Rail Delivery Group Carbon Footprint Report 2021 – 2022

Prepared by Megan Roseblade, Planning and Carbon Manager, RDG

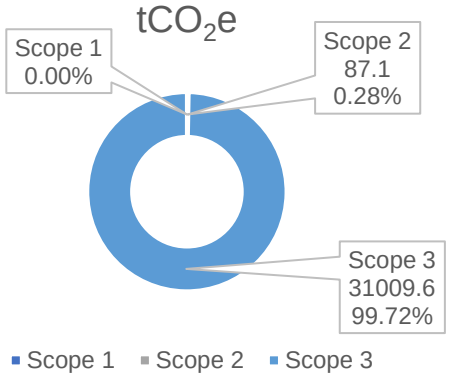
31 October 2022

RDG's emissions on a page

Total emissions

In the financial year 2021 to 2022, RDG's total emissions were 31,096.7 tCO_2e.

This is an increase of 44% from the previous year, which can be attributed to the return to usual following the Covid-19 pandemic and subsequent reduction in rail services.



Almost all emissions fall into Scope 3.

Scope 3 emissions are all indirect emissions that occur in RDG's value chain, including both upstream and downstream emissions.

RDG's biggest contributor to Scope 3 is Purchased Goods and Services, accounting for 30,076 tCO_2e

Comparison to baseline (2020-2021)

		tCO_2e
	FY20/21	**FY21/22**
Scope 1		
Stationary combustion	-	-
Mobile combustion	-	-
Refrigerants	-	-
Scope 2		
Purchased heat	36.6	36.7
Purchased electricity	76.4	50.4
Scope 3		
Purchased goods and services	20,893.3	30,076.0
Capital goods	24.2	-
Fuel- and energy- related activities not included in S1 or S2	28.1	22.4
Upstream transportation and distribution	-	-
Waste generated in operations	1.0	0.3
Business Travel	-	16.6
Employee commuting (& remote working)	188.0	405.9
Upstream leased assets	-	-
Downstream transportation and distribution	-	-
Processing of sold products	-	-
Use of sold products	-	-
End of life treatment of sold products	108.1	350.6
Downstream leased assets	-	-
Franchises	-	-
Investments	222.4	137.9

Contents

1. Introduction

This report summarises the Rail Delivery Group's (RDG) carbon footprint for the financial year 2021-2022 (the 12-month period from 1st April 2021 - 31th March 2022).

The methodology, key limitations and recommendations for improvement in subsequent years are also outlined, alongside comparison to the baseline year 2020-2021.

RDG's carbon footprint increased when compared to the baseline year, but this can be attributed to the change in service caused by the Covid-19 Pandemic.

The Climate Pledge

As part of RDG's efforts to reduce the impacts of its own operations, RDG joined the Climate Pledge on 21st April 2021. The Climate Pledge calls on companies to be net zero across their businesses by 2040, committing signatories to three principal areas of action:

1. **Regular reporting** - measure and report greenhouse gas emissions (GHG) on a regular basis across Scopes 1, 2 and 3. The Climate Pledge asks companies to refer

to best practices within their industry, e.g. the Greenhouse Gas (GHG) Protocol, which is one of the Climate Pledge's recommended methods.

2. **Carbon elimination** - implement decarbonisation strategies in line with the Paris Agreement through real business changes and innovations, including efficiency improvements, renewable energy, materials reductions, and other carbon emission elimination strategies.

3. **Credible offsets** - neutralise any remaining emissions with additional, quantifiable, real, permanent, and socially-beneficial offsets to achieve net zero annual carbon emissions by 2040[1].

As part of the Climate Pledge, RDG commit to comprehensively reviewing and reporting of the organisation's greenhouse gas emissions, accounting for all emissions associated with RDG's operations, including those the organisation can control, Scopes 1 and 2, as well as emissions the organisation can influence, Scope 3.

This process was first completed in 20/21, setting a baseline for future greenhouse gas emissions to be measured against.

2. Methodology

The methodology used to calculate RDG's greenhouse gas emissions follows the World Resources Institute GHG Protocol - A Corporate Accounting and Reporting Standard, Revised Edition[2] ("the Protocol") and is guided by the Protocol's key principles of relevance, completeness, consistency, transparency and accuracy.

An operational control approach has been taken, meaning that the inventory covers emissions from all operations that are under the group's operational control. Emissions are reported in line with the company's financial year, the baseline year being RDG's 2020/2021 financial year. UK Government emissions factors have been applied where available; electricity emission factors are location based.

