engine noise reductions of 1-4 dB



## Non-toxic & Readily biodegradable

Benign and biodegradable unlike conventional diesel



## Odourless

Greatly appreciated by customers



## Cold start

Excellent low temperature performance, low cloud point



## Storage stability

No bio component and good oxidation stability

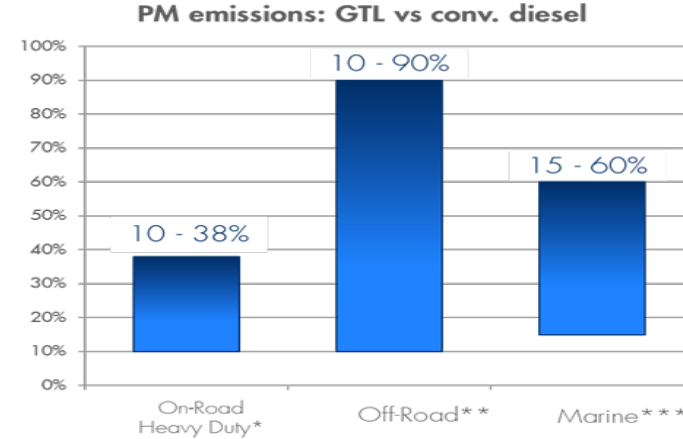
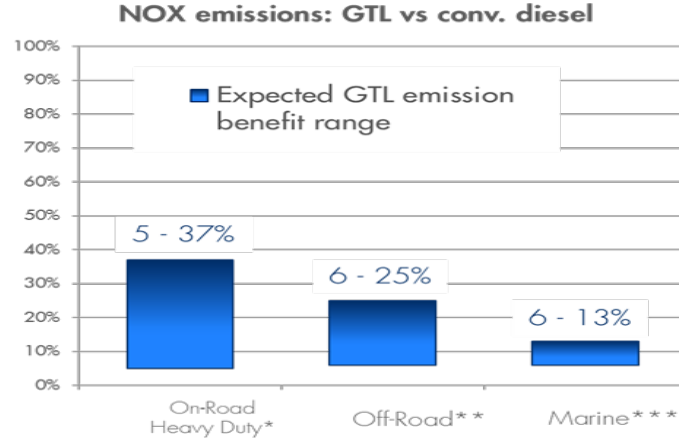
# Emission benefits within variety of applications..

Market	Example Applications	Characteristic NOx Reduction Range	Characteristic Particulate Matter Reduction Range	Noise Reductions Reported by Customer
On-Road Heavy Duty	Public buses, city utility vehicles, transport trucks	5-37%	10-38%	Limited benefit reported
Off Road	Cranes, diggers, power generators, trains	6-25%	10-90%	Benefits reported 3-5dB



**Cleaner burning and reduced local emissions compared to regular diesel**

# NOx and PM Emissions vs Conventional Diesel



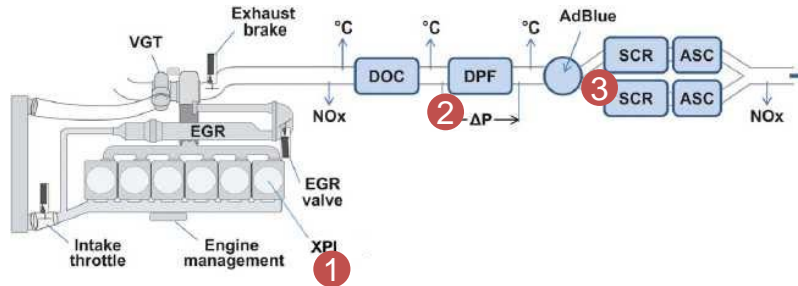
\* Based on a range of different engine types and Euro technology levels

