Environmental Data Report 2019
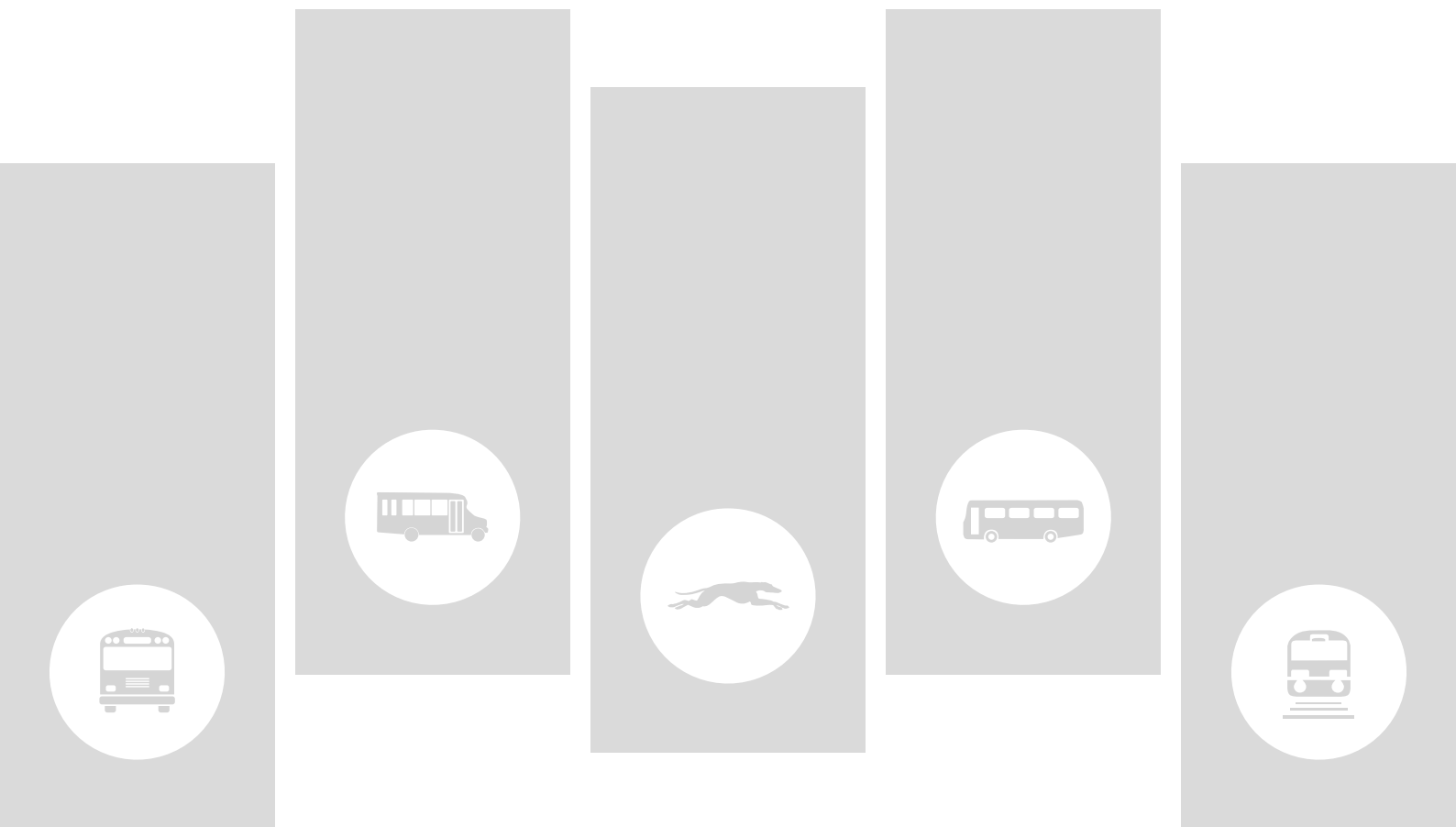
We provide easy and convenient mobility, improving quality of life by connecting people and communities.

FirstGroup is a leading provider of transport services in the UK and North America. Whether for business, education, health, social or recreation – we get our customers where they want to be, when they want to be there. We create solutions that reduce complexity, making travel smoother and life easier.

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Introduction

We believe that a vital facet of sound corporate governance is recognising our long term responsibility to all our stakeholders, and with that, a rigorous focus on sustainability. We manage, monitor and report on our most material sustainability impacts, and work with expert networks and groups to learn from best practice, helping us to better respond to the current and future needs of our customers and stakeholders.

