

Railfreight Decarbonisation

SME COLLABORATION CHALLENGE: OPPORTUNITIES FOR DECARBONISING FREIGHT



Railfreight Decarbonisation

1500	Introduction to the Event	Elaine Clark
1505	Rail Sector Background to the Challenge	Rob Cooper
1510	Railfreight Decarbonisation	Chris Swan
1515	More Rail & Better Rail – University of Derby	Gary Wright
1525	Working Group introductions	Chris Swan
1530	Data Management & Telematics	Ben Garner
	Locomotives & Wagons	Andrew Cox
	Driver Management & Improved pathing	Gary Wells
	Terminal Operations	Nigel Day
1620	What Next?	Elaine Clark



Rail Supply Group

Rail Supply Group

The Rail Sector Deal and the Midlands Pilot

Rob Cooper

Railfreight Decarbonisation



Decarbonisation is an Opportunity

- Use of railfreight in UK Construction increasing year on year
- Can help tackle Urban Congestion in Cities
- Improved Carbon footprint per delivery
- Air Quality improvements
- Rail has a small % of market share but potential to do better

Threats

- If we have no plan for alternatives to Diesel engines in the future & within Low Emissions Zones
- Challenges around planning at vital Terminals
- Capacity on the rail network
- Road technology is improving at a much quicker rate



Railfreight Decarbonisation

“More Rail” & “Better Rail”

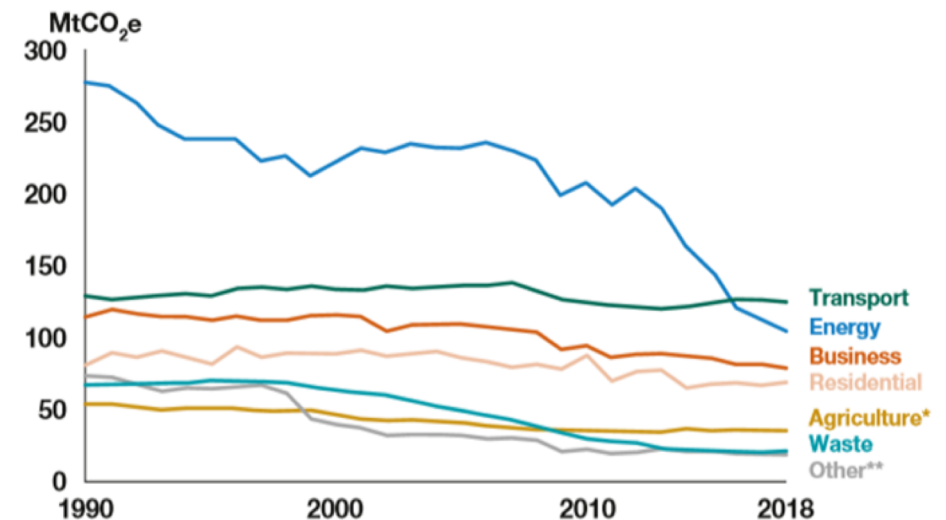
Gary Wright, University of Derby



Did You Know?

United Kingdom Net Zero Journey

- When considering transportation, it is necessary to understand the wider context of the journey to reduce total Green House Gas (GHG) emissions
- The UK is currently committed under the Climate Change Act 2008 to a reduction of 80% by 2050, compared to 1990 levels
- The UK Government's most recent aim is net zero emissions across every single mode of transport by 2050 (DfT 2020)
- While other areas than energy also continue to see a slow but steady reduction in GHG emissions there is an increasing need to focus on transport

