FUTURE OF FREIGHT

Interim report

NATIONAL INFRASTRUCTURE COMMISSION

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Contents

Foreword

At the core of the modern way of living, working and doing business is the understanding that we can have anything we need or want – clothes, food, widgets – from anywhere in the world, delivered to our doorstep, corner shop or assembly line in weeks, days or even hours, often at a cost so low that we barely give it a moment's thought.

The fact that the freight system rises to the challenge and gets goods from A to B, all year round, on time or just in time, mostly unnoticed by the public, is something of a modern marvel.

Over the past year the Commission has been undertaking the freight study, investigating how the freight system should respond to the challenges of carbon and emissions, congestion and technology, while remaining commercially efficient and continuing to satisfy consumer expectations.

The UK's freight system is one of the best in the world, but there is a major problem. The negative impacts of freight – carbon emissions, poor air quality and congestion – need immediate focus and coordinated action. We should not accept that the challenge of cleaning up freight is something for another time.

We set out our interim findings from the continuing study in this report, considering how regulation and land use planning affect and shape freight.

This report is a staging post. In the final phase of this study we will outline how infrastructure, emerging technologies and innovative approaches can be used to manage the impacts of emissions and congestion associated with freight, to create a sustainable freight future.

We are grateful to the many organisations and individuals who have engaged with the Commission's work so far, and for the constructive engagement from all parts of the industry. We look forward to continuing the conversation as we prepare our recommendations.

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In brief

The UK's freight system is one of the best in the world, providing a high quality, low cost service to businesses and consumers. But cost is not the only measure of performance. Freight also produces negative by-products such as congestion, carbon emissions and particulate matter. Left unchecked, these cause harm to society and are a drag on the UK's prosperity.

The Commission's central finding is that without action, freight's contribution towards congestion and carbon emissions will remain problematic. Acceleration of technological advancements and clear, firm, long term targets will be key to tackling this. A more coordinated approach within and between different tiers of government, based on better data, will be crucial to getting this right.

Regulatory certainty to drive change

A sustainable freight system will require change and innovation. Regulations can play a key role in driving that change, and should be designed to actively encourage innovation at pace. In particular, providing early clarity and commitment on long term objectives and the regulatory changes needed to achieve them will be essential in giving the freight industry the imperative and confidence to take action.

The forgotten element of spatial planning

An absolute focus on delivering homes without consideration of how freight will service growth will be of detriment to both housing and freight. Without better recognition of the value of freight in planning, the freight system will encounter more pinch points, restricting its capacity to operate efficiently and deliver goods in the most sustainable way possible.

Data for informed decision making

Data is a fundamental requirement of good policy making, but the quality of freight data available to policy makers is mixed and, in places, almost non-existent. Policy makers need better data for freight if they are to produce outcomes that work for freight and society.

The Commission will discuss the areas outlined in this report further with stakeholders in the coming months, to help inform the freight study's final report into how to deliver a sustainable, low carbon freight system.

Executive summary

In November 2017, the Chancellor asked the National Infrastructure Commission to provide the government with advice on the actions it should consider to support an efficient and low carbon freight system over the next 30 years, including the approaches needed to help manage the impacts of emissions and congestion associated with freight.

Over the past year, the Commission has sought to understand the UK's freight system, including its challenges and benefits, and the national policy context. In doing so, it has engaged with stakeholders across the whole of the freight system, including operators, customers and regulators as well as national and local policy makers. This engagement has been informed by the 71 responses received to the study's Call for Evidence.

This interim report focuses on the levers that government can use to influence the freight system and how they could be better coordinated to deliver a sustainable freight system that is fit for the future.

The Commission's central finding is that without action, freight's contribution towards congestion and carbon emissions will remain problematic. Acceleration of technological advancements and clear, firm, long term targets will be key to tackling this. A more coordinated approach within and between different tiers of government, based on better data, will be crucial to getting this right.

The findings and concepts in this report will be tested further with industry, local authorities, government and other stakeholders to help inform the Commission's final report, which will include recommendations on how policy, infrastructure and technology can be collectively harnessed to manage freight congestion and reduce harmful emissions.

The case for change

Freight is the lifeblood of the UK's economy and society. It operates around the clock, 365 days a year, using all modes of transport to enable everyday life. The UK has one of the most efficient freight systems in the world,[1]* moving an estimated 1.6 billion tonnes of goods in 2016.[2] Imports move through our sea and air ports before being transported to central distribution hubs and then to edge of town distribution centres, before final delivery to the end user – all to meet the needs and wants of businesses and consumers.

* The World Bank's Logistics Performance Index (LPI) analyses the efficiency of a country's logistics performance using several quality indicators, including the efficiency of customs and border management clearance; the quality of trade and transport related infrastructure; and the competence and quality of logistics services. The UK has an LPI of 3.99, the 9th highest score. Germany has the highest LPI score of 4.20.

However, despite gradual improvements in vehicle efficiency, freight still creates harmful emissions. Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs – vans) only constitute 21 per cent of the total vehicle mileage in the UK, but cause 31 per cent of the UK's greenhouse gas emissions from transport and 30 per cent of nitrogen oxide (NOx) pollution from transport.[3] HGVs comprise 25 per cent of road use on motorways[†] and although, in total, freight is a much smaller component of urban traffic, it is a considerable proportion of traffic in London at peak times, with HGVs and LGVs making up a third of traffic entering the Congestion Charge Zone in the morning peak.[4] [5]

A highly competitive marketplace and tight profit margins already provide incentives for the freight industry to drive out excess cost from operations. However, the incentives to reduce environmental impacts and other harmful effects are limited. Left to industry alone, these will not be prioritised or fully addressed.

The freight system is at a crossroads, on the cusp of major technological change. Significant advances towards clean fuels, data availability, automation, and artificial intelligence could all rapidly change the costs and the by-products of freight. With technology and innovation on heavy vehicles developing more slowly than for lighter vehicles, there remains a great deal of uncertainty over which technologies will prevail in the coming years. However, ambitious and determined action, coordinated across government, could help accelerate freight towards a zero carbon and congestion neutral future.

The terms of reference for this study make clear that matters relating to border controls and customs, and the UK's exit from the EU, are out of scope. However, the international nature of freight and the fact that in 2016 over half of the international tonnage handled in the UK relates to trade with the EU means that freight – at least in the short term – will be affected in some way by Brexit.[6] The Commission's freight study looks ahead towards 2050, and therefore does not cover the immediate aftermath and early years after Brexit. In the longer term, demand for freight will still present issues that need to be tackled regardless of the UK-EU relationship, and action will still be required.

Regulatory certainty to drive change

Enabling a low emissions freight system that manages its impacts on congestion will require change and innovation. It is important that regulations encourage developments in operations and technology and drive change for the better. Providing clear outcome based targets, greater regulatory certainty and space for innovation into the medium and long term can help ensure compliance and deliver change faster. Supporting technological development through initiatives like trials of lorry platooning and dispensations to enable real world testing of self-driving

[†] Figure calculated by multiplying the number of miles by each vehicle type (as outlined in the Department for Transport's statistics table TRA0104) by the equivalent amount of passenger car units (PCUs), totalling 80.53bn miles. HGVs equate to 2.5 PCUs, resulting in 19.75bn miles equivalent – 24.52% of the total vehicle miles by PCU equivalent, expressed as a measure of road use

vehicles are both positive steps towards helping change occur – but a piecemeal response will not encourage change at pace.

Future objectives, standards and rules need early communication and stable commitment to provide the freight industry with the confidence to invest in change. Whilst local areas need to develop solutions to tackle their specific issues, harmonisation and clarity are important for freight planning and effective operation. Greater Manchester and West Midlands Combined Authorities' liaison on their respective upcoming Clean Air Zones is an example of good practice, but more needs to be done across all areas of regulation.