Scope of this report

This Environmental Data Report provides more detailed insights and information to expand upon the environmental content contained within our Annual Report and Accounts (AR&A) 2019, which can be found on our website at www.firstgroupplc.com.

In this report we highlight our performance on carbon, energy, air emissions, waste, water and environmental compliance, and give detailed information on our environmental data assurance, scope and exclusions, and re-baselining policy.

For information on our approach to other non-financial impacts, including social and governance issues such as employee engagement, diversity, health and wellbeing, safety, community engagement, ethics and human rights, please see our AR&A 2019.

Our focus on climate change and air quality

This report focuses in particular on our carbon footprint and carbon intensity metrics, as well as our energy footprint and intensity, and our local air emissions.

Atmospheric levels of carbon dioxide are at historically high levels and continue to increase. The warming effect of these emissions on our planet is devastating and global legislation, expectations from customers, investors and stakeholders are changing as society looks to speed up the transition to a low carbon economy.

The transport sector has now overtaken the power sector as the largest contributor to greenhouse gas emissions both in the UK and North America. At the same time, there has been a growing focus on local air quality due to the increasing number of studies examining the impact of poor air quality on human health.

The overwhelming majority of our carbon dioxide and other emissions result from the fuels and electricity used to power our road and rail vehicles and we aim to reduce these. Our progress in moving to cleaner fuels and investing in more efficient and cleaner fleet, together with a significant decarbonisation of the electricity grid in the UK, meant in 2018/19 we reduced our carbon emissions to 371 tonnes of CO_2 equivalent per £1m revenue, representing a 13% decrease in our normalised emissions since 2016.

At the same time as reducing our own emissions, the focus of our entire business model and vision is to encourage travellers to make the modal shift from flying and private vehicles to more efficient public transport modes, which is fundamental to the response of our communities and governments to the impact of climate change.

Carbon Footprint

Carbon Footprint

94% of our greenhouse gas (GHG) emissions derive from the fuel and electricity we use to power our road and rail fleets.

From our baseline reporting year (2015/16), we have reduced our gross GHG emissions by 3%.

Relevant factors in this include a 3.3% reduction in diesel, gas-oil and petrol use, and increases in the use of biofuels and gaseous fuels. In 2018/19 for example, we recorded a 41% increase in compressed natural gas (CNG) use in our US businesses.

Gross carbon emissions

Table 1: Location-based carbon emissions

Carbon (tCO$_2$(e))	2019	2018	2017	2016
Scope 1	**2,344,768**	2,431,367	2,436,362	2,416,781
Scope 2	**265,924**	276,973	270,988	267,241
Scope 3	**18,179**	9,339	10,668	15,126
Out of Scope	**14,654**	10,065	9,530	13,585
Total (scope 1+2)	**2,610,692**	2,708,340	2,707,350	2,684,022
Total (all)	**2,643,524**	2,727,744	2,727,548	2,712,733
% change (against a 2016 baseline)	**-3%**	1%	1%	n/a

Figures in the table above have been restated in consideration of changes in methodologies, improvements in the accuracy, or discovery of errors in previous years' data as per our restatement policy stated in Appendix B: Re-baselining and restatements on page 12.

Table 2: Market-based carbon emissions

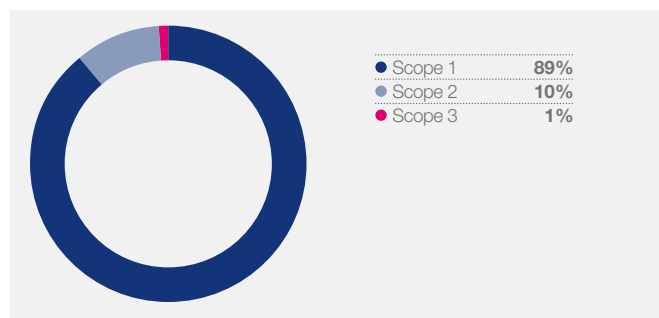| Carbon (tCO$_2$(e))	2019	2018	2017	2016
Scope 2	**48,768**	46,683	46,128	72,134
Total (scope1+2)	**2,393,535**	2,478,050	2,482,490	2,488,915
Total (all)	**2,426,368**	2,488,454	2,502,688	2,517,626

The methodology and source data for this table is explained on page 11 of Appendix A: Our reporting approach.