To ensure full transparency, calculation methodologies, assumptions and any alternative emission factors have been disclosed within a detailed methodology document, 'RDG Extended Report_Carbon Footprint Methodology FY21_22', as well as the 'RDG Carbon Inventory FY21_22' spreadsheet.

This approach is in line with the UK's Competition and Markets Authority (CMA) Green Claims Code[3], which ensures green claims are truthful, accurate, clear and unambiguous, do not hide or omit important information, consider the full life cycle of a product or service and are substantiated.

3. RDG's Carbon footprint

Greenhouse gas emissions summary

A summary of RDG's GHG emissions for the 12-month period from 1st April 2021 - 31st March 2022 is shown in Table 1. Absolute emissions (total emissions) are summarised, as well as

[1] The Climate Pledge. *The Pledge.* Available: https://www.theclimatepledge.com/us/en/the-pledge.
[2] WRI GHG Protocol Corporate Standard. Available: https://ghgprotocol.org/corporate-standard.
[3] HM Government, 2021. *Green Claims Code*. Available: https://greenclaims.campaign.gov.uk/.

two intensity ratios. Intensity ratios provide a measure of greenhouse gas emissions in proportion to a measure of activity and are useful for annual comparison.

Summary table	
Absolute GHG emissions breakdown (tCO_2e) per financial year	
Scope	**FY22/22**
Scope 1	0.0
Scope 2	87.1
Scope 3	31,009.6
Total (Scope 1 and 2)	**87.1**
Total (Scopes 1, 2, and 3)	**31,096.7**
% change (year-on-year)	**44%**
GHG emission intensity (tCO_2e) per financial year	
Budget (£)	£69,200,000
Carbon intensity (tCO_2e per £ million budget)	**449.4**
% change	**11%**
Average FTEs	362.00
Carbon intensity (tCO_2e per FTE)	**85.90**
% change (year-on-year)	**23%**

Table 1: RDG GHG emissions summary (FY21/22).

RDG's impact

As illustrated in Figure 1, near 100% of RDG's GHG emissions fall within Scope 3. The remaining 0.28% of emissions are Scope 2 emissions from electricity and heat supplied through RDG's landlord.

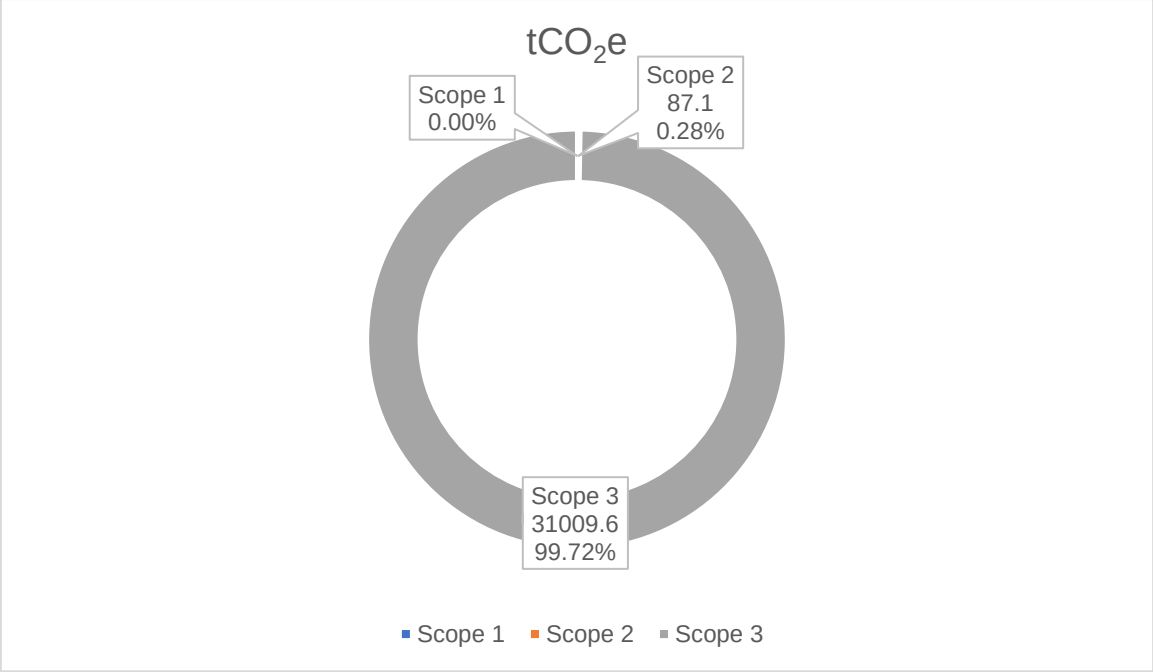


Figure 1: RDG's GHG emissions by scope (FY21/22).

