



Department
for Transport

Department for Transport

Professor Phil Blythe

Keynote: Physical Internet Answering to Retail & City Logistics Challenges





- ▶ We work to support the transport network that helps the UK's businesses and gets people and goods travelling around the country
- ▶ We plan and invest in transport infrastructure to keep the UK on the move

We work with our agencies and partners to support the transport network

Executive agencies



Arm's Length Bodies (ALBs)





How can the Physical Internet help to maximise the efficiency of freight and logistics industry....

- ▶ Minimises environmental impacts.
- ▶ Introduces new opportunities and approaches in freight and logistics.
- ▶ Integrates modal solutions to allow dynamic routing of freight.
- ▶ Provides faster and more efficient deliveries.
- ▶ Integrates government and industry.
- ▶ Enhances the development of data management techniques and artificial intelligence for real time logistics planning and scheduling.



The Alan Turing Institute





New Science and Technology brings...

Opportunities?

Challenges?

Flying cars



Drones



Electrification



Connected vehicles



Multimodal transport



High speed rail



Autonomous vehicles



and more...





The future is coming!

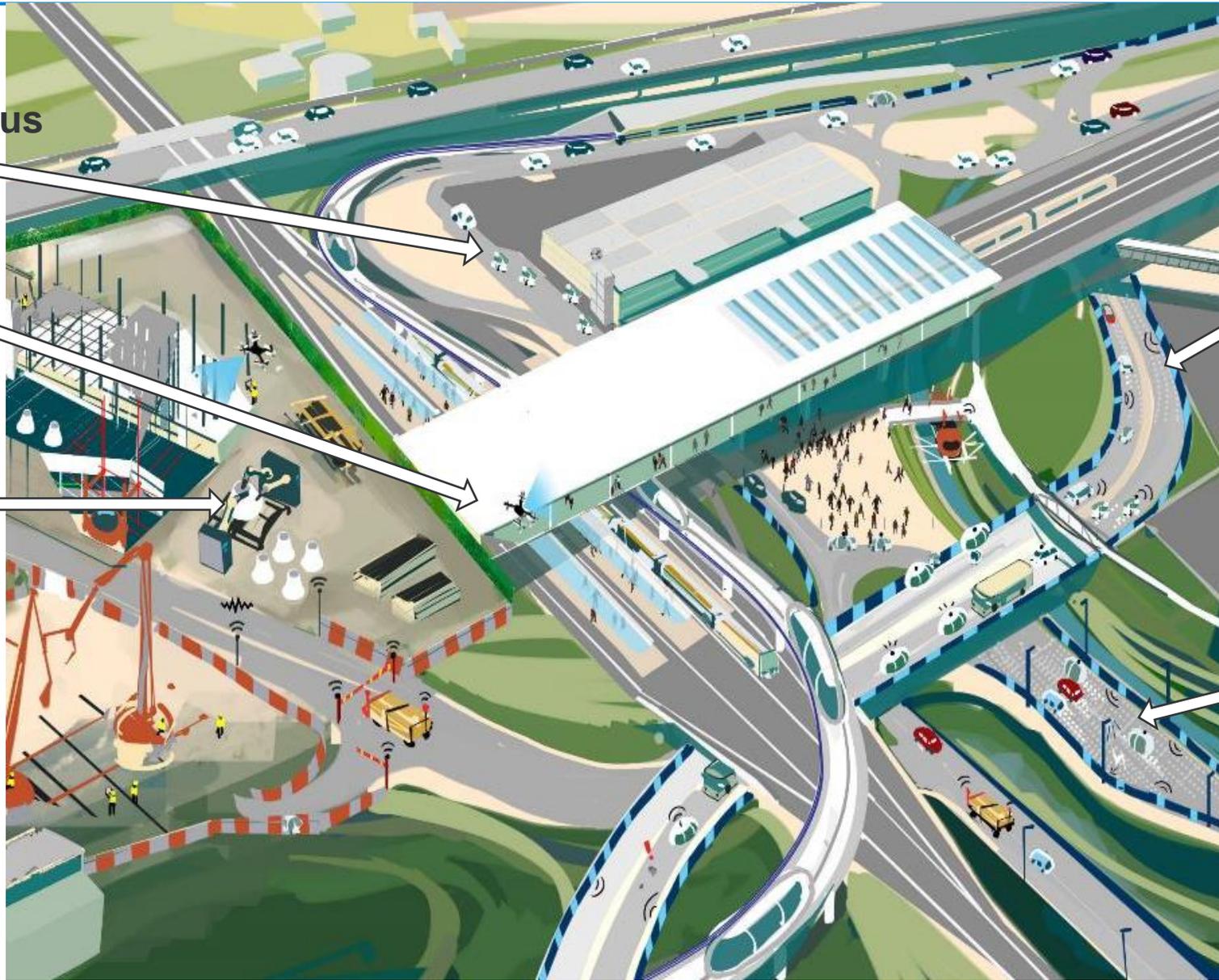
Autonomous
hubs

Drones

3D
printing

Connectivity

Smart
metering





...its similar story for new modes and business models for freight

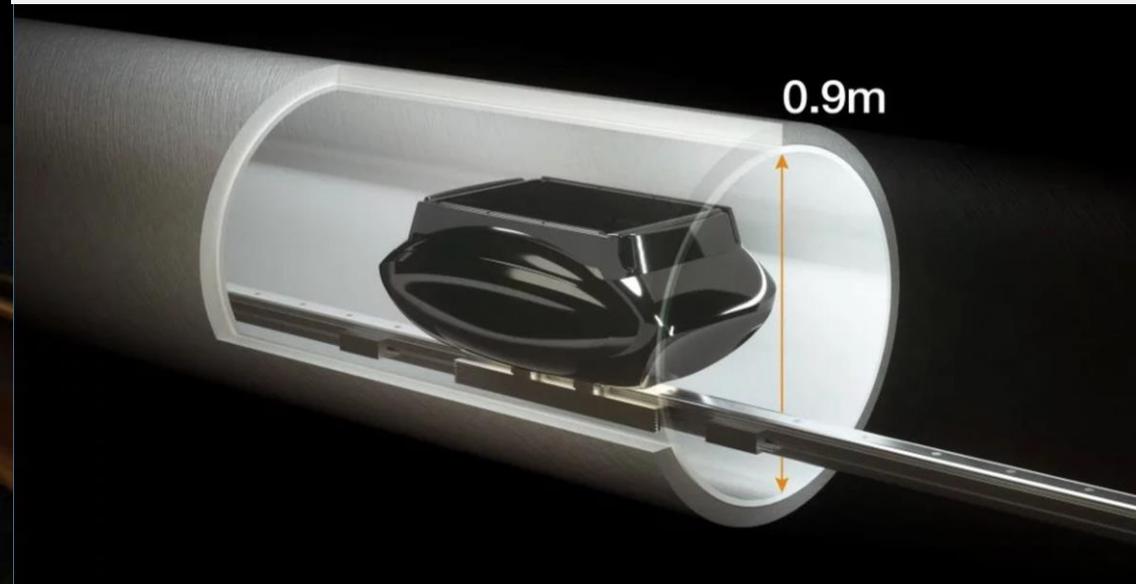




Narrow bore freight solutions

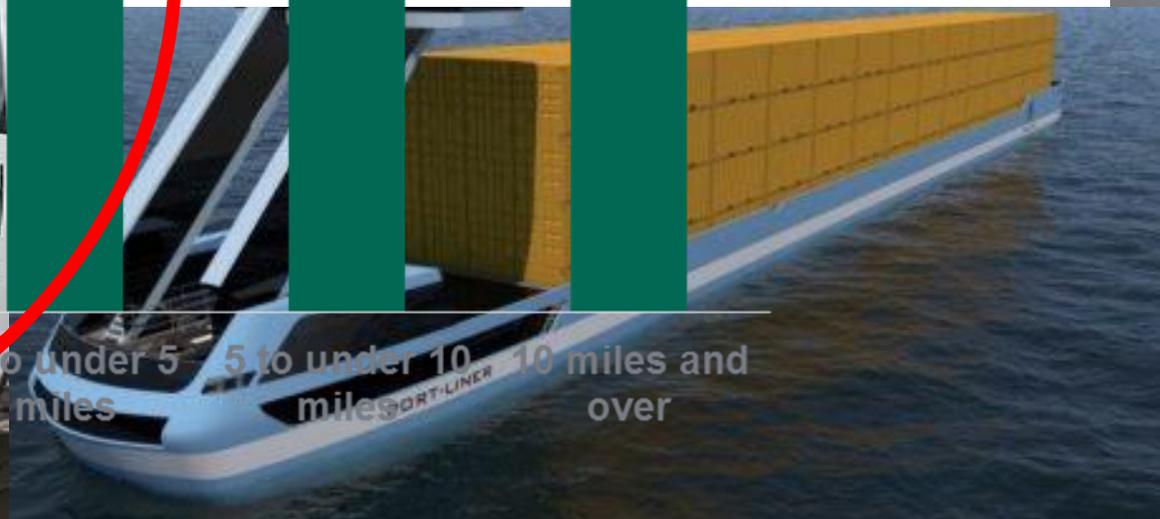


DELIVERING THE FUTURE TODAY



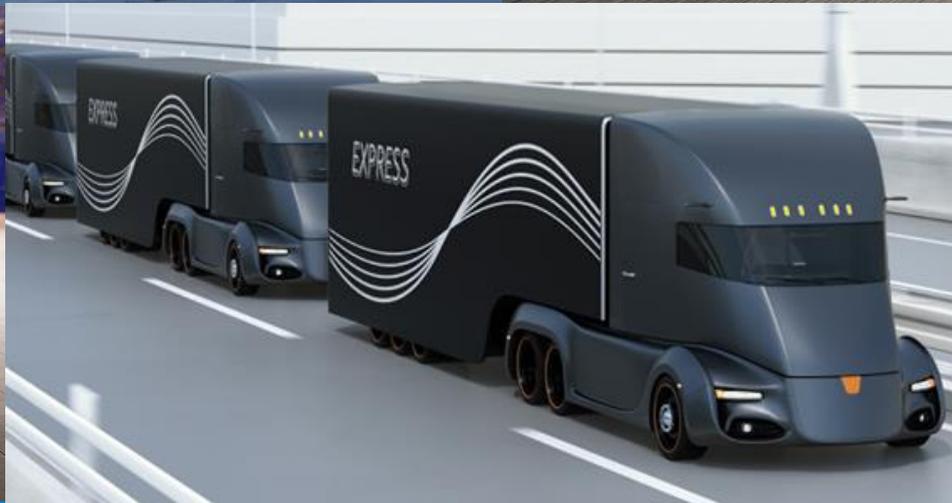
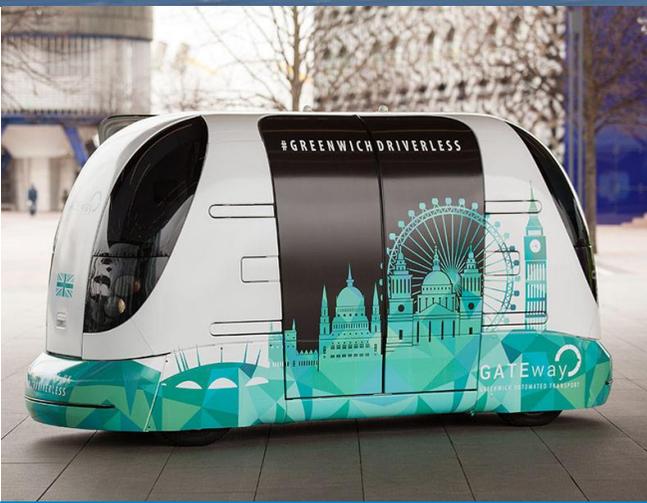


Electrification of everything



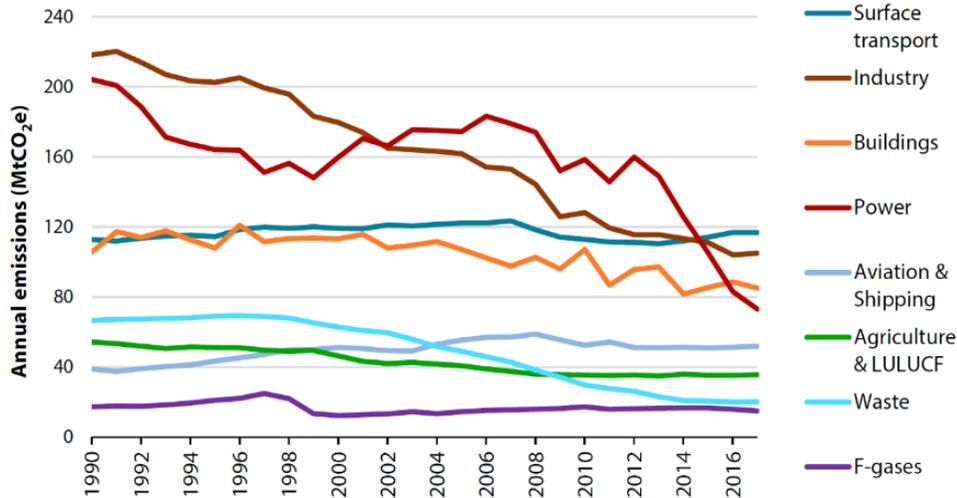


Autonomy – but how far?





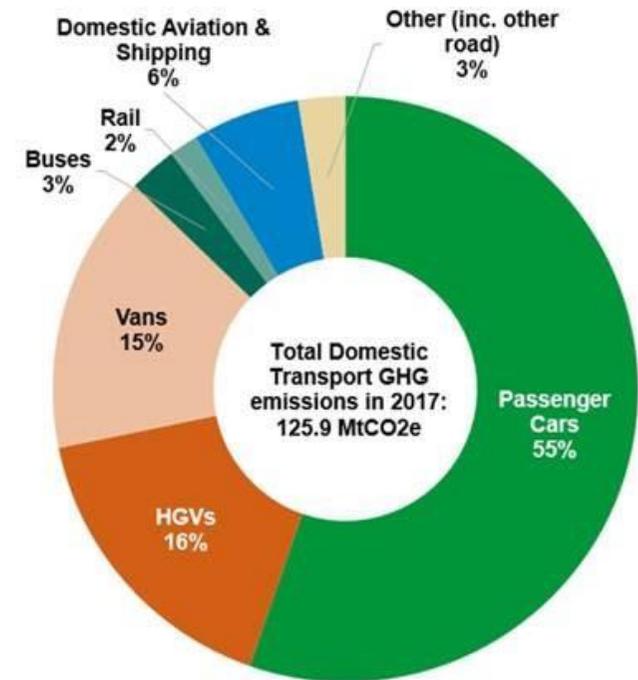
Climate change and Transport: A huge challenge...