\*\* Based on experiments in trains and construction equipment

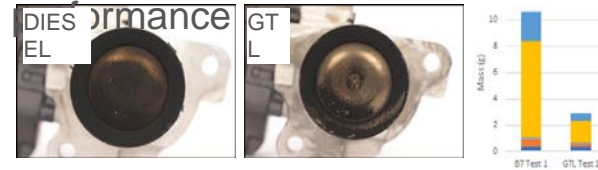
\*\*\* Based on measurements conducted on several ships by third parties

# GTL fuel offers significant operational benefits in EuroVI engines

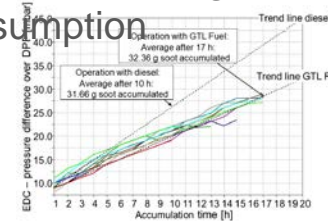
Modern engine achieve low emissions using specialised systems. GTL can improve their performance:



- 1 EGR valves stay cleaner on GTL, improving engine



- 2 DPF filters stay cleaner longer on GTL, reducing fuel consumption



- 3 GTL Fuel can reduce AdBlue consumption

# Brakes GTL Trial in London

- An intensive nine-month trial with 50 DAF New LF 230 fridge trucks fuelled with Shell GTL fuel
- Significant air quality and operational benefits
- Independent testing at Millbrook confirms 47% reduction in nitrogen oxide (NOx) emissions
- Improves uptime by cutting static DPF regeneration
- Quieter running and odour-free refuelling

*"Heavy-duty Euro VI compliant diesel engines emit very low levels of NOx and particulates, and by operating on clean-burning Shell GTL Fuel, combustion is cleaner and emissions are further reduced."*

*DAF Trucks Marketing Manager, Phil Moon*

# Certas Energy Bunker Site Roll Out

## Available at:

- Port of Liverpool

## Coming soon:

- Birmingham
- West Thurrock
- Northampton



# Thank you

Come and see us on Stand S35  
for further information



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**David Jennison**  
**Managing Director**  
**OnTruck UK**



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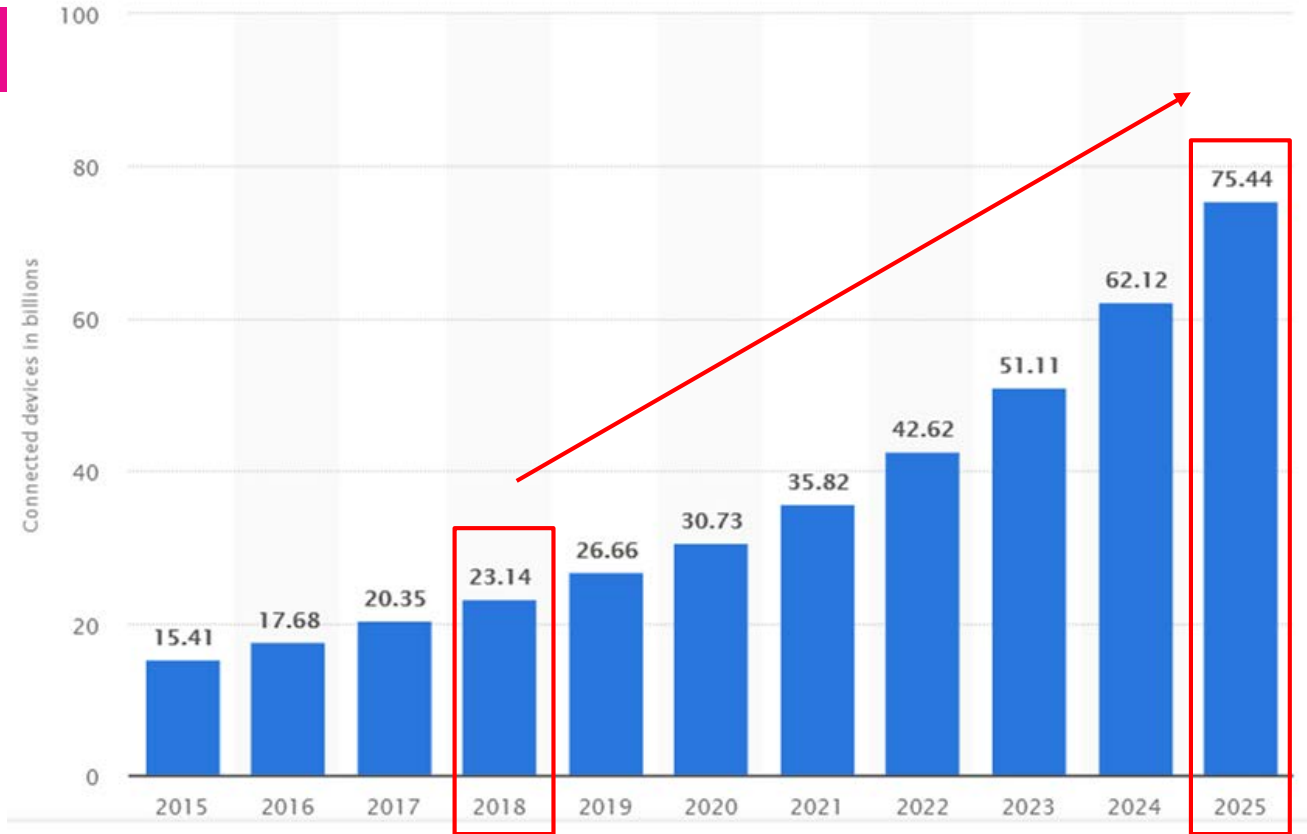
# ONTRUCK