Scope 1

Scope 1 emissions involve the direct GHG emissions that are released as a result of operations that are controlled or owned by an organisation. There are three major subcategories within Scope 1: stationary combustion (the combustion of fuel within machinery or equipment such as boilers), mobile combustion (the combustion of fuels due to the operation of vehicles owned or leased), and fugitive emissions (emissions from refrigeration systems)[4]. There are no Scope 1 emissions associated with RDG's operations as RDG did not operate or maintain any heating or cooling plant and had no company-owned vehicles in the baseline year. Fugitive emissions from refrigerants used in cooling plant have been accounted for in Scope 3 due to RDG's indirect control.

Scope 2

Scope 2 emissions are caused by the indirect release of GHG emissions that are derived from the purchase of heat, electricity, steam, and cooling. RDG's Scope 2 emissions make up 0.28% of overall GHG emissions: 50.4 tCO_2e are from purchased electricity and 36.7 tCO_2e are from purchased heat, both of which were supplied by RDG's landlord at its office premises located at 200 Aldersgate Street, London.

Scope 3

Scope 3 emissions are all indirect emissions (not included in Scope 2) that occur in RDG's value chain, including both upstream and downstream emissions[5]. Whilst RDG's operations are predominantly office-based, the reach of the organisation's operations, and therefore the Scope 3 emissions, is large. A breakdown of RDG's Scope 3 emissions, as per the GHG Protocol's fifteen Scope 3 categories is shown in Figure 2. All applicable categories were

[4] US EPA Scope 1 and Scope 2 Inventory Guidance. Available: https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance.
[5] WRI GHG Protocol. *FAQ.* Available: https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf.

included in the baseline carbon inventory for completeness and to assess the materiality of emission sources for future GHG emission calculations.

Within Scope 3, the purchase of goods and services (S3-1) accounts for 30,076 tCO_2e of RDG's overall footprint and is therefore by far the largest emission source. Figure 3 shows a further breakdown of emissions within Scope 3-1 Purchased goods and services. IT services account for 8257.5 tCO_2e of emissions within this category and marketing is a further 7467.5 tCO_2e.