BEIS (2019) Final UK GHG emissions national statistics

- ▶ Transport is the largest emitting sector, accounting for **33%** of the UK's 2018 greenhouse gas emissions.
- ▶ Whilst other sectors have reduced emissions dramatically since 1990, transport has only fallen 3%.
- ▶ Transport emissions had **risen three years in a row before levelling in 2017** at their highest level since 2009 – before falling 3% in 2018.

- ▶ Cars, vans and trucks are the most significant sources, accounting for 86% of domestic transport emissions in 2017.
- ▶ Road transport emissions have increased by 3% since 1990. Improvements in the fuel efficiency of these vehicles have only partially offset the emissions generated by increased traffic volumes. Van traffic has doubled, car traffic has increased by 22% and HGV traffic by 10%.
- ▶ International aviation and shipping (currently excluded from UK carbon budgets) add a further 35Mt and 8Mt respectively.





Department
for Transport

Against this backdrop the global political context has changed, accelerating plans for emission reductions in the UK...

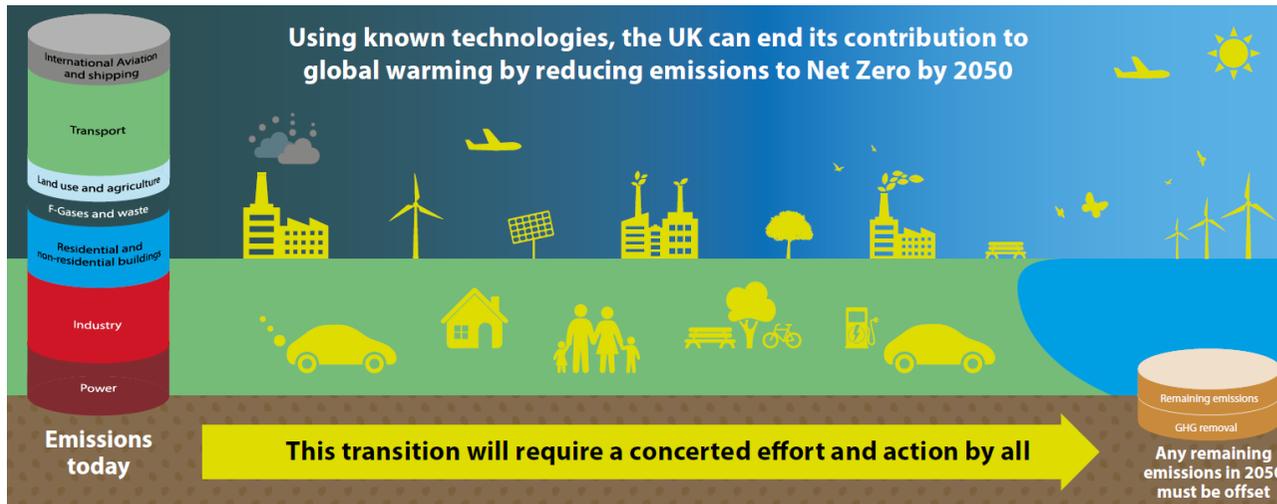


Following the UK Committee on Climate Change advice, the Prime Minister has committed to reaching net zero emissions by **2050**

Theresa May announces legal commitment to end UK's global warming contributions by 2050

PM introduces legislation enacting target of net-zero greenhouse gas emissions by 2050

Ashley Cowburn Political Correspondent | @ashcowburn |
Tuesday 11 June 2019 22:36 | 17 comments