## Introduction to Ontruck

David Jennison  
- Managing Director -

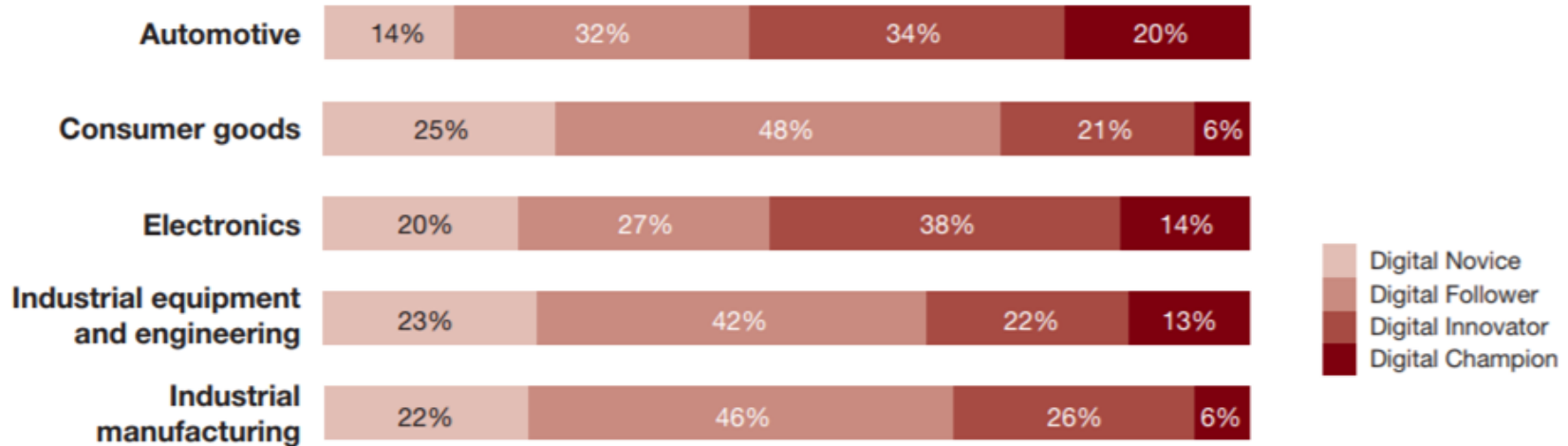
Freight in the City  
6th November

# Growth in connected devices will



Source:  
[Statista](#)

