Railfuture Rail freight strategy 2024:

Executive Summary

Moving freight was the reason that UK railways were created, and in order to deliver our net-zero future the railway needs to increase its share of domestic freight movements from the current level of 7% and reduce the 81% moved by road (by tonne-km) https://www.gov.uk/government/statistics/transport-statistics-great-britain-2023/transport-statistics-great-britain-2022-freight

Even the most hardened fan of motoring will welcome fewer pothole creating HGVs on the roads. In addition to taking HGVs off the road, every single freight train that runs brings money into the railway, reducing the level of support required for passenger operations.

Because freight needs are rarely advocated for by primarily passenger focused local user-groups, and '*containers don't vote*', so are not on the minds of local politicians (until the supermarket shelves are empty), Railfuture nationally is a strong advocate for freight so that UK plc can function effectively while reducing its environmental footprint.

This document outlines our policy position and high-level rationale behind that position, concluding with the schemes we view as the highest priority for delivery in order to achieve these aims, and will be reviewed annually.

Why ?

Carbon. Accidents. Local pollution. Congestion.

Even a diesel hauled train is 75% more carbon efficient that a diesel powered HGV, and pathways to alternative power sources for HGVs are unclear, especially their scalability.

Achieving net-zero by 2050 is not sufficient to save us from the worst effects of climate change. The area under the carbon graph – the total amount of carbon we as a species emit between now and 2050 – is vitally important.

Reducing emissions by 1 tonne now is far more valuable saving against this '*carbon budget'* than a '*perfect'* solution that saves 3 tonnes in 2040. Rail freight is a proven, scalable solution that can literally deliver now.

HGVs are involved in a disproportionate number of road deaths and serious accidents, especially pedestrians on local roads. Reducing the number of HGVs reduces this harm.

Even a zero-tail pipe emission road vehicle will still emit PM2.5 particulate pollutants from tyres and braking. Trains don't have rubber tyres so don't emit this pollution. For over 100 years we've known how to electrify railways, so we already know how to solve this problem (but need to get the cost of electrification down).

Most car drivers who don't use trains will still welcome there being fewer HGVs on the road. The 4th power axle weight rule means that heavy vehicles cause vastly more highway pavement damage than light vehicles. This is particularly acute on local roads since these are built to a lower technical standard than the SRN (strategic road network).

https://en.wikipedia.org/wiki/Fourth_power_law

Growth:

We strongly support having a growth target for rail freight, since that provides a measure of progress towards achieving net-zero and reducing the other negative externalities arising from freight movement, and should encourage a more positive attitude to freight customers within Network Rail routes. While being fully supportive of more devolution and local decision making under the vision of GBR, we must ensure that services that rely entirely on movement between multiple regions (i.e. freight) do not fall down the cracks between decision makers and can have a GB wide network that meets their customer needs.

Rail freight volume is tightly coupled to activity in the broader economy, the current growth targets are not linked to any economic measures such as GDP.

It would be a mistake to treat a downturn in the economy as an unexpected anomaly, re-baseline a growth target at the bottom of an economic cycle, then treat all increases in rail freight from that low point as all being genuine sector 'growth', therefore we support assessing the delivery of the growth target against the background of broader economic activity levels.

Growth Locations:

It is clear comparing port and rail data that ports are an area of intense logistics activities with large flows.

Studies from multiple STBs (TSE, EEH, TfN) all note that the largest ports have very large tonnages, and high impacts on the locality. There is also a very large variation in the percentage of goods lifted by rail from these ports. While the GBFM (GB freight model, owned by MDSTransmodal) can model port HGV flows, there is a perception that there is a lack of sufficient data on HGV O/D flows from ports to make policy decisions and interventions.

We strongly support prioritising growth measures on ports and the routes from ports to their destinations.

The other area of highly concentrated activity are our largest quarries. We strongly support measures to maximise the use of rail around these already active sources of bulk products and the routes from these sources to their destination.

Growth Metric:

'*what gets measured gets managed',* a good metric should align the interests of the infrastructure provider with the interests of the customer.

