



Department
for Transport

Future of Freight: a long-term plan

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Ministerial foreword

As a free trading, island nation, Britain has always relied on the efficient movement of goods. Our sea ports welcomed wine and timber in the Middle Ages; the world's first steam trains transported raw materials to our factories; and over the past two years, we've delivered vital medical supplies by water, air, rail and road to protect the public against the COVID-19 pandemic.

The scale of our freight and logistics sector is breathtaking. 1.6 billion tonnes worth of goods are transported in and around Britain each year¹. That's equivalent to around 10,000 fully loaded aircraft carriers. Yet, given much of this is done behind the scenes, we can take the intricacies, organisation, and expertise, that define this sector, for granted. We expect goods to be effortlessly delivered to our front doors from sellers thousands of miles away. We expect our supermarket shelves to be well stocked with global and local produce. We expect the materials that form our houses and infrastructure to be readily available. Yet what we don't often see are the more than 2 million workers employed by the wider logistics sector², from HGV and freight train drivers, pilots and ground handlers at airports to seafarers and those staffing our distribution centres, all of whom work night and day to make it all happen. In short, they power our economy and deliver the quality of life we want and need.

Our most pressing national priorities: from building back after the pandemic and levelling up, to reducing our greenhouse emissions, all rely on the freight sector. Freight contributes £127 billion to our economy each year, whilst supporting £400 billion in manufacturing sales³. In fact, the number of freight and logistics jobs have grown by 26% since 2010⁴, nearly double the rate of the wider economy. Many of our hub ports are in Britain's traditional manufacturing heartlands – the very areas that, for decades, have been starved of investment. And given HGV and domestic shipping freight are responsible for over 20% of our domestic transport carbon emissions⁵, it's imperative we adopt new technology to help freight go green.

Transporting goods has never been more reliable, low cost and quick. However, the sector must face up to future challenges to ensure it remains cost efficient, resilient and valued by society. These challenges range from obtaining planning and land allocation to serve local communities, growing the pipeline of talent so that the future of the sector is secured, and harnessing technology and data to meet future rising demand.

This Future of Freight Plan is government and the sector's joint response to these challenges. It reflects the growing importance of freight; until now, there has never been a cross government and cross modal plan for the sector. The Plan outlines the changes we're making across five key areas.

1. We will identify a National Freight Network (NFN) across road, rail, maritime, aviation, inland waterway and warehouse infrastructure. Our long-term aim will be to remove the barriers which prevent the seamless flow of freight.
2. A new open and honest relationship will be forged with the sector to collectively assess its future energy and fuel needs through a Freight Energy Forum. We want to support the entire sector in its transition to net zero by 2050.
3. We will also undertake a planning call for evidence to explore planning reform opportunities. Because, freight needs to, above all, serve the interests of local communities across the country.

4. Work has already begun on the forthcoming 'Generation Logistics' campaign to reset the sector's image and raise awareness of the breadth of career options across freight and logistics. In addition, we'll work with the sector to strengthen our longer-term employment and skills offer. to reset the sector's image and raise awareness of the breadth of career options across freight and logistics. In addition, we'll work with the sector to develop a longer-term employment and skills offer.
5. Finally, by connecting the sector to innovators via a dedicated £7m Freight Innovation Fund, we will maximise the use of technology and data across freight and logistics.

All this will be overseen by a refreshed Freight Council model, holding the government and sector to account on the delivery of these commitments over coming years.

Moving goods efficiently has underpinned Britain's historical growth, prosperity and global influence. In today's increasingly interconnected and competitive global economy, we need a world beating freight and logistics sector that will deliver the greener, fairer, and stronger economy we need. A sector that will help build a truly Global Britain.



Trudy Harrison MP,
Parliamentary Under Secretary of State

Executive summary

Why a Future of Freight plan and why now?

Every day millions of deliveries are made in the UK. Every parcel received at a front door, every good purchased in a shop and every component delivered to a factory was delivered by the UK's world-class freight and logistics sector. It is a vital pillar of the UK economy, contributing £127 billion gross value added (GVA) through more than 200,000 enterprises⁶. The sector enables UK prosperity, health, wellbeing and security by maintaining the smooth flow of goods into, out of, and across the country.

This Future of Freight plan comes at a pivotal time for the sector. It is emerging from the operational challenge of the COVID-19 pandemic and the transition to a new relationship with the EU whilst managing the impacts of the Russia-Ukraine war and longer-term implications for the global free-trade system. As well as managing the issues of today it must also look to the future and to meeting the opportunities and challenges of the transition to net zero, ensuring it has the right skills and people, changing consumer trends, and new technology.

Freight and logistics has a key role to play in the delivery of a number of public policy outcomes. The sector can make a significant contribution to **levelling up** and **strengthening the union** as a geographically distributed employer supporting economic activity across the UK. And the sector is the gateway for UK plc to imports, exports and global markets, making it is central to **strengthening the UK's global impact**.

To achieve this government and the private sector must work together in partnership. The Future of Freight plan builds on an enhanced partnership between government and industry, consolidated through Brexit preparations and pandemic response and culminating in the establishment of the Freight Council⁷, to jointly set direction and strategic priorities for the sector. This plan marks a step-change in collaboration between the sector and government, with a jointly agreed **vision**, set of **priorities**, **actions**, and **themes** to meet the challenges and opportunities of the coming years.

This plan does not seek to cover every aspect of freight and logistics but builds on engagement with industry to identify key priorities with an initial set of proposals. It's intended that this plan is a milestone in and ongoing partnership for the years to come, with future opportunities for course-correction. Delivering on our vision, priorities, actions, and themes will be a gateway to a stronger sector and a stronger UK.

Vision

This plan sets out a starting point for government-industry collaboration going forward and states our shared vision for the sector. The plan establishes government and the sectors joint ambition and commitment to a long-term, cross-government and cross-modal approach to delivering our vision of:

A freight and logistics sector that is cost-efficient, reliable resilient, environmentally sustainable and valued by society.



Cost efficient

Supporting the sector to deliver globally competitive costs and support the broader UK economy with access to low-cost goods transport.



Reliable

Facilitating the sector delivering consistently good performance for its customers, providing reliable access to the goods that businesses and consumers need.



Resilient

Bolstering the freight network's capacity to anticipate absorb, resist or avoid disruption and recover when disruption does occur. Maintaining the smooth flow of goods throughout.



Environmentally sustainable

Achieving a net zero freight and logistics sector by 2050, whilst supporting broader environmental objectives of air quality and noise reduction.



Valued by society

Ensuring freight is valued by the public and decision makers across sectors reflecting its critical importance to the wider economy, and the lives of everyone in the UK.

By focusing on this vision in the medium and long-term, industry and government can deliver the strong, efficient, and green freight sector that will power UK economic wellbeing and global influence for decades to come.

Themes

After consulting extensively with industry partners this plan also has two themes that inform the delivery of the priority actions. A mutual focus on **raising the status of freight** and embedding a **multi-modal approach** to freight across government.

Priority areas and actions

Engagement with industry has tested how best to jointly deliver this vision. Government and industry have agreed that the most urgent challenges are in five priority areas and have committed to delivering actions for a stronger future for freight in each of them.

A National Freight Network (Chapter 3)

Challenge: Lack of visibility and understanding of the freight network as a cross-modal system by the sector, government, and freight end-users limits joined up decision making in the public and private sectors.

Goal: Government and industry collaboration securing a system-level approach to the freight network supporting end-to-end freight journeys that are more efficient, reliable and resilient. Full consideration of the role of freight in strategic infrastructure investment and planning. Maximising opportunities for modal shift to make use of capacity in the freight system.

Announcements: Government and industry will deliver this by:

- Improving our understanding of the domestic freight network, including considering the need to identify a National Freight Network;
- Undertaking valuation of freight studies to improve methodologies for analysing the impact of freight;
- Improving the visibility of freight in infrastructure planning; and
- Supporting modal shift.

Transition to Net Zero (Chapter 4)

Challenge: A cleaner, greener freight system will deliver opportunities, including cutting emissions and supporting high-quality green jobs. The freight and logistics sector has opportunities to lead the world in developing and rolling out zero emission solutions for freight, gaining global first mover advantages in some of the most challenging areas. Continuing to invest in long-life assets can be difficult whilst there remains some uncertainty around the precise mix of technologies and the delivery of associated energy infrastructure that will be needed. Working together, industry and government will need to quickly build confidence in energy infrastructure and decarbonisation pathways in order to accelerate the deployment of zero emission technologies.

Goal: Government and industry collaboration to enhance investment certainty and to harness cross-modal efficiencies and synergies as the whole sector transitions to net zero.

Actions: Government and industry will deliver this by:

- Establishing a Freight Energy Forum to build confidence in the transition by;
- supporting and promoting modal shift and exploring geographic disparities in coverage of energy infrastructure;
- Undertaking a regulatory review of barriers to delivery of zero carbon energy infrastructure; and
- Maximising the potential of modal initiatives by demonstrating a zero-emission cross-modal freight journey.

Planning (Chapter 5)

Challenge: A disconnect exists between industry, that is not equipped to properly engage with planning processes, and local planning authorities, that are unable to understand the needs of a changing an innovative freight and logistics sector. This this leads to increased complexity, cost and time for promoters bringing forward schemes that are in the national interest. This this leads to increased complexity, cost and time for promoters bringing forward schemes that are in the national interest.

Goal: A planning system which fully recognises the needs of the freight and logistics sector now and in the future and empowers the relevant planning authority to plan for those needs.

Actions: Government and industry will deliver this by:

- Collaborating to support a programme of engagement with local planning authorities;
- Reviewing and amending Planning Practice Guidance;
- Publishing a freight specific call for evidence to understand what is working well and what requires improvement in planning;
- Engaging with a consultation on updated guidance for Local Transport Plans;
- Engaging with the review of National Networks National Policy Statement; and
- Engaging with the Department for Levelling Up, Housing and Communities programme of changes to the planning system.

People & Skills (Chapter 6)

Challenge: Immediate and future skills shortages across the sector could undermine resilience of UK supply chains. There is a need to: Produce a pipeline of talent across the freight sector by improving the training and employment options; addressing awareness and negative perceptions of the industry; and promote the availability of attractive, fulfilling jobs at all levels of the industry.

Goal: The freight and logistics sector is seen as an industry of choice for talented, diverse, and skilled people at all stages of their career, so that the sector can meet the demand for the distribution of goods to, from and in the UK.

Actions: Government and industry will deliver this by:

- A Generation Logistics communications campaign in 2022;
- Collaborating to ensure the Transport Employment and Skills Taskforce meets the future skills needs in freight and logistics; and
- Collaborating to deliver a programme of employer engagement and reforming the Freight and Logistics training offers to encourage transferable qualifications.

Data & Technology (Chapter 7)

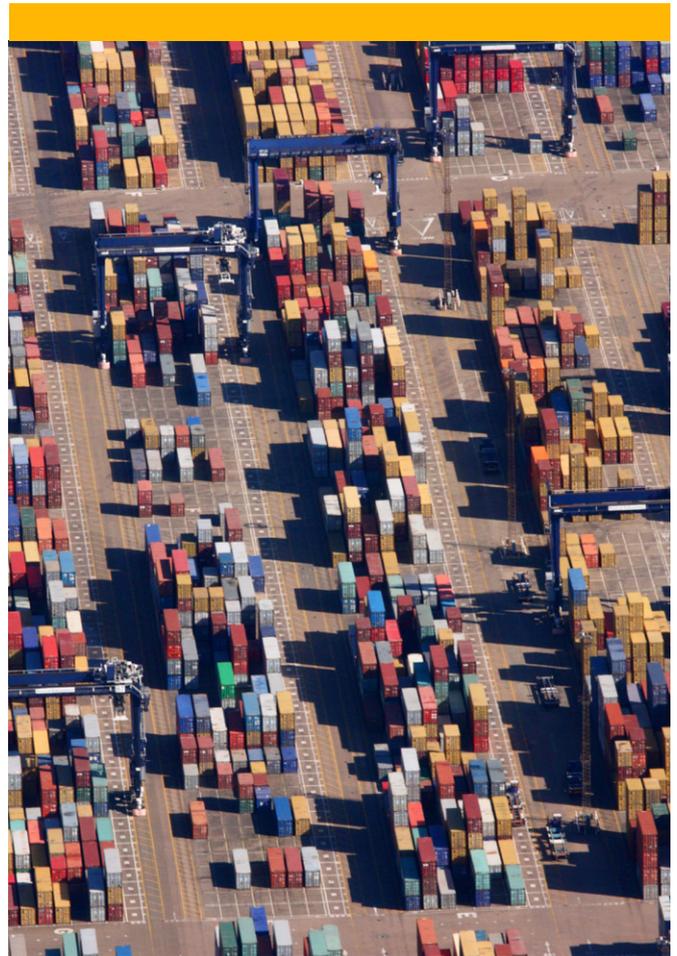
Challenge: There is limited awareness in the sector of innovative solutions coming to market, and of the sector's needs amongst innovators. There is also an incomplete understanding amongst industry and government of viable technologies' ability to meet real-world freight problems.

Goal: Greater awareness of the sector amongst innovators and greater sector awareness of innovations. Accelerating the adoption of currently available solutions within the sector and developing the future pipeline in line with real-world needs.

Actions: Government and industry will deliver this by:

- co-designing a new dedicated £7m cross-modal Freight Innovation Fund;
- Collaborating to develop the future pipeline of research and solutions to meet the sector's real-world requirements;

- Establishing an innovation sub-group of the Freight Council to build awareness of the sector to innovators and boost innovative solutions uptake in the sector.



A new dedicated



£7m

cross-modal
Freight Innovation Fund

1

Freight and Logistics

World trade volumes have grown



4100%
between
1950 and 2020

The freight and logistics sector

1.1 The multi-modal freight and logistics sector is critical to every supply chain into, across and out of the UK and is fundamental to our economic wellbeing. The Chartered Institute of Logistics and Transport has developed the 7Rs to define logistics: *getting the Right product, in the Right quantity, in the Right condition, at the Right place, at the Right time, to the Right customer, at the Right price*. Freight is the purely transport component of logistics moving goods across a multi-modal global network of road, rail, air, and maritime routes. Most supply chains rely upon multiple modes of transport and transfer between modes takes place at ports, airports, rail freight interchanges, and warehousing where freight is disaggregated or consolidated for onward transport, ultimately to the end customer.

1.2 The demand for freight and logistics is a derived demand from the needs of trade – whether international, national or local – to move goods through supply chains from raw materials to refined products and onto the end consumer. World trade volumes have grown 4100% between 1950 and 2020, while the value of trade has ballooned by almost 300 times from 1950 level⁸. The freight and logistics sector has grown alongside and today is one of the largest economic sectors globally, worth \$8.6 trillion in 2020⁹.



This growth means that the largest companies in the freight and logistics sector are amongst the world's largest companies. UPS has a market capitalisation of \$162 billion¹⁰, Maersk, the world's largest shipping line, is \$364.76 billion¹¹, and Kuehne & Nagel – a large Swiss third party logistics company (3PL) – is \$31.5 billion¹².

1.3 The UK is a trading nation with imports and exports comprising 62.9% of GDP, higher than the global average of 56.3% in 2019. We are, therefore reliant on the freight and logistics sector for our economic wellbeing¹³.

1.4 In the UK it is estimated that the sector contributes 10% of the UK non-financial business economy and £127 billion gross value added (GVA) through more than 200,000 enterprises¹⁴. The World Bank Logistics Performance Index ranks the UK highly, at 9th globally, using a range of indicators including quality of infrastructure, efficiency of clearance processes, competence of logistics services, and the timeliness of shipments reaching destination¹⁵.

1.5 The UK freight and logistics sector is operated by private sector companies who invest in infrastructure – ports, rail terminals and airports – and equipment – trucks and rolling stock – without government support. The public sector invests in the road and rail network that is used by freight transport operators.

1.6 As an island the UK is particularly reliant upon its international aviation and maritime freight connectivity and the efficient transfer of goods at ports and airports onto domestic road and rail freight modes. The country is well connected to global maritime and aviation networks. These networks are complex. The UK imports/exports 95% of goods by weight through maritime ports¹⁶. In contrast, in 2017 air freight represented less than one percent of UK international freight by tonnage, but by £ value 49% of non-EU exports and 35% of non-EU imports were carried by air¹⁷. Fig 1.1 shows freight volumes into the UK's major ports and airports, with detail of freight types for arrivals in ports and the mix of bellyhold and dedicated air freighter arrivals to UK airports. The smooth flow of freight is also facilitated by high-quality border operations. The *2025 UK Border Strategy (2020)* recently set out government's goal to deliver the most effective border in the world, including plans to deliver a Single Trader Window (STW), Advanced Risk Analytics (ARA) and Ecosystem of Trust (EoT) to support flows of freight.

**The UK
imports/
exports**



95% of goods
by weight through maritime ports

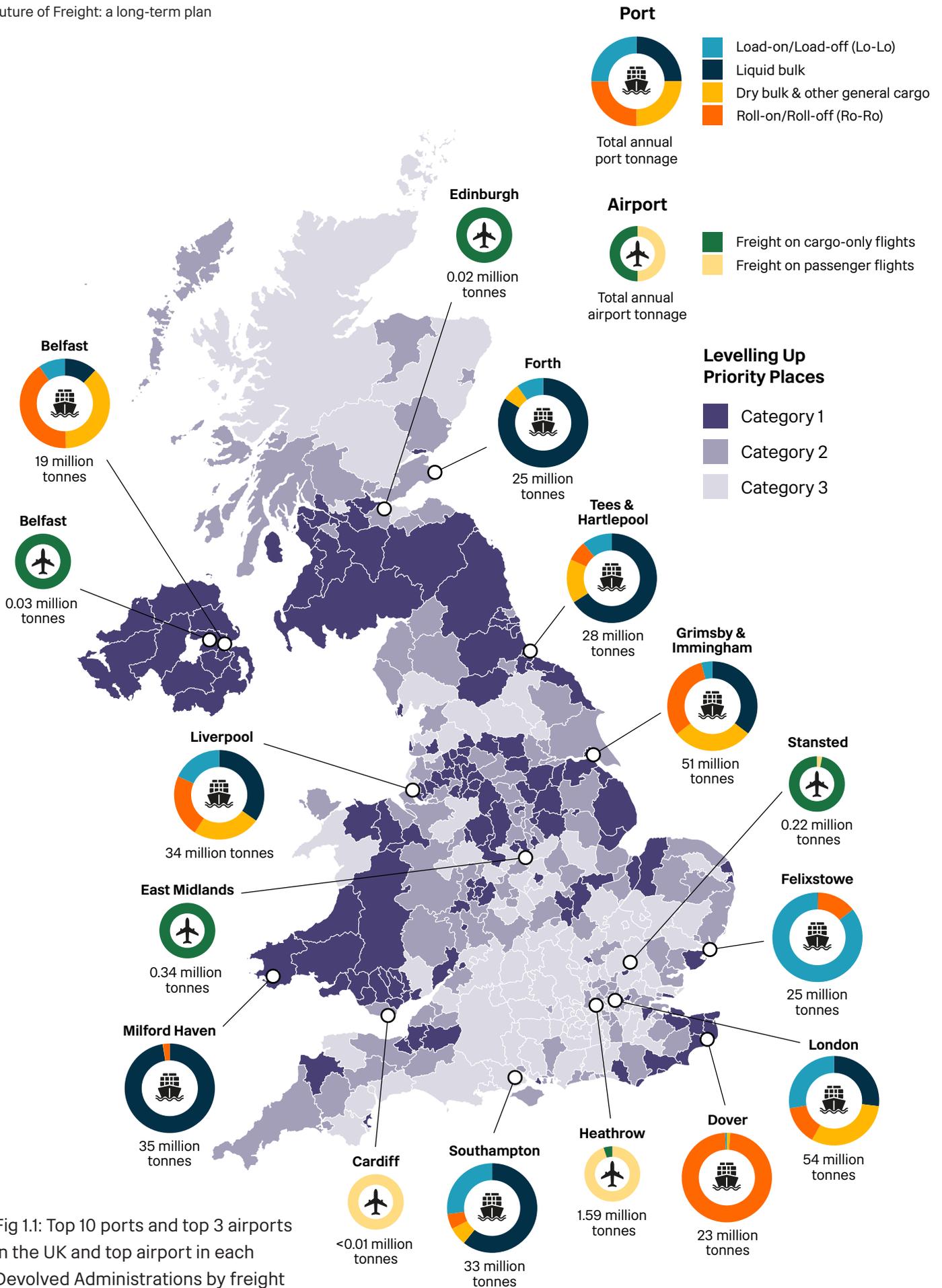
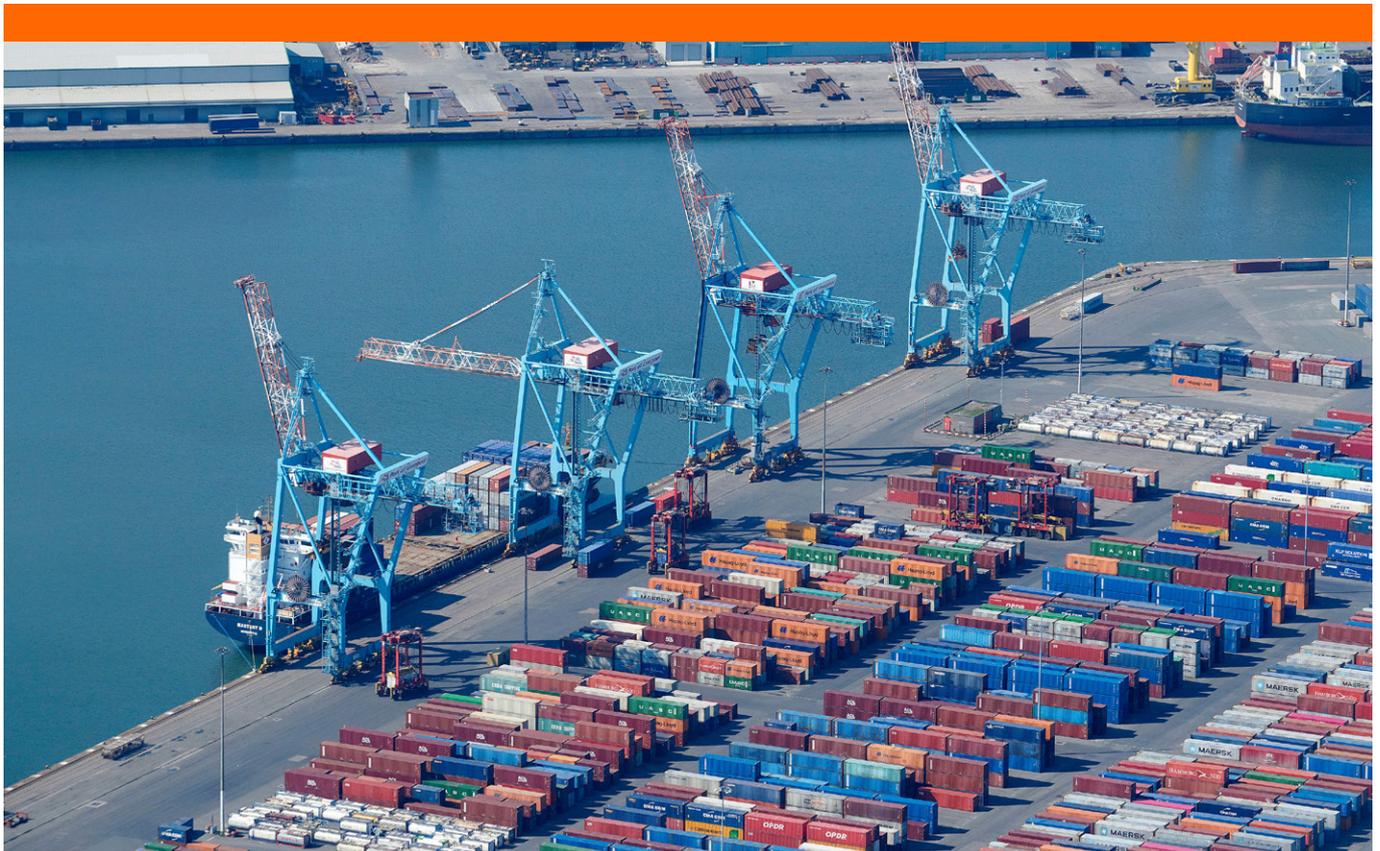


Fig 1.1: Top 10 ports and top 3 airports in the UK and top airport in each Devolved Administrations by freight tonnage (2019), alongside UK government Levelling Up Priority Areas.

- 1.7 Air freight is an excellent example of how aviation is key for the UK in supporting our global ambitions. It played a critical role during the pandemic, delivering vital PPE throughout the crisis and helping to maintain our international and lifeline distribution networks. Building on this success, the air freight sector continues to be a key enabler of international trade, playing an integral part of the future success of the UK economy.
- 1.8 Air freight is moved either in the bellyhold of passenger aircraft or in dedicated air freighters and because of cost is typically either high value or time critical goods. Air freight is critical to some high value add industry supply chains, such as advanced industrial manufacturing and pharmaceuticals. In the UK bellyhold freight is dominant and is almost exclusively long-haul, because the business models of short-haul low-cost airlines with fast turn arounds do not support air cargo. Heathrow Airport handles over 60% of all UK air freight by tonne because of its extensive long-haul passenger network with 35 destinations served at least weekly in North America, 17 in East Asia and 12 in South Asia²¹. The UK's largest airports for dedicated air freighters are East Midlands International and Stansted airports that handle a further 22% of the UK's air freight²². More than 80% of UK air freight is handled by these three airports.
- 1.9 The UK's airport, airfield and aviation infrastructure network supports freight movements, acting as a catalyst for national and local benefits. Regional airports also provide vital freight movements for the nations and regions of the UK, from Birmingham Airport to Belfast International which hosts the important nightly Royal Mail operations. In Scotland, the air freight network is used extensively for time-sensitive critical goods such as supplies to the Islands. Some airports, like Bournemouth Airport, are diversifying their operations to facilitate more trade by expanding their cargo operations and are now handling over 15,000 tonnes of freight in 2021²³. Looking forward we will continue to update and improve the UK's already extensive portfolio of Air Service Agreements; enabling international connectivity and breaking down market access barriers in the air cargo sector, giving operators commercial and operational flexibility.
- 1.10 Maritime freight is very varied. Roll-on/roll-off (ro-ro) ferries carry high-value consumer goods on routes from the EU to the UK and from England and Wales to Northern Ireland²⁴. Bulk carriers transport crude oil, refined petroleum products and liquid natural gas as well as biomass, agricultural products, and commodities such as steel. Deep sea container shipping services transport goods between the UK and the rest of the world, supported by short sea services to near neighbours in NW Europe and the Baltic and coastal services transporting containers

from large container ports to smaller regional ports. The UK is fortunate that the large container ports in southern England – Felixstowe, Southampton, and Thames Gateway – are on heavily served routes from China and the Far East to NW Europe. The UK benefits from port calls by the largest container ships as they head for Rotterdam, Antwerp and Hamburg. Fig 1.2 shows how goods from China travel by ship to the UK. Ships call at ports on route allowing shipping lines the flexibility to manage flows within their contractual agreements, while individual containers may be transhipped at specialist hubs in Dubai or Singapore or at other ports on route .

1.11 International rail via the fixed link between Folkestone and Coquelles, provides another route for ro-ro (Eurotunnel shuttles), containerised and bulk rail freight to enter and exit the country. International rail freight, which carries goods to inland locations helps to reduce pressure on short straits ports and the road network through modal shift. International rail freight through the Channel Tunnel has also played an important role in key supply chains such as automotive manufacturing, supermarket goods and steelmaking, providing a resilient, more sustainable alternative means of transport in and out of the UK.