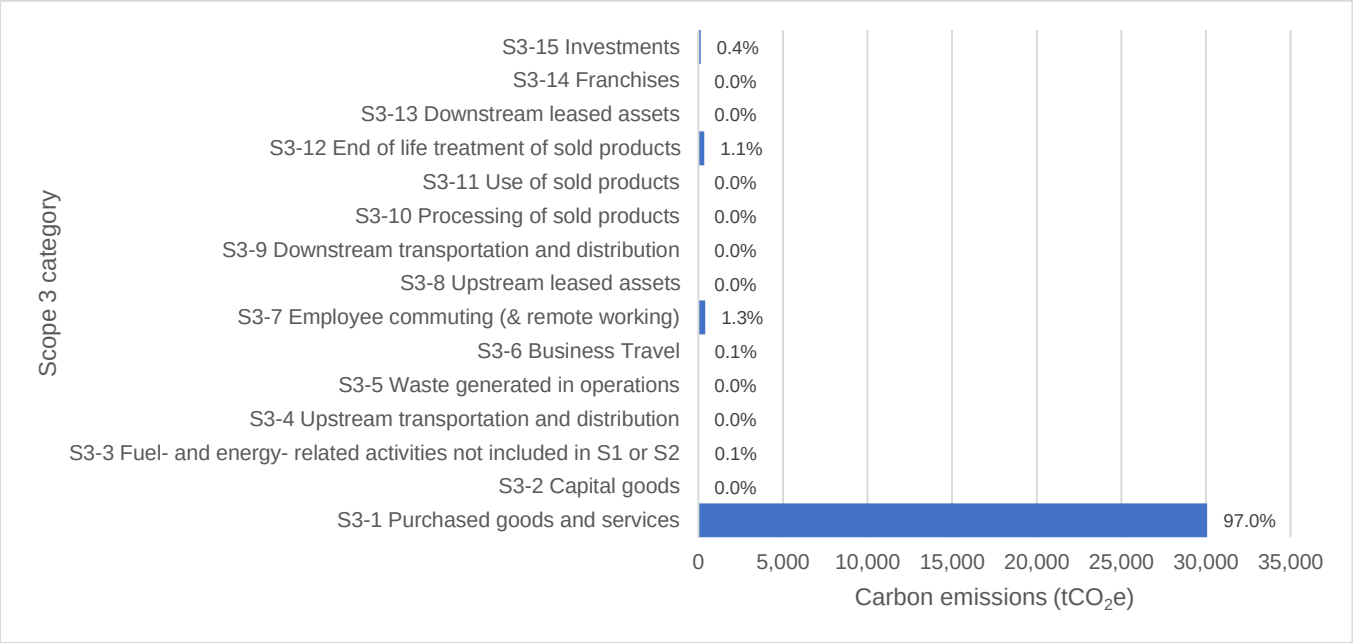


Figure 2: RDG's GHG Scope 3 emissions.

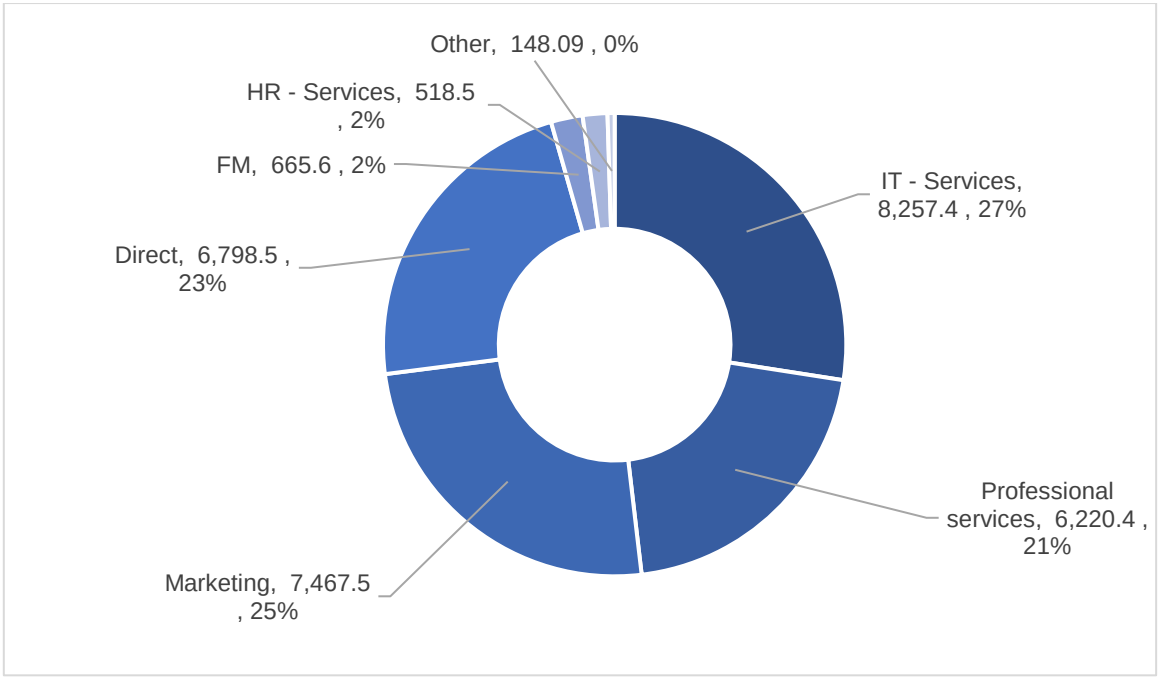


Figure 3: Breakdown of RDG's GHG emissions (tCO_2e) within S3-1 Purchased goods and services.

The GHG emissions associated with Employee commuting and remote working (S3-7), is the second largest category within Scope 3, accounting for 405.9 tCO_2e. End of life treatment of

sold products(S3-12), which for RDG is rail tickets, and RDG's investments (S3-15), i.e. pension payments, are also significant emission sources accounting for 350.6 tCO_2e and 137.9 tCO_2e respectively.

Emissions Intensity Ratio

In order to compare RDG's GHG emissions annually, two intensity ratios have been calculated, as shown in Table 2. The carbon emissions per British Pound of budget and per full-time equivalent (FTE) have been calculated.