We broadly support a tonneKm metric but have the following reservations :-

The 'Tonne' part of the metric is not suitable for all commodity types. For letters / light logistics a purely weight based metric does not reflect the broader benefits delivered by these movements being on rail.

Our understanding is that for freight trains run in multiple units the payload weight is not recorded in TABS data. This provides an opportunity to measure this commodity type differently – a metric reflecting the number of HGV movements eliminated would seem more appropriate, which in turn may be related back into an appropriate tonnage value for comparison with other commodities in the broader tonneKm metrics.

The Km part of the TonneKm metric is based on the route distance travelled. While it is a good output measure for delivery by the sector, this metric does not align customer desires to achieve the most time or distance efficient route to maximise FOC's ability to compete with road. The FDM (on-time Freight Delivery Metric), is an indicator for on-time arrival, but a path can be very slow to the point of reducing competitiveness, whilst still arriving on time. So other KPI metrics are required to monitor the utility of the product that is being offered to FOC customers.

There is an example of this in the West Midlands at Whitacre (near Coleshill). The lack of ability to turn right at this junction, means the daily DIRFT to Doncaster service (and a large number of others) has to spend an additional hour sight-seeing all the way west to Walsall, before turning north. In addition the route it goes sight-seeing on includes the very busy Coventry-Birmingham International-Stechford corridor, which is heavily in demand for passenger services, with some of the suburban intermediate local stations on this route only seeing 1TPH.

(details of this example on p27 + p28 https://www.networkrail.co.uk/wp-content/uploads/2020/08/Routeing-of-rail-freight-forecasts.pdf)

We strongly support selection of metrics that align the interests of the infrastructure provider with the interests of its FOC customers.

Decarbonisation:

In a world of finite resources, we support capacity enhancement where there is suppressed demand as higher priority than electrification. Modal shift to rail provides the bulk of decarbonisation – further decarbonisation through electrification is the cherry on top.

FOC need a *'go-anywhere'* locomotive in a way that passenger operators do not. To this end we are extremely supportive of the new bi and tri-mode locomotives soon to come into operation in shape of class 99 and class 93, and hope to see many more of this type of vehicle becoming the standard replacement for class 66.

These are more capable than the current bi-mode generation such as the class 88, which can carry out shunting operations when away from the wires, but don't have enough diesel power to run at line speed.

We view battery power as a useful way to provide a small degree of on-board storage for energy otherwise wasted from dynamic braking, and provide a short term 'battery boost', to what might otherwise be an under-powered freight locomotive when away from the wires – allowing the diesel engine to be lighter and operate more of the time in its optimal efficiency range.

We do not support use of hydrogen for rail freight movement because of its low well-to-wheel efficiency and it being a distraction from both capacity enhancement and electrification.

Network Rail's TDNS does not consider hydrogen to be suitable for freight applications.

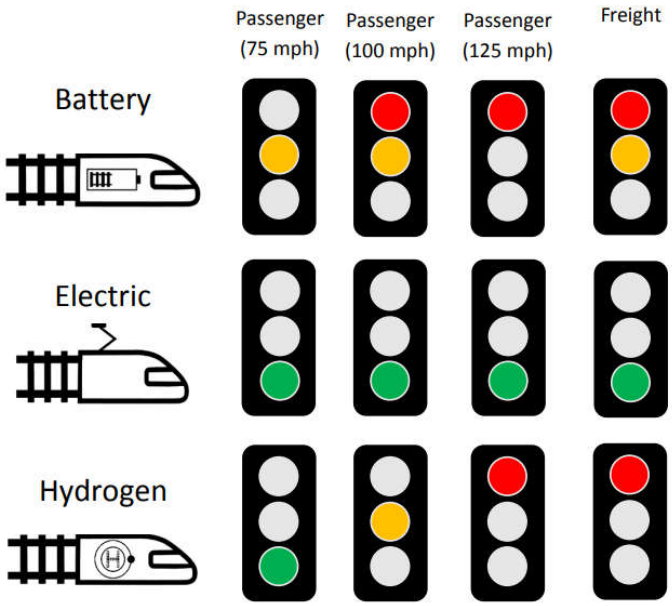


Figure 12: Summary of the technical abilities of the three traction technologies considered as part of TDNS

https://www.networkrail.co.uk/wp-content/uploads/2020/09/Traction-Decarbonisation-Network-Strategy-Interim-Programme-Business-Case.pdf

Rail is an extremely energy efficient way to move goods over land. All future economic planning scenarios assume a higher carbon price than today, with multiple sectors from home heating through industrial processes and transport needing to move to lower carbon energy sources in order to achieve net-zero.