EPA

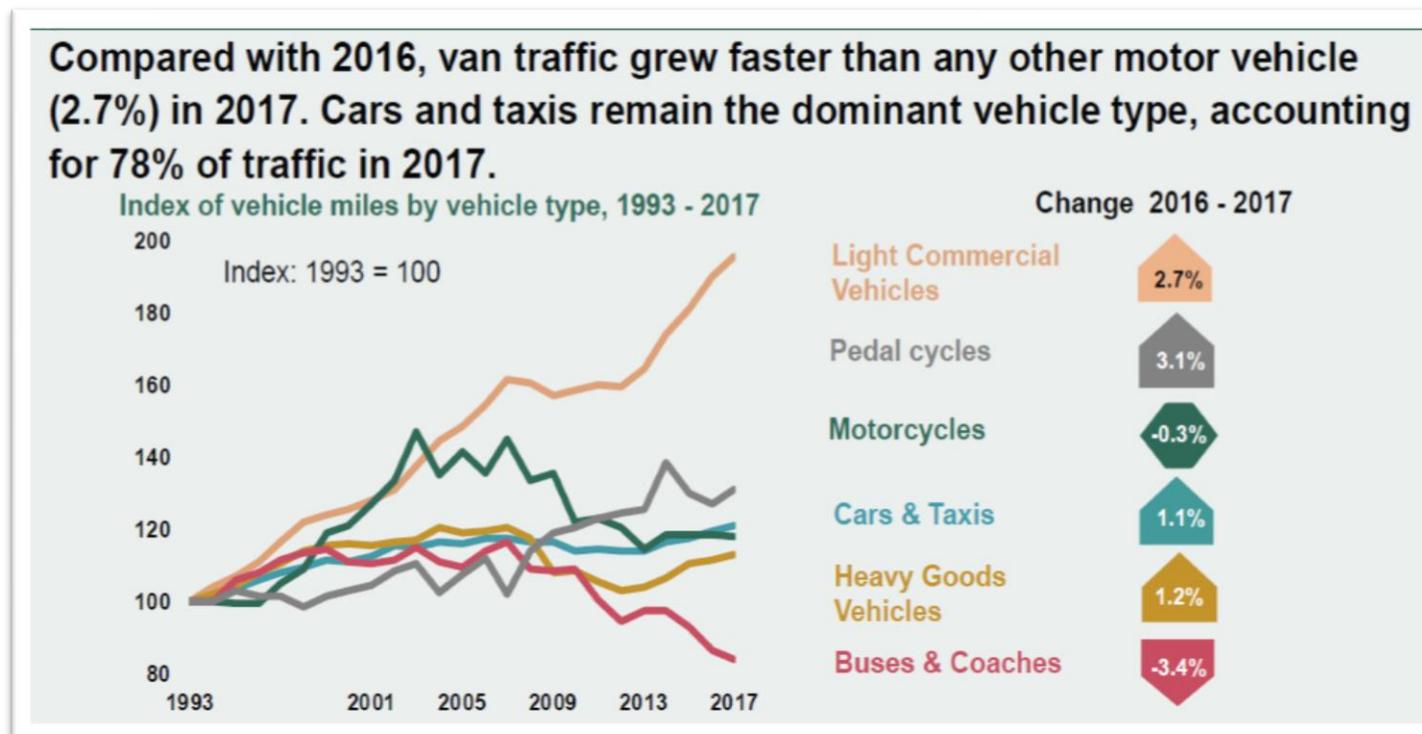


Moving Britain Ahead



Freight example: is there a problem with last mile logistics?

Van traffic in the UK grew 2.7% between 2016 and 2017 to reach a record high of 50.5 billion vehicle miles - the fastest growth in percentage terms of any motor vehicle type. Total van mileage in 2017 was 67% higher than 20 years ago





New market entrants

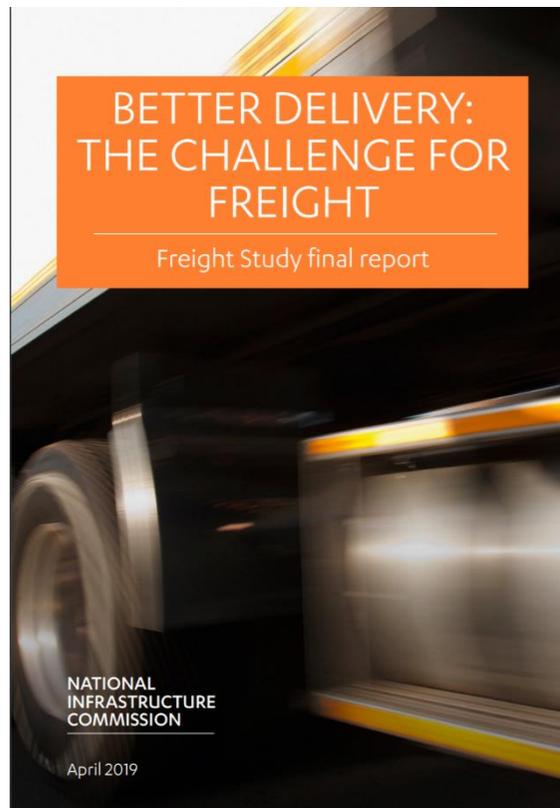


TESLA





National Infrastructure Commission published:
Better Delivery: the Challenge for Freight
April 2019

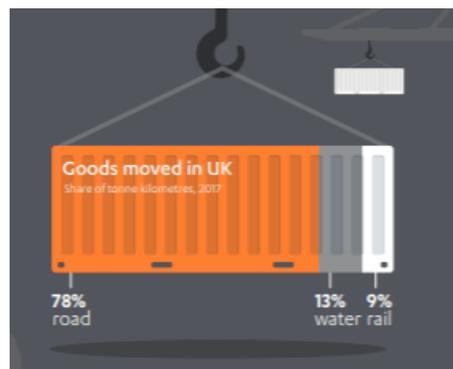
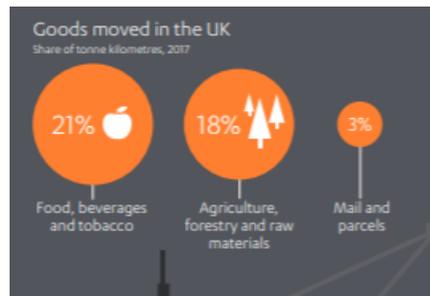