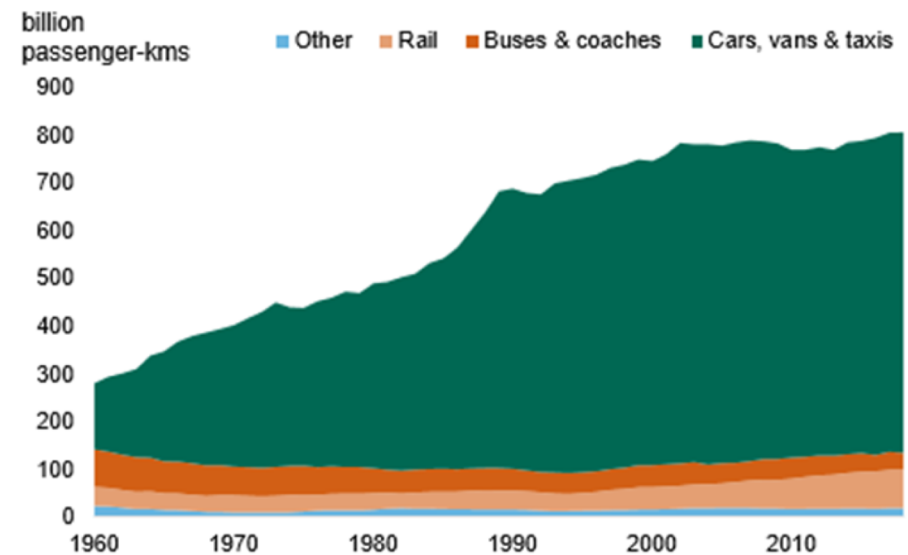


* Includes Land Use, Land Use Change and Forestry
** Includes Public and Industrial Processes emissions

Did You Know?

Transport is now the largest emitting sector

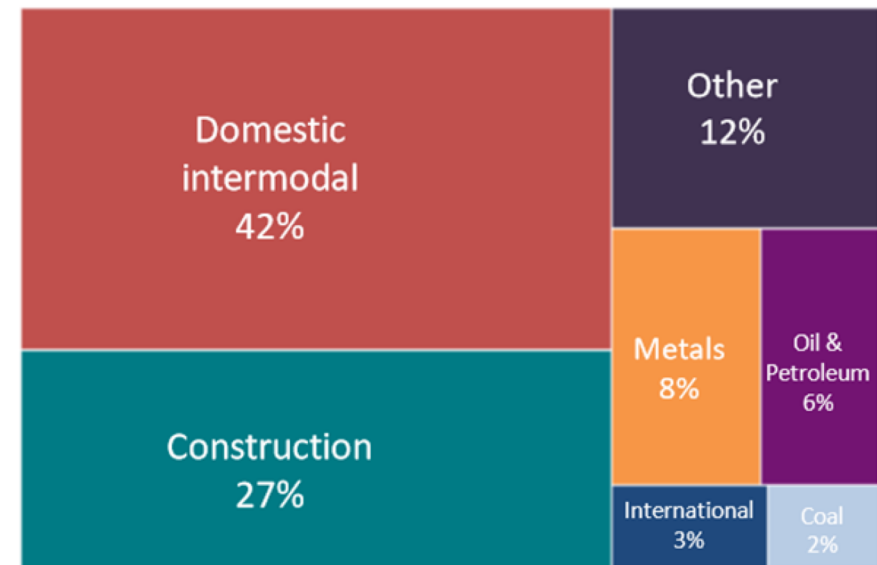
- In 2018, 808 billion passenger kilometres were travelled in the UK, with 83% of passenger kilometres made by cars, vans and taxis (DfT 2019)
- Why is there an increasing need to focus on transport?
- Due to a steady increase in total distance travelled



What Does All this have to do with Rail Freight?

Rail freight transported:

- Approximately 69 Million Tonnes p.a.
- More than 200,000 Rail Journeys
- More than 40% of the cargo is made up of household goods, while just over a quarter is composed of construction materials, such as stone
- Using rail meant 7 million lorry journeys were avoided



Share by commodity: volume of rail freight moved, 2019-20 Q3

Road to Rail Freight – Modal Shift

Road Freight transported in 2019



Heavy Goods Vehicle

154 billion tonne km



Road freight emissions

This resulted in:



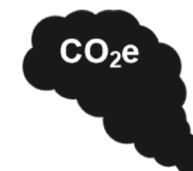
18 Mt CO₂e emissions

Rail Freight Equivalent



Rail Freight emissions

This resulted in:



4 Mt CO₂e emissions

(Dft 2020)

Goods lifted: the weight of goods carried, measured in tonnes

∴ Rail Freight > 70% Reduction in emissions

“More Rail” & “Better Rail”

Rail Freight > 70% Reduction in emissions...

A modal shift to Rail Freight can be ever better if?

- Longer trains, Improved fuel usage per tonne
- Impact on Regulation and looping on fuel usage
- Driver behaviour impact – real time management
- Road to Rail focusing on specific routes
- Wagon aerodynamic impact...

Extra Wagons

20% emissions reduction / t km

Eliminate Stopping

25% MPH increase

Efficient Driving

10% Fuel reduction

Targeted Modal Shift

7 x emissions reduction

∴ **More Rail through Better Rail Freight**
> 40% Reduction in Emissions from current baseline

Is your business ready for a Low Carbon future?
Reduce costs and cut carbon with our
DE-Carbonise programme.

“We do not inherit the earth from our
ancestors, we borrow it from our
children”

Native American Proverb



Call 01332 597982
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derby.ac.uk/decarbonise