Freight and logistics is an extremely price-sensitive industry where -at certain thresholds- small alteration in costs can have a significant impact on mode selection, with these costs ultimately being reflected in wider consumer prices. We already see situations from our major ports where it would be cheaper to move the goods by rail - but rail capacity is not available, increasing consumer costs.

The decarbonisation path for HGVs is not defined. This leads to a number of broad future scenarios :-

a) HGVs not effectively decarbonised, rail limited capacity, higher carbon price:

   This results in increased costs for UK PLC, less competitive with other countries

b) HGVs decarbonised, rail limited capacity, rail not further decarbonised, higher carbon price:

   This results in modal shift away from rail, increased non-carbon negatives from road transport such as PM2.5 from tyres and road deaths, especially vulnerable road users on local roads.

c) HGVs decarbonised, rail capacity enhanced, high percentage of rail tonne km movements decarbonised:

   Best result for UK PLC, lower and competitive with neighbouring countries, maintained competition between modes, potential for reduced negatives depending on degree of modal shift.

Scenarios (b) and (c) both require planning and investment from the public and private sectors.

Given a finite resource, after capacity enhancement, we believe the prioritisations for electrification should be :-

1) Short infill that will allow an entire well-used route to be electrified. As identified in this CILT study. https://ciltuk.org.uk/Portals/0/RailElectrification_Spreads.pdf?ver=2023-03-01-101049-347
   These short infills result in the prioritisation of the most heavily used freight routes (or parts of those routes where the usage is at its highest), working outwards from ports and other locations of very high levels of freight activity.

2) Electrification of well used passenger routes, where the combination of electrification and bi-mode freight locomotives would provide additional path capacity by allowing freight trains to operate at average speeds closer to passenger services.

Electrification costs:

The unit cost of electrification is higher than is conducive to widespread deployment. From the engineering standpoint we are learning again how to electrify in a cost-effective manner.

We support :-

1) A rolling programme of electrification to provide certainty to the supply sector and preserve the re-discovered skills within that supply chain, and the regulator.
2) Continuing focus on driving down unit costs, particularly in the project management and authorisation into service '*paperwork'*, since these are stubbornly high compared to now reduced engineering costs.
3) Appropriate risk distribution between client and contractor. It is right for the client to expect a certain quality of work with appropriate warranty, but placing too much of this risk onto the contractor results in over-engineering and inflates costs.

Network Capacity: contention between freight and passenger:

Aka the *"Containers don't vote"* problem

The rail network has finite capacity for all users, so there needs to be an equitable allocation of capacity. We welcome the acknowledgement of freight as a '*valued customer'* that announcements about GBR have brought.

Every freight train that runs brings more revenue into the railway, and removes HGVs from our roads, so should be welcomed.

Where capacity is allocated to a user – it must be effectively used, not wasted.

We highlight the research of the RDG comparing the economic value of a freight movement with lightly-loaded passenger paths.

https://media.raildeliverygroup.com/news/new-research-shows-rail-freight-is-levelling-up-britain-and-cutting-emissions-across-the-country

Where capacity is constrained, we support the reallocation of a controlled amount of capacity away from lightly loaded passenger services towards freight. For example where there is a 3-4tph passenger service, the retiming of one or two of these services per day, provided that these paths are only yielded when a freight train is to actually run.

While it may sound simplistic to occasionally retime or not run a small number of services, we need to acknowledge that the cascaded impact on operating diagrams can be complicated.

Where passenger paths are from time-to-time yielded to freight use, this must not be used to mask underlying capacity issues.