NIC: The UK's freight system is one of the most efficient in the world

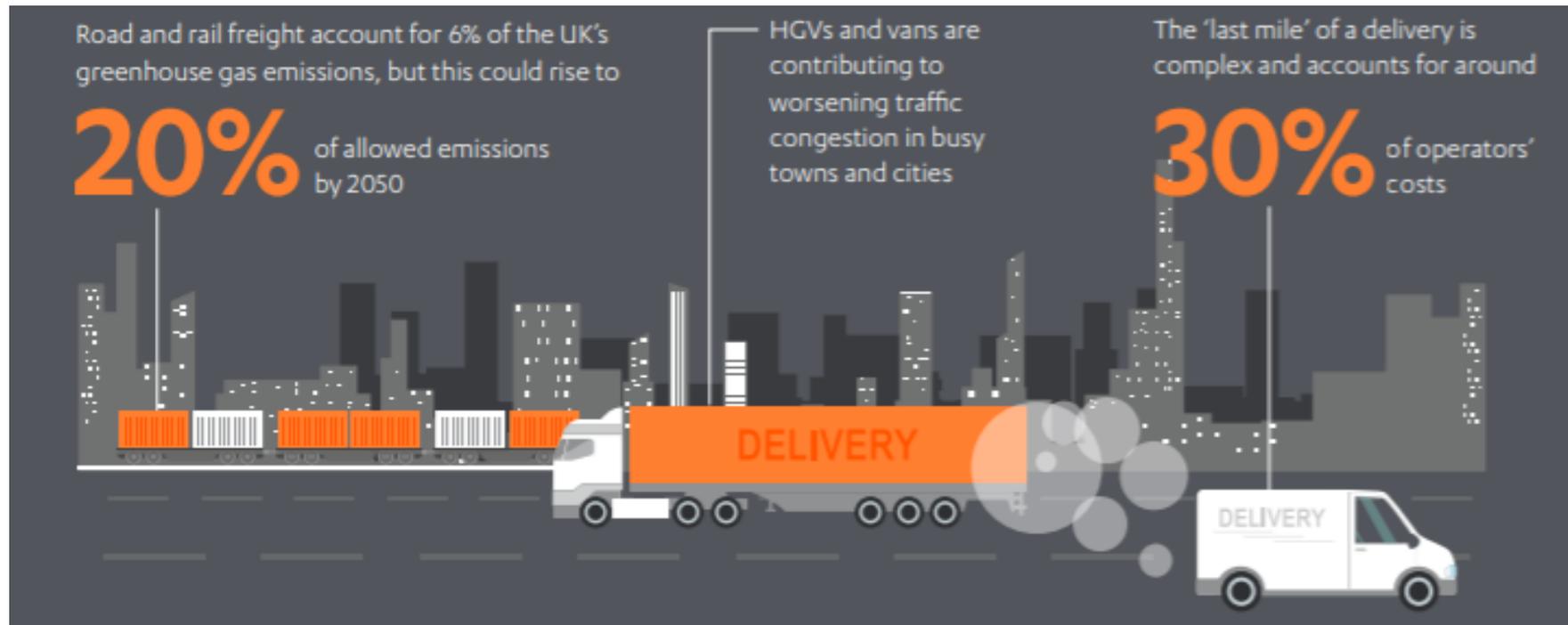
Supply chains cross city, county and national boundaries

Provides seamless transportation of goods into, out of and across the country



2. From ports, goods are transported by road and rail to central distribution hubs, often concentrated in the 'Golden Triangle'







NIC: What is required to tackle carbon emissions and congestion

ELECTRIC CHARGING INFRASTRUCTURE



HYDROGEN OR BATTERY POWERED HGVS AND CHARGING INFRASTRUCTURE

BETTER PLANNING



CLOSER DISTRIBUTION DEPOTS





Key findings: with the adoption of new technologies and the recognition of freight's needs in the planning system, it is possible to decarbonise road and rail freight by 2050 and manage its contribution to congestion.

The 3 recommendations are:

1

**Clean, low cost freight
revolution**

Decarbonisation of road
and rail by 2050

2

**Managing freight and
congestion**

Better land use planning
for freight

3

**Recognising freight's
significance**

Creating new partnerships
for freight





Transport challenges tend not to be tackled through a freight lens...

- Since the Rail Freight Strategy, 2016, the majority of transport plans and strategies have not been through a freight lens
- In terms of the environment, since 2017, DfT have produced:
 - The 2018 Road to Zero;
 - The 2018 Maritime 2050 – which includes an environment chapter; and
 - The 2019 Aviation 2050 Green Paper – including climate change policy proposals
 - In 2019 we are due to publish
 - The clean Maritime plan
 - Aviation white paper
- March 2019, Future of Urban Mobility Strategy
 - environmental factors strong theme throughout





...but there are already a huge number of funding programmes which can include freight

Integrated Delivery Programme

Vehicle Excise Duty (VED)

Low Emissions Freight and Logistics Trial (LEFT).