The forgotten element of spatial planning

Growing demand for faster, cheaper, and more convenient deliveries means planning for freight is ever more important. Delivery of new houses naturally remains the priority for local areas. Yet, whilst certain essential services required for balanced and sustainable communities – such as schools and medical centres – are planned for, freight is overlooked. National policy for planning and development has only two references to freight, and local authorities rarely have the resources or expertise to properly consider freight in their areas.

Areas of London are now suffering the consequences of failing to plan, with demand for freight sites significantly outstripping supply. Active policies to protect space for freight and innovative approaches to land use such as multi storey logistics must now be deployed. Other land constrained towns and cities are not yet in the same situation, but without action now they risk facing the same problems.

Failing to plan and protect land for freight can result in logistics operators 'sprawling' further from the centres of towns and cities, moving further from their end customers and increasing delivery mileage, emissions and congestion. Although the issue lies mostly at the local level, solutions through national frameworks could help head off future problems.

Data for informed decision making

Without up to date and reliable data it is difficult to understand the freight system and the effectiveness of potential interventions. Detailed freight data (particularly the routes operators take) is usually not available to policy makers, and where it is, quality is mixed. Surveys by the Office of Rail and Road (ORR) and Department for Transport (DfT) provide some insight into industry behaviour, but this is only a partial picture.

With LGV traffic growing faster than any other type of vehicles, understanding van operator behaviour is crucial.[7] However, up-to-date data is almost non-existent. New LGV surveys would provide a useful snapshot, but the lack of movement data means it is difficult to understand issues in detail. Through the utilisation of new technologies such as mobile data and intelligent Automatic Number Plate Recognition (ANPR), there are opportunities to capture movement data quickly and

at scale – helping to provide local areas with relevant information that can be used to deliver informed policy choices.

Next steps

This interim report outlines what the Commission believes are the issues that create operational or environmental impacts or slow progress towards efficiency in the UK's freight system. Delivering the right regulatory environment, certainty, and ensuring proper planning of freight are fundamental aspects of enabling lasting change. The Commission will explore these areas further, alongside wider work on future freight demand, the drivers of efficiency, alternative fuels, and congestion management, to produce a final report outlining the action that government and industry will need to take to deliver a clean, competitive and adaptive freight system that works for the future.

1 The case for change

Despite being cost efficient, freight activity has a range of negative consequences. All major forms of freight create harmful emissions that reduce air quality and contribute towards climate change. Freight contributes to congestion, and congestion affects the quality of freight services to customers. There is unlikely to be a single approach to reducing the harmful effects from the freight system. However, emerging technologies and alternative fuels could play a substantial role in reducing emissions and it is likely that a mixture of policy and disruptive technology will help in reducing other unwanted by-products.

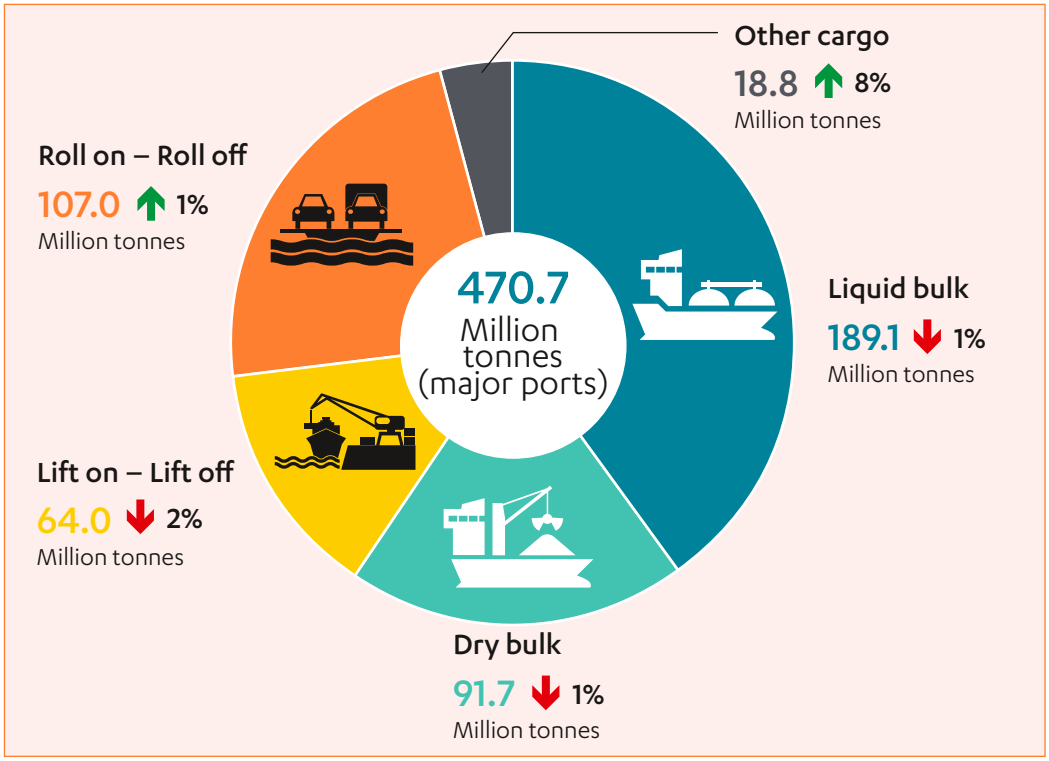
The freight system

Freight traditionally refers to the movement of goods from one location to another; it is a derived demand, meaning that it is a consequence of demand for other goods, rather than one required for its own sake. However, this study examines the 'system' of freight in the UK. By doing so, the scope has looked beyond the transport of goods to include how it interacts with a broader set of processes relating to supply chains and logistics, including coordination, management and storage.

Freight is an international business with supply chains spanning the globe. It is a complex network serving a range of markets simultaneously, with ships and planes often loading and unloading at multiple destinations during their journey to maximise the efficiency of the vessels and aircraft.

The UK's coastal ports are the principal gateway to our economy, handling 95 per cent of the country's imports and exports by weight in 2017 and the vast majority of the UK's international road freight. The weight of freight handled by UK ports peaked in 2005 at 585 million tonnes before declining to 481 million tonnes in 2017,[8] due mainly to the reduction in the movements of fossil fuels, particularly North Sea oil and gas exports.

Figure 1: UK major port freight, by cargo type (2017)[9]



Air freight transports less than one per cent of UK trade by tonnage but represents approximately 40 per cent of UK trade by value with non-EU countries.[10] Almost 70 per cent of air freight by weight travels in the 'belly holds' of passenger jets, rather than in dedicated freight aircraft.[11] This means that freight movements tend to be concentrated at the airports with the greatest number of long haul passenger flights. As such, Heathrow is the UK's hub for air freight movement, with around 86 per cent of UK belly hold air freight passing through it, which accounts for 65 per cent of all air freight in the UK.[12] [13] East Midlands and Stansted Airports are the UK's hubs for dedicated freight aircraft.

Although there is international rail freight travelling between the UK and continental Europe (with around 4.5 per cent of international goods by weight flowing through the Channel Tunnel, in HGVs and containers),[14] it is currently a small flow overall.

Tackling international problems

Both air and sea freight emit greenhouse gases (GHG) in significant quantities. In 2011 shipping produced around three per cent of global CO2 emissions and 2.1 per cent of UK GHG emissions, and aviation's emissions were over two per cent of global GHG emissions and 5.9 per cent of UK GHG emissions.[15] [16] It is clear that emissions must be reduced from these sources. However, the vast majority of emissions from air and sea relate to international voyages.