Therefore, in addition, we would only support yielding of passenger paths to freight on designated '*congested infrastructure'.* We are very supportive of increased use of the *'congested infrastructure'* designation to formally identify bottlenecks and encourage FOC to request this designation if NR are unable to provide FOC with economically attractive freight paths and routeing.

https://www.networkrail.co.uk/wp-content/uploads/2021/06/Management-of-Congested-Infrastructure-Code-of-Practice-June-2021.pdf

https://www.networkrail.co.uk/wp-content/uploads/2020/12/External-Congested-Infrastructure-Register-Dec-2020.xlsx

Light parcel movements:

We are supportive of improving light parcel movements by rail where these services are most likely to be economically sustainable.

To stand the best chance of economic success these activities need to commence at the most densely populated and congested cities – before being trialled in lower demand locations.

We also support the establishment of rail-connected consolidation centres in the most densely populated and congested urban areas.

Equalisation of costs with road haulage:

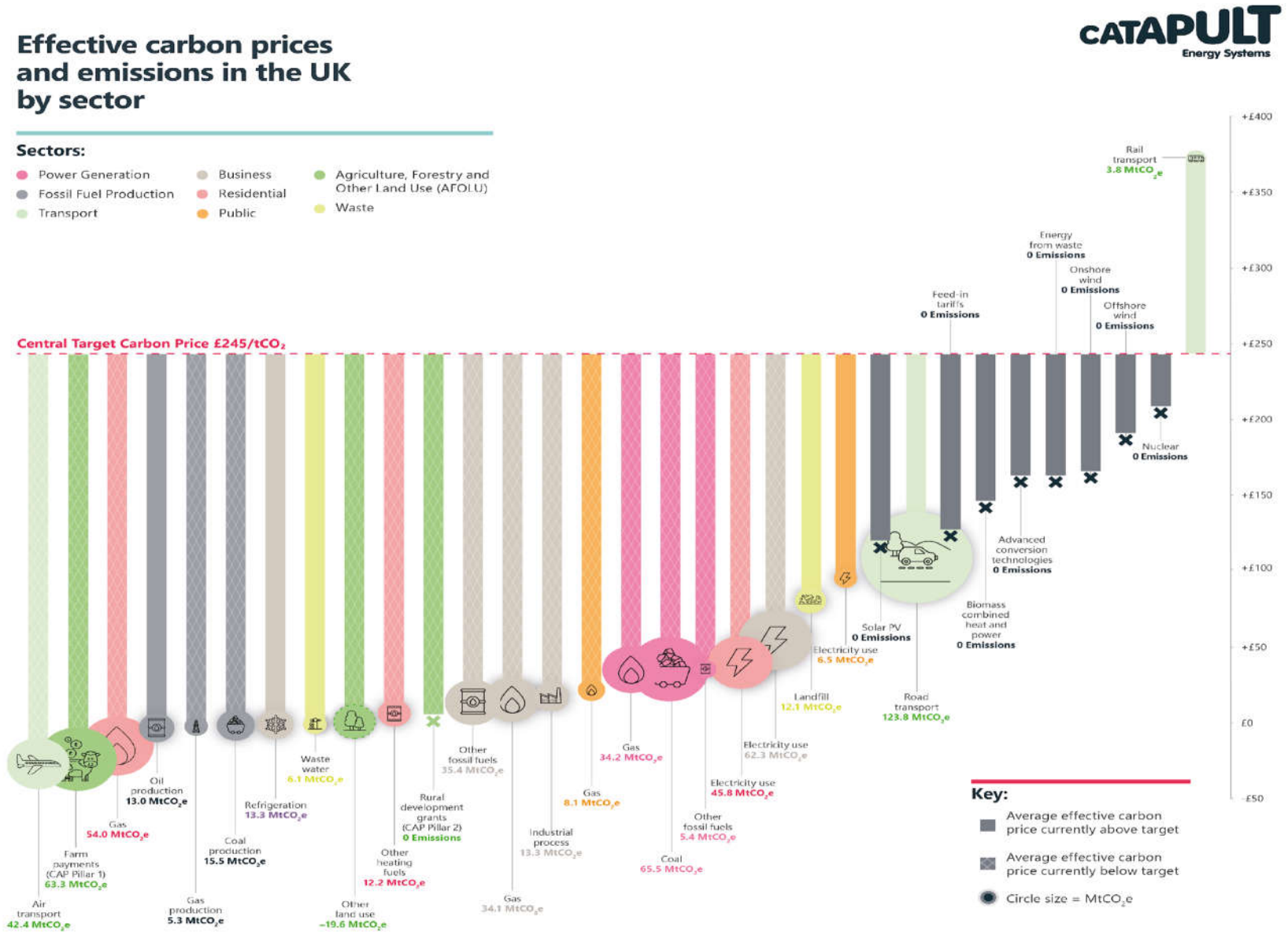
If we include the cost of negative externalities, road does not pay its way at source, whereas rail comes much closer.