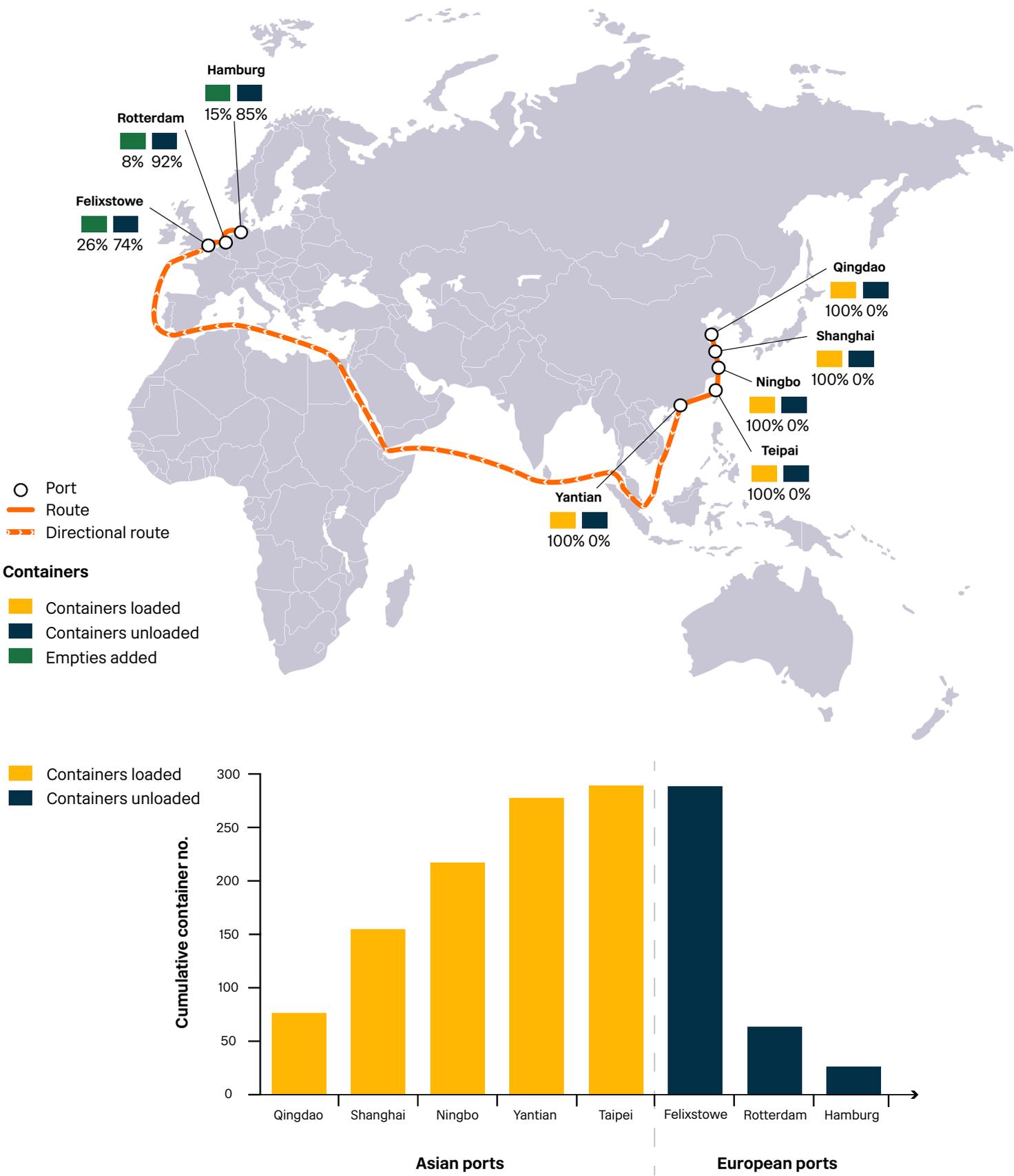


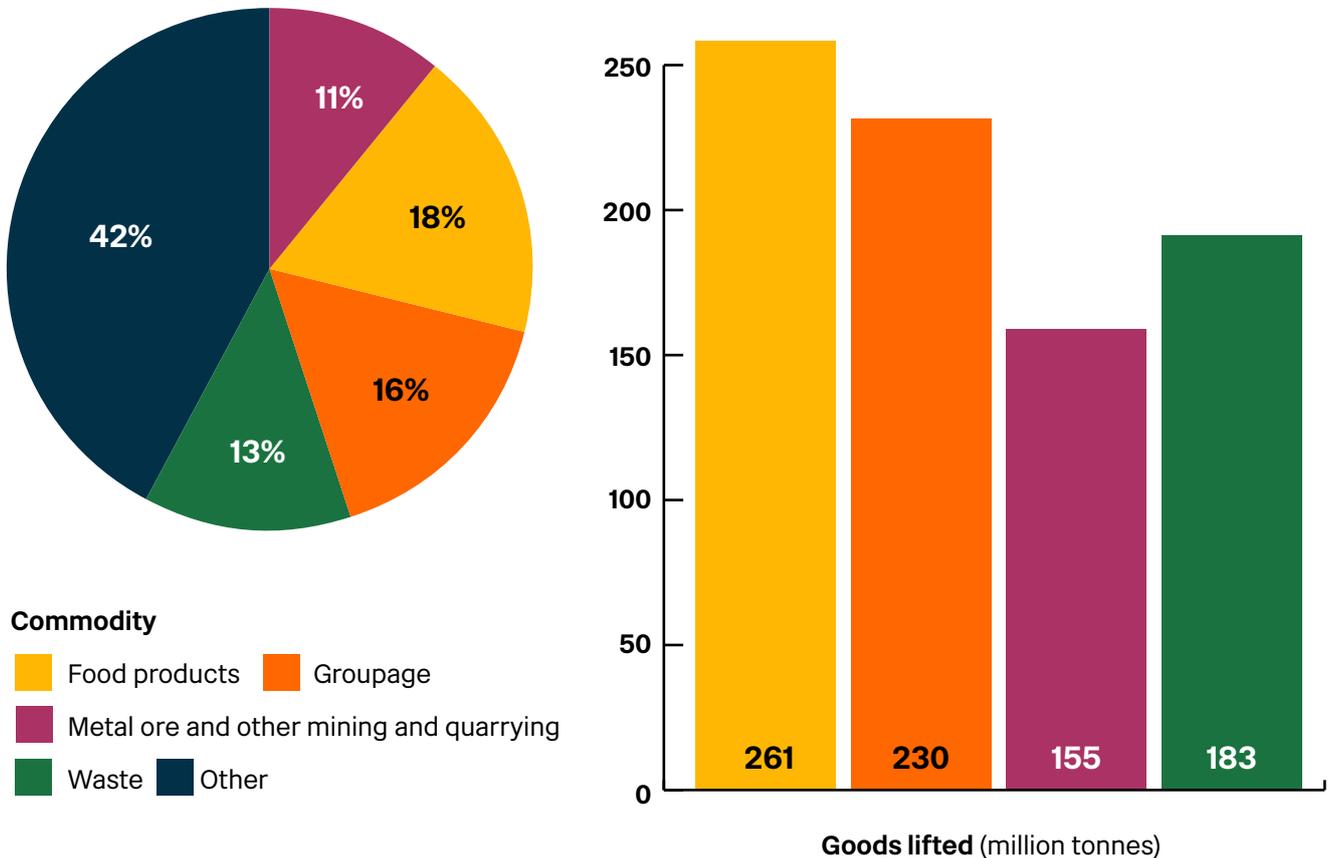
Fig 1.2: Example journey for UK bound container ship

1.12 Goods are typically moved from ports by road and rail to National Distribution Centres (NDCs) which act as medium-term storage (average 4–6 weeks) for international and domestic sourced goods. A concentration of NDCs is found within the Golden Triangle in the midlands which is centrally located to support ports, domestic suppliers and onward transport to Regional Distribution Centres (RDCs). RDCs redistribute goods to retail outlets and direct to homes and typically have much shorter dwell times – distribution frequently takes place within 24hrs. Warehousing across the UK and its road and rail connections shows how goods move through the network, frequently using more than one mode of transport.

1.13 Between distribution centres and goods destinations road freight transport dominates. It is flexible, cost effective, has low barriers to entry and it has a low level of regulatory complexity. 45% of road freight lifted is transported by vehicles operated by the owners of the goods including retailers and some manufacturers. The majority 55% is carried for “hire and reward” by operators contracting with customers for specific consignments or as a part of a long-term commercial relationship. In total 289,000 people were employed in the sector across nearly 59,000 enterprises contributing £13.6 billion to the economy. Fig 1.3 shows how just four commodities categories comprise nearly 60% of road freight by goods lifted tonnes.

Road

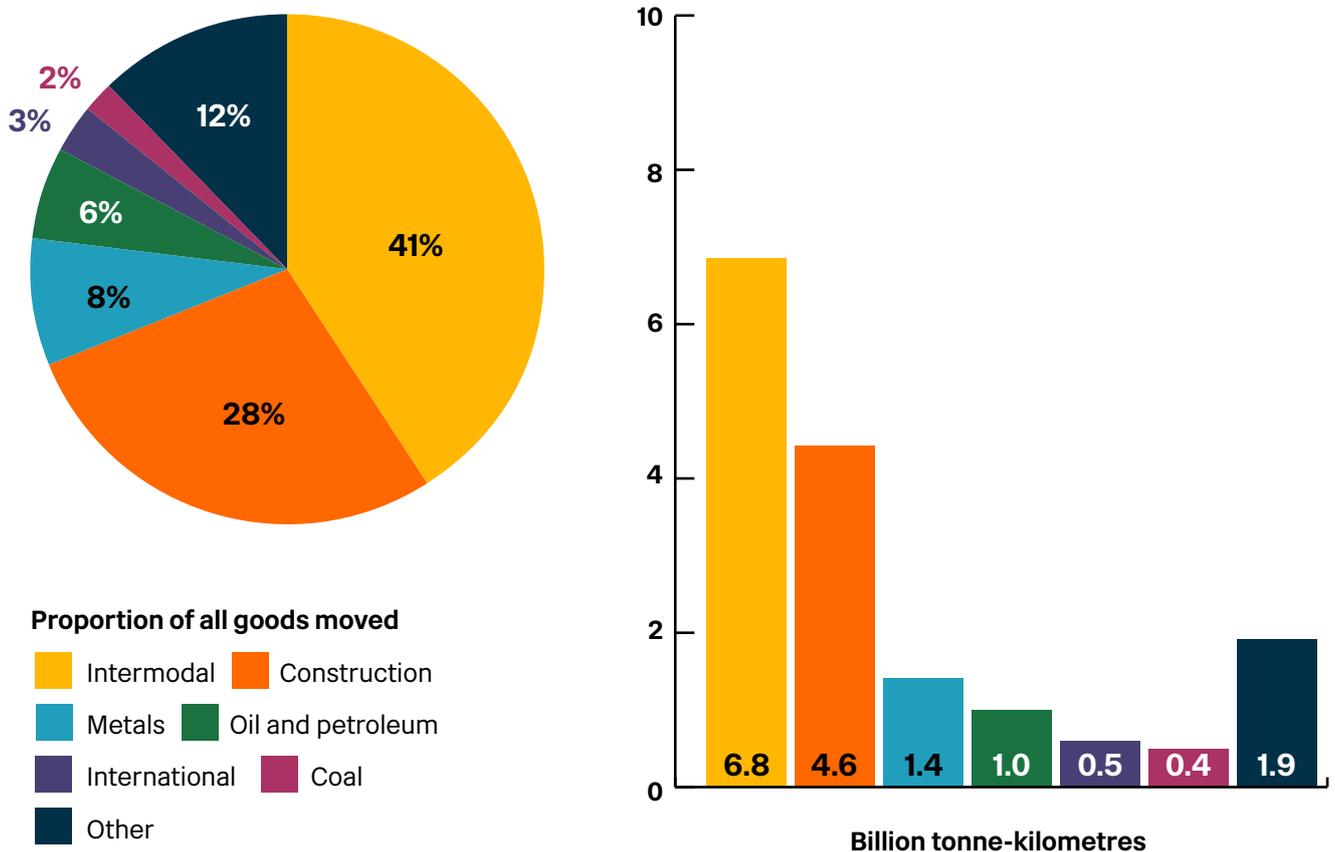
Fig 1.3: four road freight most common categories of commodities carried, 2019



1.14 Rail freight is largely privately operated and freight operating companies (FOCs) compete for custom and can be divided into a variety of services. One main area is bulk rail freight, which tends to carry large volumes of consumer goods, as well as heavy goods, either from domestic locations such as stone from quarries or from ports moving imported steel, gypsum or biomass. The other main area includes non-bulk rail freight, which is typically intermodal, where higher value cargo is carried in a container between intermodal terminals such as a deep sea port and inland rail freight interchange. Where it may then be either warehoused or moved to HGV for onward distribution by road. Intermodal cargo can range from imported consumer goods, food – imported and domestic, business to business equipment and intermediate products.

Rail

Fig 1.4: Rail freight movements by commodity 2019/20 (ORR statistics)



1.15 Fig 1.4 shows the commodity mix of rail freight today. In recent years, the biggest shift in demand for rail freight has been from low value bulk to higher value intermodal rail freight. This has been driven by the big drop in demand for the transport of coal. As recently as 2013, 8.1 billion tonne-kilometres of coal

was transported comprising 35% of all rail freight, Today that has dropped to only 0.2 billion tonne-kilometres or just over 1% of all rail freight. Rail freight is modelled to have resulted in 6.4 million fewer lorry journeys in 2019/20, reducing congestion on the road.

Rail freight also includes important Anglo-Scottish movements, moving containers from ports and inland terminals in England to the central belt of Scotland, reducing pressure on UK roads. New research, recently commissioned by the Rail Delivery Group, highlights the positive contribution being made by the rail freight sector based on the distribution of freight across varying geographical locations in the UK. The value of freight report also estimates that rail freight delivers economic benefits of around £2.45bn per year, many of which are dispersed across the Midlands, Northern England, Scotland and Wales³².

providers (3PLs), that provide supply chain management including inventory management, warehousing and fulfilment (often road freight transport); and more recently fourth party logistics providers (4PLs) that integrate the services of multiple 3PLs to manage the clients supply chain. For international trade freight forwarders contract with a carrier or multiple carriers on behalf of the shipper to move goods from one country to another using ships, planes, trucks and railways and multiple modes for a single shipment. Freight forwarders help to manage the customs and other documentation required for import, export and transhipment.

1.16 The complexity of modern supply chains and of the global and domestic freight systems has in recent years driven: firstly the development of third party logistics

1.17 This multi-modal integration of services underpins this plan's approach to freight as a complex multi-modal system rather than as separate individual modes.



2

Objectives and scope

Government and industry commitments

Government and the freight and logistics industry have collaborated in the development of this plan. Together we will continue to collaborate to:

- Achieve our vision for the sector
- Implement the priorities identified in the plan
- Ensure government and industry action reflects evolving opportunities and challenges

Objectives of this plan

2.1 In this long-term and cross-modal Future of Freight plan, the Government and the privately-owned and operated freight and logistics sector state their joint ambition to build on the strong foundations established in Whitehall and across industry to develop, for the long-term, a freight and logistics sector that is **cost efficient, reliable, resilient, environmentally sustainable and valued by society**. By working together towards this shared ambition, the government and industry will support millions of supply chains across the country that depend upon the sector to deliver the food, medicines, energy and consumer goods that we both need and enjoy.

The UK's ten largest ports handle more than



300m
tonnes of

freight each year



- 2.2 This plan is an important milestone in a long-term reset for the status of freight and logistics. This is the start of a new holistic, cross-sector and cross-government approach to driving efforts to meet long-term challenges for the sector. Supported by a sustained raised profile, clear structures, and clear deliverables.
- 2.3 **Cost efficient:** It is estimated that in the UK the freight and logistics sector is supporting nearly £400 billion in manufacturing sales across the UK and globally³³. To succeed in the global economy it is essential that the freight and logistics costs of business are competitive.
- 2.4 **Reliable:** 95% of UK imports by volume arrive by ship and the UK's ten largest ports handle more than 300 million tonnes of freight each year³⁴. The UK's heavy goods vehicle (HGV) fleet lifted 1.39 billion tonnes of freight and moving a total of 152 billion tonne kilometres in 2020/21³⁵ with rail freight lifting a further 69 million tonnes and moving a total of 15.2 billion tonne kilometres³⁶. The supply chains relying upon this huge volume of goods need consistently good performance from our freight and logistics system.
- 2.5 **Resilient:** Day-to-day reliability must be complemented by resilience in the freight and logistics system. Specifically, the systems' capacity to anticipate, absorb, resist, or avoid disruption and to recover when it does occur. Manufacturing and retail manage inventory carefully to remain competitive and a resilient freight and logistics sector is critical to this.
- 2.6 **Environmentally sustainable:** In 2019 HGVs contributed 16% of domestic transport Green House Gas (GHG) emissions and the domestic maritime sector contributed a further 5%³⁷. Rail freight is on average 76% more GHG efficient per freight tonne km than road freight³⁸. By 2050, the freight and logistics sector must achieve net zero while continuing to support wider environmental ambitions including air quality and habitat preservation.
- 2.7 **Valued by society:** A successful freight and logistics sector is necessary to support our modern way of life. Despite the recent high profile of freight and logistics during the COVID 19 pandemic, a recent industry survey showed only 48% of the public are thinking more about how goods are transported and delivered and only 24% of the public are confident they could describe how an item of clothing got from where it was made to their home or shop³⁹. Freight will be valued by the public and decision makers across sectors in a way that appropriately reflects its critical importance to the wider economy, and the lives of everyone in the UK.
- 2.8 These objectives apply to the whole cross-modal freight system. From international gateways through long-haul distribution by road and rail to urban and last mile distribution. Each priority and action identified in this plan will raise the performance of freight and logistics as a whole.

2.9 Focusing on these objectives in the medium – and long-term will support the supply chains that provide for our economic wellbeing. **Each priority identified in this plan is tested against these objectives.** Objectives must be considered both individually and collectively, recognising the potential for positive and negative feedback loops between them. A more resilient freight and logistics sector could be less cost efficient, but one that has effectively and efficiently decarbonised is likely to be more financially resilient.

How a strong Freight and Logistics sector supports wider objectives

2.10 In addition to these shared objectives the government is also keen to take opportunities to support wider strategic priorities that a successful freight and logistics sector will provide.

2.11 **Levelling up:** *Levelling Up the United Kingdom (2022)* set out the government's ambition to end the geographical inequality in the UK beginning by improving economic dynamism and innovation to drive growth across the whole country⁴⁰. In the freight and logistics sector, activity is more geographically dispersed than other service industries that agglomerate in cities with concentrations of skilled workers, capital, customers, and transport connections. The largest and most

important freight hubs – maritime ports and airports, warehousing and distribution centres, and rail freight interchanges – in the UK freight network are more likely to be situated in former industrial heartlands and coastal towns. Fig 2.1 shows the location of ports and large freight airports against the government's priority areas for levelling up.

2.12 The freight and logistics sector is ideally placed to support levelling up. It is already a major contributor to economic activity, productivity, and employment across the whole of the UK and this contribution is growing. Since 2010, the number of jobs in transport and storage has grown by 26% compared to only 14% across the whole economy⁴¹. There is increasing sophistication of roles in the sector with Professional and Associate Professional and Technical roles increasing by 331,000 since 2010⁴². Meanwhile in 2021, the number of UK businesses classified as transport and storage was 88% higher than in 2011, with fastest growth in the Midlands, East of England, Yorkshire and The Humber⁴³.

2.13 Freeports will bring together ports, local authorities, businesses, and other key local stakeholders to achieve a common goal of shared prosperity and opportunity for their regions. Freeports will be national hubs for international trade, innovation and commerce, regenerating communities across the UK, by attracting new businesses, spreading jobs, investment and opportunity to towns and cities

up and down the country. Eight new freeports were announced in the Spring Budget 2021 which were East Midlands (centred around East Midlands airport), Freeport East (incorporating Felixstowe and Harwich ports), Humber, Liverpool City Region, Plymouth and South Devon, Solent, Thames, and Teesside – with both

Thames and Teesside operational by the end of 2021. It was recently confirmed that government will establish two Green Freeports in Scotland, with discussions ongoing to deliver on the commitment to establish at least one freeport in both Wales and Northern Ireland.



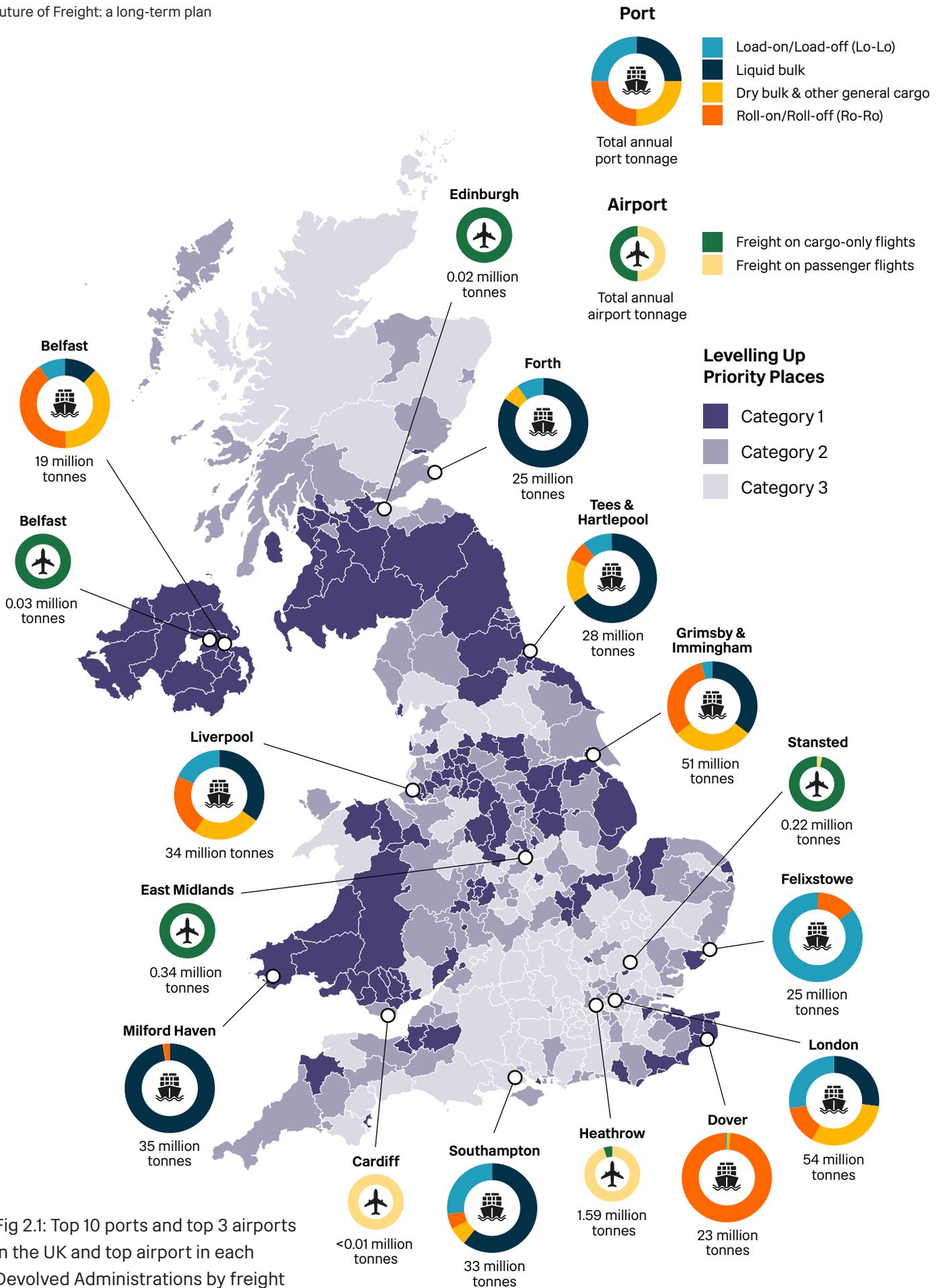


Fig 2.1: Top 10 ports and top 3 airports in the UK and top airport in each Devolved Administrations by freight tonnage (2019), alongside UK government Levelling Up Priority Areas.

- 2.14 Achieving the priorities identified in this plan will support key levelling up missions on “Living Standards”, “Transport Infrastructure” and “Skills”. The plan will do this by driving investment in public and private infrastructure and helping the industry to recruit and retain skilled workers across the country. It will ensure that the planning system provides appropriate support to enable logistics developers seeking to grow operations in all regions of the country to locate them where they need to be – near to the strategic road and rail network and close to an employment market.
- 2.15 **Strengthening the Union:** This plan reflects the devolution settlements in place across the United Kingdom. Transport policy is largely devolved and so the commitments in this plan will mostly only apply to England. Future of Freight have engaged with the Devolved Administrations throughout the development of this plan and following the publication of this plan the government will seek to collaborate with devolved Governments on its implementation.
- 2.16 This plan builds upon the work of Sir Peter Hendy in the *Union Connectivity Review (UCR) (2021)* and the priorities it identifies will strengthen the freight and logistics sector across the whole of the UK. The final UCR report into how transport connectivity across the UK can support economic growth and quality of life in England, Scotland, Wales, and Northern Ireland was published in November 2021⁴⁷. The UCR recognises that the freight system across the UK is integrated and that each nation of the UK is dependent upon efficient freight operations elsewhere.
- 2.17 **Supply chain resilience:** Resilience within the freight and logistics system is critical. The sector underpins every supply chain into, within and out of the UK. That is why resilience is one of our objectives for the sector. External factors – COVID-19 pandemic and Brexit and, as this plan is being drafted, conflict in Ukraine, – that served to raise the status of freight have also brought increasing focus from government and business on the resilience of supply chains, and particularly of critical goods. Resilience is a theme that runs throughout the issues and priorities identified in this plan.
- 2.18 The resilience of the international and domestic freight and logistics sector will continue to be tested in the future. Geopolitical tensions will continue to evolve. The global maritime freight system relies heavily on flows through the South China Sea, Straits of Malacca and Hormuz, and the Suez Canal. Airfreight is dependent upon overflights across multiple countries for efficient and reliable operation. Increased digitisation and data reliance mean potential for cyber threat may also rise. There have been reports of cyber-attacks across the freight network⁴⁸. The trade landscape is shifting as the UK signs new trade agreements following Brexit and at a macro-level the trend towards trade

liberalism established since 1945 has shown some signs of stalling. Changes to the domestic and international climate will also present resilience risks to the freight network⁴⁹, with even the targeted 1.5 degrees warming, locking in hotter summers and wetter winters domestically and a higher frequency of extreme weather events that the flow of goods will need to be resilient to. Our transport network will need to be prepared to adapt to these climate changes.

- 2.19 In principle it is the privately owned freight and logistics sector that leads resilience efforts because it manages all freight operations and the complex web of millions of daily physical and electronic interactions. Government has a strong interest in understanding potential supply chain implications of significant disruption to the system to maintain the supply of critical goods and the overall economic wellbeing of the country and a key role in resilience of the infrastructure it invests in.
- 2.20 The COVID-19 pandemic saw workplace restrictions at home and abroad and changes in consumer behaviour including a dramatic increase in home delivery and a global surge in consumption of things instead of experiences. Challenges were experienced, particularly with the mixed passenger and freight business models of our roll-on-roll-off sector, a shortage of drivers for HGVs and congestion and price increases within the global deep-sea shipping market. However,

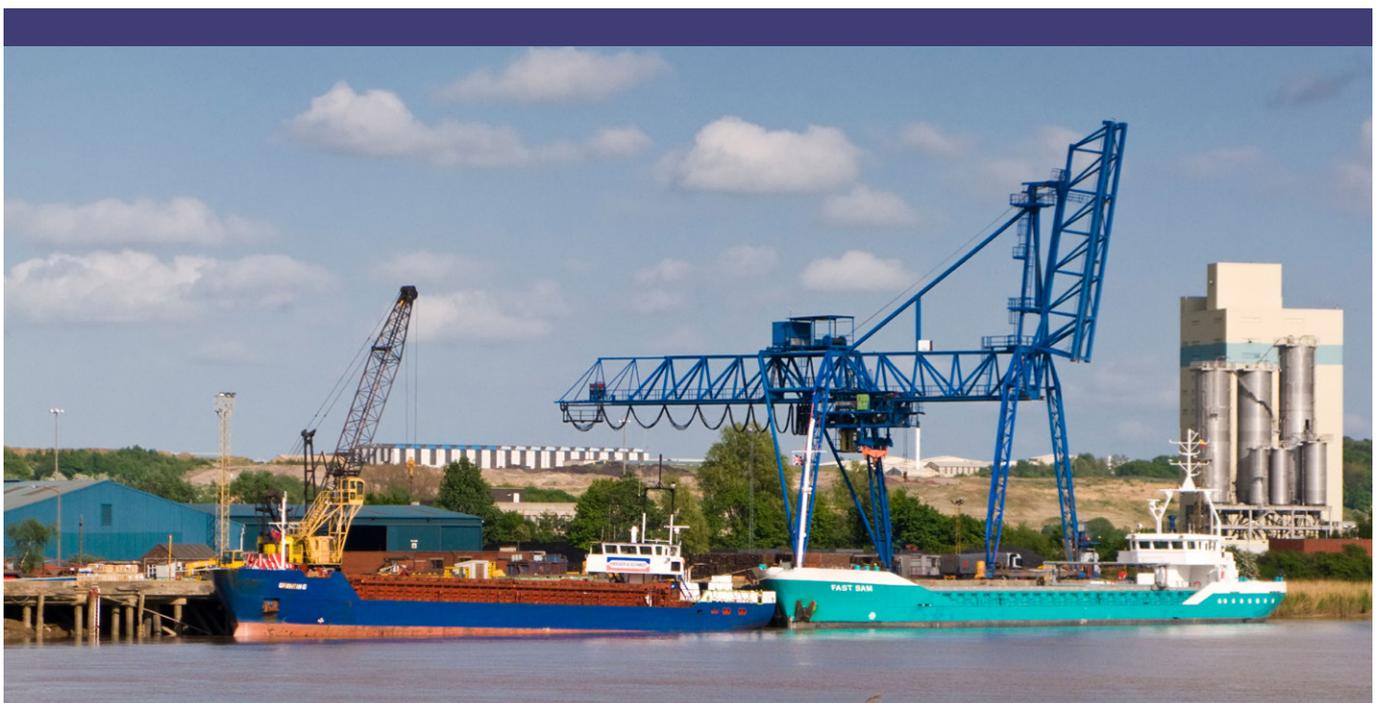
the freight sector continued operations across trucks, trains, warehouses, ships and on aircraft to keep goods moving.