It is difficult to understand the precise environmental impacts of freight. For aviation, this is because so much freight is carried in the belly holds of passenger aircraft

and it is difficult to apportion the emissions between passenger travel and freight transport.[17] For ships, the relative impacts of emissions on the UK from shipping is greater than across other areas of Europe because of the UK's proximity to major shipping lanes.[18]

Although this study recognises the importance of these modes to the UK's freight system and the negative by-products they produce, unilateral action from the UK is unlikely to be as effective as work through multilateral forums such as the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO), where agreements such as halving shipping emissions by 2050, and the Carbon Offsetting and Reduction Scheme for International Aviation, have already been achieved. The Commission's focus is therefore on domestic modes of freight transport, where the UK government has ultimate competence and responsibility.

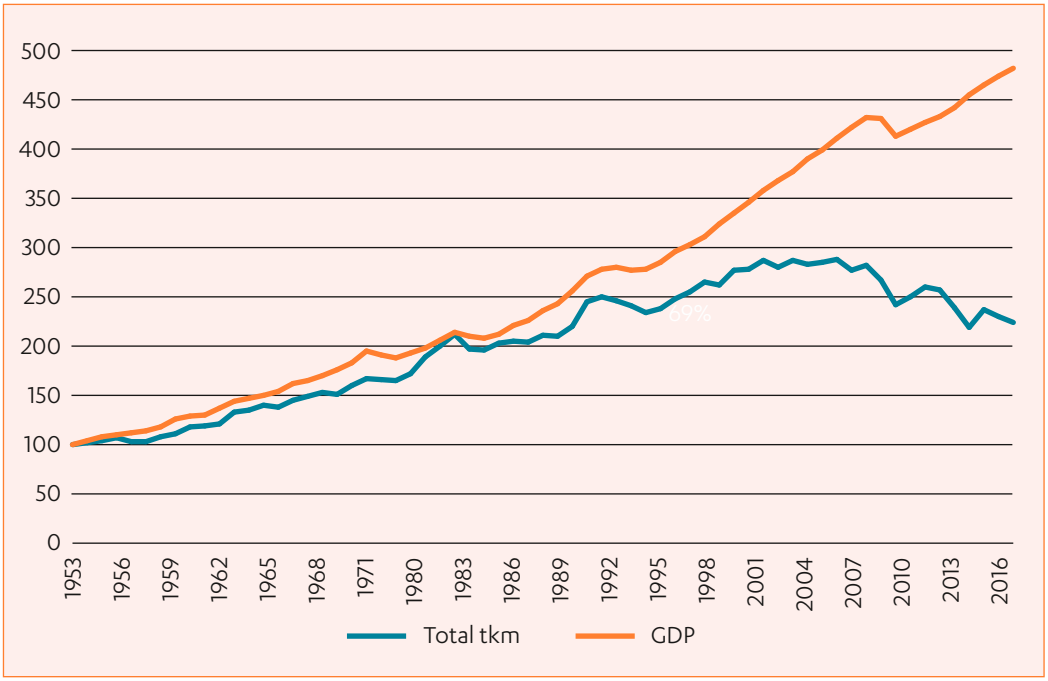
Domestic freight

In 2016, an estimated 1,472 million tonnes of goods were moved by road and rail freight in the UK.[19] The UK's freight and logistics sector comprises around 195,000 enterprises, employing 2.5 million people and contributing £121 billion gross value added (GVA) to the economy.[20]

The quantity of freight transported in the UK has increased over time, with distance travelled increasing more quickly than the volume of goods transported. Since the mid 1990s, the growth in total tonne kilometres[‡] has been at a lower rate than Gross Domestic Product (GDP), showing a decoupling of UK GDP and the intensity of freight activity.[21]

‡ Tonne kilometres, abbreviated as tkm, is a measure of freight transport which represents the transport of one tonne of goods (including packaging and tare weights of intermodal transport units) by a given transport mode (road, rail, air, sea, inland waterways, pipeline etc.) over a distance of one kilometre. It is calculated by multiplying the weight of goods carried by the distance carried.

Figure 2: UK GDP and tonne kilometres, 1953–2015 (indexed, 1953=100)[22]



The majority of freight within the UK is moved by road, equating to more than three quarters of goods moved. In 2017 HGVs moved 147 billion tonne kilometres of goods.[23] HGVs only constitute five per cent of the total vehicle mileage in Great Britain but they contributed 16 per cent of the UK's greenhouse gas emissions from transport in 2014.[24] LGVs have been the fastest growing source of road transport demand in percentage terms, with van kilometres rising by 67 per cent in the past 20 years (car and HGV kilometres have increased by 12 per cent and two per cent respectively).[25] LGVs travel 15 per cent of total vehicle miles and emit 16 per cent of transport greenhouse gas emissions.

Long haul distribution§ only involves around 18 per cent of all HGVs, but accounts for most road freight mileage and contributes between 44 and 46 per cent of HGV greenhouse gas emissions. Regional distribution¶ involves 29 per cent of HGVs, contributing between 24 and 45 per cent of HGV greenhouse gas emissions.[26] These tasks tend to use the largest vehicles and it is therefore unsurprising that they are the largest emitters.** However, their disproportionate contribution to emissions (considering HGVs only make up five per cent of total GB vehicle miles) also means that there could be a substantial opportunity to decarbonise and reduce the harmful impacts of these activities.

Urban freight, sometimes referred to as the last mile of freight, is the most labour intensive and least efficient part of the supply chain.[27] [28] Almost all urban freight travels by road, mostly (but not exclusively) in HGVs and LGVs.[29] Only around six per

§ Long haul: Delivery to national and international sites (mainly highway operation and a small share of regional roads).

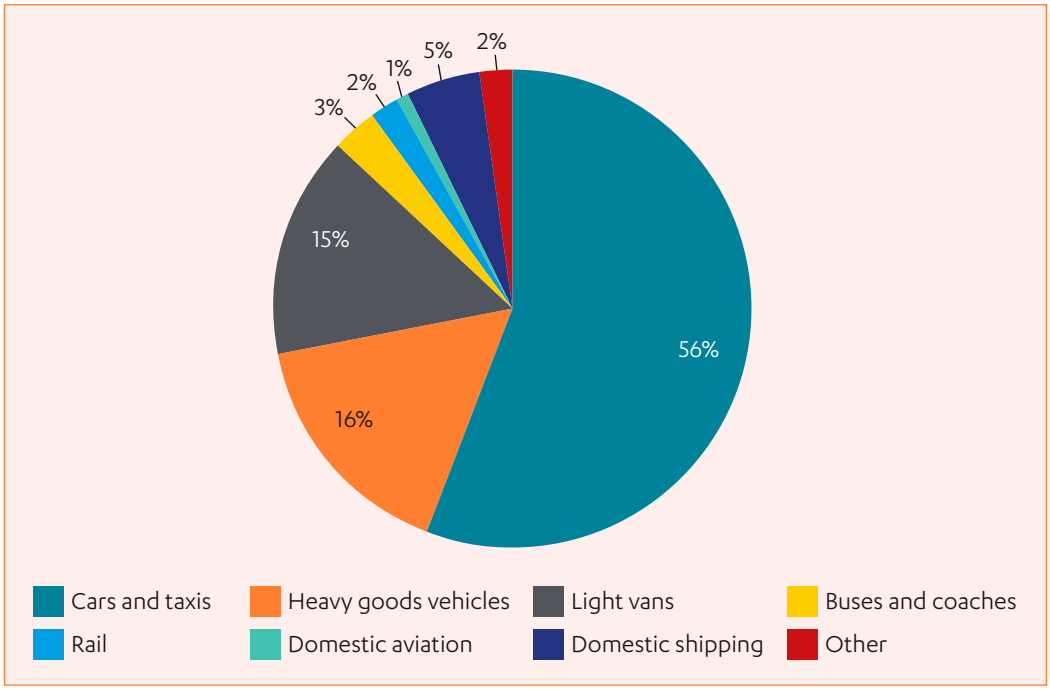
¶ Regional: Delivery of consumer goods from a central warehouse to local stores (inner-city, suburban, regional and also rural and mountainous roads).