Total carbon footprint and intensity ratio		
Carbon intensity (intensity ratio)	Carbon emissions per £ million budget	449.4 tCO_2e
	Carbon emissions per FTE	85.9 tCO_2e

Table 2: RDG Carbon intensity ratio.

4. Comparison to Baseline

Greenhouse gas emissions comparison

A summary of RDG's GHG emissions for financial years 2020/21 and 2021/22 is shown below (table 2). Absolute emissions (total emissions) are summarised, as well as two intensity ratios.

There was an increase of 9516.5 tCO_2e from FY20/21 to FY21/22.

	Summary table	
	Absolute GHG emissions breakdown (tCO_2e) per financial year	
Scope	**FY20/21**	**FY21/22**
Scope 1	0.0	0.0
Scope 2	113.0	87.1
Scope 3	21,465.2	31,009.6
Total (Scope 1 and 2)	**113.0**	**87.1**
Total (Scopes 1, 2, and 3)	**21,578.2**	**31,096.7**
% change (year-on-year)	**N/A**	**44%**
	GHG emission intensity (tCO_2e) per financial year	
Budget (£)	53,500,000.00	£69,200,000
Carbon intensity (tCO_2e per £ million budget)	**403.3**	**449.4**
% change	**N/A**	**11%**
Average FTEs	308.00	362.00
Carbon intensity (tCO_2e per FTE)	**70.1**	**85.90**
% change (year-on-year)	**N/A**	**23%**

Table 2: RDG GHG emissions summary (FY 20/21 and FY21/22).

Commentary

Reason for emissions increase

The emissions for the period from 1st April 2020 - 31st March 2021 was heavily impacted by the Covid-19 pandemic. Service provision for the rail network was at a far lower rate than usual, with passenger numbers reaching as low as 10% of pre-pandemic numbers at points.

For this reason, financial year 2020/21 is an unsuitable baseline to measure 'normal' activity against. However, 2020/21 was the first year RDG undertook GHG emissions reporting and is therefore the only year for comparison.

Whilst the substantial increase in GHG emissions is reflected in the FTE intensity, the carbon intensity per £million paints a much better picture. The budget from 20/21 to 21/22 increased by 29%, but the emissions increased by only 11%.

RDG's Impact

SCOPE 1

Scope 1 is out of scope for both years.

SCOPE 2

Scope 2 emissions of electricity has reduced by 26 tCO_2e. However, RDG's Scope 2 energy use is calculated as a percentage of the building's emissions. This reduction reflects a decreased electricity usage for the whole building, of which RDG occupies 6%.

SCOPE 3

Purchased goods and services was the largest category in both years.

Areas of RDG that operated almost business as usual, such as IT services, have remained relatively stable from 2020/21 to 2021/22, rising only 1% from 8175.5 tCO_2e to 8257.4 tCO_2e. As staff numbers rose by 17% in the same period, this could be considered a real terms decrease.

In contrast, marketing was far more affected by the pandemic. The team focussed on a limited number of campaigns, largely urging people to stay at home. However, following the pandemic, the team has worked hard to encourage people back to the railway. This change is reflected in the marketing GHG emissions, which has increased from 1890.6 tCO_2e in 20/21 to 7467.5 tCO_2e in 21/22.