This negatively impacts on rail's ability to compete, so interventions need to be made to either increase road costs or reduce rail costs.

We note the large variation in forecast rail traffic volumes depending on the degree to which negative externalities are built into the cost of each mode. (see scenario F)

https://www.networkrail.co.uk/wp-content/uploads/2019/04/Rail-freight-forecasts-Scenarios-for-2033-and-2043.pdf

We fully support the '*polluter pays*' (as close to source as possible), so support increases in road costs, with fuel duty being the primary mechanism currently being used by government, and note that it has not been increased and in fact cut since 2011, at an annual government income cost of £5 billion.
https://www.gov.uk/government/publications/plan-for-drivers/the-plan-for-drivers



https://es.catapult.org.uk/project/net-zero-carbon-policy/

Traction energy:

We note the establishment of a *"price stability mechanism"* for lower carbon aviation fuels, and the extreme degree of under-taxation of aviation generally and its fuel in particular.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1169990/developing-uk-sustainable-aviation-fuel-industry-independent.pdf https://bills.parliament.uk/bills/3311/stages/17828/amendments/10008231

While there has been a degree of reversion to the norm, the recent electricity price shocks arising from Putin's invasion of Ukraine caused a number of FOC to mothball their electric locomotives and return to diesel haulage.

If we want the logistics sector to transition to cleaner fuel options, but are not willing to fully price carbon into existing fossil fuels – then we believe a price stabilisation mechanism is needed for rail electricity and other 'drop-in' alternative fuels such as HVO, to at least the same degree as for alternative aviation fuels.

Modal Shift Revenue Support – Track access charges:

Modal shift support grants are currently one form of price equalisation, however their effectiveness could be improved.

The administrative overhead for both FOC and government is disproportionate to the value of the grant, if it is to be retained then it should be moved to a simpler percentage of track access charges, with a percentage of track access charges being paid by government, reducing FOC operating costs, while still providing sufficient revenue to the infrastructure maintainer to provide safe and reliable infrastructure.

However, we feel it would be better targeted as an '*innovation*' fund, providing shorter duration, higher value funding for immobile capital assets.

This would allow it to be used for items such as loading pads or batching plants at sidings allowing for creation of new construction flows which can be quite volatile in their location as sites get built out and complete and house-building activity.

We would also welcome an expansion of the scope of such funding so that it is not a competitive fund that bids have to 'win' against other bids, but one where any scheme that meets clearly defined criteria (which would include economic tests), could be funded from.

Smart Wagons:

Our current generation of freight wagons do not collect condition information in real time while in operation and communicate that to operator and train crew so they can act on it, however the cost of providing instrumentation is falling.

We have seen a number of recent accidents where wagons have failed causing train derailment resulting in considerable periods of disruption, and some spillage of cargo near sensitive environmental locations which could have been far worse.

We strongly support innovation in this area, and once best-practice has been established – standardisation of data interfaces to allow interworking of wagons.

There is a split incentive since the cost of improving wagons falls on the wagon owner, but the benefit of reduced risk of damage flows largely to the infrastructure provider.

Therefore we support -and will advocate for track access charges structured so that- where a FOC is operating 'smart' wagons that can provide real-time condition information to the train crew, and the FOC has management practices in place to act on the condition information in an appropriate and timely manner relative to the risk – that it is rewarded with a lower level of track access charges reflecting the lower risk of harm to the infrastructure and environment.