** The remaining 53 per cent of HGVs are involved in construction (22 per cent of HGVs, 15-16 per cent of HGV emissions), urban delivery (21 per cent of HGVs, 10-12 per cent of HGV emissions) and municipal utility activities (10 per cent of HGVs, four per cent of HGV emissions).

cent of total freight kilometres in 2016 were for urban distribution, however this is where around 30 per cent of logistics costs are incurred and where levels of CO2 per tonne moved are highest.[30] [31] Given the concentrated harmful effects, high cost and inefficiency of urban freight relative to the rest of the supply chain, it is an area where emerging technologies could deliver significant change over the coming decades.

Rail freight moves nine per cent of goods in the UK, with 17.2 billion net tonne kilometres of freight moved on the railways in 2016.[32] Since 2013/14 rail freight volumes and revenues have been affected by the sharp and rapid fall in demand for the haulage of coal for electricity generation, making these the lowest volumes since the late 1990s. However, rail is inherently more energy efficient. Per tonne kilometre, rail emits only about a quarter of the CO2 than that of road freight.

Figure 3: Domestic UK transport greenhouse gas emissions by transport mode (2016)[33]



In addition to greenhouse gas emissions, freight traffic also contributes to poor air quality, which is particularly concentrated in urban areas. 13 per cent of nitrogen oxide (NOx) pollution from road transport sources came from HGVs and 32 per cent from LGVs. In 2016, HGV and LGV tailpipe emissions together accounted for 11 per cent of PM10 and 17 per cent of PM2.5 pollution from road transport.[34]

Emissions from road freight – greenhouse gases, NOx, and particulates – are all expected to fall over the next five to six years mainly because of improvements in engine technology such as EURO VI compliant engines and better fuel efficiency.[35] The Government's Road to Zero strategy outlines a number of schemes that aim to further reduce road freight emissions – such as a voluntary 15 per cent reduction of greenhouse gas emissions by 2025, research projects with Highways England assessing the opportunities for zero emissions technologies for HGVs, and potential reform to Vehicle Excise Duty (VED) to encourage uptake of the cleanest vans.[36]

According to the Committee on Climate Change's assessment, further policy action is needed to meet the 4th and 5th carbon budgets (2023-2032). Although sector specific targets have not been included, it is clear that there remains a policy gap on achieving emissions reductions on freight.[37] To date, firm targets or plans that achieve either these budgets or zero emissions from freight do not exist. Voluntary targets provide limited impetus for change and no long term clarity. Reducing operating costs of electric vans does not tackle issues of capital costs such as installation of charging systems at depots. Whilst there is government ambition to reduce carbon emissions from rail, the pathway to a zero emission future remains unclear. Without determined and ambitious action from government, change will be slow.

Whilst there is unlikely to be a single approach to reducing the environmental impacts of the freight system as a whole, it is almost certain that technology will be a significant aspect of the solution. In certain areas there is greater clarity and certainty over decarbonisation. The transition to electric power has already started for LGVs, with some firms proving that it is possible to solely use electric vans. By contrast, the options for decarbonising heavier vehicles remain much more open – electrification and hydrogen are both potentially viable solutions. Different measures will be more applicable to specific sectors, locations and components of the freight system.

The Commission will make specific recommendations on how technology and alternative fuels can be harnessed to reduce the environmental impacts of domestic freight transport in the study's final report in spring 2019.

Congestion

Freight transport both contributes to congestion and is a victim of it. Congestion tends to occur at pinch points on road and rail networks, particularly where long distance traffic meets local traffic and around major interchanges such as ports and airports. Freight is a significant component of road traffic generally and its contribution is magnified by slower speeds, longer braking distances and involvement in a disproportionate percentage of incidents.[38]

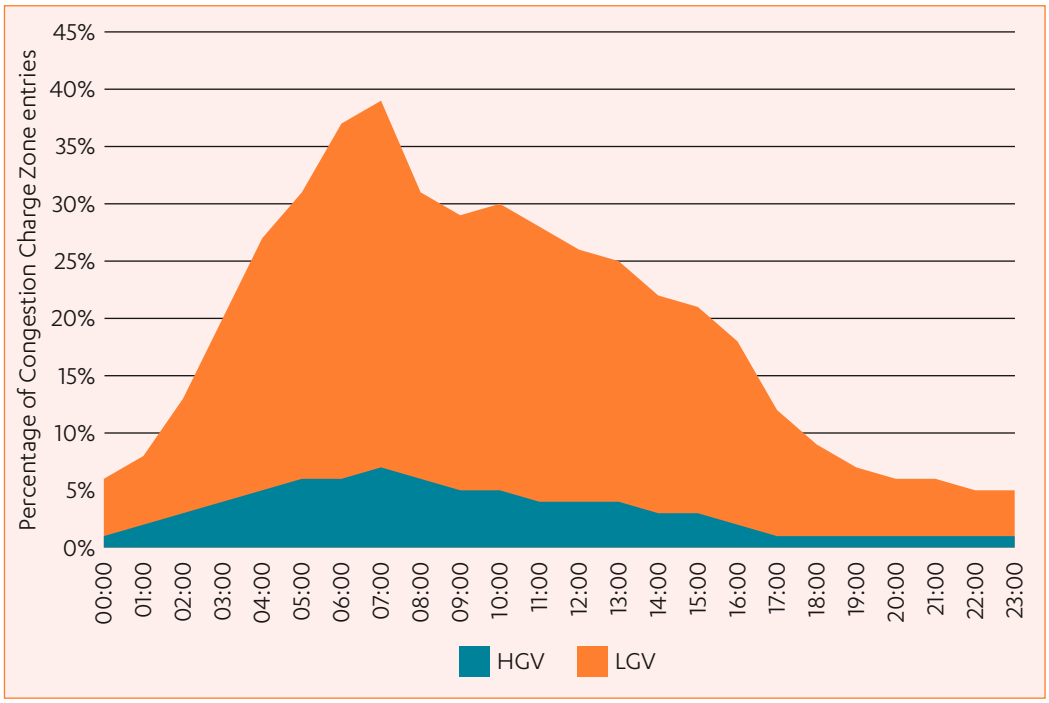
Freight congestion cannot be considered in isolation from general congestion and the wider demand for road and rail space. Freight's specific contribution to road congestion is complex. HGVs are disproportionately concentrated on the Strategic Road Network (SRN). Only five per cent of all vehicle miles were completed by HGVs in Great Britain in 2017, but this percentage increases to 11 per cent of mileage on motorways and nine per cent of mileage on urban and rural A roads.[39] Once translated into road capacity, HGVs occupy space equivalent to 2.5 Passenger Car Units (PCUs). Using this measure, HGVs account for 12 per cent of traffic across all roads in Great Britain, 25 per cent of traffic on motorways, and 19 per cent of traffic on urban and rural highways.[††40] There is limited evidence to suggest that HGVs are a significant contributor to congestion and, given the ratio of cars to HGVs on the

†† This uses 2017 road traffic estimates and multiplies them by 2.5 to convert them to Passenger Car Unit (PCU) equivalents, as is done for the purposes of traffic modelling.