We report location- and market-based Scope 2 emissions to enable our stakeholders to understand the carbon savings from our procurement of renewable energy.
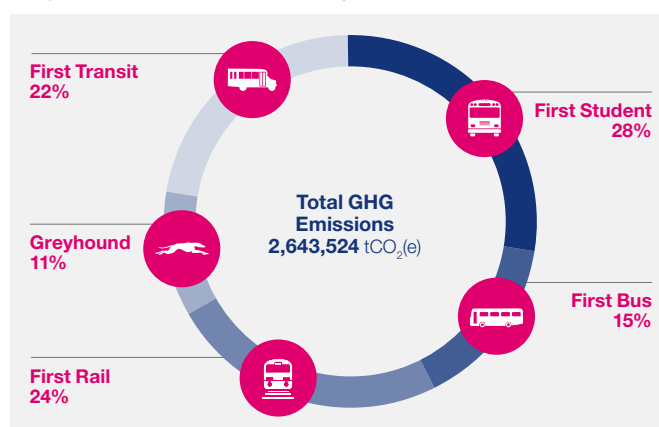
Our total GHG emissions are 8% lower when reporting market-based Scope 2 emissions as opposed to location-based.

Our carbon footprint by scope

Graph 1: 2018/19 GHG emissions by scope (location-based)

● Scope 1	**89%**
● Scope 2	**10%**
● Scope 3	**1%**

Graph 2: 2018/19 GHG emissions per division

First Transit 22%
First Student 28%
Greyhound 11%
First Bus 15%
First Rail 24%

Total GHG Emissions 2,643,524 tCO$_2$(e)

Carbon footprint and energy consumption

Carbon Intensity

We use an intensity ratio to track our performance over time in a way that takes into account factors such as a change in the size of our business.

From our baseline reporting year (2015/16), we have reduced our carbon intensity (per £1m revenue) by 13%. Decarbonisation of our power networks, coupled with increased electrification in First Rail has played a key role in reducing our carbon intensity per passenger kilometre and per £1m revenue.

First Bus' carbon footprint per vehicle kilometre has reduced by 8% since 2015/16 reflecting the impact that fleet upgrades, electric vehicles and driver initiatives are having on our overall carbon footprint. First Rail's carbon footprint per passenger kilometre has reduced by 15% since 2015/16 as a result of fleet upgrades, increased electrification and passenger efficiencies combined.

Carbon emissions intensity

Table 3: Carbon intensity by revenue

Carbon per £1m revenue (tCO$_2$e/£1m)	2019	2018	2017	2016
FirstGroup	371	385	400	426
% Change (against a 2016 baseline)	-13%	-10%	-6%	n/a

Table 4: Carbon intensity by vehicle kilometre

Carbon per vehicle km (gCO$_2$e/vehicle km)	2019	2018	2017	2016
First Bus	1,010	1,020	1,049	1,099
First Student	807	808	810	795
First Transit	1,160	821	1,043	954

Figures in the table above have been restated in consideration of changes in methodologies, improvements in the accuracy, or discovery of errors in previous years' data as per our restatement policy stated in Appendix B: Re-baselining and Restatements on page 12.

Table 5: Carbon intensity by passenger kilometre

Carbon per passenger km (gCO$_2$e/passenger km)	2019	2018	2017	2016
First Bus	84.4	81.8	88.3	85.4
First Rail	43.1	44.8	51.3	50.4
Greyhound	32.5	32.2	32.4	33.7
Car (UK Average)	114.5	112.1		
Car (US Average)	222.7	222.7		
Domestic Flight	298.3	267.4		

The methodology and source data for this table is explained on page 11 of Appendix A: Our reporting approach.

Energy Consumption

Monitoring and reporting our energy consumption is vital to understanding our business efficiency, procuring cost effective energy supply, and supports our transition to a low carbon economy. Ahead of the UK's new 'Streamlined Energy and Carbon Reporting' (SERC) legislation we have taken measures to disclose our energy consumption to stakeholders in the sections below.

Table 6: Total energy consumption

Total energy consumption in Megawatt hours (MWh)		2019	2018
Non-Renewable	Fuels	8,703,924	9,039,970
	Electricity	107,263	79,718
Renewable	Fuels	327,213	379,791
	Electricity*	767,147	655,007
	Steam	769	0
Total		**9,906,315**	10,154,485

All energy figures from liquid fuels are reported using Higher Heating Value (HHV) conversion factors

* Derived of purchased electricity sources with energy attribute certificates dedicated to this supply.