Electric Vehicle Home charge Scheme

Transport Research Laboratories

Workplace Charging Scheme

**funding
initiatives**

Plug in Grant

Tax benefits, ChargePoint grant schemes and local initiatives

Working with Manufacturers

On-street Residential Charge point Scheme

Electric Vehicle Energy Taskforce

Incentives for second hand ULEV purchasers

Freight Projects





... And the Future of Urban Mobility Strategy promotes sustainable travel for short journeys, zero emission services and consolidation of freight

In facilitating innovation in urban mobility for freight, passengers and services, the Government's approach will be underpinned as far as possible by the following Principles:



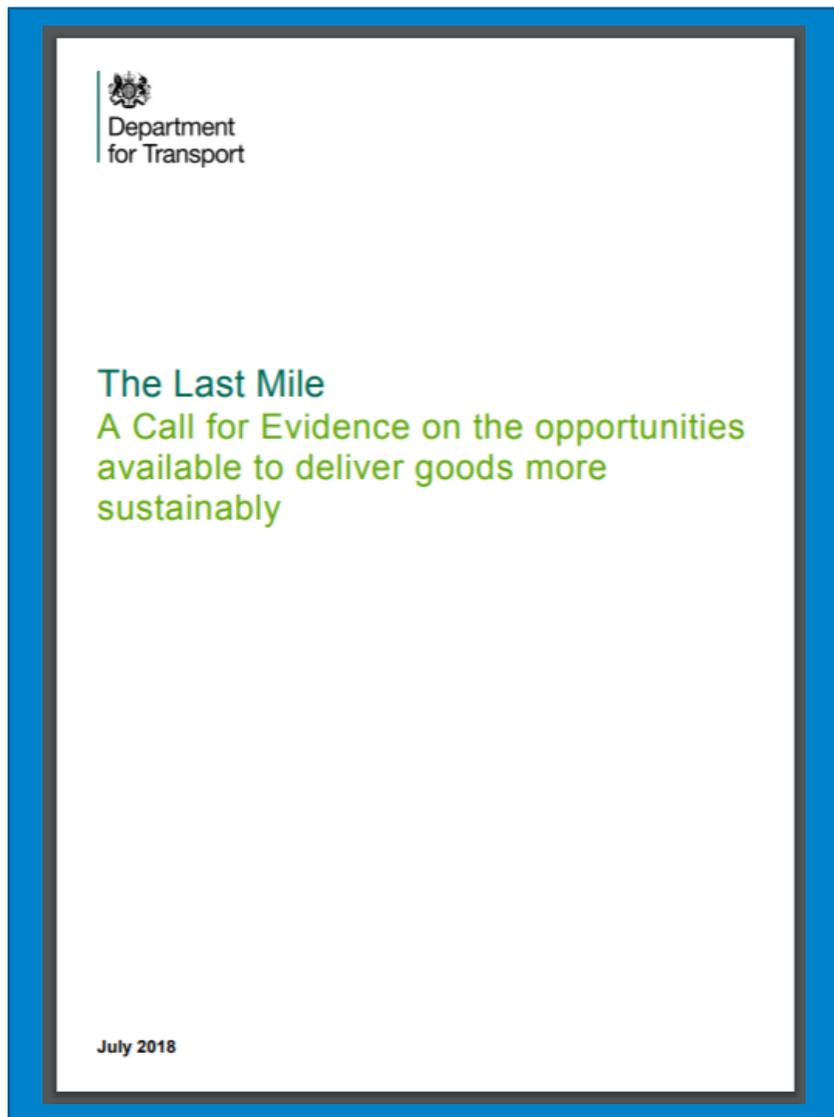
1. New modes of transport and new mobility services must be safe and secure by design.
2. The benefits of innovation in mobility must be available to all parts of the UK and all segments of society.
3. Walking, cycling and active travel must remain the best options for short urban journeys.
4. Mass transit must remain fundamental to an efficient transport system.
5. New mobility services must lead the transition to zero emissions.
6. Mobility innovation must help to reduce congestion through more efficient use of limited road space, for example through sharing rides, increasing occupancy or consolidating freight.
7. The marketplace for mobility must be open to stimulate innovation and give the best deal for consumers.
8. New mobility services must be designed to operate as part of an integrated transport system combining public, private and multiple modes for transport users.
9. Data from new mobility services must be shared to improve choice and the operation of the transport system.

Regulatory review: The review will explore regulations around new types of vehicles including e-scooters and e-cargo bike trailers, how sharing data can improve services by reducing congestion, and how journey planning and payment can be made simpler.





Last Mile Call for Evidence: We have been collecting further evidence to steer policy development...



July 2018 – DfT published

The last mile: a call for evidence on the opportunities available to deliver goods more sustainably. It aimed to:

- improve understanding of the scale of opportunity
- Identify the current barriers to delivering goods more sustainability

It explored...

how electrically powered e-vans, micro vehicles and e-cargo bikes can provide better service to customers for cargo in comparison to light commercial vehicle

what incentives might be appropriate to encourage a large-scale shift to clean, last-mile delivery options

the barriers to sustainable last mile delivery

the scale of the potential environmental and other benefits

measures to improve logistical efficiency (e.g. urban consolidation centres / hubs)





What can we learn from other countries?