Digital Automated Couplings: The lack of wagonload freight in GB drastically reduces the utility of automated couplings in the GB context. While we will keep this under review, we could concentrate resources on capacity.

https://rail-research.europa.eu/news/digital-automatic-coupling-dac-the-backbone-for-full-digital-rail-freight-train-operations-in-europe/

For clarity - a wagon can be 'smart' without having a physical DAC. We support 'smart' but are at the best ambivalent about DAC in the UK context.

Research:

Ports are an area of intense logistics activity where there is good data on the tonnage of goods brought in by ship, and the amount lifted by rail – but the destinations and routes of HGV traffic are less well understood. Even where there is data and models built from that data, the sample size and level of confidence may not be adequate to give decision makers sufficient confidence to act.

Where there is a port with significant tonnage landed, we should support and actively campaign for a multi-modal freight study to provide data and understanding of the destinations of goods landed and modes used. This would then support transitioning those movements to more sustainable modes, reducing impacts on the locality surrounding the ports and the regional corridors that freight flows through.

Ideally this would be coordinated at the national level via the STB network, which could allow further pooling of data and resources, but failing that we should work at individual LA/ city region level.

An example of a study which heads in this direction is the A34 Solent-Midlands corridor study.

https://www.networkrail.co.uk/wp-content/uploads/2021/07/Solent-to-the-Midlands-Multimodal-Freight-Strategy-Phase-1-June-2021.pdf

The Solent study identifies that Southampton is the primary UK car export terminal, but only 20% of those export vehicles arrive by rail. If these are new vehicles then it would seem likely it is a high volume point-to-point flow for which rail would be well suited.

The aim of the study(ies) should be to identify nationally the 'best' and most readily available market opportunity to mode shift from road to more sustainable modes for port traffic, and identify and unblock barriers to that improved sustainability.

Specific Schemes:

In line with the policy above, the specific schemes we are most strongly supportive of are :-

1) Haughley junction upgrade from single lead to double lead, completed ASAP.
2) Ely Area Capacity Enhancement (EACE), including expansion of scope to include doubling between Ely and Soham. https://www.networkrail.co.uk/running-the-railway/our-routes/anglia/improving-the-railway-in-anglia/ely-area-capacity-enhancement/
3) Safeguarding of HS2 phase 2a route

(bottleneck caused on WCML north of Lichfield risks squeezing out freight paths)

After the above the following infrastructure schemes are the next tier of prioritisation :-

- Simple 4 tracking by track slewing between Leicester and South Wigston + tunnel brought back into use.
  "Four tracking between Wigston North Junction and Leicester Station is progressed to Strategic Outline Business Case (SOBC) immediately with a view to delivering benefits as soon as practicable." July 2020 – no update on progress since then.
  https://sacuksprodnrdigital0001.blob.core.windows.net/regional-long-term-planning/Eastern/Leicester%20Area%20Strategic%20Advice%202021.pdf

- W12 gauge clearance for a trans-pennine route. This would permit containers on standard height wagons from Immingham/ Grimsby/ Hull area to the north-west.
  We note the contents of the LHOFT study in respect of identifying market potential, however are pessimistic about achieving some of the suggested interventions in the short to medium term, particularly a route gauge cleared to allow piggy-back of road trailers across the Pennines. https://www.hull.ac.uk/work-with-us/research/institutes/logistics-institute/docs/lhoft-n-e-rail-freight-opportunity.pdf

- Enabling freight on EWR (East-West-Rail), allowing freight from the eastern ports such as Felixstowe to flow to the Midlands and the North-West without travelling through the centre of London.
  (Table 17 'freight focus' scenario of Network Rail West Coast South Strategic Advice 2023)
  https://sacuksprodnrdigital0001.blob.core.windows.net/regional-long-term-planning/North,%20West%20and%20Central/West%20Coast%20South%20Strategic%20Advice%202023.pdf

- Trafford Park access / relieving Castlefield https://www.railfuture.org.uk/article1855-Relieving-Castlefield
  The demise of HS2 phase 2b increases the relative prioritisation of this project due to increased passenger traffic on the route from Crewe to Manchester.