UK's roads, it is likely that congestion caused by the insufficient capacity of a route is at least as much, if not more so, due to the volume of cars as HGVs.[41]

By contrast, HGVs are a small component of urban traffic, making up only two per cent of vehicle miles, or four per cent of traffic (again, as measured by counting each HGV as 2.5 cars), on urban roads. However, HGVs, and in many cases LGVs, have a disproportionate effect on urban congestion, particularly where they are stationary (when loading or unloading) and because of the difficulty manoeuvring them in constrained areas.[42] Data from London suggests that freight vehicles (HGVs and LGVs) are particularly active at peak times – the Greater London Authority states that a third of central London's traffic in the morning peak is HGVs and LGVs (though it is recognised that a significant proportion of LGVs could be for other purposes).[43]

Figure 4: HGVs and LGVs as a proportion of all vehicles entering the central London Congestion Charging Zone on weekdays (2016)[44]



The impacts of congestion on freight itself are hard to quantify, because there are many different factors which affect how much a delay 'costs', including the type of load carried, whether the load enables another part of a supply chain or not (a delay of a delivery of car parts could mean stopping an assembly line, for example), and the time at which the customer needs the goods. The way that congestion costs are quantified on freight for transport appraisal are based only on the hourly cost of a driver plus the vehicle, amounting to little more than £20 per hour, whereas the Freight Transport Association estimates it costs operators £1 per minute to operate an HGV.[45] [46] Neither of these figures capture the potential costs of the delay to the goods being transported, particularly in the context of supply chains (in both production and consumption) which have become increasingly dependent on just in time deliveries. Jaguar Land Rover recently stated it costs £1.25 million for every hour that production is halted.[47]

Rail congestion is different to road congestion because the railway is a timetabled network. The timetable is strictly controlled and the number of trains operated on the network is kept within the level which can be safely handled by the network. Rail congestion is often better considered as an issue of rail capacity, which itself is determined by a range of factors, including the number of tracks, signalling, train characteristics, loading gauge and the layout of junctions and terminals, as well as decisions on the allocation of rail paths for freight.[48]

Congestion is a broader societal problem, and tackling freight congestion will not solve the overall problem of congestion. However, freight, in some circumstances, contributes disproportionately to congestion, and action to manage its impacts through better planning and innovative last mile delivery techniques in urban centres could be an important step in managing congestion.

The Commission will make specific recommendations on managing the impacts of congestion, looking at the effectiveness of congestion management methods and alternative approaches to delivery, in the final report.

2 Regulatory certainty to drive change

The regulatory environment is a driving factor in shaping the choices that freight operators make, and helps ensure change on issues such as safety and emissions. Timely clarity over the rules to come, providing space for technological innovation, and consistency across boundaries can help ensure positive and proactive change from within the freight industry, providing long term solutions that manage freight's harmful by-products with minimal consequential impacts on its efficient operation.

The regulatory environment refers to the rules that freight operators must adhere to as part of their business and is therefore one of the primary factors that affects the way in which their business can operate. How a fleet of lorries runs, the routes that drivers can take, the times of day different operations can take place and the weight of a vehicle are all subject to regulation. Done well, regulation acts as an important protection for both those within the industry (such as train and lorry drivers), other road and rail users, and the wider population. Done poorly or without enough consideration of the wider impacts on freight operators' ability to adapt to meet new rules, regulation can have a stalling effect on change, and create new or worsen other issues – such as higher congestion from more vans due to HGV restrictions.

The regulatory landscape

Regulation for freight in the UK comes in several different forms, each with separate authorities implementing them, varying practices across areas, and different penalties for non-compliance. It is a complicated system not only due to the variety of parties involved in delivering and enforcing it, but because of the scale of what it seeks to control. Regulation is a mechanism used to manage market failures, which include controlling harmful by-products such as carbon, congestion and noise levels, but also ensuring safety, controlling access to streetscape and other infrastructure, across all modes of transport and areas such as land use.

At the national level, government, along with the Office of Rail and Road, Civil Aviation Authority, and the International Maritime Organization provide the regulatory framework and rules governing the transport network, which includes both rules specific to freight and rules that indirectly affect freight. For HGVs, for example, EU and domestic rules include those on maximum driving hours, the use of a tachograph to record all driving hours, vehicle height, weight and length limits, and restrictions on the type of loads that can be carried.

At a sub national and local level, bodies such as Combined Authorities and local authorities can set regulations that apply specifically to their local areas in relation to things like air quality, loading and parking restrictions, and times of operation of freight facilities. Each authority can set its own rules according to its local situation and requirements in accordance with allowance under law and devolution agreements.

Regulation to encourage innovation

The technological advancements affecting freight are happening in a variety of areas with a wide range of vehicle technologies, warehouse automation, and port automation trials underway or beginning to be adopted. The regulatory framework and rules must adapt to accommodate and, ideally, encourage such advancements. The Commission's own Roads for the Future competition sought to instigate thinking on how roads should adapt to the challenge of Connected and Autonomous Vehicles (CAVs).

Some progress is being made, such as the change to allow standard category B licence[‡‡] holders to drive electric vans up to 4.25 tonnes (to accommodate the battery weight) and the controlled highway trials of lorry platooning, which start next year. Although all such initiatives are positive, tackling regulation through a piecemeal approach as technologies emerge may mean regulation is continuously playing catch up.

Beyond planning for changes in existing forms of transport, the range of innovative delivery methods being considered and trialled for both urban and rural deliveries introduces alternative forms of transporting goods that at present have little to no regulation. Delivery drones and droids (aerial and ground based), e-cargo bikes, and more basic approaches such as human portering will all have impacts on the freight industry, infrastructure, and society. They will create new challenges such as pavement use rights, noise levels, and new safety requirements to ensure operations protect both operators and the public – all of which will require some form of common control and standards. It is important to consider the regulatory requirements of new approaches as they are starting to emerge, when there is a genuine opportunity to ensure good working practices and the minimisation of harmful by-products from the start.

"One of the key outcomes looking out to 2050 is an efficient regulatory framework which ensures that logistics policy issues are considered holistically across regulatory bodies, modes and geographies to ensure maximum efficiency."

FTA response to NIC Call for Evidence

‡‡ A category B licence allows individuals to operate vehicles up to 3.5 tonnes maximum gross weight.

If the UK is to decarbonise freight there may be a case for a more streamlined approach to foster new technology trials at a faster pace. As part of the research into alternative urban delivery methods and alternative fuels for freight, the Commission will consider how regulation can adapt to encourage the advancement of new technologies, including through the use of mechanisms like the Ofgem regulatory sandbox.

The effect of uncertainty on freight

Through conversations with industry, the Commission has heard that regulatory uncertainty acts as a brake on the industry's pace of change – most often this uncertainty relates to the type of vehicle and/or fuel to use. Uncertainty in any industry will affect investment decisions and potentially slow progress until clarity is provided. However, this is particularly true within the freight sector where vehicle investment can represent a very significant proportion of turnover, particularly for smaller operators.

Uncertainty and change within any complex system is somewhat expected as the environment around it changes. Currently, there is significant uncertainty on freight regulation, particularly around the introduction on Clean Air Zones in the cities of Birmingham, Derby, Leeds, Nottingham and Southampton, where the High Court has mandated action as soon as possible to tackle the air pollution in those cities. Whilst it is not disputed that it is right to improve the air quality and protect the health of the populations in the affected areas, the timeframes for the implementation of the Clean Air Zones (five years in total, from announcement to implementation, with the Clean Air Zone plans to be developed and consulted on, and signed off by government within that period) create significant challenges for both the areas designing schemes and the freight industry that will be strongly affected by them. The government's analysis calculated that the cost of compliance with Clean Air Zones would be £1 billion of fleet adjustment costs, of which £455m would fall on businesses.[49]

The lack of clarity on standards and the speed that the freight industry would be required to change – in some cases there will be less than two years between the announcement of the Clean Air Zone standards and implementation of the Zone – has created uncertainty over what solution the industry could adopt. With no retrofit technology available to upgrade older vehicles to EURO VI standards, hauliers have the choice of buying new vehicles, paying a daily charge to enter the zones, or transferring goods to smaller vehicles which may be exempt from the schemes. With new compliant lorry tractor units generally costing more than their equivalent EURO V counterparts, and a four per cent profit margin reported by the top 100 haulage firms,[50] selling vehicles and being able to afford a new one may not be a viable option for many. The potential outcome could be delays to meaningful improvements in air quality for residents.