# ...but digital maturity is

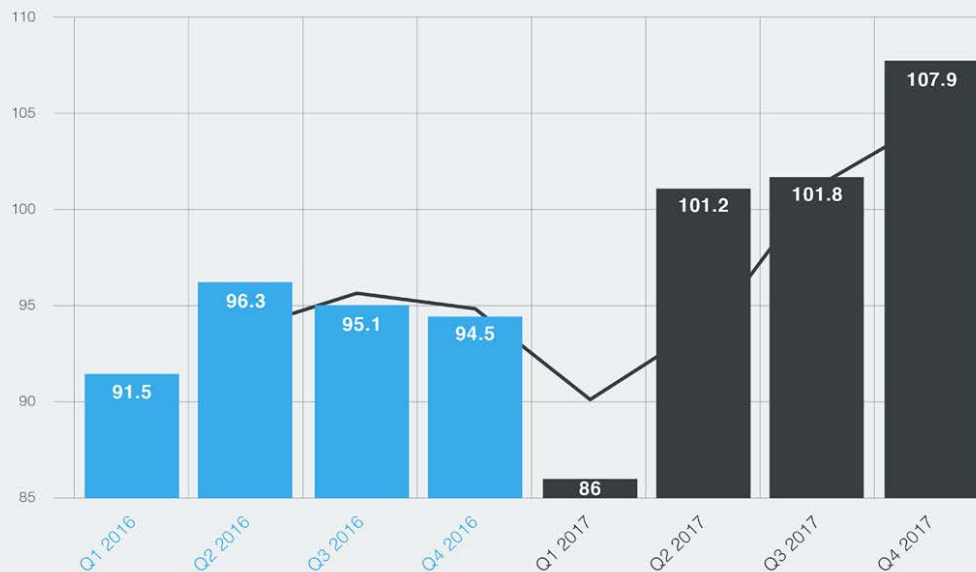


Source: PwC's Strategy and  
Global Digital Operations  
Study 2018

ONTRUCK

## Price Index of European Road Transport Rates

Source: Transport Market Monitor (May 2018)



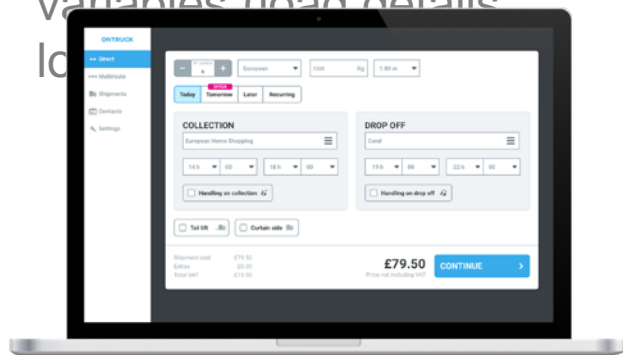
...and, in road transport, there is pressure from rising cost and expectations



# Ontruck Concept

Shipper receives an instant price quote and books order on Shipper App

Price based on 14+ variables (load details, location, etc.)



Machine learning algorithm to optimise supply/demand matching and groupage/routing



Corresponding Driver App for immediate assignment

Track/trace, Digital PODs, direct access to UK based, transport specialists



# Ontruck value proposition

We create value across the system for all key stakeholders and the community

## Shippers

- ✓ Reduce cost in transportation and supply chain

## Truckers & Hauliers

- ✓ Help truckers earn more and thrive
- ✓ Redefine EU driver shortage as an efficiency problem, rather than a capacity problem

## Community

- ✓ Lower environmental waste and carbon emissions

# OnTruck: working for SMEs and large enterprises

Short haul

KUEHNE+NAGEL



SCHENKER



Trans  
Natur



normadat

Logifrio



PEPSICO

FM LOGISTIC

P&G

DECATHLON

Long haul





The background is a solid blue color with a pattern of light blue dashed lines and small circles. The lines are curved and wavy, creating a sense of movement or flow. The circles are small and scattered throughout the background.

# ONTRUCK

Questions



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# Thank you



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