- Use of incentives for the purchase of electric vehicles and e-cargo bikes
- Adopting a strategic and holistic approach to last mile deliveries ensuring an appropriate regulatory regime was in place
- Co-operation between local bodies/logistics operators to align infrastructure and encourage sharing of facilities and lessons learned

Challenges

Lack of cycling infrastructure

Lack of charging infrastructure

additional cost of low weight/volume

Opportunities

Improve air quality

Reduced congestion

Job opportunities





Published March 2019

A range of measures to support cleaner and more sustainable last mile deliveries.

These include increasing the uptake of e-cargo bikes and e-vans. In addition, working with the Energy Saving Trust, the government is also now inviting expressions of interest for £2 million of funding to support the uptake of e-cargo bikes.

For more information, publication is available online.





DfT's Science Advisory Council (SAC): Seeking independent expert advice

- ▶ DfT's Science Advisory Council (SAC) assists the Chief Scientific Adviser (CSA) in providing independent, strategic-level advice and challenge to the Department.
- ▶ Working with DfT policy leads and external experts, the SAC identifies and examines science and innovation in specific areas, supporting evidence-based decision making.

SAC draft conclusions/recommendations from the last mile session

To facilitate the growth of e-commerce and delivery businesses whilst minimising any negative impacts on the UK transport system and environment, the SAC recommends that the DfT:

- **explore the use of digital twins** - to support the understanding of logistics and delivery solutions and to test new approaches in a holistic way.
- **encourage more sustainable on-line shopping** – by consulting the sector and the public on possible alternatives to reduce air pollution
- **Support new R&I** - reducing the negative impact of e-commerce on the environment e.g. using 3D printing, e-cargo bikes and tunnel/tube based delivery system
- That logistics becoming part of the **national infrastructure landscape** so that efficient delivery systems are recognised as being as important as utilities and transport infrastructure.



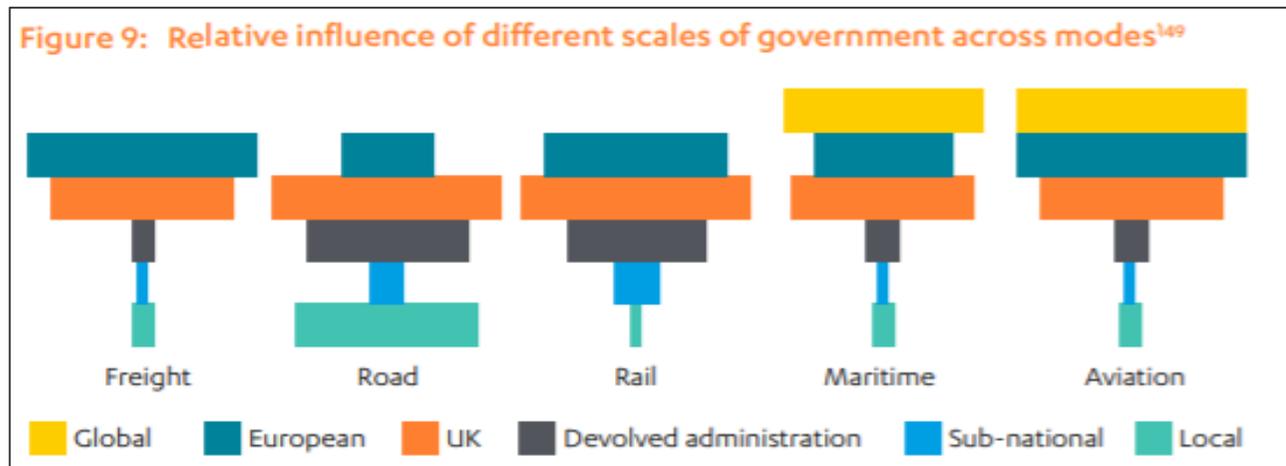


DfT are forming internal structures to respond to freight challenges...

- ▶ Freight policy is divided across several central government departments (land, environment, transport)
- ▶ DfT's responsibilities range from setting policy and regulations, collecting statistics and administering modal shift grants.
- ▶ DfT have created a cross-modal freight team to provide coordination. It aims to:
 - ▶ enhance its understanding of the freight and logistics sector in the UK
 - ▶ respond to the National Infrastructure Commission's report on freight

It is at an early stage, but work has been done identifying key external stakeholders in UK's transport and logistics network.

UK government has significant influence over the operation of the freight industry (orange in the chart)





Examples of challenges moving forward

- ▶ How do we incentivise the experimentation and use of new business models for freight delivery, which either support new modes (e.g. drones or e bikes) or change the nature of supply (e.g. localisation – 3D printing)
- ▶ How do we incentivise freight modal shifts, e.g. van to e-bike, road to rail or marine, to support reduction in carbon emissions?
- ▶ How do we incentivise the creation and use of consolidation centres to feed last mile deliveries?
- ▶ Do we need to incentive changes in consumer behaviour to support decarbonisation and, if so, how?
- ▶ Can we design our cities in anticipation of new, but unproven, modes?
- ▶ How do you develop and then incorporate new modes into freight logistics to reduce freight's carbon emissions?
- ▶ What about the energy system that supports other modes, will it be ready?

Government can't tackle the challenges and opportunities alone... over to you.





Department
for Transport

Questions