Better planning at an earlier stage could have helped reduce or even eliminate the uncertainty around Clean Air Zones and ensure higher levels of compliance from day one. The government is now beginning to outline longer term plans and

strategies across key sectors, such as through the Road to Zero publication, the upcoming Maritime 2050 strategy, and the recently published aviation strategy. However, if such strategies are to be effective they must outline firm objectives and clear targets. This in turn would help to encourage the freight industry, vehicle manufacturers, and other key players in the system to begin planning and innovating, in preparation to meet the changes required.

The freight study final report will look at how and where long term planning can help support aims such as a low or no carbon freight system, and the level of clarity and commitment required from government to help deliver faster change.

Harmonisation and coordination

Sub national level, county, city, and local authorities set rules of operation and restrictions on freight to help manage its impacts and serve the community. Each area has their own specific issues to manage based on their economic activity, geography, population and infrastructure quality. Whilst this in itself is not an issue, the disparity and variety of rules and restrictions between different areas of all scales can mean freight operators make inefficient choices. As mentioned previously, the planned introduction of Clean Air Zones in certain cities (largely being done in isolation) means that freight operators may not be able to take the most efficient route for deliveries to ensure compliance with different zone rules. There is some positive acknowledgement of the need to harmonise from the West Midlands and Greater Manchester Combined Authorities, who are liaising over the design of their Clean Air Zones and how these can work in a complementary fashion. However, the majority of road haulage stakeholders engaged by the Commission state the lack of clarity around the operation of different zones and the speed of introduction is currently the key uncertainty affecting the haulage industry.

Although the issues covered relate to local decisions there may be a role for a stronger Clean Air Zone framework and other guidance going forward, to help ensure a consistent approach across boundaries. The Commission will consider the options for strengthening and expanding guidance as part of its final report.

3 The forgotten element of spatial planning

An absolute focus on increasing the supply of homes comes at the expense of a sustainable balance of land uses and supporting infrastructure. Gaps in planning policy and guidance give planners little understanding of why and how to plan for freight, leaving the needs of the freight system far down the priority list. Over time, a lack of holistic, freight-aware decisions will erode the capacity of the freight system to deliver the goods that communities and businesses want and need in the most sustainable way possible.

The current approach to planning can mean that freight is forgotten in plans for new developments and, even where it is considered, it is not a holistic assessment. Often plans for new developments only reflect consideration of the final delivery of goods, neglecting the fact that this is the result of the successful functioning of a whole supply chain, finely tuned and optimised, often spanning borough, county, and even national boundaries.[51]

The failure to consider the whole supply chain in the planning system leads to insufficient capacity for the efficient handling of goods at different stages in their journey from point of production to consumption. These issues combine to create unsuitable conditions for good freight planning. Better planning for freight will allow the freight system to have access to the capacity it needs to allow the most sustainable and efficient decisions to be made, reducing the risk of an irreversible slide towards an inefficient system.

A lack of freight know-how in planning and policy

The freight system does not feature prominently in the public consciousness. What is seen by the public of the freight system's activities appears to function well, in that supermarkets get stocked day-after-day and items bought online arrive quickly and safely.

The public perception has undoubtedly influenced the level of knowledge about freight within the public sector, its associated policy areas, and the priority it is afforded.

An example of the lack of understanding of freight in planning and policy making is the failure of the planning system to consider supply chains in their entirety. The freight system is considered only at the point at which goods are delivered, rather than as a supply chain, with multiple stopping off points on the journey from production to consumption.

Focusing on the point of delivery rather than the supply chain can lead to freight being considered and planned for as a nuisance, with planners keen to introduce measures to mitigate the impact of deliveries, instead of taking a more balanced and enabling approach, recognising constraints further up or down a supply chain. The failure of the planning system to anticipate and plan for the logistics requirements associated with new housing developments means planners make provision for the final delivery of goods to new households through the stipulation of concierge services or parcel lockers, but they do not and are not required to understand the relationship between housing and logistics space requirements in the supply chain.

Properly balanced decisions require planners to have a full and nuanced appreciation of the issues, but the space devoted to freight and logistics in planning policy does not allow the issues to be covered in any detail. Planners have access to a wealth of instruction and guidance about housing, little on employment and almost nothing on the specific needs of freight. This inevitably makes it difficult to reflect both the need for freight and the needs of the freight system in plans and decisions, and to properly recognise its enabling role in new developments. This hole in the policy framework needs to be fixed so that planners can give freight the support it needs in order to be recognised as an essential, enabling part of any functioning community. What a better framework should look like will be explored by the Commission in the coming months, ahead of the final report.

Local planning vs global supply chains

The point of production and consumption of goods rarely fall within the same planning geography. Goods need to be moved across national, regional and county borders in their journey from origin to destination, and are often stored and processed along the way.

The current planning system encourages local planning authorities to only plan for the parts of the freight system that they 'see' within their area, eg a port, clusters of warehouses or a high street, with a need for loading bays. Current planning policy encourages neighbouring local planning authorities to agree and cooperate on 'strategic policies'[52] and cross border issues, which can include housing, transport infrastructure and water supply, but there is limited precedent for freight

"...supply chains that end in cities originate in other areas. Almost all [supply chains] are regional, most are national and many are global. There is a continuum from point of production (in the UK or abroad) to the point of consumption in UK cities..."

Gazeley response to NIC Call for Evidence

being considered as a strategic issue in this context, and therefore limited evidence of locally led efforts to work together and join up their respective planning geographies in response to freight issues and opportunities.

The implication of failing to plan for freight at the right spatial scale is that actors in the freight system find it more and more difficult to locate the land for the capacity the system needs in the locations which allow it to function most efficiently.

The Commission will explore alternative options for planning at the right scale for freight in its next phase of work.

A shortage of space for warehouses and distribution

Sufficient storage and distribution capacity is needed for the freight system to work efficiently. There is evidence to show that there is an increasingly limited supply of land for storage and distribution operations in key markets, particularly the land required for last mile logistics in London. A recent report for the Greater London Authority (GLA) stated that there is a rapidly dwindling supply of warehousing space in London, and that the present vacancy rate is four per cent,[53] "by far the lowest rate of any region of the country."[54]

Last mile logistics providers, such as parcel carriers or retailers and producers, need to be able to serve customers in urban areas quickly, often within short delivery windows. Providers therefore need space for final distribution operations in areas where their drive time to the end destination is minimal. In some places the periphery of the urban area will do, but in London, and other large and densely developed towns and cities, a short drive time to customers means a need for space inside the urban area.

Demand for such space has increased at the same time as the supply has been actively reduced. A recent upsurge in demand for last mile logistics space in London (triggered by population growth, increasing e-commerce activity, and demand for faster delivery times and shorter delivery windows) has coincided with a period of the release of industrial land for non-industrial land uses – most often housing. This was facilitated by a succession of pro-release policies in London planning policy.

The limited supply of affordable, suitable premises in central locations means that logistics providers need to look further afield for the right solution. Some commentators have referred to this trend as 'logistics sprawl'[55] [56] – logistics providers can no longer find affordable premises in central London and so 'sprawl' further and further from the centre, and then out of the city altogether. This increases a providers' stem mileage (the distance from the distribution point to the first delivery address) – wasting a larger proportion of the journey distance, with knock-on effects for emissions, congestion, and operational efficiency.

While London is set to change its policy on industrial land in the new London Plan (expected to be adopted in autumn 2019) from one of managed release to a

policy of retention and limited release by exception,[57] some contributors to the Commission's research have noted they are concerned that assessments of need for industrial space are less robust in other areas of the UK, raising the possibility that an undersupply issue could take hold elsewhere. It is partly the strength of London's evidence base on supply and demand for industrial space which has allowed such a complete change in policy direction to take place, before the situation becomes critical.

Without a complete and up to date understanding of the demand for and supply of the space needed by the freight system to allow fast and efficient distribution to towns and cities, there is a risk that supply shortages occur in places outside of London, resulting in freight facilities being located further from customers, with less and less efficient journey patterns.

