



## SUSTAINABILITY SERIES

### PART 2 – RAIL FREIGHT TRANSPORT

The transport sector accounts for around 21% of global greenhouse gas emissions and 23% of the world's energy related carbon dioxide emissions<sup>1</sup>. As such, the transport sector globally is pivotal in a meaningful shift towards renewable energy and the fight against climate change.

<sup>1</sup> HFW Sustainability Series Part 1 – Road Transport Article. Available at: <https://www.hfw.com/Sustainability-Series-Part-1-Road-Freight-Transport>

# “In particular, where possible, rail freight should be seen as a positive alternative to road-based transport. Whilst rail freight is not only a greener mode of transport, it also has the potential to eliminate the issues the logistics industry has consistently encountered with HGV driver shortages”

Current figures show that rail freight carries more than £30 billion of goods around the United Kingdom each year<sup>2</sup> and crucially, railways have been identified as contributing only 2% of transport emissions<sup>3</sup>. Rail transit can therefore be a means to greener freight services. Maersk recently introduced a new sea-rail-sea (AE66) service linking Korea, Japan and China to the Kaliningrad Region in Russia, the Baltic countries, and Poland through Trans-Siberia. This indicates a growing demand for international rail offering a better balance of speed and cost over all-water services. As supply chains face increasing scrutiny over sustainable and efficient operations (especially following the effects of COVID-19), greater consideration should be given to the opportunities provided by rail freight.

In particular, where possible, rail freight should be seen as a positive alternative to road-based transport. Whilst rail freight is not only a greener mode of transport (a single freight train removes approximately 76 heavy goods vehicles (HGVs) from the UK's roads, translating to 1.66 billion fewer HGV kilometres each year<sup>4</sup>), it also has the potential to eliminate the issues the logistics industry has consistently encountered with HGV driver shortages. However, the rail freight

market must expand to enable further modal shift, which will require investment in both infrastructure and technological developments to ensure rail freight remains a viable green alternative.

## Legal and Regulatory Incentives

In July 2021 the UK's Department for Transport (DoT) published its Rail Environment Policy Statement. The policy statement sets out, “a clear direction on environmental sustainability and policy priorities”<sup>5</sup>, aligning with the wider UK Government's ‘Plan for Rail’<sup>6</sup> which seeks to overhaul the rail sector. The policy statement highlights that currently the majority of rail freight is carried by diesel engines in the UK. Yet, on average, rail freight trains emit a quarter of the CO<sub>2</sub> emissions of an HGV per tonne mile travelled<sup>7</sup>. Even with this positive emissions differential, the DoT intends to increase the process of electrifying all UK rail networks. The policy states that Network Rail and Great British Rail should coordinate with rail operators to engage in decarbonisation programs to achieve net zero greenhouse gas emissions in rail networks by 2050<sup>8</sup>. Fundamentally, the DoT aims to remove all diesel-only trains from UK networks by 2040<sup>9</sup>.

Publications such as the Rail Environment Policy Statement indicate that governments globally are targeting rail freight as a key sector of reform as part of net zero carbon targets. Through coordination with transport authorities and national agencies, rail freight operators should engage in the process of electrification to accelerate towards achieving zero and low emission targets. Where available, rail freight operators should seek support from state and governmental authorities to assist financially with this transition. However, the DoT currently has no plans to reinstate the Freight Facilities Grant in England which assisted with the extra costs generally associated with moving freight by rail. In the absence of this grant, the UK Government should consider further incentives to encourage modal shift from road to rail.

## Market and Consumer Incentives

Consumers are increasingly demanding transparency and sustainability commitments from companies, which highlight the measures such companies are taking to reduce greenhouse gas emissions and contribute positively to the fight against climate change. Failure to engage in meaningful sustainability practices can result in both

2 Network Rail. *Rail freight is vital to Britain's economic success. It contributes £1.7bn to the economy and plays a big part in reducing congestion and carbon emissions.* (Freight analysis). Available at: <https://www.networkrail.co.uk/industry-and-commercial/rail-freight/>

3 UIC sustainability statistics. Available at: <https://uic.org/sustainability/>.

4 Network Rail. *Rail freight is vital to Britain's economic success. It contributes £1.7bn to the economy and plays a big part in reducing congestion and carbon emissions.* (Freight analysis). Available at: <https://www.networkrail.co.uk/industry-and-commercial/rail-freight/>.

5 Department for Transport (2021) *Rail Environment Policy Statement*. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1002166/rail-environment-policy-statement.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002166/rail-environment-policy-statement.pdf)

6 Department for Transport (2021) *Great British Railways: Williams-Shapps plan for rail*. Available at: <https://www.gov.uk/government/publications/great-british-railways-williams-shapps-plan-for-rail>

7 BEIS Greenhouse gas reporting. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf)

8 Department for Transport (2021) *Decarbonising Transport Report*. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf)

9 Department for Transport (2021) *Rail Environment Policy Statement*. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1002166/rail-environment-policy-statement.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002166/rail-environment-policy-statement.pdf)

reputational damage and possible legal repercussions.

As sustainable practices become more evident in the rail freight sector, companies will need to adapt and have clear and sustainable business strategies in place in order to remain competitive. Emphasising the benefits of rail freight in contrast to road freight will be an important step to ensuring rail maintains a competitive position in the freight market.