- 2.21 The COVID-19 pandemic also demonstrated targeted and proportionate intervention from government. To support the workforce and to ensure international freight flows continued to operate into and out of the country Government worked with international partners and secured exemptions for freight and logistics workers from travel restrictions.
- 2.22 To protect the flows of critical goods moving into and across the UK on our maritime roll-on-roll-off routes the government provided £7.7 million of financial support through a Public Service Obligation scheme to operators on some routes. This ensured that ships continued to sail with freight when a collapse in passenger revenue meant some sailings were no-longer economic⁵⁰. The UK government implemented 33 measures to address a shortage of HGV drivers impacting upon the distribution of goods across the UK. These focussed on increasing efficiency in existing supply chains, providing support and training for new HGV drivers, expanding HGV driver testing capacity and improving licencing processes, attracting drivers back to the sector and improving conditions, ensuring the stability of the fuel supply chain and economic measures to support the haulage industry⁵¹.

2.23 The rail freight industry played a vital role throughout the pandemic, ensuring that food and critical supplies, such as Personal Protective Equipment (PPE), got to where they needed to go. The Government recognises how integral rail freight is to the prosperity of the UK and resilience of our supply chains, which became even more apparent during the pandemic. In particular, the way in which mode diversification across all modes supports resilience. To support the egress of containers from the Port of Felixstowe, Network Rail has identified capacity to increase the number of train paths available from 37 paths a day to 40 each way (of which one path is already operational), which will deliver a significant boost to capacity. To further increase capacity for rail freight in 2021, it has also created new paths for rail freight services from Liverpool and

Immingham Ports, and a new service from Doncaster to Mossend. In response to a surge in container volumes and to mitigate the shortage of HGV drivers, the Network Rail Southampton Freight Train Lengthening scheme has enabled trains of up to 775 metres, or 14 extra containers per train, out of the Port of Southampton.

2.24 The private freight and logistics sector also responded strongly to the COVID-19 pandemic to deliver a resilient sector. Strategic adaptation and innovative operating models ensured that maritime and aviation freight kept operating throughout, ensuring the delivery of vital supplies including PPE and vaccines.





Case study – air freight adaptation for resilience during the COVID-19 pandemic

The onset of the pandemic and global drops in international passenger air travel presented huge challenges to the aviation industry. Alongside this there was surging demand for the express transport of medical supplies including medicines, PPE and ventilators. With many passenger planes grounded the air freight industry saw an opportunity to innovatively meet this demand and make up for shortfall in passenger revenues. The aviation freight industry converted passenger

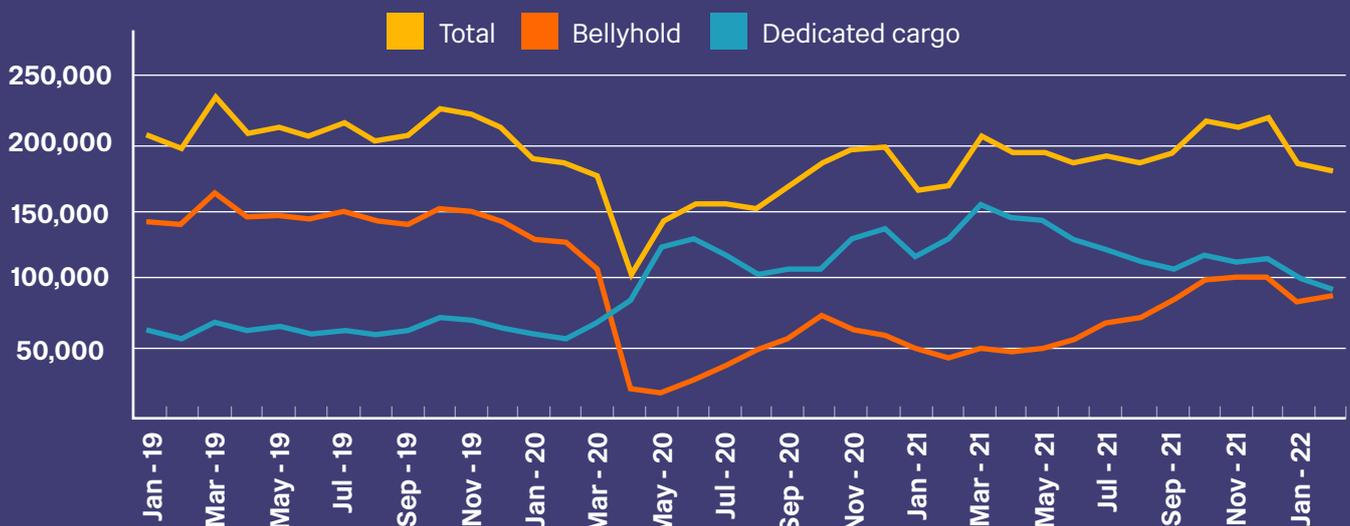
aircraft to carry medical supplies through the spring of 2020 successfully boosting capacity to get vital supplies across the world.

As the pandemic went on, the air freight sector built on this strong record. To maintain flows of high value and time critical airfreight, a shift took place from bellyhold freight to dedicated air freighters.

The share of bellyhold freight dropped from 70% in 2019 to only 38% in 2020 and the use of air freighters meant major cargo hubs at East Midlands and Stansted airports saw strong growth. So, while passenger volumes dropped by 75% during 2020 air cargo saw only a 21% reduction.

This sector led resilience adaptation is an excellent example of the strengths of the freight and logistics sector at large.

Impact on air freight tonnage over the past 3 years



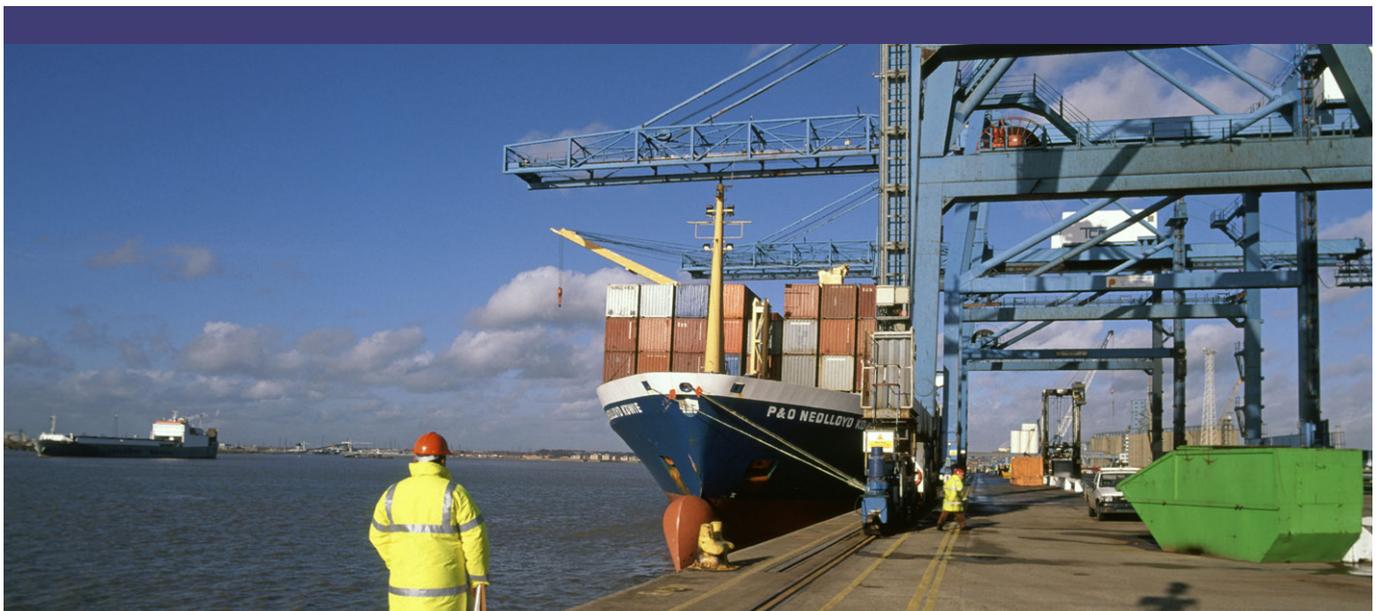
- 2.25 The sector is also building resilience through expansion of freight services. Owners are developing plans for significant investment at major container ports of Liverpool, Bristol, and Felixstowe. New DFDS services are operating from Sheerness and Irish Ferries is joining operations at Dover.
- 2.26 This plan does not address operational response and neither does it seek to specifically address the scenarios summarised. Rather its contribution is that the initiatives set out are important components of building resilience. A resilient sector needs enough people with the right skills to be responsive and agile to disruptions. Resilience will entail managing long-term change, such as the transition to zero-carbon as efficiently as possible. A resilient sector will need to build and optimise infrastructure – public and private –, supporting its adaptation to climate change, and to have access to the best data and technology.
- 2.27 **Increasing our global impact:** The priorities identified with industry in this plan are primarily domestic focused, but because of the importance of international supply chains to our prosperity the UK government has a strong interest in securing the long-term success of the international freight and logistics sector. The government is very active in this area and will continue to be so, supporting the development and enforcement of international rules and regulations that make the global freight network viable. Work is undertaken bilaterally and multilaterally through international institutions that collectively regulate trade, security, the environment and international aviation and shipping.
- 2.28 Pre-disruption caused by the COVID-19 pandemic, the UK had the third largest aviation network in the world and a significant aerospace industry. Our permanent representation at the UN's International Civil Aviation Organisation (ICAO) takes a leading role driving forward global regulation of aviation including the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) to reduce emission to 50% of 2005 levels by 2050. Bilaterally, the UK negotiates Air Services Agreements (ASA) with nations across the world. ASAs set the parameters for flights between the signatories and UK agreements support our large network of long-haul air freight routes.
- 2.29 The UK is host to the International Maritime Organisation (IMO), the only UN agency based in the UK, and focused on enhancing maritime safety and protecting the maritime environment. In IMO, the UK is a leader in the field of international maritime environmental diplomacy, securing agreement to the target of a 50% greenhouse gas (GHG) emission reduction from the sector by 2050. To support seafarers government works proactively within the International Labour Organisation (ILO) to drive up minimum standards and through both IMO and ILO it took a leading role to address the repatriation of seafarers stuck onboard vessels.
- 2.30 The UK hosted COP26 in 2021, securing 22 signatories to the Clydebank Declaration to support the establishment of green shipping corridors – zero carbon maritime routes – between two or more ports. Throughout the COVID-19 pandemic Government worked bilaterally with near neighbours and with the EU to deliver exemptions for freight workers from travel restrictions to ensure the continued flow of goods into and out of the UK.

Themes

- 2.31 This plan sets out specific actions identified in collaboration with the freight and logistics sector that will support our joint objectives for the sector. In addition, there are two themes which run through the plan: **Raising the status of freight** and **a multi-modal approach to the sector**.
- 2.32 **Raising the status of freight:** In 2019 the National Infrastructure Commission (NIC) published *Sustainable delivery: the challenge for freight*⁵². The report made a number of recommendations to government including on: the decarbonisation of road and rail freight; addressing congestion through proper recognition of freight and its needs within the planning system; and developing common data standards for application at the national and local levels. Government has responded to this report⁵³. The report also set out that sustained success for freight and logistics required government and the industry to raise its status within the public and private sectors and with the public.
- 2.33 The success of this plan and the sector is dependent upon the value of freight and logistics being recognised by all parties.
- 2.34 The COVID-19 pandemic, and the UK's exit from the European Union have raised awareness of the role that freight and logistics plays. The rippling impacts in the freight system have been felt across society, and whilst this is not welcome, it has served to focus minds on the importance of freight and logistics across government and industry. The value placed on the sector by the public is trending upwards, with 68% of respondents to an industry survey agreeing that those who work in the sector deserve more appreciation than they get⁵⁴.
- 2.35 This plan is an output of the raised status of freight. It is the first time that government has sought to develop, in collaboration with industry, a long-term and cross-modal plan for the sector. Its development has also driven the establishment of structures and fora critical for maintaining a long-term focus on freight. The **Freight Council** was established in 2021 as a cross-modal industry and government forum to drive the development of this plan⁵⁵. Chaired by a Department for Transport Minister (DfT) it brings together senior leaders from the freight and logistics trade associations and government departments across Whitehall. The Council has a significant role in managing the delivery of this plan. To support this process **a strong independent co-chair will be appointed to advocate for the sector and to drive its programme of work**.
- 2.36 DfT has established a cross-cutting directorate responsible for logistics and borders which will complement the creation of supply chain focused workstreams across government including in Cabinet Office, the Department for International Trade (DIT) and Department of Environment, Food and Rural Affairs.
- 2.37 **Multi-modal approach:** The NIC report also made clear freight and logistics required a multi-modal systems approach. Development of this plan has been undertaken through engagement with all modes of the freight and logistics sector. Each priority identified in this plan is multi-modal.

Approach and process

- 2.38 This plan recognises that there is much more activity taking place across the public and private realms than is possible to describe in detail in this plan. At **Annex A** we seek to capture some of this important work alongside a high-level assessment of which of our objectives this work supports.
- 2.39 The plan also builds on the expert advice of the National Infrastructure Commission's *Better Delivery: The Challenge for Freight report* (2019). This plan seeks to further the progress made in relation to this NIC report as summarised in the Government's response to the NIC in August 2021.
- 2.40 This plan represents the shared commitment of the government and the freight and logistics sector to work to achieve a sector that is **cost efficient, reliable, resilient, environmentally sustainable and valued by society**. The approach has been collaborative between government and the sector, its customers and support services. Identifying challenges and opportunities, and then, agreeing and prioritising clear actions to address them.
- 2.41 This has been achieved through internal and cross-Whitehall policy baselining and discussion and agreement at five meetings of the Freight Council chaired by the cross-cutting Minister in the Department for Transport and attended by senior representatives from the freight transport trade associations and other departments from across Whitehall. Further engagement took place through four workshops and five roundtables attended by more than 300 stakeholders from the public and private sector. Each workshop focused on one of the Department for Transport's strategic priorities – improve transport for the user, grow and level-up the economy, increase our global impact and reduce environmental impacts. The roundtables followed on from the workshops and focused on developing actions to support the priorities identified. More detail on our engagement approach is detailed in chapter 8.
- 2.42 Five priority areas emerging from this engagement have been further developed by the Department for Transport and with the Freight Council. The following chapters set out each of these priorities and the agreed actions.



Future of Freight plan priorities:



1 National Freight Network



**2 Enabling the transition
to Net Zero**



3 Planning



4 People and skills



5 Data and technology

3

Priority 1 – National Freight Network

Government and industry will collaborate to:

- **Identify a National Freight Network**
- **Undertake valuation of Freight studies**
- **Improve visibility of Freight in Infrastructure Planning**
- **Support Modal Shift**

The challenge ahead

The challenge:

Lack of visibility and understanding of the freight network as a cross-modal system by the sector, government and freight end-users limits joined-up decision-making by both the public and private sectors.

- 3.1 The UK has a rich history of leading the world in the rollout of high-quality freight transport infrastructure, from canals to railways to roads to aviation. Today our freight network is geographically diverse and supports comprehensive freight transport across all four corners of the country. Vital to a cost-effective, resilient, reliable, environmentally sustainable and valued by society freight sector is high-quality infrastructure across the UK, that is both optimised for the needs of the sector and optimally utilised by the sector.
- 3.2 The freight network is highly complex and understanding it at a cross-modal systems level is difficult. Given this difficulty the majority of investment in freight infrastructure to date has been focused modally. However, freight operations are highly integrated and inefficiencies on one mode or part of



the network can show up in disruption at other parts of the network. An example being the recent increase in container volumes through UK ports, which was exacerbated by and highlighted the issues of lack of hauliers and inland storage. This shows the limitations of a modal approach to infrastructure investment as inefficiencies require collaboration and a system-level view to address. Similarly, a modal approach to investment and prioritisation of freight has at times led to freight being transported in less environmentally sustainable ways due to cost, speed and reliability considerations. The lack of awareness of the value of end-to-end freight journeys has also made it harder for vital warehousing and distribution centres and rail freight interchanges to get through local planning systems.

3.3 Addressing such inefficiencies requires visibility of the whole of the UK's freight network. Across government and the sector this visibility is not consolidated in one place and so understanding of the components of the system and how they integrate with each other to form a core freight network is complex. Until recently it would have been impossible to conceive of comprehending the whole freight system. However, the rapid proliferation of technology and data, alongside huge expansions in analytical capability in the sector and government, present an opportunity for the first time to try and develop a system-level view of the freight network.

3.4 It is important that government and industry grasp this opportunity to optimise infrastructure for freight for three reasons:

- **To target policy, investment and planning decisions strategically to maximise efficiency;**
- **To enable the best freight infrastructure decisions for the UK economy, at local, regional and national level; and**
- **To make operational decisions that maximally utilise all existing infrastructure.**

3.5 Investment decisions for infrastructure projects are made on a modal basis and the needs of end-to-end supply chains are not at the forefront of those decisions. The lack of a clear understanding of the modes as an integrated system with a core strategic network, means that investment decisions may not be correctly prioritised. The lack of a systemic cross-modal view of the network means that limitations and bottlenecks are not properly understood for their impact on the whole system and are therefore not adequately addressed. The lack of understanding of the whole network also makes it harder to understand the value of freight to the economy and the value of specific interventions, thus making it harder to understand which infrastructure projects to prioritise. Finally, the lack of a cross-modal view limits the ability for the system to offset disruption from planned works on one mode through extra capacity in a parallel mode.

Strategic goal:

A system-level approach to the freight network means that end-to-end freight journeys are more efficient and reliable. Better understanding of freight as a system ensures the needs of freight are appropriately considered as part of decision-making processes, and facilitates a better utilisation of existing infrastructure, including through modal shift.

3.6 The lack of a clear system-level cross-modal view of the freight network reduces visibility and awareness for freight operators and buyers of the full range of modal choices. This information shortage means that the full range of infrastructure is not being optimally utilised as users aren't aware of alternative options. This lack of a system level view also makes it difficult for operators to make optimal capacity decisions at the cross-modal system level and across passenger and freight needs. For example, it is currently hard for Network Rail and National Highways to collaboratively spot opportunities where there are 'corridors' where roads are congested due to limited capacity and where there are equivalent rail routes with underutilised capacity that

could be used to ease this congestion. On an often constrained network, it is becoming increasingly important to look towards maximising the best use of existing capacity and ensure we capitalise on efficient network planning to optimise network performance and facilitate growth.

Where we're going

- 3.7 Delivering this requires expanding visibility of freight infrastructure. Creating an understanding of the UK's freight network that is cross-modally integrated, clear and responsive to changing circumstances. Unlocking this increased visibility will be transformative to the UK freight sector, allowing better decisions around infrastructure investment, and better Day-to-day operational decisions to make the most of existing infrastructure.
- 3.8 Better UK infrastructure to support freight requires better consideration of freight and its supporting facilities being made at the outset of infrastructure programmes, including warehousing location, welfare, border controls and energy requirements. Ensuring that investment is made in high-quality infrastructure that benefits the whole freight system. This will require greater recognition of the importance of the freight network within public infrastructure policy and investment decisions based upon a wider awareness of freight as an integrated, multi-modal end-to-end network that is a vital component of our supply chains.

These public investment decisions will need to be aligned with and geared towards maximum synergy with private sector investment decisions in vital freight infrastructure such as ports, airports, rail terminals, warehousing and more. This will need to be aligned with the transition to net zero which will require large scale investment and coordination from the public and private sector to deliver vital future energy infrastructure across the UK freight network. Pivotal to delivering all of this will be achieving a stronger cross-modal understanding of the freight network and its infrastructure, making sure that private and public investment is coordinated across the network to deliver maximum benefits across all modes.

- 3.9 This vision will also require removing barriers to freight buyers and operators visibility of alternative modes and capacity across the network to support more efficient use of existing infrastructure. This will include delivering stronger knowledge and expertise within freight user and intermediary community on how to access different modal options. This will need to be complemented by efforts to unlock further capacity across the network, in particular efforts to deliver greater rail freight capacity.
- 3.10 Achieving this vision will unlock huge benefits to the freight sector and broader economy. The UK will see continuous improvement of the **economic efficiency** and **reliability** of end-to-end freight journeys with **greater**

resilience built into the system. Buyers and operators of freight transport will have a high awareness and easy access to the range of modal choices for freight and the capacity that exists across the system. Consequently, opportunities for modal shift, where appropriate, to support objectives on congestion, built and natural environment, and decarbonisation will be maximised.

Strong foundations

The UK's current freight network

- 3.11 The UK's current freight network has evolved over centuries, reflecting the changing nature of trade into, out of and across the country. The modern system began to take shape with the Industrial Revolution and its requirement for mass transport of raw materials and finished product. This drove the development of the canal and subsequently railway networks and finally, alongside demand from the private motorist, our modern motorway network. Important before industrialisation and central after it, Ports across the country have risen and fallen reflecting the evolution of our international trading relationships. In recent decades, airports have become vital to the transport of high value international goods and unlocking express services into and out of

the country. Finally, our network of warehouses has evolved from places focused on storage and inventory to vital hubs supporting efficient aggregation, disaggregation, and distribution of goods.

Open to the world: maritime, aviation and international rail freight

- 3.12 As highlighted in Chapter 1. Freight and Logistics, the UK benefits from a varied and comprehensive network of ports, airports and international rail links to international supply chains facilitated by significant government activity in multilateral institutions and bilateral relationships.
- 3.13 These have evolved through years of public and private investments in improving infrastructure that keeps the UK open to the world. Today, as the UK's freight links to international supply chains are almost entirely privately owned or operated, the majority of investment in this infrastructure is privately led.
- 3.14 The UK's ports and airports are majority privately owned and all are privately operated. New ports or developments at existing ports are mostly privately funded by the owner or operator and are undertaken in response to market demand, maintenance needs, or opportunities for more efficient
- technology. In the last decade, private investment has built an entire new container port at London Gateway with total investment in excess of £1.8 billion⁵⁶, and a new highly automated container terminal – Liverpool 2 – at the Port of Liverpool at a cost of £400 million⁵⁷. Government investment at ports is not typical, although to help the sector prepare for new customs arrangements following Brexit the government developed the Port Infrastructure Fund to help ports build the physical infrastructure required⁵⁸. Similarly, infrastructure and fleet upgrades for air freight are funded predominantly by the private sector. This is supplemented with public funding for connectivity upgrades to improve rail and road access to ports and airports⁵⁹.
- 3.15 As previously summarised, these international gateways are connected to a similarly comprehensive domestic network of roads, rail, inland waterways, domestic aviation and shipping and other innovative modes. Investment in this domestic network of infrastructure comes through a complex mix of public and private investment. As seen above, maritime and aviation investments are almost entirely private, as are investments in warehousing. It is estimated that the warehousing sector invested in 40 million sq. ft. of new warehousing and distribution space due for completion in 2021 compared to 20 million sq. ft. completed in the previous year.

Connecting with the domestic network: road haulage, rail freight and domestic shipping

- 3.16 As previously summarised, these international gateways are connected to a similarly comprehensive domestic network of roads, rail, inland waterways, domestic aviation, shipping and other innovative modes. Investment in this domestic network of infrastructure comes through a complex mix of public and private investment. As seen above, maritime and aviation investments are almost entirely private, as are investments in warehousing. It is estimated that the warehousing sector invested in 40 million sq. ft. of new warehousing and distribution space due for completion in 2021 compared to 20 million sq. ft. completed in the previous year⁶⁰.
- 3.17 For road and rail investment tends to be private where it is focused on fleets, rolling stock interchanges and terminals, and public, where it is related to the road and rail networks. The road freight sector invests privately in its fleet, registering 54,000 new heavy goods vehicles in 2019, with gas and battery electric vehicles making up 0.2% of total registered HGVs with expectations that these and other low-emission and zero-emission vehicle registrations will increase over the coming years⁶¹. However, investments in the road and rail network that both modes rely on are predominantly public.
- 3.18 The Road Investment Strategy (RIS) provides 5-year funding settlements for the maintenance, renewal and enhancement of England's strategic road network by National Highways. Between 2015–2020 RIS1 invested £17.6 billion in England's strategic roads⁶², and between 2020–2025 RIS2 will provide further funding of £24bn⁶³. RIS3 will run from April 2025 and is in the early stages of development. Local roads are managed, maintained and enhanced by local highway authorities and combined authorities, Local roads are funded through a combination of locally generated taxes and rates, and through grant allocations to local highway authorities for specific enhancements and interventions. These investments and broader policy around planning (spatial and transport), design and kerbside management at the local level have significant impact on urban logistics flows and determine the efficiency of 'last mile' journeys.
- 3.19 For rail, the Periodic Review process sets a five-year settlement that determines the level of funding the infrastructure owner (Network Rail/Great British Railways) receives for its operations, maintenance and renewals activities. Of fundamental importance to the rail freight industry, the Periodic Review process also sets a framework for how much freight customers will be charged to access the rail network. The settlement for operations, maintenance and renewals in Control Period 6 (2019–2024) was over £35bn⁶⁴. Separately, the government will invest around £9bn in enhancements on the network for

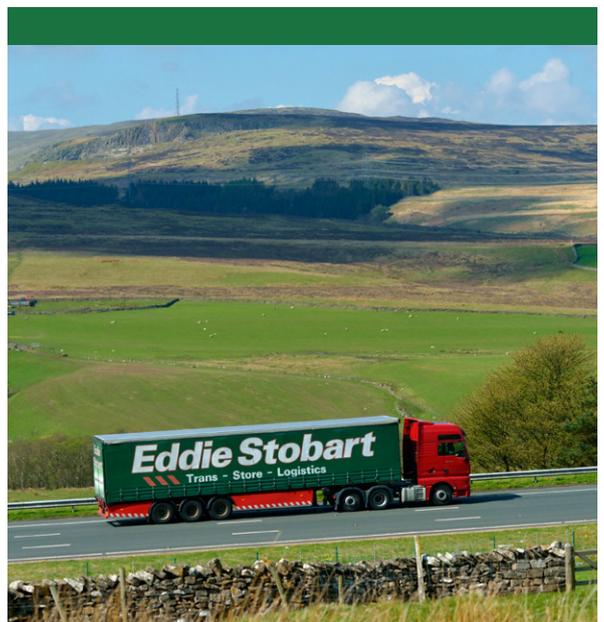
both passengers and freight over the course of Control Period 6. Between 2014–2019 (Control Period 5), the government invested over £235m in rail freight enhancements to improve the capacity and capability of the network for freight users, with a further £40m from 2019 onwards⁶⁵. For Control Period 6 enhancements were funded through the separate but parallel Rail Network Enhancements Pipeline (RNEP) process. Most recent examples of RNEP freight enhancements completed are Port of Liverpool – West Coast Mainline track doubling improvements⁶⁶ and upgrades to enable full length 775m intermodal container freight trains to and from the Port of Southampton⁶⁷. The next Periodic Review is in 2023 and will cover the next five years from April 2024, known as Control Period 7.

Thinking cross-modally

3.20 Overall, the UK has a highly comprehensive and complex freight network, with many goods passing through multiple modes on their end-to-end journey, and each mode playing vital and specialist roles. Given the structures of the industry and government, the majority of investment in freight infrastructure to date has been focused on modal improvements, with significant amounts invested in making each mode operate as effectively as possible. However, in operation as seen above, the freight system is highly integrated and, as explained in *the challenge ahead*, inefficiencies and bottlenecks can ripple across the network with bad

outcomes appearing far away from causation where there aren't adequate levers or incentive structures to address these problems. As such, infrastructure investment and decision making must account not only for individual modes but also for intermodal links and cross-modal dependencies. Ensuring an efficient, resilient, reliable and environmentally sustainable freight sector will require government and industry taking a collaborative and cross-modal approach to investment to address inefficiencies.

3.21 In the UK the area where this cross-modal approach has been most visible has been in work to facilitate modal shift through investment in rail freight interchanges. Strategic rail freight interchanges have been built across the country⁶⁸, an example being investment at Daventry International Rail Freight Terminal (DIRFT) in the “Golden Triangle”. DIRFT is a key rail-road intermodal freight terminal with rail connections to



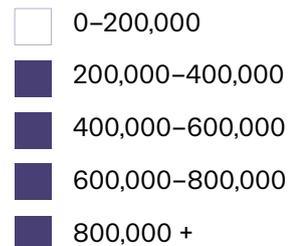
the West Coast Mainline and onwards to the channel tunnel and deep seaports, facilitating the flow of goods into the country through the interchange and onto the M1, M6, A14 and A5, allowing the import/export and transport of goods in a strategic multi-modal and low carbon fashion⁶⁹. Interchanges such as these not only meet the needs of the freight sector but also support wider government objectives around decarbonisation and congestion. All helping to deliver a more efficient, resilient, and environmentally sustainable freight sector. The Planning Act 2008 includes strategic rail freight interchanges within the scope of Nationally Significant Infrastructure Projects (NSIP) enabling schemes meeting the threshold to be considered directly by the Planning Inspectorate, rather than by local planning authorities, further supporting the development of these vital interchanges⁷⁰.

