

National Rail Trends

Chapter 9: Sustainable development

9.1 Environmental indicators

Methodology

The 2007-08 traction energy data for passenger TOCs (franchised and open access operators) has been provided by ATOC. Traction energy data for freight operators has been taken from two sources: Network Rail for electricity consumption and individual FOCs for diesel. Traction energy data for Eurostar services has been provided by Network Rail. Estimations of freight diesel consumption have been made for some operators where data is currently incomplete or has not been provided. Carbon dioxide emissions have been calculated using the appropriate emissions conversion factors from the Defra Greenhouse Gas (GHG) Company Reporting Guidelines. (Note: These are consistent with data published in the Digest of UK Energy Statistics and the National Atmospheric Emissions Inventory (NAEI)). In converting electricity consumption into carbon dioxide emissions the values have been adjusted for losses in the high voltage national grid. Passenger km data for franchised operators has been taken from National Rail Trends, with open access operators and Eurostar providing data separately. Net freight tonne km data has been provided by National Rail Trends and Network Rail. Charter services and engineering trains ('yellow plant') have not been included within the KPI as data on these is currently either unreliable or unavailable.

Notes

Totals may not equal the sum of component parts due to rounding.

This KPI includes traction energy data in respect of franchised and non franchised passenger TOCs, freight operators and Eurostar.

The carbon intensity of electricity generation (gCO₂/kWh) for 2007/8 has been assumed to be the same as for 2006/7. This may need to be updated once final 2007 power station emissions data becomes available from NAEI.

While total traction electricity usage has decreased over the three years, the corresponding increase in CO₂ emissions is primarily due to a change in the electricity generating mix – principally a switch from gas to coal during 2006 – which resulted in a higher carbon intensity of electricity generation.

Table 9.1 Environmental indicators

GB passenger and freight train operator traction energy consumption and related CO₂ emissions

	Energy Consumption						Traction electricity			CO ₂ emissions from traction energy			Combined (ktonnes)
	Traction electricity usage (million kWh)			Traction diesel usage (million litres)			Traction electricity (ktonnes)			Traction diesel (ktonnes)			
	Total Passenger	Total Freight	Total Traction Electricity	Total Passenger	Total Freight	Total Traction Diesel	Passenger	Freight	Total	Passenger	Freight	Total	
2005-06	3020.7	118.2	3138.9	459.3	224.2	683.6	1495.2	58.5	1553.8	1228.3	599.6	1827.9	3381.7
2006-07	2947.8	109.6	3057.5	463.7	218.4	682.1	1532.9	57.0	1589.9	1239.8	584.0	1823.8	3413.7
2007-08	2922.3	101.2	3023.5	447.5	218.7	666.2	1519.6	52.6	1572.2	1196.6	584.8	1781.4	3353.7
Percentage change 2007-08 on 2006-07	-0.9	-7.6	-1.1	-3.5	0.1	-2.3	-0.9	-7.6	-1.1	-3.5	0.1	-2.3	-1.8
Percentage change 2007-08 on 2005-06	-3.3	-14.4	-3.7	-2.6	-2.5	-2.5	1.6	-10.1	1.2	-2.6	-2.5	-2.5	-0.8

	Normalised data	
	CO ₂ emissions from traction energy g/CO ₂ per passenger km	CO ₂ emissions from traction energy g/CO ₂ per net freight tonne km
2005-06	61.4	28.0
2006-07	58.1	27.6
2007-08	53.4	28.5
Percentage change 2007-08 on 2006-07	-8.1	3.1
Percentage change 2007-08 on 2005-06	-13.2	1.7