Graph 3: Renewable and non-renewable energy consumption (MWh)

- Renewable
- Non-renewable
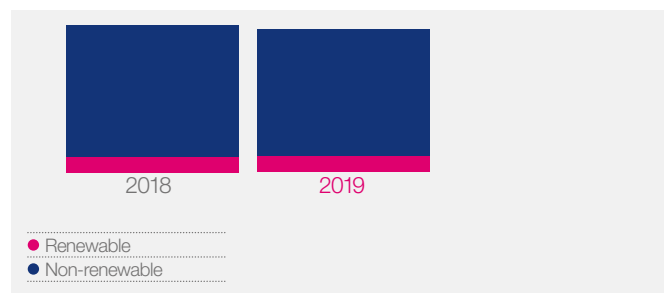
Energy intensity

Table 7: Energy intensity by revenue

Units of energy consumed per unit of revenue	2019	2018
MWh/£1m revenue	1,106	1,209
% Change from 2018	-9%	

Air emissions
Road divisions

Rising concerns over the link between poor air quality and health outcomes is driving towns and cities to restrict the most polluting vehicles. A shift to lower emission and higher occupancy vehicles in our urban areas is needed to help address this.

We support this by continuing to innovate and invest in our fleets to reduce our impact on air quality and offering practical and convenient services to our customers.

First Bus

We remain focused on targeting our investment in areas where local authority stakeholders recognise the importance of the bus sector's role to meet air quality targets, reduce congestion and strengthen local economies. As many of our markets introduce more stringent air quality plans, our investment in low emission vehicles continues.

We took delivery of 328 new EURO VI vehicles in 2018/19, a more than two fold increase over the prior year. This year, 18% of our First Bus vehicle kilometres were completed using EURO VI vehicles, an increase of 5% from the previous year.

We upgraded 215 vehicles to cleaner EURO VI standards in the year, and anticipate retrofitting 1,200 more, principally funded by grants, including the Government's Clean Air Fund. We expect this retrofitting programme, alongside continued investment in new vehicles, to continue increasing our EURO VI kilometres across First Bus.

Graph 4: First Bus – % distance travelled by EURO fleet type
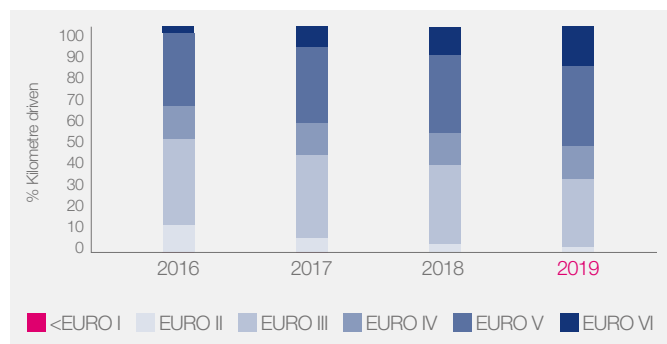
This data excludes kilometres which have not been attributed to a EURO classification. This exclusion is less than the materiality threshold of 5% in each year.

EURO classifications are in accordance with the EURO emission standard for heavy duty trucks and buses. EURO I, PRE-EURO and PRE-88 have been classified together as '<EURO I'. Enhanced Environmentally friendly Vehicles (EEV) are grouped in 'EURO V'.

This data does not include vehicles retrofitted to EURO VI standard.