## Solutions and Alternative Options

Rail freight has been highlighted as a valuable tool in reducing road congestion and facilitating the mass transit of goods across the globe. When contrasted with road, rail is a clear alternative for reducing carbon generated from freight movements. The development of existing global rail networks will additionally ensure that rail freight is able to deliver resources across the world with greater speed and efficiency.

Emerging technologies and investment in fuel efficiencies will work to further ensure that rail freight maintains its position as a sustainable alternative to road freight. Developments in fuel efficiency and the increasing drive to electrification will require long term research and investment, however as public policy maintains its focus on sustainability (for example, the European Union has announced a new legislative program called 'the Green Deal' which will coordinate a myriad of EU actions in response to climate change<sup>10</sup>) rail operators will likely have greater sustainable fuel alternatives. Whilst DoT funded research concluded that hydrogen and battery technologies could, in principle, work on a modelled freight route, significant infrastructure and operational changes would be necessary<sup>11</sup> and thus, continued research and work is required in this area.

Continuing and increasing the implementation of digital tools in rail freight will also assist to make railways more efficient. Digitalisation

in railway infrastructure will both increase capacity and reliability whilst also providing shippers, carriers and freight forwarders with better visibility of cargo location and status thereby adding to a more positive customer experience. This is a focus for some of the work in the Shift2Rail programme, which aims to promote the competitiveness of the European rail industry and meet changing transport needs, accelerating the integration of new and advanced technologies into innovative rail product solutions<sup>12</sup>.

## Barriers to change

The main obstacles to the enhanced use of sustainable rail freight are the lack of global rail infrastructure and integration. Across the EU, there are different track widths and at least five different electrical supply systems, meaning adhering to multiple safety regulations between countries and increasing the cost of multi-national locomotion by up to 50%<sup>13</sup>. These differences also result in bottlenecks at borders, the removal of which are timely and expensive. As such, a unified approach between countries is required. In particular following Brexit, communication between stakeholders and governments will be key in harmonising systems to streamline operations.

The current lack of aligned investments in rail between countries inhibits the expansion and development of cross-border rail freight flows and therefore the use of rail as a viable alternative to road-based transport. Globally, increased investment and collaboration is required to overcome these challenges.

The process of electrification of rail networks have been highlighted as a possible development to further boost rail freight as a sustainable alternative to road freight. However, this is not without its challenges as in late 2021 UK rail freight operators halted the use of electrified trains and reverted to diesel engines as a result of rising energy prices<sup>14</sup>. A

200% increase in electricity costs for each train could not be absorbed by operators or customers and as such, diesel was regarded as the only economically viable alternative. The commercial challenges of operating electrified engines are linked to both conversion costs and the instability of energy prices. As such, the uptake of electrification of rail freight networks is likely to be slow.

Consideration must also be given to electricity generation. Although carbon outputs from electricity are lower than current diesel engine freight trains, a long-term solution will require electricity to be generated in a more sustainable way. Accordingly, the electrification of rail freight is, to an extent, linked to the wider national investment in green energy generation.

## Conclusion

Unsurprisingly, there is a lack of public money available for rail infrastructure projects in Europe. Investment should therefore be focused on densely used networks where there is a clear demand or on routes where there is likely to be a consistent and stable freight flow<sup>15</sup>. As rail is already a more sustainable way of transporting goods, there must be greater support and encouragement for the shift from road haulage to rail freight. This is also necessary for rail to achieve an optimal share of the freight market. As outlined above, collaboration and communication between stakeholders will be key in decarbonising rail freight itself and ensuring it remains as a viable green alternative to other modes of freight transport.

### How HFW can help

HFW has a wealth of experience in the transport and logistics sector and can work with clients to achieve their sustainability goals by providing solutions for both sustainable transport and logistics in the entire life cycle of the sustainable transportation system.

10 European Commission statement on the European Green Deal. Available at: [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en).

11 Decarbonisation and Air Quality Improvement: a Roadmap for the Rail Freight Industry, RSSB (2019).

12 Europe's Rail S2R. Available at: <https://shift2rail.org/about-shift2rail/>

13 Zunder, T., *Obstacles to cross-border rail freight in the European Union*. Available at: [https://www.ncl.ac.uk/media/wwwnclacuk/newrail/files/NewRail\\_Final.pdf](https://www.ncl.ac.uk/media/wwwnclacuk/newrail/files/NewRail_Final.pdf)

14 Lancefield, N (2021) *Electric freight trains mothballed due to soaring energy prices*. Available at: <https://www.standard.co.uk/news/uk/cop26-co2-network-rail-rail-delivery-group-road-b960367.html>

15 Kenny, S. (2018) *Lesson 7: Smarter Investment in Rail*. Available at: <http://lowcarbonfreight.eu/lessons/lesson-7-smarter-investment-in-rail/>

If you would like to discuss how HFW can support you with your sustainability goals in the transport sector, please speak to:



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**SUSTAINABILITY  
IN OUR SECTORS** 

**We are committed to using our legal and sector expertise, networks and corporate responsibility initiatives to enable sustainable practices across all of our operations and the industries that we service, and to drive meaningful and lasting change.**

**[Click here to visit our dedicated sustainability hub.](#)**

**HFW has over 600 lawyers working in offices across the Americas, Europe, the Middle East and Asia Pacific. For further information about our commodities capabilities, please visit [hfw.com/Logistics](https://www.hfw.com/Logistics).**

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