3.22 Building on the success of investment in strategic rail freight interchanges will require long-term strategic action from government and industry, focused on similar opportunities to bolster the operation of the freight network as a whole through improvements to infrastructure with multi-modal impacts. This will require a clear understanding of the National Freight Network at a system level, understanding how the modes interact and link together to form an end-to-end freight system.

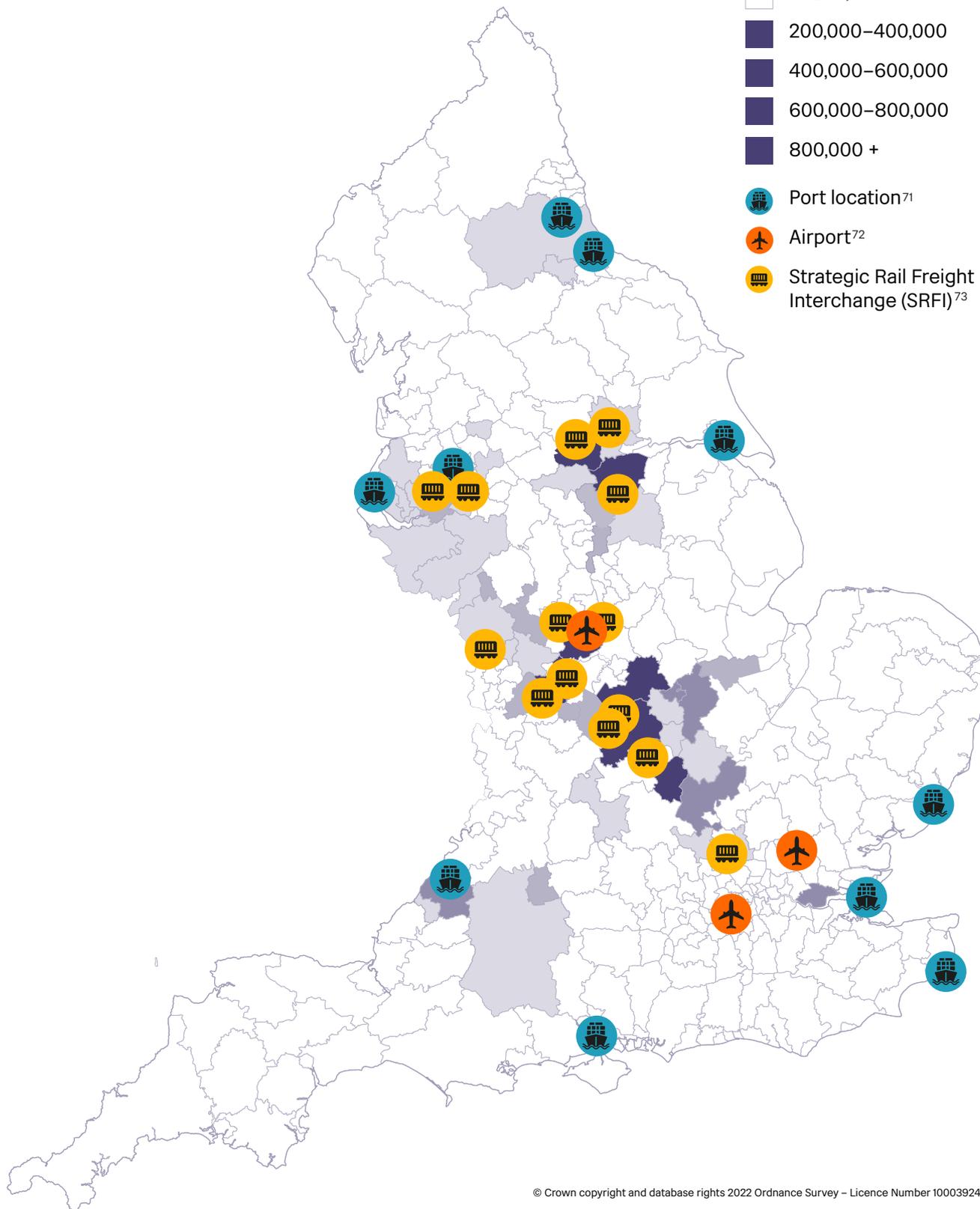


Between **2014–2019**
(CP5), the government invested
over £235m
in rail freight
enhancements

Large Distribution Warehouse total floorspace (m²)



- Port location⁷¹
- Airport⁷²
- Strategic Rail Freight Interchange (SRFI)⁷³



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Top 10 port locations and top 3 airports in England by tonnage and Strategic Rail Freight Interchanges, alongside total Large Distribution Warehouse floorspace⁷⁴ by local authority (note, port location may represent multiple ports within the same river estuary)

3.23 Government and industry are working hard to deliver this system level view and are building on strong foundations. There is a strong sense of the key modal and intermodal ‘nodes’ in the freight network, as seen in figure 3.1. This shows the complex multimodal picture, picking out the key freight ‘nodes’ in England. The map shows the major ports and airports where goods enter and exit the UK, alongside the locations of the strategic rail freight interchanges and the local authorities with major concentrations of warehousing and distribution centre floorspaces. As such a cross-modal picture is built up of the stopping points of goods across England, first entering our ports, then on to interchanges and warehouses, before finally heading to end businesses and consumers.

3.24 These nodes are linked by a high-quality road, rail, inland waterway, coastal shipping and regional air connectivity network, joining up these key points and connecting the smallest of towns and villages to international supply chains and major hubs. This predominantly utilises the strategic and major roads network⁷⁵ and major rail freight corridors⁷⁶, however towards the ‘last mile’ it utilises the full local extent of the UK’s road network, and specific local rail links.

3.25 In recent years, there has also been attempts to understand further the major corridors and flows of freight across the UK. Government and industry have worked hard over recent years to build a stronger picture of the geography of the UK’s national Freight Network. In particular, the Network Rail and National Highways collaboration on the *Solent to the Midlands Multimodal Freight Strategy*⁷⁷ has shown the benefits of taking a multimodal approach to understanding strategic freight corridors, and has enhanced government understanding of the growing importance of this key two-way route for freight. Similarly, the *Port Connectivity Studies (2018)*⁷⁸, undertaken by the Department for Transport, have developed government understanding of freight flows by rail and road to and from the UK’s ports. These studies have served to highlight key areas of improvement for connectivity between modes in the national freight network, highlighting the need for greater cross-modal working in government and supporting the case for a full consideration of freight in transport decision making.





Case study – Solent to the Midlands Multimodal Freight Strategy

In June 2021 Network Rail (NR) and National Highways (NH) released the first phase of the Solent to the Midlands Multimodal Freight Strategy. The strategy represents a landmark step forward in collaboration between the organisations on strategic multimodal planning and a blueprint for government on how to consider key freight corridors from a cross-modal perspective.

The Solent to Midlands corridor was chosen as it represents one of the UK's most important freight corridors, connecting the global freight and logistics hubs of the Solent ports, particularly Southampton, with the 'golden triangle' of freight distribution in the midlands. The A34 linking the two is closely mirrored by equivalent rail routes and so these parallel routes are an ideal candidate for cross-modal analysis.

The strategy demonstrates how both networks could be used more efficiently, in terms of their overall capacity and their carbon footprint, outlining opportunities for new and enhanced freight markets and recommending NH and NR: commit to continued joint working, remove barrier to rail freight growth, unlock new markets for transporting commodities by rail, and drive forward decarbonisation. The study has begun to use data in innovative ways to identify freight flows with a potential to be switched to rail. Altogether, the strategy and continued joint working will support the two organisations to free up road capacity through more efficient utilisation of the rail freight network.

NR and NH are now committed to building on the strategy for this corridor and exploring similar opportunities for joint working.

3.26 These programmes of work, alongside broader analysis, modelling and mapping undertaken in recent years, means that government now has significant, but not sufficient, understanding of the key freight flows across the UK. In order to properly support the freight network, government will need to expand its understanding into a comprehensive view of the most critical and strategic freight flows across the UK. To inform this work to map out a National Freight Network (NFN), government and industry will need to use all available data on the volume, value and criticality of freight flows, balancing these to come to an agreed understanding of the most strategically important journeys, nodes and infrastructure.

What next?

3.27 Delivering our vision and addressing the challenge ahead will require building on the UK's strong existing infrastructure, as summarised above, and consolidating these advantages. This will require building on government and industry's work to date to understand and map freight flows, value and criticality and an initial view of the key routes of significance to the freight network. This will be vital to allowing industry and government to better understand freight infrastructure needs and to supporting industry to maximise opportunities for modal shift. This work to improve understanding at the system level will also be vital to inform decision making

around decarbonisation, future energy sources and modal shift. In the interim, the committed projects outlined in the annex A will go some way in easing congestion and improving freight flows.

Key activities for achieving a strong Future of Freight

3.28 **Identifying a National Freight Network:** Working together the Freight Council and the government will develop a fuller understanding of the domestic freight network across road, rail, maritime, aviation, inland waterway and warehouse infrastructure. This will be a complex process starting with developing a stronger data and strategic picture of the network before exploring how this could be consolidated into a NFN.

- **Understanding the network:** Government will work across the public sector and with industry to use all available data and explore new opportunities to understand the volume, value and criticality of freight flows into, across and out of the UK to define the geographical spread and physical infrastructure of the NFN and to understand the implications of bottlenecks and vulnerabilities. As part of this, government will seek to improve the coordination of data cross-modally. We will also work to consider the need and the feasibility of strengthening our analytical capability on freight analysis, modelling, forecasts and logistic

operations across the NFN. This could potentially include data collections, new tool developments and methodology explorations. Improving our evidence base will enable us to enhance our collaboration with industry, improving freight's contribution to the wider economy and delivering better outcomes against key work areas such as resilience and mode shift.

- Guided by the appraisal framework in the Green Book and Transport Analysis Guidance (TAG), government will consider undertaking a study to understand the valuation of freight and freight transports to inform the NFN's use cases. Government is already undertaking a Road Freight Value of Time study to update the HGV's representation in modelling and appraisal process for road infrastructure investments. This work to establish an understanding of the NFN, will be underpinned by a supportive Industry, led by the Freight council, proactively delivering opportunities to share data with government.

- **Using the Network:** The NFN will focus on supporting end to end supply chains and take a corridor-based approach seeking to create a strategic overview of the priority corridors and infrastructure within them. Government and industry will consider how this can be used to better coordinate strategic alignment between modes in each corridor. Government will work to use the NFN to inform and support key activities such as net zero, including the delivery of zero-carbon energy infrastructure (see chapter 4), and Planning (see chapter 5). Development and implementation of the NFN will be aligned with any UK strategic transport network work arising following the Government's response to the Union Connectivity Review. Government will work to include analysis underpinning the NFN in its infrastructure investment decisions. It should be noted that all investment decisions will need to be guided by affordability and value for money considerations within existing investment programmes and decision-making processes.

How might the NFN be used:

The NFN could be used to identify the key freight corridors across the country, including the density of freight flows and value and criticality of goods to the UK economy and society along these corridors. This would allow HMG and Industry to prioritise strategically important corridors, e.g. those with particular economic, levelling up or decarbonisation benefits

This is particularly pertinent for rail, given the current constrained fiscal environment for enhancements, and the significant demands on available RNEP funding.

3.29 Visibility of freight in infrastructure planning: Government will continue to provide long-term, secure funding through the RIS and CP process for roads and railways. Through the Freight Council the government and industry will work together to support awareness of and engagement with the RIS and CP processes so that the freight and logistics sector is better able to engage with those processes. In particular:

- Government will work with the Freight council to ensure engagement with upcoming consultations on RIS3.
- Government will also work to encourage collaboration between infrastructure organisations, as demonstrated by the Solent-Midlands joint Network Rail and National Highway strategy.
- Government will work with our ports to ensure that regulatory frameworks continue to support high levels of private sector investment in port infrastructure. Government will also work with our ports to ensure port connectivity needs are adequately represented in road and rail infrastructure decisions.
- As above, Government will work with industry to actively seek ways of improving the methodologies of

valuing freight transports, used in infrastructure investment decision-making processes, under the Green Book and transport analysis guidance (TAG).

3.30 UK Infrastructure Bank: Government has recently established the National Infrastructure Bank, providing £22bn of infrastructure finance to tackle climate change and support regional and local economic growth across the United Kingdom. Government will work with the Freight Council to raise awareness of the bank, and ensure the broader freight sector is taking opportunities for infrastructure financing through this route.

3.31 Resilience of infrastructure: In consultation with industry, the government will undertake a review of the pros and cons of introducing a reporting requirement on resilience and risk management across the sector. Government and industry must also bolster climate adaptation. This will involve modelling the vulnerabilities of the freight system from climate change and developing adaptation plans to ensure it can withstand a changing climate, both in the UK and globally.

3.32 Supporting modal shift: Government will work with industry to continue efforts to encourage a greater utilisation of freight across all modes, including:

- *Modal shift to rail freight:* Government remains fully committed to unlocking the economic and environmental

benefits rail freight can deliver, including supporting decarbonisation and reducing congestion on Britain's roads. Government continues to invest to support rail freight growth, and will set out our priorities in the forthcoming publication of the Rail Network Enhancements Pipeline. As part of rail reform, the railway will have a long-term strategy which will set out, for the first time, key strategic priorities for the whole rail network for the next 30 years. *The Williams-Shapps Plan for rail (2019)*, including commitments to a rail freight growth target made in it and in the Transport Decarbonisation Plan, will further strengthen the place of rail freight on the national network, create new opportunities for growth and investment, and maximising its environmental benefits. The Government fully supports the continued growth and success of international rail freight services, where it has the potential to accommodate an even great shift of freight from road to rail and boost resilience. The Government will continue to work closely with the sector to facilitate the launch of new routes, build on our close collaboration, including developing a bespoke inland customs clearance model for rail freight terminals.

- *Mode Shift Revenue Support and Waterborne Freight Grant*: The government commits to ongoing funding of the successful Mode Shift

The Williams-Shapps Plan for rail (2019) and the opportunities for rail Freight

The Government is committed to supporting rail freight to enable it to thrive and grow recognising the role the sector will play in achieving net zero targets and the government's ambitious economic and Environmental agenda.

The WSPR rightly gave a high priority to the economic and environmental benefits of rail freight, putting rail freight at the centre of its reforms with ambitious plans to grow rail freight and ensure key protections for rail freight are prioritised. The WSPR has created exciting opportunities for the rail freight sector including:

- A **Strategic Freight Unit** within Great British Railways dedicated to improving performance and efficiency across the network for rail freight customers.
- A **duty on Great British Railways to promote rail freight** to help drive rail freight growth, recognising the sector's vast economic and environmental benefits.
- The introduction of a **rail freight growth target** which we will be consulting on shortly.

Revenue Support and Waterborne Freight Grant schemes for a further three years with the total grant available for the MSRS maintained at £20m per year. The current scheme removes on average 900,000 diesel HGV journeys off the road and 58,000 tonnes of CO₂ emissions each year and supports modal shift rail, inland waterways and coastal & short sea shipping⁷⁹.

- *Innovative modes:* Working with industry to explore the opportunities for and barriers to utilisation of new innovative freight modes, such as e-cargo bikes, freight on light rail, and high-speed rail freight into cities.
- *Publicity and communications on cross-modal freight:* Government will work with industry to raise the profile of less utilised freight modes, their benefits (including reliability, carbon emission reduction and congestion reductions) and create greater visibility of capacity across the freight network. This work will aim to build on existing portals and services. Through the Freight Council we will review access to freight advisory services for users of freight and promote and, where a need is identified, improve these services.
- *Using enhanced understanding of cross-modal freight to explore opportunities for immediate capacity uplifts:* Exploration of options to create more capacity on network, such as new paths for rail freight, longer trains, evening and weekend paths, utilisation of Inland waterway, smart kerb management and flightpath to future.

Building on the National Infrastructure Commission (NIC):

This renewed cross-modal approach including a mapping of key freight corridors as part of the National Freight network, directly expands on the NIC's advice, recommendations and the government's response. The cross-modal analysis and modal shift opportunities encapsulated above will support further work on the NIC's recommendations in relation to decarbonising freight, new and better data and a new status for freight. (see Annex B for further details)

The current scheme removes on average



over

900,000

diesel HGV journeys

off the road and

58,000
tonnes of CO₂



emissions each year

Achieving our Future of Freight vision

The above key activities will deliver a sector that is:



Reliable

The National Freight Network and increased modal shift will support efforts to reduce congestion across the network, delivering more predictable freight journey times.



Resilient

The NFN, modal shift and better prioritisation of the freight network, will diversify freight journeys, providing better adaptability and resilience to disruption across the freight network.



Environmentally sustainable

Supporting modal shift will contribute to achieving emissions targets. The NFN will support targeted roll-out of future energy infrastructure. The NFN will also support more strategic locating of freight and logistics land closer to strategic transport links reducing noise and air pollution impacts.



Valued by society

The NFN will ensure greater understanding of the network across the public and private sector, boosting freight's profile. This alongside support for modal shift will reduce the negative externalities of freight and therefore improve its reputation with the public.

We will succeed when:

We will know we are making progress against this priority when:

- Government and industry have expanded our data and evidence picture of the domestic freight network. We have identified what a NFN would entail, with a decision on continuing development of the NFN reached by the end of 2022. Underpinning evidence continues to be iterated yearly with further data

contributing to understanding of key freight corridors and nodes.

- Industry awareness of availability and access to cross-modal freight solutions shows that the full range of modes are being regularly considered in operational decisions.
- Road and Rail network investment and operational processes show significant engagement from the Freight Sector and broader industry.

4

Priority 2 – Enabling the transition to Net Zero

Government and industry will collaborate to:

- **Create a Freight Energy Forum**
- **Support and promote mode shift**
- **Undertake a regulatory review of barriers to delivery of zero-carbon energy infrastructure**
- **Maximise the potential of modal initiatives by demonstrating a zero-carbon cross-modal freight journey**
- **Continue delivering the commitments outlined in the Transport Decarbonisation Plan.**

The challenge ahead

The challenge:

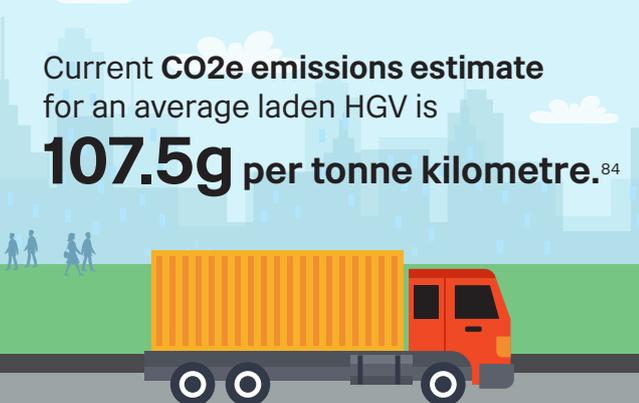
The UK's freight and logistics sector has opportunities to lead the world in developing a cleaner, and greener freight system. Continuing to invest in long-life assets can be difficult for industry whilst there remains some uncertainty around the precise mix of technologies and the delivery of associated energy infrastructure that will be needed. By working together, industry and government can build confidence order to accelerate the deployment of zero-emission technologies.

- 4.1 Transport is the largest contributor to UK domestic greenhouse (GHG) emissions, producing 99 MtCO₂e of carbon in 2020⁸⁰. The transition to zero emission technology is already well underway, particularly in our towns and cities. Increasingly sustainable forms of freight transport, including small commercial vehicles and e-cargo bikes, are already delivering goods and services sustainably. Zero-emission HGVs are currently available to purchase, with more and more coming to market, and our railway system already offers a greener means of transporting goods that will further decarbonise in future.



18%⁸¹ (or 19.5 MtCO₂e) of 2019 domestic transport greenhouse gas emissions (GHG) came from HGVs⁸².

Current CO₂e emissions estimate for an average laden HGV is **107.5g** per tonne kilometre.⁸⁴

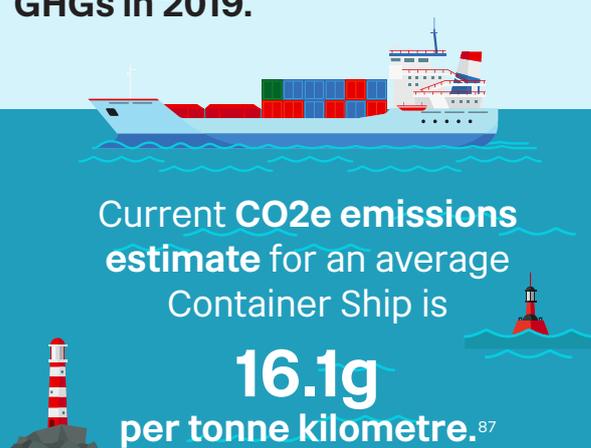


HGV emissions reduced by **5%** from 1990 to 2019⁸³.

In 2018, international shipping accounted for around **3%** of global anthropogenic CO₂e emissions⁸⁶.

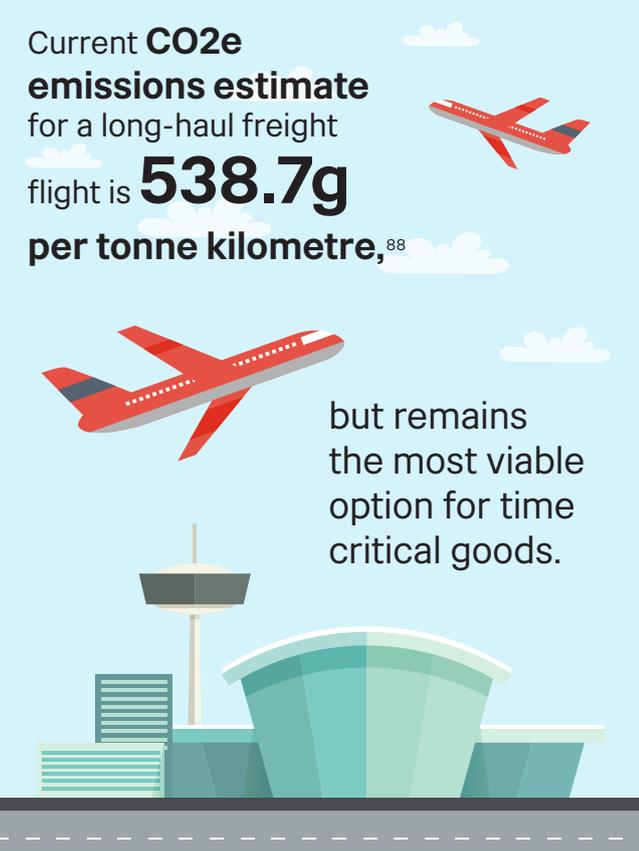
Domestic Shipping emissions accounted for **5%**⁸⁵ of UK GHGs in 2019.

Current CO₂e emissions estimate for an average Container Ship is **16.1g** per tonne kilometre.⁸⁷



Current CO₂e emissions estimate for a long-haul freight flight is **538.7g** per tonne kilometre,⁸⁸

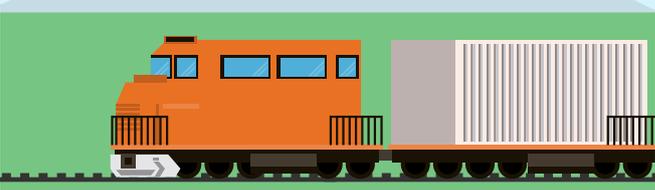
but remains the most viable option for time critical goods.



Rail freight emitted **1.8 Mt** of CO₂ in 2020⁸⁹ **1.4%** of UK emissions.

Current CO₂e emissions estimate for a freight train is **27.8g** per tonne kilometre.⁹⁰

Rail freight trains currently emit around **1/4** of the CO₂e emissions of HGVs per tonne mile travelled.⁹¹



- 4.2 Whilst much work has already been undertaken, some parts of the freight sector face challenges from the large energy requirements of long-haul HGVs, rail freight, aircraft and ships. Overcoming these is critical to meeting net zero by 2050.
- 4.3 Government and industry continue to make significant investments in R&D towards sustainable fuels and clean technology to meet our commitment to be net zero by 2050. For some of the freight sector, particularly the heavier and longer haul elements, further R&D is required into the fuels and technology of the future and the precise mix of technologies remains uncertain.
- 4.4 During the development of this plan, industry made clear their perception of a lack of transparency as to how a holistic assessment for provision of future energy and fuel infrastructure will be made for the freight sector. This includes opportunities for cross-modal synergies or inter-modal priorities, and how the freight sector will be able to inform these.
- 4.5 This is leading to investor uncertainty as they lack confidence that the energy infrastructure or supply network will exist, along with the concern that it will come at a disproportionately high cost. Recent energy price volatility is also adding to uncertainty on the long-term running costs of vehicles.
- 4.6 Freight businesses make investment choices in assets with long life-cycles, and will take decisions now and in the coming years for assets that may exist up to and well beyond 2050. Based on industry estimates, the operational life-span of an HGV can be up to 12 years, and rail freight locomotives, ships and aircraft often have an operational life of 25–30 years.
- 4.7 Energy infrastructure decisions are also long-term in nature and there is a clear need for further cross modal assessment of the upscale needed in fuel and electricity supply. There has been good work on the National Grid Future Energy Scenarios to explore energy demand in the future. However, it is still not clear what the future fuel/energy demand for the freight sector will be, and where there is evidence this represents a significant challenge. For example, government commissioned research estimates that the total annual electricity demand at UK ports could rise from 20 GWh in 2016 to around 250 GWh by around 2050⁹², meeting this challenge will require significant industry and government collaboration.
- 4.8 As of today, zero-emission solutions require further research and development to be available for some of the freight sector and future fuel and energy demand is uncertain. For example, the most cost-effective mix of zero-emission technologies to power HGVs and trains is still unclear, as is to what extent the land-based freight sector will rely on low carbon fuels as

an interim technology and how quickly demand for these fuels in aviation and maritime might ramp up. Changes to both the demand and supply side will impact the infrastructure and supply chains needed to produce assets and produce and distribute the fuels and energy required to meet our climate targets.

- 4.9 In a sector with small margins, the freight industry have concerns about the risk of stranded assets and first-mover disadvantages creating a barrier to investment in new technologies. Therefore, industry and government must work together to build greater certainty and give private and public investors more confidence to invest in new assets, new energy/fuel generation, and supply and distribution.
- 4.10 This plan focuses on the transition to net zero; the core environmental challenge identified through our engagement. There are other environmental challenges that exist for freight and logistics, notably air quality, noise, biodiversity management and climate change adaptation that the planning regime (see chapter 5) and continual technological advances (see chapter 7) have a critical role in helping to assess and overcome. The broad range of activities taking place within those wider environmental areas are summarised within **Annex A**.
- 4.11 Despite this focus on net zero, it is important to recognise that reducing air pollution is a key consideration and co-benefit of the net zero transition

and influences the adoption of future fuels and technologies. For example, only certain low carbon fuels (LCFs) will reduce exhaust emissions significantly, and emissions of particulates from tyre, brake and road-surface wear can only be overcome through technical design, innovation and by greater efficiency. Work to map out the freight sector's transition to net zero will need to align with government's air quality priorities.

Where are we heading?

Strategic goal:

To improve future energy mix and energy infrastructure planning certainty and to harness the efficiencies and synergies of a cross-modal approach to net zero in freight, while avoiding pitfalls such as stranded assets and disproportionately high first-mover costs.

- 4.12 Whilst significant steps have already been taken to transition towards zero-emission technologies, government recognises that challenges remain for freight, and will work closely with the sector to ensure that we overcome them. This plan sets out a vision for a sector that is cost efficient,

reliable, resilient, and environmentally sustainable. The transition to net zero in freight therefore needs to have these principles at the core.

- 4.13 Road, rail, waterborne, and air-freight operators can meet net zero and air quality targets cost effectively and efficiently without compromising the reliable and resilient critical services they provide, with costs borne across consumers, industry, and government.
- 4.14 Industry need confidence to make significant investments in freight energy infrastructure and new transportation assets, and the policy framework needs to ensure a degree of predictability and certainty. Further research and development is required to understand which zero emission technologies are best suited and most cost-effective for some types of freight transport.

Strong foundations

- 4.15 Government's *Transport Decarbonisation Plan (TDP)* (2021) contains ambitious commitments that put transport on a pathway to delivering carbon budgets and net zero by 2050, many of which have already been delivered or are in progress. The TDP includes freight as a core priority and has the following initiatives for freight (full details of the current policy landscape is included in **Annex A**).



Transport Decarbonisation Plan (TDP) Freight Overview

The TDP, published in 2021, included the following commitments and aims in relation to Freight (updates on progress on these commitments can be found in Annex A):



Cross modal

- Develop a strategy on the deployment of low carbon fuels across different transport modes in the period up to 2050.
- Support and encourage modal shift of freight from road to more environmentally sustainable alternatives, such as rail, cargo bike and inland waterways.