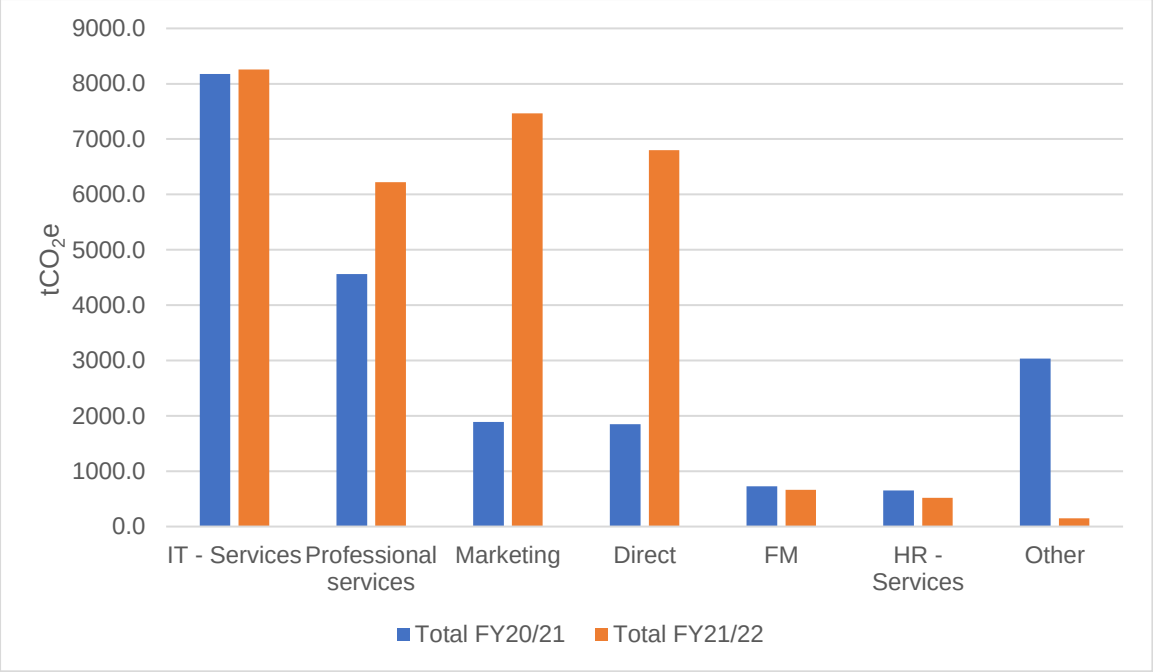


Figure 4: Breakdown of RDG's GHG emissions (tCO_2e) within S3-1 Purchased goods and services for financial years 2020/21 and 2021/22

Employee commuting and remote working was the second largest category in FY20/21 but dropped to third in FY21/22. However, with the increase in people working in the office following the pandemic, the total emissions increased from 188 tCO_2e to 406 tCO_2e. Alongside the common sense increase here, FY21/22 was the first year a full survey of staff commuting methods took place and is therefore likely to be much more accurate than the previous year which had been based on estimates.