How local planning authorities develop and maintain a more robust evidence base on demand and supply for logistics land – and the steps that should be taken to maintain a suitable supply and correct an emerging undersupply issue – will be explored by the Commission in its next phase of work.

Wharves and depots for freight use are under threat

Current government policy is to promote the use of rail or water for freight transport as a method to reduce the environmental and congestion impacts of road freight – providing modal shift revenue support to encourage this activity in relation to container traffic. Local planning authorities can formally protect freight sites such as wharves and railheads, and Network Rail maintains specific protections for railway land for future freight use.

The most pressing issue concerning the safeguarding of freight handling sites is that of the erosion of informal 'buffer' zones between wharves and/or rail depots and noise sensitive uses (ie housing). Under pressure to deliver significant numbers of new homes and ambitious regeneration projects, local planning authorities are granting planning consent for housing and other uses adjacent to wharves and/or rail depots, leaving the wharf or rail depot operator open to nuisance complaints from new occupants – as has been the case in one example in London which the Commission have been made aware of,

"If potential developments are allowed on or adjacent to [wharves and depots] the industry's ability to make full use of rail and water transport will be compromised."

Mineral Products Association (MPA) response to the NIC Call for Evidence

where complaints from residents of a new adjacent development have resulted in the curtailment of aggregates facilities operations.

Without robust protections for existing operators, reinforced by effective mitigation measures to protect new residents from the realities of an operational wharf or rail depot (eg noise, dust and vibrations), operators will continue to be the subject of nuisance complaints and ultimately could have their operations limited, or stop future new facilities in areas where they are needed. The 'agent of change' principle outlined in the new National Planning Policy Framework (NPPF) and draft New London Plan (which places the onus for mitigating the impact of a change of land use on the instigator of that change) should make developer-led mitigation measures standard. However, concerns remain over the enforcement of the principle by time-poor local planning authorities.

In land-constrained areas housing and industrial land will continue to compete. Multi-purpose land use can be a way to maintain the quality of freight operations whilst meeting wider targets such as housing and employment.

The Commission will investigate the best way of balancing the need for housing with the need for wharf and rail depot capacity in its next phase of work.

Providing inner city freight capacity alongside new housing: Chapelle International 'Logistics Hotel', Paris

The Chapelle International 'Logistics Hotel' is a new road and rail served freight terminal and logistics depot in the centre of Paris. The 'hotel' has four floors, with a cash and carry in the basement; the urban railway terminal, depot space and offices on the ground and first floors; and an urban farm and sports facilities on the roof.

Space for a logistics facility was designated as part of the masterplan for the site, in addition to land for residential units, a gym and sports facilities, office space and schools.

Image credit: Sogaris

The operators anticipate that there will be two freight trains per day arriving and unloading at the facility in the near future, from locations up to 200 kilometres from Paris. Containers will be unloaded from the train and loaded on to road vehicles for final delivery in the city. In addition, several hundreds of new residential units are being constructed on the adjacent land as part of the masterplan.

Chapelle International is a positive demonstration of proactive last mile logistics planning for the City of Paris, but importantly shows that when done sensitively and designed in from the outset, logistics, housing, offices and leisure can coexist in close proximity.

4 Data for informed decision making

The limited amount of freight data available to policy makers at both national and local levels makes it difficult to develop plans and interventions that meet the needs of freight whilst managing its harmful by-products. Targeted action is needed to gather better data, ensure access to it, and to help deliver decisions that enable efficiency for all.

The complexity of the freight system and the variety of factors that affect the decisions made by the freight industry means that predicting operator behaviour and reactions to change is difficult. Even a single consignment of goods can have numerous alternative pathways through the supply chain, and can be in regular flux as operators try and squeeze out further efficiencies, or as customer demands change. In most cases, infrastructure changes on the transport network will require an element of modelling to help determine the effectiveness of interventions. However, current transport and land use models and appraisal methods such as TRICS and WebTAG have very limited capability or information to enable proper assessment of freight impacts and behaviours. They therefore provide little help in developing new policies or physical interventions for freight.

Access to better data on how the freight system currently operates – which would help provide the information that modelling requires, identify issues and test changes – is key to enabling policy makers to effectively tackle problems such as peak time congestion in urban centres. Without it, piecemeal policies will lead to lost opportunities for faster change and further negative impacts.

The Starfish project – efficiency enabled through data

Following a 2007 DEFRA study into reducing the external costs (accidents, noise, congestion, and emissions) of food haulage, the Efficient Consumer Response initiative (ECR UK) undertook work to further improve efficiencies and the benefits of data sharing and collaboration in the Fast Moving Consumer Goods (FMCG) market.

27 companies from across the FMCG sector provided information on their goods transport for two months of the year, equating to over one million vehicle kilometres and almost 127 million pallets of goods. The data provided helped to show opportunities for improvement – including backloading and consolidation – but also demonstrated that 7,500 tonnes of CO2 can be saved each month by backloading, and five per cent of CO2 savings through consolidation of part loads from nearby depots of these companies alone.

Providing haulage data has significant benefits for both hauliers and wider society. Although a relatively small sample study (when compared to total lorry miles), the Starfish project is an example of how data can help to design interventions to tackle the negative effects of freight.

The current data situation

Compared to other similar countries in Europe, the UK is relatively on par in terms of its statistical analysis of freight transport. In addition to the mandatory data requirements of the European Commission the UK government does – in certain areas – collect more data to help understand specific modal markets.

Data on rail freight is amongst the most regularly collected freight information, with the Office of Rail and Road compiling quarterly updates on rail freight using DfT, Network Rail and freight operating company data to understand the freight lifted, moved, train delays, and market indicators – which all help show the status and future demand of the rail freight market. Equally, on roads, the DfT's Continuous Survey of Road Goods Transport (CSRGT) provides a range of information on HGVs (ie origins and destinations, load factors, cargo, etc) – creating a dataset of around one million trips. On international gateways, the volume of goods entering and leaving the country is relatively well recorded by both government and international organisations such as the OECD, which provides information on import/export rates, enables international comparison, and a picture of the global movement of goods.

Freight operators themselves are constantly collecting and compiling data on their journeys. Whether through the use of telematic devices, GPS, satnavs, or manual records such as manifests, most movements will be tracked and information used to understand things like route effectiveness, delays, vehicle and driver performance, and a range of other information that enables freight operators to identify efficiency

opportunities – something of a necessity in a market where profit margins of even the most successful hauliers equate to around four per cent.[58] However, this data is not shared.

The most obvious data gap relates to van traffic. Vans are the fastest growing segment of the road vehicle market (van vehicle miles increased by over 65 per cent between 2007 and 2017),[59] and more data is needed to understand where vans are being driven and what they are used for. However, data on vans is almost non-existent. The last reliable surveys were undertaken by DfT between 2003-2005 (providing around three years of data on company owned vans at the national level, using data from 13,000 driver records over three days), and the 2008 Van Activity Baseline Survey. Considering the rise in van miles since these surveys, this data will now be out of date.

The need for new data

New or additional data is only of value to policy makers where it can provide new understanding or insight into an issue or potential policy impact. On this basis, more freight data across all areas of the industry and on every mode is not necessary. For example, with rail being an access controlled system and the data collection already at a good standard, there is little that further data could do to help deliver better policy.

More freight data must be focussed on helping policymakers better understand its impacts at the local and regional scale. Considering the average haul length of HGVs is 105km and fewer than one in five HGVs are involved in long haul activity, more information about HGV movements at the sub national scale is essential.[60] [61]

Within urban areas, the significant growth in van miles is causing serious concern. In 2015, vans accounted for 16 per cent of road transport CO2 emissions,[62] 30 per cent of NOx emissions,[63] and 10 per cent of airborne PM10 particulates.[64] Between 1998 and 2008, 50 per cent of urban traffic increases were because of vans.[65] Although freight specific LGVs are thought to make up only 21 per cent of the total number of vans and 26 per cent of van miles,[66] the rise of e-commerce and demand for faster and more convenient freight may add to the issues.