Road freight

- Consult on phase out dates for the sale of all new non-zero emission HGVs, to end the sale of new non-zero emission HGVs from 3.5 – 26 tonnes by 2035, and all new non-zero emission HGVs by 2040.
- Demonstrate zero emission HGV technology on UK roads through investing £20m to develop cost-effective, zero emission HGVs and refuelling infrastructure across the UK.
- Support efficiency improvements and emission reductions in the existing fleet.
- Stimulate demand for zero-emission trucks through financial incentives.
- Support and encourage modal shift of freight from road to rail, cargo bike and inland waterways.
- Take forward measures to transform 'last mile' deliveries.



Rail freight

- A net zero railway network by 2050, with sustained carbon reductions in rail along the way.
- Ambition to remove all diesel-only trains from the network by 2040.
- Introduce a rail freight growth target – this should not become a ceiling.
- Incentivise the early take up of low carbon traction for rail freight.
- Build extra capacity on our rail network to meet growing freight demand and support significant shifts from road and air to rail



Maritime

- Consult on the appropriate steps to support wider deployment of shore power, including potential regulatory interventions, for both vessels and ports.
- Establish, after public consultation in 2022, an ambitious 'Course to Zero', helping the UK domestic maritime sector to reach net zero through indicative targets from 2030 and help the UK meet its net zero by 2050 target.
- Consult in October 2022 on the potential for accelerated decarbonisation through carefully designed, well-signposted measures to phase out the sale of new, non-zero emission domestic vessels in the UK.
- Accelerate the development of zero emission maritime technology and infrastructure in the UK via a £23m Clean Maritime Demonstration Competition and explore establishing a UK Shipping Office for Reducing Emissions.
- Explore economic instruments to incentive maritime decarbonisation.
- Extend support under the Renewable Transport Fuels Obligation (RTFO) to renewable fuels of non-biological origin used in shipping.



Aviation

- Consult on our Jet Zero Strategy, which will set out the steps government will take to reach net zero aviation emissions by 2050. Government will also consult on an earlier target for UK domestic aviation to reach net zero by 2040.
- Consult on the introduction of a UK Sustainable Aviation Fuel blending mandate from 2025 to accelerate the production and use of Sustainable Aviation Fuels in the UK.
- Continue supporting the development of new low and zero carbon UK aircraft technology through the Aerospace Technology Institute (ATI) programme.
- Develop the UK Emissions Trading Scheme (ETS) to help accelerate aviation decarbonisation.
- Work internationally and aim to agree an ambitious long-term global emissions reduction goal in the International Civil Aviation Organisation.

- 4.16 The TDP sets a very clear strategic direction, and government and industry have, and continue to, invest significantly to rise up to the huge challenge of meeting transitioning to net zero by 2050. Recent developments across the freight sector since the plan was published are further detailed below.
- 4.17 **Road freight:** Most freight is moved by vehicles on our roads. Government committed £20m in 2021/22 to support zero emission road freight trial feasibility and pave the way for future trials, Following that project, in May 2022 government announced the £200m Zero Emission Road Freight Demonstrator (ZERFD) programme. It will create an evidence base on which technology or technology mix is best suited to decarbonise the heaviest road freight vehicles (40–44t trucks) and address barriers to infrastructure roll out. Battery electric and hydrogen fuel cell competitions will be launched shortly⁹³.
- 4.18 The road freight industry has already made significant movements towards decarbonisation. There are increasing industry applications of low carbon fuels, including biomethane and higher blends of biofuels and drop-in fuels, and a focus on improving fuel efficiency via initiatives such as driver training, telematics, aerodynamic equipment and more efficient tyres. Truck platooning exists internationally and can potentially improve driving efficiency and reduce operational costs.
- 4.19 Zero emission light commercial vehicles are already delivering goods and services on our streets in increasing numbers with battery electric van sales in March 2022 up by 17.7% compared to March 2021⁹⁴. Along with wider emerging innovative delivery solutions including e-cargo bikes, the last mile is being decarbonised, and will create greener, cleaner, more liveable places.
- 4.20 But much more is needed, and the UK is leading the world with its ambitions. Commitments are in place to reduce and remove the use of fossil fuels from road transport and to set achievable but ambitious phase out dates for every type of new non-zero emission vehicle. New non-zero emission HGVs are being phased out in the coming decades. At COP26 government announced that a phase out date for the sale of new, non-zero emission HGVs weighing 26 tonnes and under will be introduced from 2035 and that from 2040 all new HGVs sold in the UK must be zero emission. The government response to it's consultation on phase out dates, promised in the TDP, has been published⁹⁵, We have launched a call for evidence on potential exemptions to the 2035 phase out date for the sale of new, non-zero emission HGVs 26 tonnes and under⁹⁶.
- 4.21 As new vehicles continue to come to market, and with an increasing demand from businesses, this will have a significant effect on emissions savings. Prior to setting UK phase out dates, ACEA, the European truck manufacturer's association, had

already pledged to end the sale of fossil fueled HGVs by 2040 across the European market. Zero emission trucks are already entering the market. As of 2022, operators including Amazon and Tesco are deploying articulated zero-emission HGVs in UK operations. Sales of new zero-emission trucks are supported by the plug-in truck grant, with grant rates for eligible vehicles set at 20% of the purchase price with up to £25,000 of funding available for the largest HGVs⁹⁷. Introduced in 2017, the number of vehicles eligible for the plug-in truck grant is rapidly expanding providing greater choice to operators. To date, the grant has supported the purchase of over 100 zero emission HGVs across the UK. Plug-in truck grant orders were nearly 8 times higher in 2021 than in 2020, demonstrating the growing appetite for these vehicles. This capability is transformational, and government will continue to support the development of the future options through the Zero Emission Road Freight Demonstrator programme.

4.22 Government recognises the importance of a widespread, reliable refuelling and recharging network to provide confidence in the commercial viability of zero emission HGVs. We will convene industry stakeholders to work together to develop a plan for zero emission HGV infrastructure rollout and the role of the public and private sectors to achieve this. The plan will build on data gathered through ZERFD and draw on the expertise of the Freight Council to set out how we can deliver a public refuelling and recharging network to

support the swift and efficient uptake of zero emission HGVs.

4.23 **Rail freight:** Although 38%⁹⁸ of the rail network is electrified, only 5% of freight is currently transported using electric traction. Even on routes where the majority of the track is electrified, there are still lengths of track that are not and the practicalities of transferring from electric to diesel for part of the route as well as insufficient power supply mean that for many journeys, diesel trains are the preferred option. Whilst bi-mode trains, which can switch between diesel and electric traction along the same route do exist, there are currently only 10 (2%) of such locomotives in operation amongst four of the five major freight operators (purchased between 2015 and 2017 and operated by the then, Direct Rail Services)⁹⁹. Similarly, electric locomotives currently comprise roughly 10% of these freight locomotives.

4.24 Further electrification of the rail network therefore remains the limiting factor for wider adoption, but this is not feasible on all parts of the network¹⁰⁰. Fluctuating and high costs of electricity are also impacting freight operator's use of electric locomotives. It will therefore be necessary to deploy other technologies on some parts of the network, however the pathway for this remains unclear. There is therefore much focus in the rail freight sector on improving efficiency of existing stock, for example by maximising payloads, employing driver advisory systems and deploying stop start technology, to make interim carbon reductions. Low carbon fuels have also

been successfully deployed, such as hydro-treated vegetable oil (HVO) in rail freight diesel locomotives in advance of electrification, but cost barriers prevent wider use.

- 4.25 **Maritime freight:** Globally, carbon intensity improvements for international shipping to date have been driven by a number of factors, including through the International Maritime Organisation’s (IMO) work on energy efficiency operational measures and improved design, and a move to larger ships.
- 4.26 We want the UK to be at the forefront of global decarbonisation, working with international partners to transform worldwide shipping. In March 2022, the government launched the UK Shipping Office for Reducing Emissions (UK SHORE) to tackle shipping emissions with £206 million to accelerate research and development of clean maritime technologies and skilled jobs through a clean maritime competition¹⁰¹. Electric and hybrid options are starting to be deployed in limited circumstances.

- 4.27 **Air freight:** It is critical that the aviation sector plays its part in delivering the UK’s net zero commitment and the decarbonisation of air freight is inseparable from the wider challenge of decarbonising air transport as a whole. Through the Jet Zero Council, a partnership between industry and government, we are working to develop and industrialise clean aviation and aerospace technologies, including establishing UK production facilities for sustainable aviation fuels (SAF) needed to deliver net zero aviation by 2050. Our approach will be further highlighted in the Jet Zero Strategy, which we aim to publish later this year.
- 4.28 **Modal shift:** Modal shift from road to more environmentally sustainable alternatives continues to be a key part of the freight and logistics sector’s decarbonisation strategies. With the increasing emergence of express rail-freight services, a shift from road to rail could also become more widespread for non-bulk cargoes.

£206m 
to accelerate research and development of clean maritime technologies and skilled jobs



4.29 New freight modes: There have been recent developments in exploring new modes, notably underground freight systems being trialed or planned in Switzerland, Japan, Saudi Arabia, and British innovators including Magway and Mole Solutions are looking to develop UK based underground solutions. Drones have been used for specific small delivery applications, such as deliveries of medical supplies to the Isle of Wight successfully demonstrated during the COVID-19 pandemic. And as payloads for drones increase, wider applications may come to the fore. Mode shift to express rail-freight, e-cargo bikes or walking modes in the urban context is also increasingly common. However, road, rail, water, and aviation remain the core of the freight network.

4.30 Low carbon fuels: Over the last fifteen years, low carbon fuels (LCFs), supported by policy measures such as the Renewable Transport Fuel Obligation (RTFO), have been one of the main decarbonisation measures in transport. They include different liquid and gaseous fuels, such as biofuels or renewable hydrogen, which offer carbon savings compared to fossil fuels when looking at their whole life cycle. LCFs will continue to play a role as a transitional fuel in HGVs during the development and roll-out of zero tailpipe emission vehicles, helping to minimise carbon emissions from the existing conventional vehicle fleet. However, they are likely to be increasingly required in other freight modes where limited alternatives to liquid and gaseous fuels

are available. Government are working with stakeholders to develop a longer term strategy for low carbon fuels, for publication in 2022. The aim of the strategy is to provide a vision for the low carbon fuels sector to maximise opportunities for greenhouse gas savings and provide more investment certainty. There are huge opportunities for UK production, both for current market participants and new entrants, building on existing skills, expertise and infrastructure available in the UK.

4.31 Air quality: Future of Freight has focused on the transition to net zero. However, the importance of delivering air quality standards and measures such as clean air zones means that these will have an impact on the technologies and fuels chosen by the sector to support the transition to net zero. Considerable progress has already been made across the sector in managing air quality emissions, for example, DPD's project Breathe has seen the deployment of over 400 air quality sensors across major cities, and ports in England handling excess of 1 million tonnes of cargo per year have developed port air quality plans¹⁰². Other cross-modal key environmental policy objectives are detailed in Annex A such as noise management and climate change adaptation.



Case study – powering the future of HGVs

Massive strides have been made over the past decades in the race to replace fossil fuels with environmentally sustainable alternatives.

Battery electric cars are becoming increasingly common on UK roads, however the precise technology mix to ensure all new HGVs are zero emission by 2040 is less certain.

Electric HGVs are already capable of performing some urban and interurban journeys, such as the Volta Truck – a fully electric vehicle that has a range of 95–125 miles, designed specifically for intercity use. Volta have partnered with West End of London property owners and will be trialing the delivery of goods to Regent Street retailers in the summer of 2022¹⁰³. Zero emission HGVs are also performing more challenging duty cycles, with Tesco recently launching their first fully electric 37-tonne articulated HGVs. Capable of travelling around

100 miles. The lorries will transport goods from a rail freight terminal in Cardiff to a hub 30 miles away in Magor¹⁰⁴. The success of these trials will see how additional electric HGVs could be rolled out in Tesco's fleet.

Electric roads – roads that have conductive or overhead charging, for example through electric power cables overhead that HGVs can attach to – may be an important technology. Electric roads allow HGVs to charge as they drive, enabling them to drive for longer without stopping to charge or to have smaller batteries on board. A six-mile trial e-highway was launched in Germany in 2019 and is now being extended, and a feasibility study looking at the UK situation is underway.

Looking beyond batteries, hydrogen fuel cells may also be a solution to long distance zero emission HGVs. An advantage of hydrogen is that it offers similar refuelling timeframes as existing diesel vehicles. However, use relies on there being hydrogen refuelling infrastructure. To this end, the Department for Transport is funding a feasibility study in the Tees Valley area considering the period 2025–2030, functioning across transport modes and capable of serving 12–13,000kg of hydrogen a day¹⁰⁵.



38% of the existing rail network is already able to operate at zero emissions¹⁰⁶. Further to this, Network Rail's *Traction Decarbonisation Network Strategy* (2020)¹⁰⁷ defined plans for converting the remaining unelectrified rail to zero emissions. Although zero emission HGVs will be essential for achieving net zero by 2050, Government action to support modal shift and industry embracing rail will also drive emissions reductions.

38%
of the **existing rail network** is already able to operate at **zero emissions**



What next?

4.32 Government and the freight and logistics industry will continue to work together to deliver on the TDP, including taking forward committed large scale technology demonstrations and research and development programmes across all freight transport modes.

4.33 Through this Future of Freight plan, the focus will be on drawing together outputs of existing mode specific initiatives, such as the notable progress made for aviation via the Jet Zero Council, and for road freight through the Zero Emission Road Freight Trials, to identify areas of cross-modal opportunity for 'no regrets' investments that can be pursued as a priority for the freight system overall to de-risk future decisions.

4.34 Over and above the commitments already made by government and industry, the freight and logistics sector and government will work together on the following key activities:

Key activities for achieving a stronger Future of Freight

4.35 **Mode Shift support and promotion:** See Chapter 3.

4.36 **Freight Energy Forum:** By autumn 2022, sub-group of the Freight Council will be established to bring together cross-modal freight operators and users,

manufacturers, energy infrastructure providers, fuel producers/suppliers, regulators and planning authorities.

The role of this group will be to:

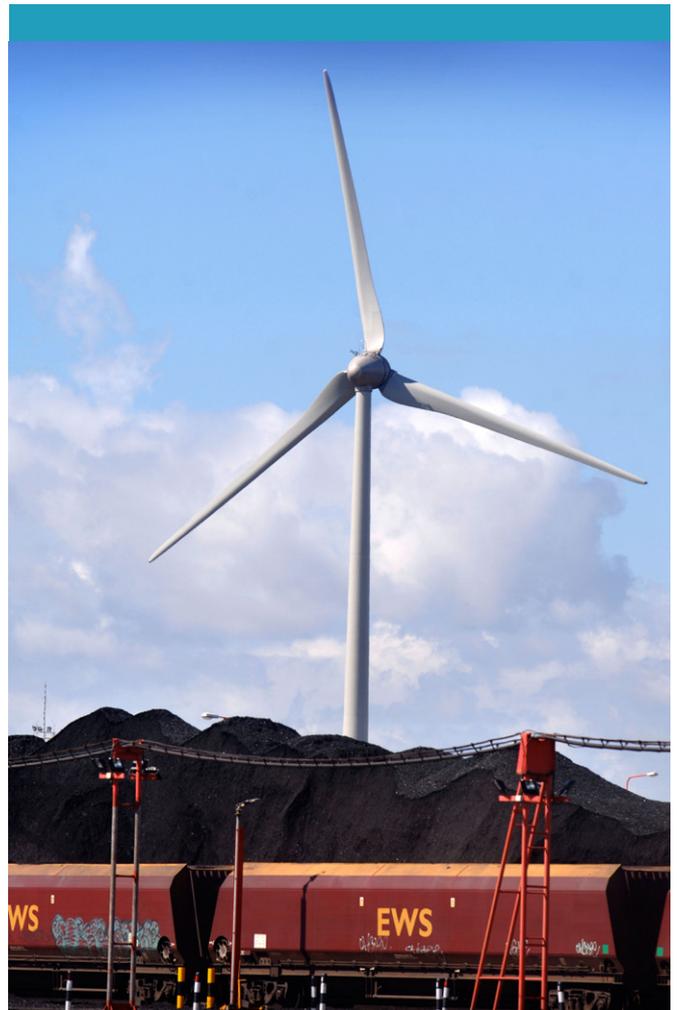
- Share energy/fuel infrastructure plans transparently to identify cross-modal opportunities or areas of collective priority for deployment.
- Continuously evaluate and share non-commercial outputs of technology or fuel trials and research in order to better inform future predictions for freight and logistics overall; as part of that, to form the best evidence base for interim decisions e.g. based on the outputs of the zero emission road freight demonstrations, and what those means for all modes.
- Engage with the development of the National Freight Network and how planning for energy/fuel infrastructure can be factored into this as well as explore options to support the deployment of higher blends of biofuels.
- Ensure freight has a role in developing and responding to wider government fuel, energy and air quality strategies and planning reform.
- Seek to maximise funding opportunities for freight energy and fuel infrastructure deployment e.g. through the UK Infrastructure Bank.
- Explore regional and local disparities in the coverage of freight energy infrastructure and specific actions to address them.

4.37 **Regulatory review:** Through the Freight Energy Forum, government will conduct a freight and logistics specific review of the energy regulatory barriers to implementing new fuel / energy infrastructure for the freight sector, including disadvantages to first movers, as well as adapting existing infrastructure. The outputs of this review will contribute to the planned regulatory review by Ofgem, planning reform opportunities, where applicable, and any future review of incentives.

4.38 **Demonstrate net zero cross modal journey(s) and intermodal hub(s):** Explore the potential to demonstrate an end to end net-zero cross-modal freight journey including zero-emission intermodal hub. As we support the establishment of green shipping corridors under the Clydebank Declaration, take forward the Zero Emission Road Freight Demonstrator programme, complete clean maritime demonstration projects, establish maritime clusters, and as rail freight R&D continues to develop, government and industry will explore the potential to join-up these initiatives to demonstrate cross-modal synergies for energy/fuel infrastructure across key freight route(s) and/or priority inter-modal hub(s). This could be a means to de-risk wider freight energy infrastructure decisions

National Infrastructure Commission (NIC):

These actions directly builds on the NIC's recommendations and expert advice to undertake detailed analysis of the future energy infrastructure needs of the sector to support decarbonisation of road and rail freight and to ensure freight is properly incorporated into the upcoming Ofgem review (see Annex B).



Achieving our Future of Freight vision

The above key activities will deliver a sector that is:



Cost efficient

By providing greater investor certainty to allow the timely and best value replacement/conversion of fossil-fuelled assets and by seeking to look at future fuel and energy demands holistically so no one part of the sector bears the cost.



Reliable and Resilient

Timely and effective transition with a focus on the cross-modal network to zero carbon freight will minimise costs and physical disruption to that network and not consume resources that might be targeted at resilience.



Environmentally sustainable

By creating greater certainty for the sector to make the investment in the assets and supporting infrastructure necessary for making net zero 2050 a reality.



Valued by society

By being able to demonstrate and share clear progress on the pathway to net-zero to help sustain a positive public perception of the sector.

We will succeed when:

4.39 Government and industry will know we are making progress against this priority as already set out in the TDP, when we realise the following desired outcomes:

- Reduction of emissions of CO₂e/tonne km, with net zero by 2050. The current baselines (2021) government will be measuring improvement against are:
 - Road freight: 107.5g CO₂e per tonne kilometre
 - Rail freight: 27.8g CO₂e per tonne kilometre
 - Aviation emissions: 538.7g CO₂e per tonne kilometre

- Maritime emissions: 16.1g CO₂e per tonne kilometre – the outcome of the course to zero consultation will be setting indicative (non-binding) targets for domestic maritime emissions.
- An increase in the share of non-road freight traffic. Government will be measuring increases in rail and water modal share of freight moved against the 2019 domestic baseline of road freight 79%, rail 8%, and water 13%¹⁰⁸. Government will also shortly consult on a rail freight growth target as part of this ability to measure success at delivering a more sustainable modal share
- Sector engagement undertaken by the Freight Energy Forum, shows increased confidence in energy infrastructure provision and the route to net zero.

5

Priority 3 – Planning

Government and the freight and logistics sector will:

- **Work with the sector to support a programme of engagement with local planning authorities**
- **Review and amend Planning Practice Guidance**
- **Publish a freight specific call for evidence to understand what is working well and not so well**
- **Consult on updated guidance for Local Transport Plans**
- **Engage with the review of National Networks National Policy Statement**
- **Engage with the Planning Reform programme**

The challenge ahead

The challenge:

A disconnect exists between an industry that is not equipped to properly engage with the planning process, and local planning authorities that are unable to understand the needs of a changing and innovative freight and logistics sector. This leads to increased complexity, cost and time for promoters bringing forward schemes that are in the national interest.

5.1 The planning system has a crucial role in promoting development that supports the efficient supply of goods. To achieve this, the planning system needs to ensure that sufficient land is being made available in the right places for freight operations and that it is able to respond to the changing needs of the freight and logistics sector such as how to plan for the adoption of future vehicle technologies. There is a clear role for the planning system in ensuring the country has a freight and logistics sector that is economically efficient, reliable, resilient, and environmentally sustainable and can meet current and future needs.



- 5.2 As set out in the **levelling up** section of Chapter 2, the freight and logistics sector is growing faster than the economy, providing more employment in more highly skilled sectors. Chapter 3 sets out that this growth must be seen across a multi-modal network that requires all parts to be working well to achieve our objectives. Chapter 4 highlights the very specific challenge that Net Zero poses for freight and Chapter 6 draws attention to the importance of access to the right mix of people with the right skills for the sector to thrive. Chapter 7 illustrates how the sector is innovating with new technology and operations.
- 5.3 Strategies for decarbonisation, responses to growing demand and the integration of new technologies for freight all have implications in the built environment, and therefore rely on the planning system to operate in a way that can support the Government's levelling up agenda. Across 19 key industrial and logistics markets in England, demand for space was found to be above the supply of available land and floorspace in each area¹⁰⁹. With productivity in the sector expected to grow by 29% by 2039¹¹⁰. The planning system will be key to enabling the growth and innovation of the freight sector to better meet current and future challenges. By ensuring the planning system can be more responsive to the needs of the sector, and industry can be more engaged in planning, freight will be able to secure sufficient land of the right type in the right places and at the right time to support growth, innovation and improved productivity with the appropriate accompanying infrastructure.
- 5.4 Ensuring there is a joined-up approach between the planning system, local authorities and industry, can safeguard and prioritise the land needed for these uses. Sites that support freight activities like ports, lorry parks, refuelling stations and infrastructure, as well as distribution centres often require large amounts of land and need to be strategically located near transport links. They operate across local authority boundaries and use the local and national transport networks to move goods.
- 5.5 When planning policies and decisions do not adequately consider the freight industry's needs, it can impact other transport network users and local communities negatively, making consent for schemes more challenging to obtain, often leading to significant delays to decision making and reducing the level of certainty for applicants, investors and communities. This increases the uncertainty of delivering development associated with freight and logistics, actively discouraging promoters from bringing forward schemes and can lead to sub-optimal outcomes. All of these considerations can be better met through better collaboration between industry and local authorities supported by an agile and responsive planning system.

Where are we going?

Strategic goal:

A planning system which fully recognises the needs of the freight and logistics sector, now and in the future, and empowers the relevant planning authority to plan for those needs.

- 5.6 The planning system can help to facilitate the needs of the freight and logistics sector. From national policy and guidance to the local plan making and decision taking, the system can help to allocate land in the right places to support the economy, which includes the freight and logistics sector, to ensure sufficient land is available to meet their needs now and in the future. Existing freight provision needs to be appropriately supported and can expand, adapt and innovate including for the rollout of new technologies to decarbonise freight end-to-end.
- 5.7 The freight sector and logistics industry should be confident in engaging and working with local planning processes, so local planning authorities are empowered to understand their development needs. Developers and operators should work collaboratively with local authorities and properly engaging with all stages of the planning process to secure better outcomes.

- 5.8 The freight sector relies on different modes of transport to move goods and this means the planning system needs to make land available for the receipt, storage, processing, interchange and distribution of goods. We need a supply chain network that is secure, predictable, reliable, and resilient with no link in that chain overlooked, including the need to provide the right high-quality facilities and infrastructure required to support freight and logistics workers. Local planning and highways authorities have a crucial role to play in planning for delivery of the right infrastructure, where it is needed and at the right time, to support the sector.

Strong foundations

- 5.9 *The National Planning Policy Framework (NPPF) (2021)* sets out that the purpose of the planning system is to contribute to the achievement of sustainable development. Achieving sustainable development includes an economic objective – to help build a strong responsive competitive economy.
- 5.10 Local planning policies and decisions are expected to help create the conditions in which businesses can invest, expand and adapt. The NPPF makes clear that planning policies and decisions should recognise and address the specific locational requirements of different sectors. This includes making provision for clusters or networks of industries, and for storage and distribution operations at a variety of scales and in suitably accessible locations.

Planning policies should also provide for large scale transport facilities, located in areas of need, which include interchanges for rail freight. The NPPF also makes clear we already expect planning policies and decisions to recognise the importance of providing adequate overnight lorry parking facilities, taking into account any local shortages.

- 5.11 The suite of transport National Policy Statements set out the need and strategic planning policy for National Significant Infrastructure Projects (NSIPs), recognise the importance of our ports, roads, and rail network in the movement of freight including, where applicable, in delivering modal shift through provision of strategic rail freight interchanges.
- 5.12 In 2021, the Department for Transport made a Written Ministerial Statement with the Department for Levelling Up, Housing and Communities, which made clear that in preparing local plans and deciding planning applications, the specific locational requirements of different industrial sectors should be recognised and addressed by local planning authorities. The Written Ministerial Statement also committed to review how freight is currently represented in the Planning Practice Guidance and to update DfT Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development' to fully reflect the importance of providing logistics and freight.
- 5.13 At the heart of the government's ambitions for an improved planning system is more use of environmentally sustainable transport modes and a decarbonised transport network. The Transport Decarbonisation Plan was clear in its ambitions for a zero-carbon freight sector and whilst freight currently relies on carbon intensive forms of transport to move goods, the development of the technology to decarbonise these transport modes is accelerating. It is important that the planning system recognises this. To capture this, government will ensure that planning policy keeps pace with technological advancements such as for electric vehicles, low carbon fuels across transport modes and autonomous vehicles.
- 5.14 The crucial last mile of the supply chain for freight is becoming an increasingly important issue in planning. As people work more flexibly and more goods are delivered to people's homes during the day (and night), the local transport network will be forced to work harder to accommodate this.



Case study – urban logistics and last mile

The final leg of the journey that sees goods either delivered to shops to be sold or directly to homes – known as the ‘last mile’ – has had to adapt significantly. Meanwhile local authorities are having to ensure these changes in usage patterns are reflected in planning and street design considerations.

Whilst much of the final leg continues to be delivered by Light Goods Vehicles, innovative delivery solutions have been deployed to aid this change.

In dense urban centres, e-cargo bikes have become an increasingly common sight and are being encouraged by supportive local authorities across the country. Most notably the City of London is using its planning powers and partnering with a logistics company to lease underutilised space in it’s car parks to deliver the necessary consolidation and logistics hubs required to support e-cargo delivery¹¹¹. Whereas in 2020, when the Isle of Wight was operating strict no-travel policies, drones were being tested to deliver goods to the NHS with further trials now ongoing¹¹² and all supported by a forward thinking Civil Aviation Authority.

There are also innovative plans being developed to reduce the length of ‘last mile’ journeys by getting goods closer to population

centres, with Leeds City Council recently giving full planning permission to a scheme to use rivers and canals to transport goods from North sea ports directly to Leeds city centre¹¹³.

A particularly innovative last mile solution is being trialled in Milton Keynes where, since 2018, a fleet of autonomous robots have been helping fulfil the last mile across the city through zero-emission technology. Starship Technologies, who have launched their robots in over 100 cities across the world, have worked in partnership with Milton Keynes council in their trial of roughly 200 robots that can be called on-demand through an app.

For a delivery fee of roughly £1.60, the robots will move at roughly walking pace along pavements, through rain and snow, to deliver small cargos of supermarket groceries. Since 2020, the number of journeys made by the robots has risen significantly, with Starship’s deliveries quadrupling¹¹⁴ and new announcements to expand the fleet coming regularly.

The final leg of deliveries will need to continue to undergo major changes in order to hit the UK’s ambitious climate targets, reduce congestion and air pollution and support changing consumer demand. Innovative solutions such as those in the City of London, Isle of Wight, Leeds and Milton Keynes point the way forward and show the transformative impact innovators, partnering with supportive local authorities and public sector organisations can have on the ‘last mile’ and local residents experiences of logistics.

What next?

5.15 We have a suite of national planning policy and guidance tools that can support the provision of development that meets the changing need of the freight and logistics sector. Setting a clear and unambiguous case for the end-to-end needs of freight and logistics that can be taken account of in all stages of plan-making and decision taking. This includes considering the role the establishment of the National Freight Network could eventually play in planning for freight.

Key activities for a stronger Future of Freight

5.16 **Planning Practice Guidance:** As set out in our response to the National Infrastructure Commission and in the 'Lorry Parking' joint Written Ministerial Statement published in 2021, government will take forward work to review and where appropriate amend planning practice guidance to better support freight and logistics.