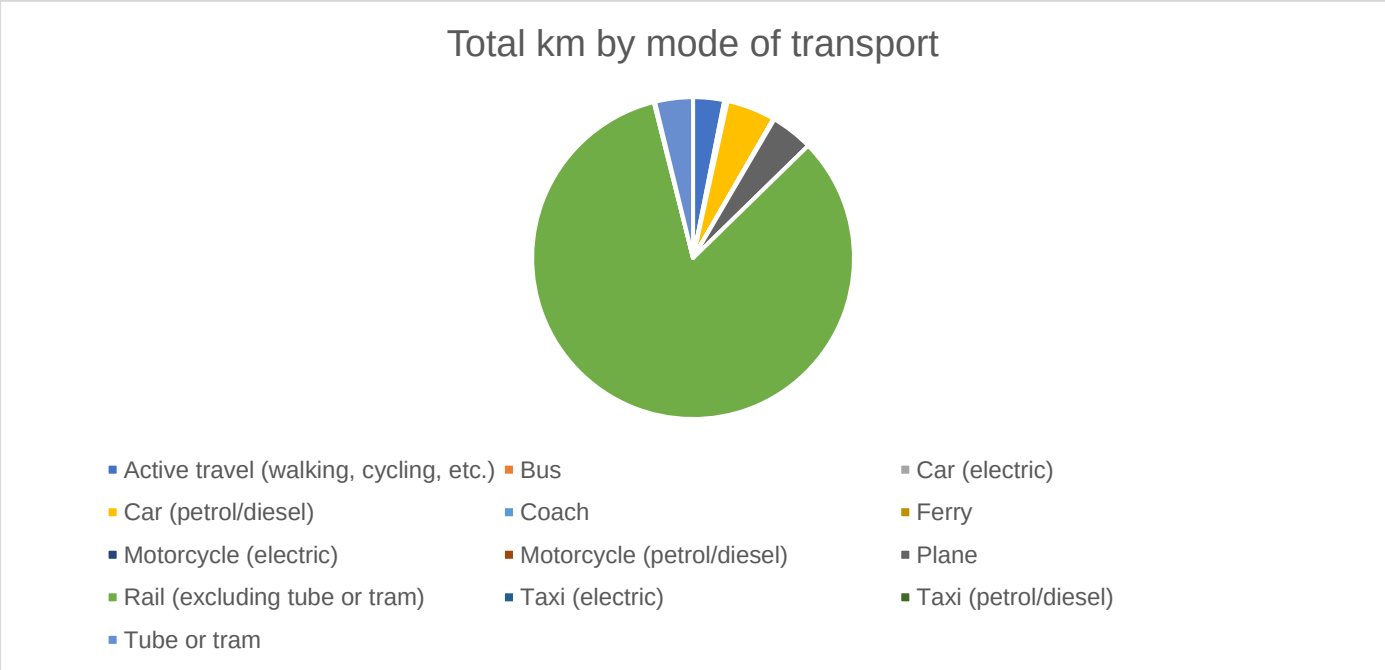


Figure 4: Breakdown of RDG's commute FY21/22, based on an average of all staff and total kilometres travelled.

Rail accounts for most kilometres travelled, with 76% of employees taking mainline rail for some proportion of their trip. Almost all walk some of the distance. However, 24% of staff drove for at least a portion on their journey, and those who drove typically drove for an average of 4 miles. This is a journey distance that is within DfT's target range to switch to cycling.

End of life treatment of sold products overtook commuting to become RDG's second greatest category of emissions. This covers rail tickets, which RDG supplies on behalf of the industry. The vast majority of these tickets are non-recyclable so, to the best of our knowledge, are sent to landfill. The increase in this category, from 108.1 tCO_2e to 350.6 tCO_2e, reflects the increased number of passenger journeys following the lockdowns of 2020 and early 2021.

5. Next Steps - Emissions Reduction

Having quantified Scope 1, 2 and 3 emissions, RDG's next step will be to identify opportunities to make emissions reductions.

With Scope 3 emissions from purchased goods and services forming the majority of its emissions, RDG will focus on this area through engaging with individuals and teams who make the high-spend purchases and the supply chain, firstly to better understand and quantify these emissions, then to seek to make reductions where possible through supplier engagement and considering carbon emissions as part of its future procurement strategy and purchasing decisions.

RDG is already working on a project to reduce the emissions from end-of-life treatment of sold products. The responsible directorate is focused on increasing options for alternative ticket-types, such as PAYG smartcards, barcode and paper tickets (rather than the current magnetic, non-recyclable tickets).

A staff engagement programme will also be rolled out to look at further areas of reduction, initially focussing on reducing waste and changing commuting habits.

Scope 2 emissions are currently out of RDG's control. Steps to reduce this will be taken when RDG moves into its new office in April 2023, which is expected to allow RDG greater control of its energy emissions than is currently provided.

It's also recommended that RDG updates its Environmental Policy, and produces a target based plan for emissions reduction.

6. Limitations of Methodology and Recommendations

As with all GHG emissions inventories, there are limitations to the methodology applied and certain assumptions have needed to be made, in the absence of suitable quantified data. A summary of key limitations and recommendations for improvement in subsequent years is shown below (a full review of these for each scope category can be found in the 'RDG Extended Report_Carbon Footprint Methodology FY21_22):

Spend based emission calculations

- **Limitation:** Emissions were based on the best data available at the time of calculation. Primary data was provided for emission categories where available. In some instances, primary data was based on spend in place of weight/volumes, which reduces the accuracy of emission calculations.
- **Recommendation**: It is recommended that emissions from purchased goods and services are based on quantity of goods/services in place of spend, however, this approach is considered appropriate to assess the scale.

Assumptions/benchmarks used in place of some primary data source

- **Limitation**: Neither primary or spend data was available for some 'in-scope' categories. In these instances, calculations are based on benchmarked data or assumptions. These assumptions have been noted within the extended methodology report[Error! Bookmark not defined.] and within the GHG Inventory[Error! Bookmark not defined.].
- **Recommendation**: Obtain primary data for scope categories where assumptions or benchmarks have been used.

Emissions are based on the best available emission factors.

- **Limitation**: There is a lack of specific up to date emission factors for some Scope 3 categories, particularly Scope 3-1 Purchased goods and services.
- **Recommendation**: Continue to work with suppliers to obtain supplier specific emission factors to improve the accuracy of emission calculations within this category.

It is acknowledged that the calculation methodology and data sources will evolve in the future as improved data becomes available. If data quality improves significantly there may be a need to re-baseline.

The above limitations will not have a material impact on the overall inventory. Where assumptions have been made, a 'worst case scenario' has been chosen, to ensure emissions are not underestimated.