Tackling the data gaps

Obtaining route data for HGVs is not a new issue. Other than the CSRGT (for which completion is a legal requirement), success in getting significant volumes of any haulier data has always been limited. Outcomes have generally been on small geographical scales or with too small a sample to provide a reliable picture of freight movement. Numerous projects have the aim of seeking agreements from hauliers to share their data for the purposes of improving operational efficiency and enable better policy planning – but progress with such attempts has been slow. Despite clear potential benefit for hauliers, the offer of safeguards such as data anonymisation, and guarantees over IT security, fears over commercial

confidentiality and the highly competitive nature of the industry mean that HGV operators – large and small – remain reluctant to share any of their information.

The limited success of obtaining haulier collected data does not mean that further attempts for data sharing should be abandoned or dismissed. If even part of this mass of data could be accessed by government and local areas, it would deliver a significant databank that updates naturally with new information and with little additional burden in the way of additional data gathering for government or industry. However, if current attempts at voluntary data sharing continue to be a challenge, a mandatory approach may be required.

Addressing the data void on vans

In recognition of the lack of information on LGVs, the DfT intend to undertake a new van survey in 2019. Local areas are also becoming aware of the issues that vans can create and contribute towards and are beginning to take some action. Transport for London and the City of London Corporation have recently undertaken studies within their areas to try and record van movements and van behaviours, with plans for further work including two years of primary research on goods movements within the Square Mile, and the introduction of questions on home deliveries into the London Travel Demand Survey.

Although specific urban schemes will help to provide some level of data on urban van movements, the individual nature of local areas – such as their layout, population, and location in the country – may mean that data in one local area is not a particularly useful guide for other areas. For example, due to London's shortage of logistics space, congestion levels, and population density, van behaviours in London will differ from those in cities such as Birmingham where land availability is less of an issue. Similarly, single programmes of national level surveys provide a useful static shot of the situation, but fail to give policy makers the all-important route information required to understand and address issues.

Utilising technologies to capture movement data

All the survey data collected provides some insight into the freight market, changing trends in the demand for freight, and the industry's general approach. However, they fundamentally miss a key aspect that could truly help policy – routing data. Without this level of detail, it is difficult to truly understand how hauliers and van operators choose routes, react to incidents, or respond to changes in the regulatory environment such as road use restrictions or environmental rules.

Technologies such as intelligent ANPR (Automatic Number Plate Recognition) and mobile tracking already exist and have the capability to provide large volumes of data quickly and in a consistent format that can be analysed. Using these to gather data on vehicle movement patterns could help to produce the information needed to develop effective freight policies, and prove a more effective method of obtaining freight data than through paper surveys or voluntary data sharing.

How such a programme could work and be rolled out will be considered as part of the Commission's final report. Whatever the solution, the freight industry must do its part. Commercial confidentiality and personal information should be respected and kept private, but the industry must be willing to share data or cooperate with new measures if it is to expect policy makers to introduce changes that factor in the needs of freight.

5 Towards a coordinated approach

Despite the overall efficiency of the freight system, its negative impacts are a challenge. Delivering a clean, efficient, competitive and affordable freight system will require action from government. This interim report has reviewed three of the principal levers that government can use to affect change in the freight system: regulation, planning and the data that underpins infrastructure decision making. Ensuring that these interventions are effective in delivering the right solutions will require government to adopt a more coordinated approach towards freight policy.

The UK's freight system is almost wholly privately owned and operated but it depends on public infrastructure, has harmful by-products which affect all of us and is strongly shaped by government actions and policies. Government creates the physical and regulatory framework, through land use planning, regulation and infrastructure decision making, in which the freight industry attempts to develop the most competitive, efficient and profitable business possible.

The UK's freight and logistics system is one of the most efficient and effective in the world and will continue to be critical to the UK's economic prosperity and competitiveness.[67] Despite this, congestion, harmful emissions and difficulties finding appropriate land are continuing issues that create inefficiency or slow progress.[68] Addressing each of these will require a government response.

Freight blindness

This report has demonstrated that both government and local authorities often have little understanding of why and how to plan for freight, leaving the needs of the freight system far down the priority list. This has resulted in policy makers or planners being unable to take account of, or plan effectively for, the needs of freight. Government's current approaches to policy making for freight are piecemeal, fragmented into individual modes and have struggled to proactively confront future challenges.

Notwithstanding a range of sector specific performance reporting, there has been no national view as to how the UK freight system is performing as a whole. It is difficult to draw firm conclusions from existing data collection and analysis and it has often been challenging to find empirical data to test or verify the hypotheses put forward by industry or observers. In part, this is due to the extensive and fragmented nature of the industry, but the Commission also believes that the paucity of data collection is symptomatic of the limited visibility of the freight sector within government and the limited priority given to it as a policy issue.

Currently, most policy relating to freight is the responsibility of Department for Transport. Its responsibilities range from setting policy and regulations, collecting statistics and administering modal shift grants. The recent Ports Connectivity Study, Freight Carbon Review and the ongoing Maritime 2050 programme, are all individually necessary and valuable pieces of work that begin to look forward and recognise the wider factors affecting freight. However, in the main they still each deal with individual components of a wider system and struggle to fully recognise the non-transport aspects of freight.

The freight system uses infrastructure, occupies land, interacts with planning and regulation, impacts the environment, ultimately responding to and meeting the demands of consumers and businesses. Being dominated by transport, the current approach demonstrably struggles to craft policy approaches capable of reflecting the reality of how the system actually functions.

A lack of freight-aware decisions risks perpetuating harmful by-products and compromising the efficiency of the UK's freight system. If it becomes less efficient, or its productivity is dampened, these could be manifest in lost export income, reduced employment, higher import prices and consumer impacts such as less efficient deliveries and a higher cost of goods.[69]

A coordinated response

Creating the conditions in which the freight system is both incentivised and able to make environmentally efficient choices at the right pace will require a more coordinated government response within and between different tiers of government, and based on better data.

Better coordinated interventions would need to set a long term direction across all modes; address market failures; and target investment and innovation. Fulfilling these three roles would allow congestion management, the reduction of environmental impacts, infrastructure investment and enabling the uptake of new technologies to be brought into focus simultaneously, in coordination with land use planning and passenger transport.

Coordination would need to draw on the right expertise inside and outside of government. Across government, there are obvious interdependencies with the Ministry of Housing, Communities and Local Government (MHCLG) (illustrated earlier in this report) and the Department for Business, Energy and Industrial Strategy (BEIS), but also HM Revenue and Customs, Highways England, Network Rail and the Office for National Statistics (ONS). It should also seek to draw on expertise and knowledge from outside of the public sector, seeking active and structured involvement from industry and other relevant stakeholders.

The movement of freight is largely blind to administrative boundaries, but its impacts can often be very localised. The relationship between national and local tiers of government and regulation will need to be a critical consideration in designing a more coordinated response.

The case for, scope and benefits of government adopting a more coordinated approach to the UK's freight system will guide the next phase of the Commission's freight study.

Next steps

The Commission will use this interim report to start a conversation with government, industry, local authorities and wider stakeholders about the scope of a more coordinated approach and how it could be delivered in practice. This engagement will also include conversations with the freight industry and government about the pathway to a lower carbon and managed congestion future, to ensure the Commission is fully aware of the impacts, issues, and effectiveness of change on both the operation of the industry and government's plans and policies. This engagement will be key in helping to inform the development of the Commission's final recommendations to government in spring 2019.

The Commission will use its final report to outline the actions needed by government to enable technological acceleration and introduce policies that will help reduce congestion and emissions and deliver a sustainable freight system that is fit for the future.

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