5.17 **Call for evidence:** government need to fully understand what currently works and doesn't work for freight and logistics. This will allow us to put in place targeted interventions in the right places to realise the best outcomes. To ensure government understand the practical issues of planning for and delivering the right infrastructure to best support the

freight and logistics sector, government will publish a call for evidence by autumn 2022. This will help us build a comprehensive picture of where the planning system can appropriately support the freight and logistics sector, including understanding what is working well, what could work better and how government can promote best practice. This call for evidence will recognise that the planning needs of the freight and logistics are wide ranging and complex. It is unlikely that single intervention would address all the needs of the sector, but equally there is a need to recognise that government has a part to play in realising a better future for freight, – from the role of central government and of local authorities, to the key role the industry must play in addressing the challenges we face. There is a range of measures that could be taken, dependent on what support is needed. This could include updates to national planning policy that would be implemented as part of our programme of changes to the planning system, and updates to planning practice guidance.

5.18 **DfT Circular 02/2013:** Government will consult on and publish an updated DfT Circular later in 2022 including higher standards for roadside facilities on the strategic road network so that government can provide better facilities for HGV drivers. This will build upon the Written Ministerial Statement published with the Department for Levelling Up, Housing and Communities, which made clear that in preparing local plans and deciding planning applications,

the specific locational requirements of different industrial sectors should be recognised and addressed by local planning authorities.

5.19 Local Transport Plan guidance:

Government aims to consult on and update guidance on Local Transport Plans by the end of 2022. Local Transport Plans play an important role in setting the transport priorities of any local highway authorities jurisdiction, and contribute key evidence in local plan making. By updating the guidance for Local Transport Plans, government will ensure that freight needs are key considerations in Local Transport Plan-making.

5.20 National Policy Statements: Through the current review of the National Networks National Policy Statement (NNNPS) – which government aims to complete by Spring 2023 – government will consider the growing importance of major freight schemes to our economy, particularly the increasingly important role of strategic rail freight interchanges (SRFIs) and the interdependencies between different transport hubs along the supply chain. Whilst no decision has been made to review the Airports and Ports National Policy Statements, government will continue to assess the need to review in line with the requirements of the Planning Act 2008. If appropriate, the role and future of freight in these transport contexts could be considered as part of any such review.

5.21 Consolidation centres: As the NIC set out in *Better Delivery: The Challenge for Freight* (2019), consolidation centres could reduce emissions and freight trips into congested areas. Government continues to research the effectiveness of consolidation centres, and if proven effective, government will explore opportunities to establish a national planning policy position for consolidation centres so that they can be properly recognised within the planning system.

5.22 Manual for Streets and National Model Design Code: As government plans new developments, it will increasingly need to think about how more deliveries and servicing can be safely accommodated to discourage inappropriate parking. Through potential updates to the National Design Guide, Manual for Streets, and National Model Design Code, government will explore the role that street design can play in driving up standards for delivery and servicing arrangement in all developments. Government will also consider the need to ensure the planning system can support innovation and technological advancements to each stage of the supply chain, including ensuring the right infrastructure is in place to support zero carbon transport.

5.23 Communication and engagement: A collaborative approach between national and local government and the freight industry and developers will support effective delivery within the planning system. Government will work with the sector to support a programme of

engagement with local authorities. This will provide planning officers with an understanding of the wider economic benefits of freight infrastructure, the environmental impacts, provide specialist training and give considerations to options to strengthen their capacity. Government will also seek to address capability and capacity issues across the sector from developers and operators alike so as better to engage with all stages of the planning system to secure better outcomes.

5.24 Programme of changes to the planning system:

The government recognises the need for a modernised planning system – one which embraces digital technology, benefits communities and creates places in which people can take real pride. An integral part of reviewing any changes to the planning system is considering how they align with and support the government’s wider mission to level-up the country and regenerate left-behind places. The call for evidence will enable us to understand what changes to the planning system will mean for the freight sector and will give us the opportunity to consider appropriate interventions to support the land use needs of the sector are needed, including:

- How best to consider the needs of a National Freight Network within planning
- How the requirement for HGV parking can be better facilitated within the planning system, particularly at freight sites such as distribution and

logistics centres along with the better utilisation of existing infrastructure to accommodate HGV parking.

- How to best promote delivery of development of edge of centre urban consolidation centres to facilitate modal shift to environmentally sustainable transport options including how to better utilise urban rail freight interchanges.
- The lessons learnt from the Future of Transport initiatives, and better understand how the planning system can support government commitments in the Transport Decarbonisation Plan and Gear Change, to facilitate modal shift to more sustainable transport options, decarbonise our transport network, deliver the infrastructure needed to assist a transition to alternative fuel and energy sources, and act as an enabler for sustainable patterns of development for the sector.
- Improvement opportunities identified through the *Union Connectivity Review* (2021).
- Options to ensure sufficient land is allocated to service the needs of freight and logistics including ensuring we deliver a resilient network of lorry parking facilities and ensure planning authorities recognise the land use requirements to support each stage of the supply chain.
- The role our Sub-National Transport Bodies, Highways and Transport Authorities can play in better aligning

transport and spatial planning, sharing data and foster greater collaboration and cooperation across local authority boundaries (including between upper tier and lower tier authorities) to reflect the needs of the freight sector and identify improvements to the local transport networks can play in supporting the seamless movement of goods.

- How the planning system can support the needs of 24hr freight movements and technological advances, including night time servicing arrangements without compromising the planning system's role to uphold environmental standards and preserve amenity of communities. This will build on evidence accumulated from relaxation of night-time delivery restrictions during the COVID-19 lockdown.
- How the planning system can support port diversification and expansion, including around our new freeports,

to reduce the need to move goods for processing and to ensure they are serviced by a transport network sufficient to meet their needs, reduce congestion and promote innovation.

Building on the National Infrastructure Commission (NIC):”

These actions directly build on the NIC’s recommendations and expert advice to “Manage Congestion” and ensure “Better Planning to enable optimisation” (see annex B for further detail). The above actions to consult on changes to the planning system, planning guidance, local transport plan guidance and other design codes will help to ensure that the needs of freight and logistics are fully considered in the planning system and that the sector and planning authorities strengthen their relationship.



Achieving our Future of Freight vision

The above key activities will deliver a sector that is:



Cost efficient

Successful planning applications mean freight infrastructure and operations are sited where they need to be supporting the wider efficiency of the system.



Reliable and Resilient

An industry with infrastructure and operations where they are needed will support the reliability and resilience of the whole freight system.



Environmentally sustainable

Access to land and appropriate land-use will support the development of infrastructure and support optimisation of journey distance to support transition to Net Zero.



Valued by society

Better communication about the value of freight to local economies to support planning applications and build capability in local planning authorities.

We will succeed when:

- There is an increase in site allocations for freight and supply infrastructure being adopted in Local Plans to reflect the needs of the sector, alongside more robust and agile policies, where needed, to meet specific local needs.
- Planning authorities are more aware of freight industry needs when devising planning policies and are making planning decisions that pro-actively plan for and speak to the change needs of the sector.
- Members of the freight and logistics industry are engaged in planning policy processes and are aware of the appropriate planning consent mechanisms.
- Better sharing and communication of data between industry stakeholders, and transport authorities, sub national transport bodies and local planning authorities is being used to underpin local evidence bases and is being effectively used to support plan-making and decision-taking.
- A package of training and a communications strategy has been developed and is routinely being used by the freight and logistics industry and local planning authorities to better communicate and engage with the needs of the sector and how best to engage with the planning system.

6

Priority 4 – People and Skills

Government and industry will collaborate to:

- **Deliver Generation Logistics campaign in 2022.**
- **Ensure the Transport Employment and Skills Taskforce meets our future skills needs in freight and logistics.**
- **Support a programme of employer engagement**
- **Reform Freight and Logistics training offers to encourage transferable qualifications.**
- **Support efforts to boost diversity within the sector.**

- 6.2 As we emerge from the pandemic, the UK economy is growing and businesses are seeking more skilled and semi-skilled employees. There is increasing demand, and in the three months to January 2022 there were almost 1.3m unfilled vacancies in the UK across all industries¹¹⁵. Many sectors of the economy face recruitment challenges and some must also grapple with a demographic challenge as the workforce ages. For logistics businesses, this is exacerbated by the fragmented nature of the sector and the lack of awareness of the range of careers available within logistics. For a number of years, some parts of the sector have struggled to attract new recruits and retain those working in it, relying on agency staff and foreign labour to manage periods of high stress. The reasons are diverse and include rates of pay, standard of working conditions, anti-social hours, lack of transport to sites, perceived lack of career development opportunities, and lack of diversity¹¹⁶.
- 6.3 The HGV driver crisis, for example, has brought the ongoing workforce shortages in the sector into sharp focus. However, the importance of our logistics sector across rail, maritime, aviation and warehousing are equally significant and there is growing evidence of significant difficulties recruiting and retaining staff across the sector¹¹⁷. Across Transport and Logistics, ONS evidence points to a significant ongoing surge in job advertisements, indicating Industry having many vacancies to fill¹¹⁸.
- 6.4 Transport and logistics businesses have noted skills challenges around the skills supply pipeline and role retention. There are 30,000 new HGV test passes per year but this figure is offset by workers retiring, with a disproportionate percentage of the HGV workforce from older age groups¹¹⁹, and quitting HGV driving for a living. In 2020–21 there were 39,000 fewer HGV drivers employed in the UK than in 2019–2018. This challenge is compounded by a struggle to retain staff and timescales needed to train new staff.
- 6.5 There is limited understanding on the future skills mix and what government needs to do to support industry to address future skill gaps. Government and industry need to work together to close this gap and consider what is necessary to build the workforce for an increasingly digitised and automated workplace.

Strategic goal:

Industry, with government support, will lead on ensuring the freight and logistics sector will be seen as an industry of choice for a diverse group of talented and skilled people at all stages of their career and will have the people and skills that it needs to thrive.

Where we're going

6.6 To improve resilience of the supply chain and the reliability and cost efficiency of the freight and logistics sector, we must improve the labour market for the sector – this will require Industry working to fully understand and overcome barriers, with government partnership through existing programmes including Road to Logistics which is supporting military service leavers, ex-offenders and the long-term unemployed, and Think Logistics working with young people to change the perception of the industry and highlight the many career opportunities that exist.. There will be clear areas where industry will need to take the lead in ensuring the labour market for the freight sector meets the needs of the economy, and clear areas where government can act to support industry. By adopting a partnership approach, we will ensure we have a clear and holistic overview of the key challenges and action that is

needed to overcome them. By adopting a partnership approach, we will ensure we have a clear overview of the key challenges and action that is needed to overcome them.

6.7 The above goal will be achieved by:

- Raising and maintaining awareness of the range of roles and career options within the sector
- Industry working to ensure fair wages and higher welfare standards for workers across the sector
- Identifying and removing barriers to accessing, remaining, and progressing in the sector for any part of society, with government supplementing this through its existing programmes.
- Provision of readily accessible qualifications that are transferable across the industry and match industry needs

Strong foundations

- 6.8 DfT and other departments across Whitehall have a wide range of initiatives either specific to the sector or focused on wider skills development, which bring benefits to the sector. Freight and logistics skills and people initiatives already in place are covered in Annex A.
- 6.9 Good progress has already been made to address key barriers contributing to the HGV driver shortage, as well as understanding the future workforce needs. The interventions undertaken demonstrate that to address working conditions, skills, recruitment and retention issues it is necessary to understand the full spectrum of barriers and identify interventions to address each. This comprehensive approach will be adopted more widely across the whole of the freight and logistics sector.
- 6.10 Whilst recruiting and retaining workforce is an Industry responsibility, Government recognises the importance of working together with the freight and logistics sector to ensure it is creating a conducive regulatory environment and that its existing skills and training initiatives to facilitate the sector to secure the workforce it needs for the future. The HGV driver shortage is a good example of industry and government collaborating to address a specific labour force challenge within the sector.



Case study – improving diversity and addressing workforce shortages

One of the most dominant headlines from 2021 was about labour shortages in key roles in logistics, specifically the HGV driver shortage. However, whilst drivers are the best publicised shortage, the inability to fill roles is an industry-wide problem, with software engineers, project managers, and executives being listed by industry as the hardest roles to fill.

Logistics firms cite the main barriers to recruitment as a lack of job-specific skills, lack of work experience schemes, as well as acknowledging that low wages contribute to recruitment issues.

Beyond these problems, however, the profile of the average logistics worker may factor into the difficulties the sector is facing. For one, the median HGV driver is 55, and an *LMI for All* (2019) report found that 49.2%

of the workforce set to retire by 2027, indicating that the driver shortage and related phenomena may, without intervention, get worse before they get better.

Additionally, the sector has a highly male-dominated workforce, and this severe gender imbalance arguably contributes to the difficulty in filling roles. For direct freight operators, less than 1% of HGV drivers are women, and whilst women only amount for 4.2% of rail drivers in the UK, they are an even smaller slither of freight rail drivers at 1.4%.

Historically a male-dominated workforce, the image of a 'boys club' is likely perpetuated by the demanding hours of the job, the requirement to be away from home, and the lack of facilities for drivers. These factors have been much cited in the press during the driver shortage as a general barrier to entering the industry, however these are likely to be especially pertinent for women due to the disproportionate split of caregiving, unpaid home labour, as well as safety concerns.

The gender gap goes beyond the driver's cabin, however, and in all UK transport companies with over 250 employees there

is a pay gap of 10.4% and 75% of women surveyed believed it was easier for men to progress in their career compared to women.

Aiming to offer career support, mentoring, and networking opportunities for women in the industry are groups such as Women in Rail and Women in Transport, that also seek to host discussions to address the systemic gaps in the industry.

Beyond the gender gap, the sector is also disproportionately white. A 2016 House of Lords paper found that only 3% of the haulage workforce were from black and minority ethnic backgrounds – around

four times below the national population. Amongst bus drivers, however, 19% of the national workforce are from BAME backgrounds – suggesting that there may be specific barriers within the logistics sector to those from non-white backgrounds.

Any sector that is failing to recruit from the entire population is more likely to run into labour shortages. For an ageing sector that is struggling to fill roles, it is natural to think about the workforce of the future. And for logistics, perhaps the future sector will need to aim to recruit from a wider range of backgrounds.



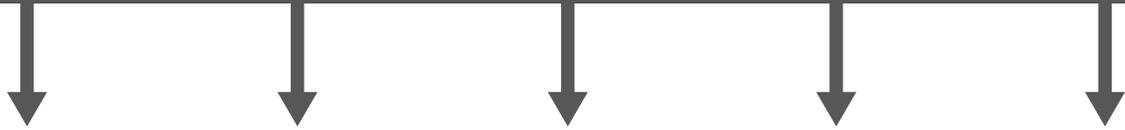
6.11 Recognising the importance of ensuring there is dedicated focus to address workforce challenges for the sector, DfT has appointed a workforce lead who is responsible for working with industry to support them to address labour market shortages, ensuring appropriate government levers are available as well as the joined-up focus of industry. To better understand the skills gaps, the Education Secretary is establishing a new Unit for Future Skills which will look at the data and evidence of where skills gaps exist and in what industries.

6.12 To bring all our work on skills together and tackle skills gaps head on, DfT published in February 2022 a Transport Labour Market and Skills Call for Views and Ideas, which sought information on the key labour market and skills challenges across the entire transport sector, including freight and logistics¹²⁰. It sets out four cross cutting themes and five proposed 'pillars' that DfT and industry will work together in tackling. The freight and logistics sector will feature in each of the five 'pillars' identified:



Cross-cutting themes

- Developing the transport workforce and a pipeline of talent to meet the net zero challenge.
- Supporting growing and levelling up the economy by supporting local labour markets across the country.
- Enhancing the transport sector’s global competitiveness.
- Building a diverse and highly skilled transport sector.



Preparing for future skills

Challenge:

To drive a shared understanding of future skills needed across the sector and identify actions to ensure skills and employment programmes can meet those needs.



Improving training and employment

Challenge:

To map routes into training and employment in the transport sector, identify barriers and opportunities to overcome them, and to identify and share best practice.



Promoting careers in transport

Challenge:

To understand current perceptions of the industry, and create a programme of comms and engagement to promote careers across transport.



Boosting diversity, inclusion, and social mobility

Challenge:

To understand the drivers of the lack of diversity across the transport sector. To identify barriers to D&I & social mobility, and look for opportunities to overcome them.



Building evidence and evaluating progress

Challenge:

To improve the evidence base across the other pillars and wider labour market and skills issues, and measure and evaluate progress.



- 6.13 DfT has also created a new industry-led taskforce, the Transport Employment and Skills Taskforce (TEST), which aims to respond to the challenges of future skills and training required in the transport sector. TEST will work in partnership with industry to fill evidence gaps and ensure that future policy interventions are tailored to meet our future skills needs across the whole transport sector, including haulage and logistics.
- 6.14 TEST will consider the barriers and opportunities to developing skills and careers across the transport sector and suggest an approach as to how industry, with government support, can tackle them. Informed by the responses to the consultation, these five pillars will set the direction for the work of the Taskforce. The Taskforce and DfT will work with other key partners to develop and refine the programme in this area to support the transport sector in developing and accessing a skilled pipeline of talent as government builds back better from the COVID-19 pandemic and build a transport system fit for the future.
- 6.15 This builds on the 2016 *Transport Infrastructure Skills Strategy (TISS)*, that set ambitions to increase the number of apprenticeships in road and rail client bodies to help address skills shortages and established the Strategic Transport Apprenticeship Taskforce (STAT).
- 6.16 To improve learners' understanding and awareness of their careers options, government is delivering our commitment in the Skills for Jobs White Paper to improve both local and national alignment between the Careers & Enterprise Company (CEC) and the National Careers Service to create a clear, all-age careers system, ensuring that this incorporates freight and logistics career options.
- 6.17 Good progress has been made with the provision of apprenticeships within the sector. However, there remain calls from industry for the Apprenticeship Levy and the system to be more flexible so it works for the sector. The levy was created to support the uptake and delivery of high-quality apprenticeships. DfE are making it easier for levy-payers to spend their levy funds on the training they need to develop skilled workforces, including through encouraging more flexible training models such as front-loaded and accelerated apprenticeships. Employers can also continue to access a range of other government-funded skills programmes including traineeships, T Levels, and Skills Bootcamps.
- 6.18 Department for Work and Pensions (DWP) has a Schools Adviser Network that provides vocational support for young people in schools and other educational settings, demand for which is channelled through the Careers and Enterprise Company (CEC). DWP's Way to Work initiative helps to boost the economy by filling entry level roles more quickly and efficiently. DWP will continue to work with employers in a range of sectors, including logistics and freight, to understand the different role requirements for their vacancies.

What next?

- 6.19 For many years, logistics has been supporting the UK's economic growth and development. The sector is a world leader in this space, and the unsung heroes who work in this sector have facilitated the rapid growth of large high street retailers, grocers, and online stores. In the last 20 years the industry has embraced new technologies to support an efficient and highly adaptable service. Since the pandemic, we have seen a change in consumer behaviour, with a shift to home retail and a growing demand for just-in-time goods and services. The sector has responded effectively to this, demonstrating its flexibility and ability to adapt to complex IT tracking, scheduling and warehousing systems that have satisfied consumer demand and made next day home delivery possible for a vast array of products.
- 6.20 As we move forwards and look towards achieving both modal shift and decarbonisation targets, we will see a shift in the skills and labour required. There will be an increase in technology adoption which will present highly skilled and highly paid employment opportunities. As we face these opportunities and challenges, the sector needs to attract talent that can rise to them and grow with the industry they serve.

- 6.21 Such opportunities will also support the levelling up agenda. Logistics UK¹²¹ note that The Midlands and North West are home to sizeable proportions of logistics employees, representing the regions' significance in the movement of goods throughout the country.

Key activities for a stronger Future of Freight

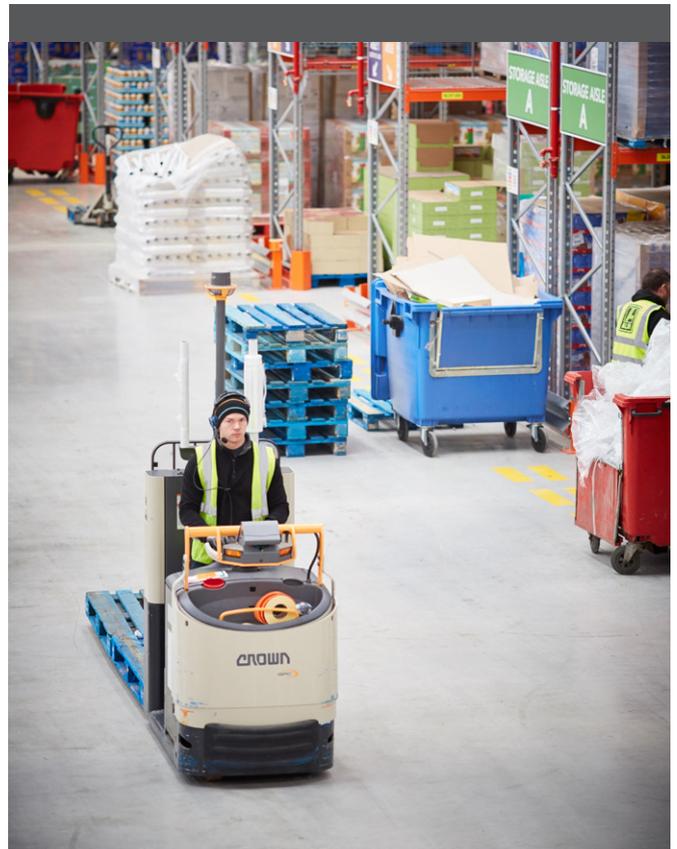
- 6.22 **Generation Logistics:** DfT are working in partnership with Logistics UK and the Chartered Institute of Logistics and Transport (CILT) to deliver an industry led programme of promotional activities which will:
- bring the freight and logistics industry together
 - shift perceptions of the industry
 - improve diversity of the sector
 - encourage the next generation of logistics workers to engage with the opportunities available and keep the nation's supply chain protected
- 6.23 Generation Logistics will shine a light on the sector, bringing unprecedented visibility to companies and addressing their recruitment gaps. Activity will target the next generation of logistics workers, ensuring commercial longevity and the ongoing integrity of the supply chain, whilst aiming to improve diversity across the sector.

6.24 Employer engagement: To further raise awareness of the career options available in the freight and logistics sector, the sector will be a core component in Department for Education's (DfE) developing single employer engagement strategy that aims to ensure government is speaking to industry with one voice through cross-government/ industry forums. An early output of this work is the new 'Find training and employment schemes for your business' gov.uk platform. Government will work to improve industry links with DfE infrastructure (Careers & Enterprise Company and the National Careers Service) and encourage collaboration through industry-led campaigns to help learners understand their routes into careers in key sectors, including freight and logistics. Government will also continue to work with employer forums, such as the Aviation Industry Skills Board (AISB) to understand workforce challenges and inform initiatives.

6.25 Qualifications and training offers: DfT, supported by DWP and DfE will improve employer understanding of the benefits of government-funded skills intervention, encouraging employers to see themselves as 'partners' of skills offers by: i) supporting the development of offers (e.g. through apprenticeship Trailblazer groups); ii) investing in them to build their pipeline of talent; and iii) acting as skills champions at a local

level, engaging with the employer representative bodies developing the new Local Skills Improvement Plans (LSIPs) and providers to shape local provision that meets employers needs.

6.26 Review of training offers: DfT, supported by DWP and DfE will undertake a review of training incentives available for freight and logistics business verses their business needs. This will be done through the Freight Council, with support from policy and employer engagement teams in DWP and DfE.



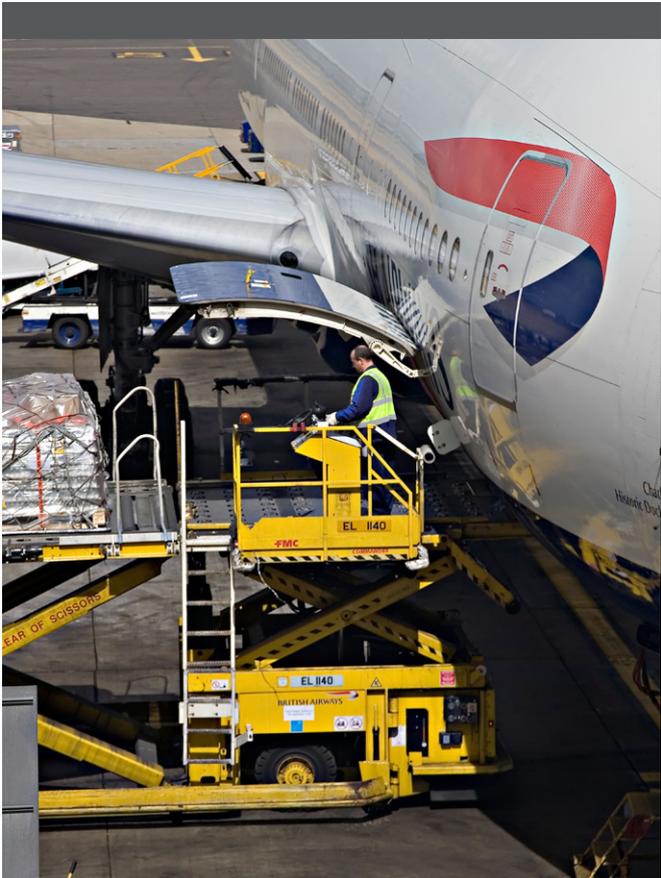
6.27 Reform freight and logistics training offers: Government will work with the industry to identify which transferable skills would allow candidates to take roles across the freight and logistics sector. Through skills reforms, the Government are creating routes to fulfilling careers for career starters and career changers from classroom-based training to in-work and work-based options. By the end of the decade the vast majority of our programmes will **align with employer-led standards**. We will build on the ambitions of the Skills for Jobs white paper by:

- Improving workforce readiness through investment in high-value, employer-led classroom-based learning (T Levels and Higher Technical Qualifications)
- Investing in occupational traineeships to provide a work-based route to employment/apprenticeships for young people at risk of long-term unemployment
- Investing in retraining opportunities for the existing workforce through short term, flexible in-work options Skills Bootcamps, and high-value classroom-based training (Free Courses for Jobs)

6.28 To support government focus on our future of freight commitments, departments are working together to understand and enhance cross-government Logistics, Transport, and Supply Chain Operations capability.

Building on the National Infrastructure Commission (NIC):

These actions directly build on the NIC’s recommendations and expert advice to deliver a “new Status for freight” (see Annex B for further details). By using the freight council to deliver campaigns that will ensure the Freight and Logistics sector is seen as an industry of choice for potential employees.



Achieving our Future of Freight vision

The above key activities will deliver a sector that is:



**Cost efficient,
reliable &
resilient**

Securing the people and skills required will support the operational efficiency of the freight system bringing more certainty to the users of freight.



**Environmentally
sustainable**

A Net Zero freight sector will require new skills to operate and maintain new equipment and technologies.



**Valued by
society**

Generation Logistics will directly promote the sector building awareness and supporting careers choices within the industry.

We will succeed when:

- There is evidence of a change in perception of the sector – through the Generation Logistics campaign we want to increase awareness by 25%, and positive sentiment by 40% in the first 12 months
- Industry see a reduction in the time it takes to fill vacancies.
- Industry delivers an improvement in diversity in relation to age, gender, and ethnicity within the sector.
- Industry delivers improved facilities and working conditions for HGV drivers.

Through the
**Generation
Logistics campaign**
we want to
**increase
awareness
by 25%**



7

Priority 5 – Technology and data enabled opportunities

Government and industry will collaborate to:

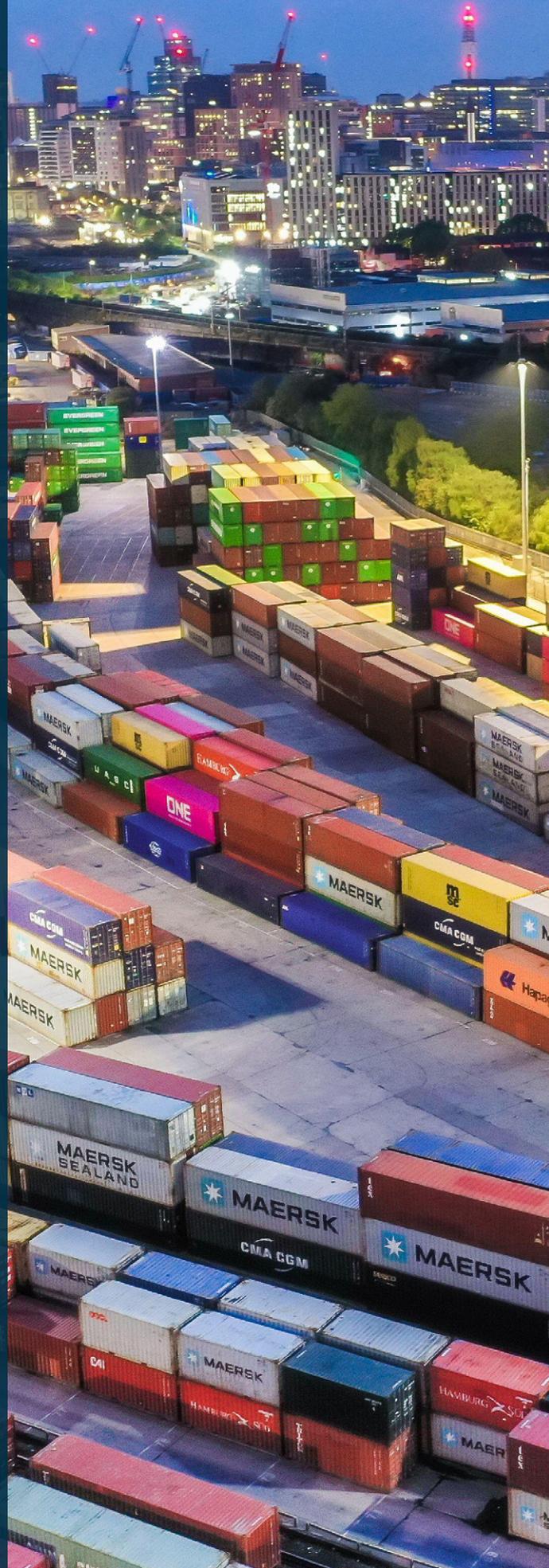
- **Create an innovation sub-group of the Freight Council to build awareness of the sector to innovators and innovative solutions available to the sector**
- **Co-design new dedicated £7m cross-modal Freight Innovation Fund**
- **Develop the future pipeline of solutions to meet the sector's real-world needs**

The challenge ahead

The challenge:

There is insufficient awareness among the sector of innovative solutions coming to market, alongside limited awareness of the sector's needs amongst innovators. There is also an incomplete understanding amongst industry and government of the ability of viable technologies to meet real-world freight problems.

- 7.1 The supply chains of the future are expected to be even more driven by technology and data, enabling them to be more efficient, reliable, resilient, and sustainable. Through our industry engagement and research, the application of new technologies and improved use of data have been highlighted as critical components to achieving these overarching objectives, for example:
- 7.2 **Efficiency:** Technology and better use of data is core to improving operational and fuel efficiency, for example, connected vehicles and data sharing¹²² have the potential to support increased efficiency of freight and load consolidation, reducing congestion and harmful emissions¹²³. Automated driving features could also improve fuel efficiency for a range of fleets, and innovative engine design as well as retrofit solutions continually improve fuel efficiency.



7.3 **Reliability:** The use of predictive, geospatial, blockchain and AI technologies could increase the reliability of supply chain forecasting, planning and operations, thereby increasing supply chain resilience and flexibility¹²⁴.

7.4 **Resilience:** Technology and data-driven innovations could have a larger role in building resilience by shielding the sector from digital disruption and allowing it to respond more effectively to physical disruption. This will also address workforce resilience issues by creating highly skilled employment opportunities and using automated and digital solutions to improve safety and working conditions across the sector.

7.5 **Environmental sustainability:** The optimal technology pathway to net zero is uncertain and further technological development is required. Continued joint investment is needed in research, development, and commercialisation strategies for a broad range of potential solutions at all levels of the technology readiness scale, including alternative fuels. See Chapter 4, Net Zero. Technology and innovative design has also been essential in progress towards minimising other environmental impacts such as noise and air quality.

7.6 Despite these technology and data enabled opportunities, there can be a reluctance to invest where business

cases are unproven or operators are not confident in the best available solutions, due to:

- A disconnect between the tech developers and the real-world freight and logistics challenges these could be tailored to
- No comprehensive sharing of the cost-benefit outcomes and technology limitations identified through trials and tests across the sector. For example, the mutual benefits of data sharing across the supply chain and between private – public bodies are yet to be proven on a wide scale
- Lack of expertise, incentive, or resource within all parts of the sector to fully appraise solutions, especially amongst smaller operators. For example, conversations with the sector have shown there is limited expertise on how to utilise Connected and Automated Mobility (CAM), especially systems engineering
- A mismatch between the sector's longer-term investment planning cycles verses the government's relative short-term funding cycles, coupled with limited freight industry input into R&D programme design.

Strategic goal:

Build awareness of the sector amongst innovators and the sector's awareness of innovators, accelerate the adoption of readily available solutions within the sector and develop the future pipeline in line with the sector's real-world needs.

Where are we heading?

7.7 Government and the freight and logistics industry share a collective ambition for the sector to be able to readily harness the opportunities of viable technologies and data driven innovations to improve economic efficiency, reliability, resilience, and environmental sustainability. This will be achieved by:

- Building awareness of the sector amongst innovators.
- Expanding the sector's awareness of viable solutions, including their limitations.
- Accelerating the adoption of commercially available technology and data-driven innovation where it can make a real-world difference to address the sectors' core areas of challenge.
- Developing the future pipeline of solutions with the sectors' requirements in mind.

Strong foundations

7.8 The government's vision is to make the UK a global hub for innovation and has sought to accelerate innovation in multiple potentially game changing areas for freight logistics, through strategy, R&D, and innovation funding¹²⁵.

7.9 There has been a sustained programme of investment by government and the freight and logistics industry in finding and developing new solutions. The below summarises how key technology and data driven investments have been targeted over the last five years to help create a world beating freight and logistics sector. See Annex A for a more comprehensive 5-year investment overview:

- **Decarbonisation and emissions reductions:** As government continues to implement the Transport Decarbonisation Plan, innovation and technological advancement – including for alternative fuels – will be essential to the sector's transition to net zero. See Chapter 4 also.

- **Data sharing and exchange:** Digital technology and connectivity has a key role in increasing the efficiency of supply chains and digitising borders is core to easing freight flows, as set out in the 2025 UK Border strategy. There has been a shift in the uptake of digital technologies within freight and logistics, such as telematics driving efficiencies in road-haulage. Government and industry have begun exploring opportunities for data sharing for mutual benefit, including recent work undertaken by the Connected Places Catapult to explore avenues for combining freight data and utilising it in private and public decision making¹²⁶.
- **Connected and automated mobility:** Industry has made notable investment in automated solutions at distribution centres, ports, and intermodal exchanges. A key driver of which has been to improve safety, for example UPS invested to eliminate workplace transport risks and automated container terminals are increasingly commonplace, such as Port of Liverpool and London Gateway. Notable investments have also been made in automated last-mile delivery solutions, for example Ocado has invested £10m in both Oxbotica and Wayve, and Wilko invested £3m in Streetdrone to develop automated delivery units¹²⁷. Since 2015, government has enabled the investment of over £400 million into the UK Connected and Automated Mobility (CAM) sector¹²⁸.
- **Connected/intelligent systems:** Recent simulation trials of connected traffic signals to prioritise HGVs at key junctions show real promise in reducing energy costs and harmful emissions¹²⁹.
- **New modes:** Technological developments are leading to the emergence of new forms of freight transport or modern takes on existing forms to ease congestion and air quality, such as underground freight distribution systems, new express rail-freight services and drone technology for cargo operations. The UK is a major player in aviation technology – the government wants to capture the benefits of new types of aircrafts such as drones, including for delivery services.
- **Regulation:** The government's aim is for the UK to be at the forefront of shaping the future of transport. A flexible and forward-looking regulatory framework for transport as a whole is critical to achieving this, and freight and logistics needs to be at the core of government's Future Transport work.





Case study – Transport Research and Innovation Grants for freight

The Department for Transport run an annual Transport Technology Research and Innovation Grant (TRIG) programme, aimed at supporting innovators by de-risking the development of new technologies and helping early-stage innovations reach a commercial solution.

Over £300k was awarded under TRIG in 2019 and 2020 for 11 early-stage R&D projects to decarbonise the freight system.

Building on the success of this, 2022 saw the addition of a specific £810k fund for the Future of Freight.

The 12 successful projects were announced in February 2022, and the innovators will receive support from DfT throughout the lifecycle of their innovation. A full list of the exciting concepts can be found below.

Building on the success of this,  2022 saw the addition of a specific **£810k fund** for the **Future of Freight**

Future of Freight £30K: 7 awards

Organisation	Description
University of Cambridge	Original steering design for HGVs that allows for both longer vehicles and lighter tires.
Brunel University London	Novel design for HGV trailer that is more drag resistant.
CurbCargo Limited	A freight delivery/collection booking platform for businesses, districts, and cities to encourage collaboration and thereby reduce pollution and congestion caused by urban freight movements.
Mole Solutions Ltd	Development of a Control Module for intermodal operations on an innovative Underground Freight Transport system.
Cyth Limited	A power harvesting device to enable an IIOT that can be used for predictive maintenance on unpowered rail cars.
Kale Collective	Software that allows urban freight operators to assess whether how they could convert their fleet to cargo bikes.
London South Bank University	Low carbon food transport refrigeration trucks with hydrogen fuel cell and metal hydride reactors

Future of Freight £100K: 6 awards

Organisation	Description
Voltempo Limited	Redeployable charging hubs for fleets of HGVs/ buses that can be installed overnight.
CGA Simulation	Tool for city planners to help estimate freight demand and ascertain where microconsolidation centres are needed. To be trialled by TfGM.
Hypermile (Trading Name); Creation Labs AI Limited (Legal Name)	Development of an in-HGV AI that provides real time feedback to drivers to improve fuel efficiency.
3Squared Ltd.	Web platform for short notice freight train wagon booking to maximise freight capacity.
Fishbone Solutions	Technology developed that uses vibrational data from rail tracks to perform predictive maintenance.
Anteam	Development of an “Airbnb of logistics” that allows people already making passenger car journeys to act as a delivery person for two businesses partaking in a trial.

What next?

7.10 Whilst there is a good track record of government and industry driving technology and data advancements in freight and logistics, more can be achieved through fostering a more collaborative relationship and raising the status of freight.

Key activities for achieving a stronger Future of Freight

7.11 The freight and logistics sector and government will:

Year 1 – Build awareness of the sector’s challenges that can be addressed through technology and digitalisation via an innovation sub-group of the Freight Council by June 2022, to:

- Better connect innovators and the sector, and to explore the case for a dedicated innovation exchange service for freight and logistics.
- Ensure the freight and logistics sector is aware of the support available across government.
- Share technology developments in the freight and logistics sector, including results of trials and tests by government and Freight Council members – and explore a dedicated knowledge exchange portal.

Years 1–3 – Accelerate adoption of commercially ready solutions into the sector by:

- Co-designing a new dedicated £7m cross-modal **Freight Innovation Fund**, for later stage, commercially available technology to prove / disprove the business cases for their deployment.
- Government recently announced that it is making £7.6 million available for cutting-edge technology that will help transform rail travel. The year’s rail **First of a Kind** competition is focusing on technologies that improve the industry’s cost efficiency and network performance to support a more reliable railway for passengers and improving rail freight.

Years 3–5 – Develop the future pipeline of solutions to meet the sector’s real-world needs by:

- Undertaking research into where to best target future government support for innovation within freight and logistics.
- Continue to invest in early-stage technology trials in the freight and logistics sector through the Transport Research and Innovation Grant (TRIG) programme.
- Test with industry agreed ‘proofs of concept’ for improving data exchange to identify data sources that will help to create many of the digital and connected services in the future for freight and logistics.

- Work to ensure the development of *2025 UK Border Strategy (2020)* projects such as the Single Trade Window (STW), Advanced Risk Analytics (ARA) and Ecosystem of Trust (EoT) are integrated with any platforms and systems developed through the implementation of the Future of Freight plan and the Freight council sharing data where possible and where this will improve efficiencies and add value for customers using these systems.

Building on the National Infrastructure Commission (NIC):

These actions directly build on the NIC's recommendations and expert advice to deliver "new and better data" (see Annex B). The above actions will support testing greater data exchange within industry and with government. More broadly the ambition to boost innovation takes the sector further on NIC recommendations on decarbonisation and optimisation.



Achieving our Future of Freight vision

The above key activities will deliver a sector that is:



**Cost efficient,
reliable &
resilient**

by optimising the sector's use of technologies.



**Environmentally
sustainable**

by increasing the uptake of technology and innovations that are proven to reduce emissions and environmental impacts.



**Valued by
society**

by being seen as technology advanced and creating highly skilled employment opportunities.

We will succeed when:

7.13 Government and industry will know that progress is being made against this priority when we achieve the following desired outcomes: These are long-term outcomes, that may take longer than the next 5 years to show material benefits.

- Industry engagement sees an increase in the uptake of innovative technologies and digitalisation.
- Government and Industry have access to more coordinated, consolidated and richer data on the freight and logistics network and sector.

- Reduced emissions from the freight and logistics sector on the path to net zero (as outlined in chapter 4).
- Improved safety – a reduction in the number of injuries and deaths related to freight and logistics for employees and members of the public. Measured against baselines, such as:
 - o Rate of 0.85 fatal injuries per 100,000 workers¹³⁰
 - o Estimated rate of 2,110 non-fatal injuries per 100,000 workers¹³¹
 - o Road safety: 250 reported accidents (all severities) involving heavy goods vehicles per billion vehicle miles¹³²

8

Priority 6 – Moving to implementation

- 8.1 In this plan, government and industry have set out a forward thinking and ambitious programme for supporting the next generation of Freight and Logistics in the UK. By focusing on our initial set of priority areas, we will deliver a Freight and Logistics Sector that is cost efficient, resilient, reliable, environmentally sustainable, and valued by society.
- 8.2 The plan represents a key milestone in this ongoing partnership between industry and government, and central

to maximising impact will be taking its content and building on this iteratively with industry. We must build on the momentum of the past years and the publication of this strategy to rapidly move to implementation. The plan outlines the key actions we must take forward (see below), however we must work with industry to constantly test, iterate and develop these actions taking a dynamic and organic approach to implementation.

National Freight Network	Enabling the transition to Net Zero	Planning
<ul style="list-style-type: none"> • Identify a National Freight Network • Undertake valuation of Freight studies • Visibility of Freight in Infrastructure Planning • Support Modal Shift 	<ul style="list-style-type: none"> • Create a Freight Energy Forum • Support and promote mode shift • Undertake a regulatory review of barriers to delivery of zero carbon energy infrastructure • Maximise the potential of modal initiatives by demonstrating a zero carbon cross-modal freight journey • Continue delivering the commitments outlined in the Transport Decarbonisation Plan. 	<ul style="list-style-type: none"> • Work with the sector to support a programme of engagement with local planning authorities • Review and amend Planning Practice Guidance • Publish a freight specific call for evidence to understand what is working well and not so well • Consult on updated guidance for Local Transport Plans • Engage with the review of National Networks National Policy Statement • Engage with the Planning Reform programme

People and Skills`	Technology and Data
<ul style="list-style-type: none"> • Deliver Generation Logistics campaign in 2022. • Ensure the Transport Employment and Skills Taskforce meets our future skills needs in freight and logistics. • Support a programme of employer engagement • Reform Freight and Logistics training offers to encourage transferable qualifications. • Support efforts to boost diversity within the sector. 	<ul style="list-style-type: none"> • Innovation sub-group of the Freight Council to build awareness of the sector to innovators and innovative solutions available to the sector • Co-design new dedicated £7m cross-modal Freight Innovation Fund • Develop the future pipeline of solutions to meet the sector’s real-world needs

Our partnership so far

8.3 All of these actions require strong and ongoing collaboration and co-delivery with industry and will build on our approach to engagement to date. To co-develop this strategic plan, the Department for Transport (DfT) has worked closely with industry and across government. We used existing fora, and bespoke Future of Freight events to engage over 350 stakeholders, across a series of Freight Council meetings, scoping workshops, focused roundtables, and in-depth one to one discussions.

8.4 This has helped us to develop a strategic plan that rightly focuses on the priority challenges and opportunities that the freight sector is facing.

8.5 This signals the start of new era of partnership working between government and the freight and logistics sector, using the Freight Council to continue to guide our approach and raise the status of freight.

Our engagement objectives:



1.

To raise stakeholder awareness of our overall approach to the Future of Freight and the government's renewed, strong focus on freight.



2.

To access expert insight from across the sector on the long-term strategic issues and opportunities and together identify actions to address these.



3.

To establish the means for an enduring elevated status for freight in government-industry engagements and forums.



Our engagement approach:



Initial scoping

Government sought views from our Freight Council members on the core priority challenges and opportunities facing the sector and undertook desk-based research into the emerging trends for freight i.e. key changing factors.



Detailed scoping and prioritisation

The long-list of factors highlighted by the Freight Council and our research were further refined through a series of industry workshops, attended by 180 stakeholders, centred on the themes of:

- 1. Freight's role in economic growth and levelling up**
- 2. Global Britain and freight**

3. Reducing freight's environmental impact

4. Transport for the freight user

These government policy themes were used as 4 different and contrasting angles by which to gain a collective understanding of where the freight industry is now, where the industry wants to be in the long term, and the key opportunities / obstacles to getting there.



Problem identification

The outputs of these workshops were analysed against the current policy landscape, to identify 5 core priority gaps where there was deemed further potential for government and industry to work together to remove barriers to the sector reaching its potential.

Focused roundtable events on the following topics were attended by 118 stakeholders, to start to better understand the issues, identify evidence, gaps or weaknesses in current policy and define an agreed target position:

- 1. Skills & people, making freight an industry of choice.**
- 2. Impact of the planning system on the freight and logistics sector.**
- 3. Overcoming the uncertainty of the future energy mix and infrastructure for a net-zero freight sector.**
- 4. Optimising freight infrastructure.**
- 5. Innovation and technology (a ministerial chaired roundtable hosted by CAM test bed UK in the West Midlands).**



Planning

Roundtable write-ups were shared for comment with attendees that documented a vision, the strengths, weaknesses opportunities and threats of the current situation, a problem statement, and proposed early thinking of actions that could be taken to address.

This was further refined with Freight Council members and cross-Whitehall representatives, to develop the basis of Future of Freight.

Pivoting to implementation

8.6 Our engagement and the structure of the Freight Council have been core to getting the Future of Freight programme to this point, with a strong plan for the future and a powerful relationship between government and industry to take it forward.

8.7 Looking ahead, we will need to take this relationship and engagement approach and reorient it from the strategic and scoping phase towards an implementation and delivery mindset. As such, after publication of this plan we will be working with existing Freight Council members to reconsider the structures of the Freight Council. This will involve appointing an industry co-chair to drive the group alongside the sponsoring DfT Minister and working with members to implement a new structure with sub-working groups focussed on delivering the key priority areas of the plan. In composing sub-groups, consideration will be given to inclusion of freight operators, end users, manufacturers, regulators and those with academic or professional services specialisms and across those categories large and small operators, and a mix of operators and stakeholders with national and regional operations.

8.8 Upcoming Freight Council meetings will be key moments for delivering this reorganisation and assessing progress and driving towards delivery on the key actions of this plan. Looking ahead we hope to:

- Summer 2022 Meeting – Introduce newly appointed industry co-chair and undertake a post-publication stocktake review of the reception to the plan and next steps

- Autumn 2022 Meeting – Embed new Freight Council structures and finalise implementation phase programme plans for each priority area.
- Winter 22–23 Meeting – Portfolio review of programme progress and first quarter sub-group stocktake.
- Spring 2023 – Horizon scan, stocktake and lessons learned from first 12 months, feeding into delivery plans for 2nd year and beyond.

The Future of Freight

8.9 This plan marks a key achievement in government and industry delivering a stronger freight and logistics sector for the benefit of the whole country. The plan marks a considerable effort to develop a route-map for the future. Through this plan we have co-developed clear long-term objectives, a strong sense of medium-term priorities, and key actions for the next five years and beyond to begin to deliver against all of these.

8.91 Our core task going forward will be making sure this plan marks the start of developing that route map rather than the ending, building on strong collaboration to take a flexible and iterative approach to getting the best deal for the sector. Government and industry leveraging their strengths and power can have a huge impact delivering the future of freight the country needs to underpin levelling up, economic growth and a truly global Britain for generations to come.

Annex A – The UK freight sector today

National Freight Network

Current policy landscape

Cross modal



Freight Corridors: Government and industry collaboration over recent years through Network Rail and National Highways Solent to Midland Freight Strategy to take an increasingly multimodal approach to understand the UK's National Freight Network.

Port Connectivity Studies: Department for Transport led research to improve understanding of freight flows from UK ports to road and rail, highlighting areas of improvement for connectivity.

Warehousing investment: Government is working with industry to explore ways to protect and expand the warehousing land capacity, aiding the completion of 40 million sq. ft. in 2021, up from 20 million the previous year.

Rail Freight Interchanges: The Planning Act 2008 includes strategic rail freight

interchanges within the scope of Nationally Significant Infrastructure Projects (NSIP) enabling schemes meeting the threshold to be considered directly by the Planning Inspectorate rather than by local planning authorities.

Union Connectivity Review: Has reported and recommended the establishment of a strategic, multi-modal transport network for the UK (UKNET). Work on the NFN will have to build on and integrate work to take forward the UCR.

Freeports: Establishment of 10 ports from late 2021 where different economic regulations apply aimed at increasing trade and regenerating local areas.

Freight Data Repository: Prototype repository developed by Transport for the North to inform strategic freight planning.

Road freight



Local roads: Local roads are managed, maintained, and enhanced by local highway authorities and combined authorities, Local roads are funded through a combination of locally generated taxes and rates, and through grant allocations to local highway authorities for specific enhancements and interventions.

Road Investment Strategy (RIS): £17bn invested between 2015–2020 on essential upgrades, maintenance, and operation on the strategic road network – the roads that see two-thirds of all HGV miles. 2020–2025 sees a planned £24bn of spending covering a wide range of projects across the whole of England, with the following five-year investment cycle's Initial Report to be published in summer 2022.

Rail freight



Track Infrastructure Investment: £10.5bn to be spent between 2019–2024 for enhancements on the network for both passengers and freight. Government invested over £235m between 2014–2019 on strategic freight routes to improve the capacity and capability of the network for freight users. A recent example of rail freight enhancements completed are £8.3m Port of Liverpool access ; which has allowed for an increase from one, to two trains, per hour in each direction.

Williams-Shapps Plan for Rail (2021):

The Plan for Rail reaffirmed government’s ambition to introduce a rail freight

growth target to strengthen rail freight on the national network and create new opportunities for growth and investment.

Integrated Rail Plan: The Integrated Rail Plan (IRP) will help to free up capacity on the existing network, and deliver improved capacity and capability for rail freight across the Midlands and North. The IRP confirmed a further £625m in funding for the Transpennine Route Upgrade (TRU), seeing it upgraded and electrified.

Maritime freight



IMO & Multilateral Negotiations for

Shipping: The UK is an influential voice at negotiations on maritime transport in the major international maritime bodies, for example where the UK played a leading role in the agreement of the International Maritime Organization’s 2018 Initial Strategy on Reduction of Greenhouse Gas Emissions from Ships.

Port investments: Whilst ports investment is mostly industry led, government committed substantial funding to help prepare the sector for new customs arrangements following Brexit, including the Port Infrastructure Fund.

Aviation freight



Night flights: A government consultation in July 2021 on night flight policy is attempting to strike a fair balance between the negative impacts of aviation, in particular noise, and their positive economic benefits. Existing night flying regulations will remain at Heathrow, Gatwick, and Stansted until 2025 to allow for the impacts of the pandemic to be understood. Operational ban on QC4 rated aircraft movements during the night quota period from October 2022, with a further consultation in 2023 for post 2025 restrictions.

Flightpath to the Future: a framework for aviation: The government has published a medium-term strategic framework for the sector, which focuses on building back better and ensuring a successful UK aviation sector for the future. This framework explores key sector issues, including consideration of workforce and skills, regional connectivity, noise, innovation and regulation, and consumer issues. Government also considered climate change and decarbonisation, as well as the critical role that aviation plays in maintaining the UK's global impact.

Transition to Net Zero

Current policy landscape

Cross modal



Low carbon fuel policy: Renewable fuels, including biofuels such as bioethanol, biodiesel and biomethane, are supported in the UK under the Renewable Transport Fuel Obligation (RTFO) scheme, a certificate trading scheme, which has been in place since 2008. Commitments to maximise the benefits of low carbon fuels set out in the TDP included the development of a longer term strategy for the deployment of low carbon fuels between now and 2050 alongside the development of a mandate for Sustainable Aviation Fuels (see below).

UK Hydrogen Strategy: A key report that, alongside the TDP, makes clear that hydrogen will play a significant role in decarbonising freight. £3m invested in 2021/2 to support the early development of the Tees Valley Hydrogen Transport Hub, delivered pilot projects to seed hydrogen demand in the area and catalyse collaborations between industry, academia, and the local authorities.

Modal shift: Government continues to provide £20m funding for this shift from road to rail, inland waterways, coastal and short sea shipping through the Mode Shift Revenue Support Scheme and Waterborne Freight Grant Schemes. These grants help remove around 900,000 HGV journeys off the road and remove 58,000 tonnes of CO₂ emissions each year.

Last Mile Logistics: Government are committed to transforming the last mile into an efficient and sustainable delivery system, through supporting new vehicles such as e-cargo bikes or improvements to the logistics system. Having already funded local authorities and businesses with £3.5m to support access to e-cargo bikes, the Zero Emission Transport City (below) will include up to £2m for an ambitious e-cargo bike pilot.

Pathfinder projects: Government are reviewing the Traffic Regulation Order (TRO) legislative framework and will consult in due course on improvements that could deliver near-term carbon savings by reducing the number of vehicle movements through the use of new technologies and smarter regulation, such as dynamic kerbspace and delivery management. Dynamic kerbspace could increase the efficiency of last mile deliveries through easing restrictions that limit services that are reliant on the loading and unloading of goods.

Zero Emission Transport City: Government has committed to create at least one Zero Emission Transport City, which will explore deliveries made to consolidation hubs with the last mile being done by cargo bike or electric van. Research into the legal and practical issues around compulsory consolidation centres has also been commissioned by government, setting the groundwork for potential future pilots.



Cross modal

48 for 48: Trial allowing heavier road freight to travel short journeys to or from rail interchanges.

Other environmental policy (not in relation to net zero):

UK air quality standards and Clean Air Zones:

The Air Quality Standards Regulations 2010 seek to control human exposure to pollutants in outdoor air to protect human health and the environment by requiring concentrations to be within specified limit values. In addition, some local authorities have introduced clean air zones, some of which set a minimum emission standard for HGVs and vans below which a charge is levied..

Climate Change Adaptation: The Climate Change Act 2008 allows the Government to ask certain organisations, including key transport operators, to produce reports on the current and future predicted effects of climate change on their organisation and their proposals for adapting to climate

change. The Climate Change Act also sets the requirement for a Programme for adaptation to climate change. This is the 5 yearly reporting cycle called the National Adaptation Programme. The third National Adaptation Programme is due in 2023.

Noise: Management of noise by freight and logistics operators is a key consideration in the planning regime (see the planning section). In addition, Environmental Noise (England) Regulations 2006 (as amended) require regular environmental noise mapping and action planning for road, rail and aviation noise, and noise in large urban areas (agglomerations). Noise Action Plans identify Important Areas (areas exposed to the highest levels of noise) and ways the relevant authorities can reduce these. Major airports and those which affect agglomerations are also required to produce and publish their own Noise Action Plans.

Road freight



Non-zero emission HGV phase out dates:

Government has announced the phase out dates for the sale of new non-zero emission HGVs. This will end the sale of new non-zero emission HGVs 26 tonnes and under by 2035. All new road vehicles sold in the UK must be zero emission by 2040. The full consultation response has been published, alongside a call for evidence on potential exemptions to the 2035 phase out date for HGVs 26 tonnes and under¹³³.

Zero Emission Road Freight

demonstrations: £20m invested in 2021–2022 to support industry-led feasibility studies into developing cost-effective, zero-emission HGVs and their associated infrastructure. Government will be building on the success of this work by expanding the programme to demonstrate three zero emission HGV technologies at scale on UK roads. Battery electric and hydrogen fuel cell competitions will be launched shortly. New battery electric HGVs in lighter weight categories (19 tonnes), built by Leyland DAF, are already running on UK roads, delivering supplies for the NHS and others.

Electricity Networks Strategy: In partnership with Ofgem, the independent energy regulator, government is working to deliver a Strategic Framework for the electricity network. This will outline potential energy demand scenarios created by increasing electrification, including the transition to electric cars, vans and HGVs.

Double Length Semi-Trailers and Longer Semi Trailers:

A variety of policy measures are being explored to support larger HGV payloads, which can increase the efficiency of freight movements, such as the use of heavier HGVs for intermodal freight, the ongoing trial of Longer Semi Trailers, and the use of longer and heavier HGVs.

OZEV LGV and HGV Grants Plug in vehicle grants: A fund currently available until 2025 for sellers of zero emission HGVs/LGVs.

Zero Emissions Automated Logistics:

Government will work with the logistics sector to enable the safe deployment of zero emission automated delivery and goods vehicles on UK roads and on private land, for example ports, factories and distribution centres.

Project Rapid: Research to assess and deliver charging needs for electric and light vans.

Road freight emissions reductions:

Government has updated and relaunched the Energy Saving Trust's (EST) Freight Portal, to provide more and better information, particularly focused towards smaller freight operators. We will continue to support the EST to build upon this work and expand, improve and promote the portal to road freight operators.

Rail freight



Rail electrification: Electric locomotives are deployed for freight, facilitated by the electrification of almost 800 miles of the network in England and Wales. The Traction Decarbonisation Network Strategy (TDNS) will inform decisions about the scale and pace of decarbonisation between now and 2050; it focuses on electrification and other traction technologies.

Rail investment: To enable further modal shift from road to rail, the Government will invest in the capacity and capability of the rail network for freight through the Rail Network Enhancements Pipeline (RNEP), including on projects like the recently completed upgrade to the key freight corridor between Southampton and the Midlands. HS2 will release a significant amount of spare capacity on the southern part of the West Coast Main Line, some of which could create opportunities for freight operators to grow and develop.

Connected Places Catapult R&D: In 2021–22, government funded a Connected Places Catapult (CPC)-led R&D project, that will identify low-emission technologies for use in the rail freight estate and stimulate innovation in this sector.

First of a Kind competitions: Over £4m of funding provided since 2019 through Innovate UK-run First of a Kind competitions for new traction technologies that reduce rail emissions.

Air quality monitors: To improve air quality, Government is funding the roll out of air quality monitors at more than 100 railway stations across England and Wales. The network will initially provide a snapshot of air quality on the railway and identify priority locations where improvement measures are needed. Once established it will show how air pollution levels change over time, helping us to understand the effectiveness of different interventions.



Maritime freight

The Energy Efficiency Design Index (EEDI)

was introduced in 2013 to progressively improve the design and operational efficiency of ships and their propulsion systems. A further package of measures on carbon intensity and energy efficiency for existing ships is due to enter into force in 2023¹³⁴.

Clean Maritime Demonstration

Competition: £23m fund launched in March 2021 by DfT. This one-year 'springboard programme' will lay the foundations for a network of real-world projects, gearing up maritime decarbonisation in the UK. As set out in *Net Zero Strategy (2021)*, government will be extending this to a multi-year programme, delivering real-world demonstrations and technology trials of clean maritime vessels and infrastructure to decarbonise the maritime sector.

The ClydeBank Declaration: Signed at COP26 alongside other leading climate nations, making clear our support for the adoption at the IMO of an ambitious target

of zero emissions from international shipping by 2050. Under the Clydebank Declaration, 22 states from around the world committed to supporting the development of green shipping corridors.

Operation Zero: Operation Zero brought together a coalition of industry partners, convened by DfT, to accelerate the decarbonisation of the operations and maintenance vessels working in the North Sea's offshore wind farms. Government also launched a call for evidence in February 2022 on different aspects of supporting the deployment of shore power and the provision of shoreside electrical power to a docked vessel while its engines are shut down.

UK SHORE: In early 2022 it was announced that a £206m R&D programme will be delivered through the new UK Shipping Office for Reducing Emissions (UK SHORE). This formed part of government's refreshed National Shipbuilding Strategy.

Aviation freight



Jet Zero Consultation: Published in July 2021, the Consultation outlines government vision for aviation sector reaching net zero by 2050. The consultation focuses on the rapid development of technologies in a way that maintains the benefits of aviation whilst maximising the opportunities that decarbonisation can bring to the UK, with the full strategy to be published later this year.

Jet Zero Council: A partnership between industry and government announced in July 2020 that brings together leaders in aviation, aerospace, and academia to drive delivery of new technologies that can cut aviation emissions – aiming to deliver zero emission transatlantic flight within a generation.

Sustainable Aviation Fuels blending mandate: In July 2021, the government also consulted on the introduction of a UK SAF blending mandate, which government are aiming to confirm following a second consultation in 2022. The government's *Net Zero Strategy (2021)* confirmed our commitment to Jet Zero and sets out the government's ambition to enable the delivery of 10% SAF in the UK fuel mix by 2030 and included a funding commitment of £180 million to support the development of SAF plants in the UK. This builds on the progress made in previous advanced fuels competitions, including the Green Fuels, Green Skies competition. In addition, £15m of funding was awarded to eight companies at the end of 2021.

Aerospace Technology Institute (ATI) Programme: The government is also supporting the development of new

and zero-carbon emission aircraft technology through the Aerospace Technology Institute (ATI) Programme – a joint commitment from industry and government to invest £3.9bn in aerospace R&D from 2013 to 2026. The recent Spending Review has extended our commitment to co-invest in aerospace by guaranteeing R&D funding for the ATI Programme to 2031.

International negotiations: The government is clear that international action on aviation emissions is essential given the sectors' global nature. The UK is therefore negotiating for International Civil Aviation Organisation (ICAO) to agree long-term emissions reduction goals for international aviation at the 2022 conference. At COP26, the UK launched the International Aviation Climate Ambition Declaration which has been committed to by a broad coalition of states to show support for ICAO adopting a 1.5°C-consistent long-term goal at the 41st Assembly. The UK is also committed to implementing ICAO's Carbon Offsetting and Reduction Scheme for International Aviation.

R&D Grants: Government sponsored research in 2021/22 on preparing airports and airfields for the advent of electric and hydrogen aircraft through the Zero Emission Flight Infrastructure Project.

Interim measures: Until hydrogen, electric and Sustainable Aviation Fuel options are fully deployable, carbon offsetting and improving efficiency of the fleet (through better use of data and operator controls/design) are the primary aviation emission reduction strategies.

People and Skills

Current policy landscape

Cross modal



Logistics skills training: A guide for accessing logistics skills training jointly prepared by Logistics UK, with DfE, and DWP.

Logistics champions: Government established network across all DWP Jobcentres, to channel information and encourage active engagement with the sector at a local level. DWP is also exploring progression pathways into the broader freight and logistics sector, so there is support for people entering employment to train and progress. This work considers the specific labour needs of the industry, for example, working with the Warehousing sector to upskilling existing staff to become forklift truck drivers.

Skills for Jobs: DfE continue to reform our further education system, building on the vision set out in our Skills for Jobs White Paper (January 2021).

DWP's National Employer Partnership Team (NEPT) Engages with large national employers and trade associations, including the freight and logistics sector, to understand their needs and help them access DWP or other government offers. DWP also a bespoke employer engagement strategy with SMEs – which make up 85% of HGV operators – to support their specific recruitment needs.

Road freight



HGV driver facilities: Government has allocated £32.5 million for investment in roadside facilities for HGV drivers, such as showers, toilets and eating areas.

DfT has also worked with the Health and Safety Executive to **strengthen guidance to businesses**, including distribution centres, to make it clear that HGV drivers must be given access to sanitary facilities when visiting premises to make deliveries or take collections.

Industry led campaigns: DWP has partnered with trade associations to deliver campaigns such as the Road Haulage

Association's 'Love the Lorry' campaign and Logistics UK's 'Discover Logistics Careers' 2021 campaign.

Partnership with major employers and trade associations to deliver **#JobsThatMove**, an internal communications and awareness campaign promoting HGV driving roles to work coaches.

DWP has been working closely with DfE and the National Career Service (NCS) on the rollout of **HGV Driver Skills Bootcamps** to ensure that jobseekers can access the training they need.

Road freight



Implementation of a **Job Centre Plus (JCP) HGV Driver Training Pilot** to fund HGV licence acquisition for 100 jobseekers as part of the wider Road to Logistics project.

Provision of Flexible Support Fund (FSF): funding to help claimants take on roles in the sector, such as funding the renewal of a Certificate of Professional Competence licence.

A range of DWP-funded **Sector-based Work Academy Programmes (SWAPs)** for HGV drivers are available in England and Scotland. Wales has its own separate arrangements.

DfE are working with Logistics UK and other key partners in the sector to develop an **Occupational Traineeships** for HGV driving.

Skills interventions: a significant package introduced by DfE which are intended to train up to 16,000 new HGV drivers in response to the acute driver shortage, including:

- £34m investment to train up to 11,000 new HGV drivers on **Skills Bootcamps**
- Widening access to relevant apprenticeships and taught courses funded through the Adult Education Budget in academic year 21/22 to deliver up to 1,000 places (there are five Level 2 certificates available in driving goods vehicles).
- Industry estimates point to the potential for 4,000 apprenticeship starts per year – in August government increased the provider funding band for the Large Goods Vehicle Driver apprenticeship from £5,000 to £7,000; and Institute for Apprenticeships and Technical Education (IATE) have worked with employers to introduce the new Urban Driver standard, which went live in December 2021.

Aviation freight



In February 2021 the Department for Transport launched the **Aviation Skills Retention Platform (ASRP)** which allows former and current aviation sector workers who are currently out of work to register their skills.

In November 2021, the DfT launched the early-careers aspect of the ASRP, **Talentview Aviation**. This platform connects aviation students to employers.

In January 2022, DfT recruited a set of 12 new **Aviation Ambassadors**.

Data and Technology

Current policy landscape

Cross modal



Future Fuels for Flight and Freight

Competition: £22m of funding allocated in 2017 to projects that produce low carbon waste-based fuels to be used in aeroplanes and lorries.

Future Transport Strategy and Traffic

Technology Forum: Programme and strategy launched in March 2019, including a new Technology Traffic Forum.

Civil Aviation Authority's Innovation Hub:

Established in April 2019 to help bring new services to the market and allow trials in a safe environment.

CPC Drones Pathfinder Catalyst

Programme: Provided £1.2m Programme (concluding in March 2022) to support integrating drones into UK airspace.

Future of Mobility Urban Strategy: Set out how government will drive policy that secures the benefits of Connected and Automated Mobility, guarding against unwanted outcomes. Launched April 2019.

Controlled Urban Test Site: Opened in Millbrook as part of today's CAM Testbed UK, including facilities to test freight and logistics solutions.

3 new 'Future Transport Zones': £90 million funding boost beginning in March 2020 for real-world testing of new transport

innovation for people and goods in 3 new Future Transport Zones – including multiple freight / logistics pilots.

2025 UK Border Strategy: Lunched in December 2020, the document provides a six-point strategy for implementing changes to the UK borders via better usage of data to minimise the wait time and streamline data. It also includes a range of measures to modernise and streamline checks at the border, including Single Trader Window, Advanced Risk Analytics, and Ecosystem of Trust.

Tees Valley Hydrogen Hub: The UK's first ever hydrogen transport hub kick-started by £3 million government investment beginning March 2021. It will function as a living lab to understand hydrogen's role in decarbonising the transport system, including freight.

Kick off of End-to-end logistics & data project: Commissioned in April 2021 by Connected Places Catapult to investigate sharing of high-quality freight data for mutual private and public benefit.

Future of Transport Regulatory Review: Consultation taking place from September to November 2021 seeking to identify areas of transport regulation that are a barrier to innovation and new technologies.

Cross modal



Aerospace Technology Institute

Programme: £3.9bn programme which supports aerospace design.

TRIG Future of Freight: £810k of freight specific innovation funding as part of DfT's 2021 annual TRIG programme.

Spending review: DfT received £300m in R&D funding for transport decarbonisation programmes, plus £117m from innovate UK. Details of these schemes can be found below.

Road freight



Platooning: In 2017, £8.1m funding was made available for Helm UK, a project to progress real-world trials of HGV platooning.

Local Transport Data Discovery Report: 2018 report highlighted that roads-related transport data in England needs to be easier to discover, leading to DfT's Find Transport Data scheme.

Traffic signal prioritisation: Successful early-stage tests throughout 2019 and 2020, demonstrating potential for this to be used to manage freight flows and reduce emissions.

Connected Vehicle Data Research project report: This 2020 report identified much untapped data that can be exploited to reduce congestion and better provide information to road-users.

Zero Emission Road Freight

Demonstrator programme: Government committed £20m in 2021/22 to support zero emission road freight trial feasibility, to pave the way for future trials. The Zero Emission Road Freight Demonstrator programme which will expand on the feasibility work undertaken last year will see at-scale demonstrations of three zero emission HGV technologies on UK roads, operating in real-world commercial settings. These demonstrators will provide a wealth of information that will be used to determine the operational benefits of each technology, as well as their infrastructure needs.

Rail freight



First Of A Kind Rail R&D Projects:

Nearly £2 million in funding for five decarbonisation focused rail-freight projects as part of the 5th First Of A Kind innovation competition in 2021. Since 2019, government have provided >£4m First of a Kind competition funding for new traction technologies in rail.

Connected Places Catapult Low Emission Technologies:

A Connected Places Catapult-led R&D project to identify low-emission technologies for use in the rail freight estate.

Rail Safety and Standards Board: Review into incentivising a transition to lower carbon forms of traction, capital and major refurbishment works.

Maritime freight



Government supported CAM Testbed UK site opens: £3.4m joint government-industry investment in a smart logistics testbed for 5G enabled logistics management and security in Millbrook as part of today's CAM Testbed UK in September 2019, with a similar £3.4m being spent at West of England Combined Authority and Port of Bristol in January 2021.

Clean Maritime Fund: Launched March 2021, £23m match-funded for UK innovators to support design and development of zero

emission vessel technologies and greener ports.

UK SHORE: In early 2022 it was announced that a £206m R&D programme will be delivered through the new UK Shipping Office for Reducing Emissions (UK SHORE). This formed part of government's refreshed National Shipbuilding Strategy.

Aviation freight



Future of Flight challenge: £300m of joint industry and government funding announced in September 2019. Now in its

third phase which will run until 2024, to explore Advanced Air Mobility.

Annex B – National Infrastructure Commission (NIC) Recommendations Update

NIC ‘Better Delivery – The Challenge for Freight’ (2019) Recommendations (summarised)	Government Response (Aug 2021)	Update
<p>1. Decarbonising Road Freight: Government should commit to decarbonising road freight by 2050, announcing plans by the end of 2021 to ban the sale of new diesel-powered HGVs no later than 2040. To support this Government should prepare detailed assessments of the infrastructure required to enable the uptake of battery electric or hydrogen HGVs and work with Ofgem, as part of the next energy distribution price review (RIIO ED2) starting in 2023, to include clear requirement for distribution network operators (in partnership with the freight industry) to map out the infrastructure upgrades and opportunities.</p>	<p>Mostly endorse</p>	<p>In Nov 2021 government announced all new heavy goods vehicles in the UK will be zero-emission by 2040.</p> <p>Future of Freight further commits to:</p> <ul style="list-style-type: none"> • Freight Energy Forum, to identify cross-modal energy/fuel infrastructure priorities • Regulatory Review of barriers to implementing new energy infrastructure for freight – to inform ofgem energy distribution price review in 2023. • Expanding our understanding of the domestic freight network, including exploring identifying a National Freight Network, to be used to support understanding of future energy infrastructure needs.
<p>2. Decarbonising Rail Freight: Government should undertake detailed crossmodal analysis, using a corridor-based approach, of the long-term options for rail freight’s transition to zero emissions, including low carbon rail services and the scope for road-based alternatives. It should then publish, by the end of 2021, a full strategy for rail freight to reach zero emissions by 2050, specifying the investments and/or subsidies that it will provide to get there.</p>	<p>Mostly endorse</p>	<p>Future of Freight commits to:</p> <ul style="list-style-type: none"> • Freight Energy Forum, to identify cross-modal energy/fuel infrastructure priorities • Expanding our understanding of the domestic freight network, including exploring identifying a National Freight Network, to be used to support routes to decarbonisation and future rail decarbonisation needs.

<p>3. Managing Congestion: To help manage peak time congestion on the urban transport network, local authorities should include a plan for urban freight within the infrastructure strategies they are developing. These plans should review local regulations to incentivise low congestion operations, consider the case for investments in infrastructure such as consolidation centres, and identify the land and regulatory requirements of new and innovative low congestion initiatives.</p>	<p>Mostly endorse</p>	<p>Future of Freight commits to:</p> <ul style="list-style-type: none"> • Consultation and update of Local Transport Planning guidance by end 2022. • National policy position for consolidation centres based on research. • Updates to National Design Guide, Manual for Streets and National Model Design Code
<p>4. Better Planning to Enable Optimisation: Government should produce new planning practice guidance on freight for strategic policy making authorities. The guidance should better support these authorities in planning for efficient freight networks to service homes and businesses as part of their plan making processes. This new planning practice guidance, which should be prepared by the end of 2020, should give further detail on appropriate considerations when planning for freight.</p>	<p>Mostly endorse</p>	<p>Future of Freight commits to:</p> <ul style="list-style-type: none"> • Call for evidence on freight planning issues, to inform planning reform opportunities. • Review Planning Practice Guidance to better support freight and logistics. • Consultation and update of Local Transport Planning guidance by end 2022. • Increase communication and engagement between freight industry developers and planning authorities.

<p>5. New and Better Data: Government should develop a data standard for freight data collection to support local authorities, outlining the requirements for technological capability, data requirements, and data format. Such a standard must seek to ensure consistent data quality and format across technologies to allow regional and national aggregation, and should be complete by the end of 2020.</p>	<p>Partially endorse</p>	<p>Future of Freight commits to:</p> <ul style="list-style-type: none"> • Test with industry agreed ‘proofs of concept’ for improving data exchange to identify data sources that will help to create many of the digital and connected services in the future for freight and logistics. • Work with industry to improve the valuation of freight methodologies used as part of infrastructure investment decisions.
<p>6. A New Status for Freight: Government should establish a new biannual ‘Freight Leadership Council’, inviting representatives from BEIS, DfT, MHCLG, DEFRA and HM Treasury, devolved administrations, all freight modes and parts of the supply chain. This Council’s main focus should be on strategic, long-term issues – specifically supporting decarbonisation of road and rail freight by 2050. This Council should hold its first meeting before the end of 2020.</p>	<p>Fully endorse</p>	<p>Future of Freight builds on the initial success of the Freight Council, established in June 2021, via the appointment of a strong independent co-chair and establishing delivery groups, to ensure an enduring partnership model capable of implementing Future of Freight.</p>

Annex C – End notes

- 1 National Infrastructure Commission, **Better Delivery the Challenge for Freight**, P7
- 2 Logistics UK, **UK Skills and Employment Report 2020**
- 3 National Infrastructure Commission, **Better Delivery the Challenge for Freight**, P5 and P10
- 4 National Infrastructure Commission, **Better Delivery the Challenge for Freight**, P12
- 5 Department for Transport, **Energy and Environment: Data Table - ENV0201 Greenhouse gas emissions by transport mode: United Kingdom**
- 6 Logistics UK, **The Logistics Report Summary 2021**
- 7 GOV.UK, **Freight Council**, The Freight Council is a cross-modal freight forum, chaired by Department for Transport Minister Trudy Harrison MP, to drive collaboration between government and the freight sector.
- 8 World Trade Organisation, **Evolution of trade under the WTO: handy statistics**
- 9 Statista, **Global Logistics Market Size in 2020 by region**
- 10 Yahoo finance, **UPS Market Data**
- 11 Yahoo finance, **Maersk Market Data**
- 12 Yahoo Finance, **Keuhne Nagel Market Data**
- 13 The World Bank, **Trade as a % of GDP Tables**
- 14 Logistics UK, **The Logistics Report Summary 2021**
- 15 The World Bank, **Logistics Performance Index – UK Scorecard**
- 16 Department for Transport, **Port Freight Annual Statistics: 2020**
- 17 HMRC, Trade in Overseas Goods Statistics (drawn from overseas trade data table- UK trade info)
- 18 Department for Transport, **Port Freight Annual Statistics: 2020**
- 19 Civil Aviation Authority, Freight by Airport Configuration Table 15
- 20 DLUHC, **Levelling up the United Kingdom**
- 21 Department for Transport, **Analysis of CAA UK Aviation 2019**
- 22 Civil Aviation Authority, **Annual Airport Data 2019**
- 23 Civil Aviation Authority, **Annual Airport Data 2019**
- 24 Ro-ro services carry unitised cargo in trailers that are rolled on and off a ship without the use of a crane.
- 25 Government Office For Science, **Future of Mobility: Understanding the UK Freight Transport System**
- 26 Department for Transport, **Domestic Road Freight Statistics - United Kingdom 2020**
- 27 Department for Transport, **Domestic Road Freight Statistics – United Kingdom 2020 -Table RSFS0104**
- 28 Mixed consignments: no single commodity makes up 75% or more of the consignment weight.
- 29 Office for Rail and Road & DfT, **Rail Freight (RAI04)**
- 30 Office for Rail and Road & DfT, **Rail Freight (RAI0401)**
- 31 Office for Rail and Road & DfT, **Rail Freight (RAI0403)**
- 32 Rail Delivery Group, **The Role and Valued of Rail Freight in the UK 2021**
- 33 Vivid Economics for National Infrastructure Commission, **The Value of Freight**
- 34 Department for Transport, **Port Freight Annual Statistics: 2020**
- 35 Department for Transport, **Road Freight Statistics 2021**
- 36 Office for Rail and Road & DfT, **Rail Freight (RAI04)**
- 37 Department for Transport, **Transport Decarbonisation Plan 2021**
- 38 Department for Transport, **Rail Freight Strategy**
- 39 UK Major Ports Group, **Public First public attitudes survey**
- 40 DLUHC, **Levelling up the United Kingdom**
- 41 ONS, **JOBS05: Workforce jobs by industry and region**
- 42 British Property Federation, **Levelling Up – The Logic of Logistics**
- 43 ONS, **The rise of the UK warehouse and the “golden logistics triangle”**
- 44 Department for Transport, **Port Freight Annual Statistics: 2020**
- 45 Civil Aviation Authority, Freight by Airport Configuration Table 15
- 46 DLUHC, **Levelling up the United Kingdom**
- 47 Department for Transport, **Union Connectivity Review: final report**
- 48 Cybertalk, **Ransomware Attacks on the Transportation Industry, 2021**
- 49 The Committee for Climate Change identified “Disruption to business supply chains and distribution networks” as one of 61 risks in the third UK Climate Change Risk Assessment (CCRA3).
- 50 Department for Transport, **Public Service Obligation Freight Scheme**
- 51 GOV.UK, **UK government action to reduce the HGV driver shortage**
- 52 National Infrastructure Commission, **Better Delivery the Challenge for Freight**
- 53 Department for Transport, **Government Response to Better Delivery: The Challenge for Freight**
- 54 UK Major Ports Group, **Public First public attitudes survey**
- 55 GOV.UK, **Freight Council**
- 56 Port of London Authority, Estimates of London Gateway initial costs and DPWORLD, Investment in New Fourth Berth at London Gateway
- 57 Peel Ports Group, **Liverpool2 Overview**
- 58 Department for Transport, **Port Infrastructure Fund: Allocations**
- 59 As part of broader DfT Road and Rail investment decisions, and road investment decisions by local and regional authorities.

- 60 Knight Frank, [Ecommerce growth driving record warehouse development in 2021](#)
- 61 DfT & DVLA, [Vehicle Licensing Statistics Tables \(VEH05\)](#)
- 62 Department for Transport, [Report on RIS1 Road Investment Strategy](#)
- 63 Department for Transport, [RIS2 Report](#) (N.B. Reduced at SR21 to £24bn)
HMT, [Autumn Budget and Spending Review 2021: A Stronger Economy for the British People \(p110\)](#)
- 64 Office for Road and Rail, [Periodic Review Final Determinations](#)
- 65 Department for Transport, [Rail Freight Strategy](#)
- 66 Department for Transport, [Freight train capacity doubles to Port of Liverpool thanks to £8.3 million line upgrade](#)
- 67 Network Rail, [Major boost for freight by rail as Southampton upgrade is completed](#)
- 68 Network Rail, [Network Rail Freight Maps](#)
- 69 Prologis UK, [Prologis RFI DIRFT](#)
- 70 GOV.UK Legislation, [Planning Act 2008 Part 3 NSIP Section 14](#)
- 71 Department for Transport, [Port Freight Annual Statistics: 2020](#)
- 72 Civil Aviation Authority, Freight by Airport Configuration Table 15
- 73 Network Rail, Freight Map – Intermodal Sector
- 74 Valuation Office Agency, Large Distribution Warehouse Floorspace.
- 75 Department for Transport, [Major Road Network and SRN Side by Side](#)
- 76 Network Rail, [Key Freight Corridors and commodity types map Freight UK Base Map](#)
- 77 Network Rail and National Highways, [Solent to Midlands Multimodal Freight Strategy](#)
- 78 Department for Transport, [Transport infrastructure for our global future: a study of England's port connectivity](#)
- 79 Department for Transport, [Mode Shift Revenue Support and Waterborne Freight Grant applications: overview](#)
- 80 BEIS, [Final UK greenhouse gas emissions national statistics: 1990 to 2020](#)
- 81 BEIS, [Final UK greenhouse gas emissions national statistics: 1990 to 2020](#)
- 82 BEIS, [Greenhouse gas reporting: conversion factors 2021](#)
- 83 BEIS, [Final UK greenhouse gas emissions national statistics: 1990 to 2020](#)
- 84 International Maritime Organisation, [Fourth Greenhouse Gas Study 2020](#)
- 85 BEIS, [Greenhouse gas reporting: conversion factors 2021](#)
- 86 International Maritime Organisation, [Fourth Greenhouse Gas Study 2020](#)
- 87 BEIS, [Greenhouse gas reporting: conversion factors 2021](#)
- 88 BEIS, [Greenhouse gas reporting: conversion factors 2021](#)
- 89 Office for Rail and Road, [Rail Emissions 2020-21 p6](#)
- 90 BEIS, [Greenhouse gas reporting: conversion factors 2021](#)
- 91 BEIS, [Greenhouse Gas Reporting: Conversion Factors 2021](#)
- 92 Frontier Economics, [Potential Demands on the UK Energy System from Port and Shipping Electrification A Report for the Department for Transport](#)
- 93 Department for Transport, [£200 million boost to rollout of hundreds more zero-emission HGVs](#)
- 94 SMMT, [Light commercial vehicle registrations](#)
- 95 Department for Transport, [Outcome and response to the consultation on when to phase out the sale of new, non-zero emission HGVs](#)
- 96 Department for Transport, [Exemptions to 2035 phase-out date for the sale of new non-zero emission HGVs 26 tonnes and under](#)
- 97 Department for Transport & OZEV, [Plug-in van and truck grant: eligibility and applications](#)
- 98 Office for Rail and Road, [Rail infrastructure and assets](#)
- 99 Direct Rail Services, Bimodal rolling stock
- 100 Network Rail, [The Traction Decarbonisation Network Strategy](#)
- 101 Department for Transport, [UKSHORE](#)
- 102 DPD, [Project BREATHE](#) Department for Transport, [Port Air Quality Strategies](#)
- 103 Clipper Logistics, [Volta Trucks, The Crown Estate and Clipper Logistics partner to decarbonise Central London retail distribution](#)
- 104 Tesco, [Tesco powers into the new year with the UK's first commercial electric articulated HGVs](#)
- 105 Department for Transport, [Tees Valley multi-modal hydrogen transport hub](#)
- 106 Office for Rail and Road, [Rail infrastructure and assets](#)
- 107 Network Rail, [The Traction Decarbonisation Network Strategy](#)
- 108 Department for Transport, [Transport Statistics Great Britain – Freight \(TSGB04\)](#)
- 109 British Property Federation, [Levelling Up – The Logic of Logistics](#)
- 110 British Property Federation, [Levelling Up – The Logic of Logistics](#)
- 111 City of London, [City of London Corporation teams up with Amazon to cut delivery vehicles and improve air quality](#)
- 112 BBC News, [Isle of Wight NHS trust trials drones for chemotherapy deliveries](#)
- 113 BBC News, [Leeds inland port plan approved](#)
- 114 Milton Keynes Citizen, [Milton Keynes' famous robots spread their wings to deliver in Cambridgeshire](#)
- 115 ONS, [Vacancies and jobs in the UK: February 2022](#)

- 116 Logistics UK, [Logistics UK Skills and Employment Advice Hub](#)
- 117 Logistics UK, [Survey shows skills shortages are growing across the logistics industry](#)
- 118 ONS, Online job advert estimates
- 119 ONS, Online job advert estimates
- 120 Department for Transport, [Transport labour market and skills](#)
- 121 Logistics UK, [The Logistics Report Summary 2021](#)
- 122 Intecor, [Milestone 11 – Pilot Operation Finalised](#)
- 123 Department for Transport, [Freight Carbon Review 2017](#)
- 124 MIT Centre for Transportation & Logistics, [Analytics of the Future: Predictive Analytics](#)
- 125 BEIS, [UK Innovation Strategy: leading the future by creating it](#)
- 126 Transport Technology forum, [Connected Places Catapult aiming to transform the use of freight and logistics data to inform investment and policy decisions](#)
- 127 Retail Tech Innovation Hub, [wilko invests £3m in autonomous deliveries venture StreetDrone](#)
- 128 BEIS & CCAV, [UK connected and automated mobility: call for evidence](#)
- 129 Transport Technology Forum, [DfT Funded Connected ITS Demonstrator Projects](#)
- 130 Health and Safety Executive, RIDDOR annual average 2016/17–2020/21
- 131 Health and Safety Executive, LFS, annual average 2013/14–2020/21
- 132 Department for Transport, [Reported road accidents, vehicles and casualties tables for Great Britain \(RAS20001\) 2019](#)
- 133 Department for Transport, [Outcome and response to the consultation on when to phase out the sale of new, non-zero emission HGVs](#)
Department for Transport, [Exemptions to 2035 phase-out date for the sale of new non-zero emission HGVs 26 tonnes and under](#)
- 134 International Maritime Organisation, [Fourth Greenhouse Gas Study 2020](#)