North America

Through the process of contract renewal, new contracts and planned fleet replacement, we are replacing our older, higher emission fleet with newer 'model year' variants, including vehicles running on fuels such as compressed natural gas (CNG) and liquified petroleum gas (LPG) and electricity which have significantly reduced emissions, including Nitrogen Oxide (NOx) and Particulate Matter (PM2.5) compared to those of petrol and diesel engines. In 2018/19, our Road divisions in North America achieved an 18% reduction in NOx and a 23% reduction in PM 2.5.
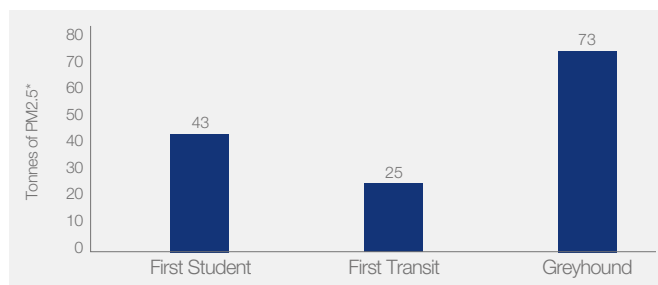
Graph 5: Distance travelled by model year of vehicle
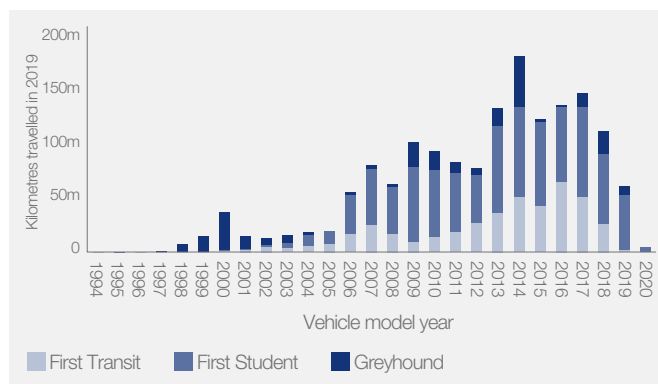
Graph 6: 2019 emissions of Nitrogen Oxides
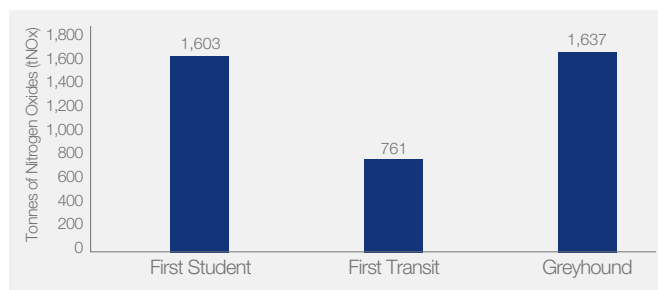
**Graph 7:** 2019 emissions of Particulate Matter 2.5*

* Particulate matter (PM) that has a diameter of less than 2.5 micrometres.

Waste and Water

Waste

In all our markets we adopt approaches to first reduce the volume of waste we produce, then recycle as much as possible, sending any remainder to energy-from-waste plants, considering landfill as the last option. In 2018/19, the total waste produced by the Group was 25,570 tonnes (2017/18: 22,520).
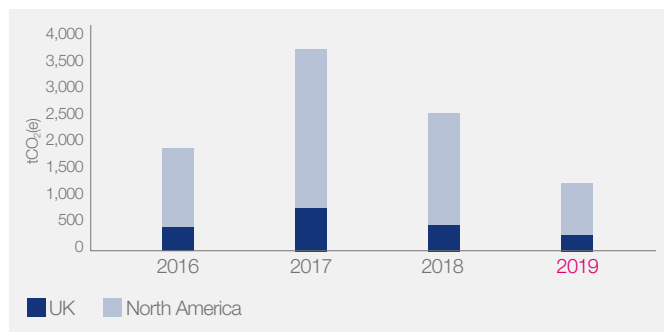
Graph 8: Total tonnes of waste produced
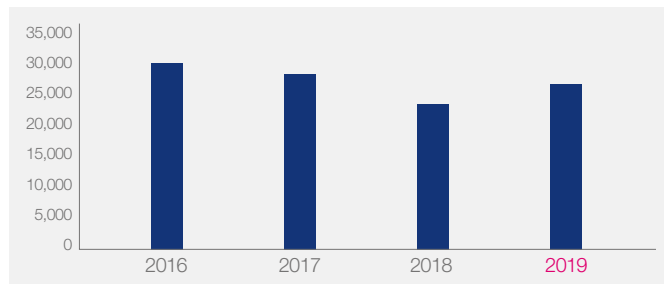
**Graph 9:** Proportion of waste by disposal route

- Recycling
- Recovery
- Landfill
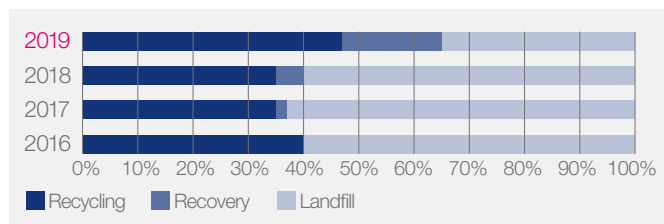
Graph 10: Carbon emissions from waste

- UK
- North America

Water

We are committed to efficient resource use and this includes our water use. We continue to improve the accuracy and scope of our water monitoring to better understand our water uses, reporting a total UK water figure for the first time in 2018/19.

Graph 11: Water (m³) 2018/19

UK
723,872

North America
781,612

Total
1,505,484
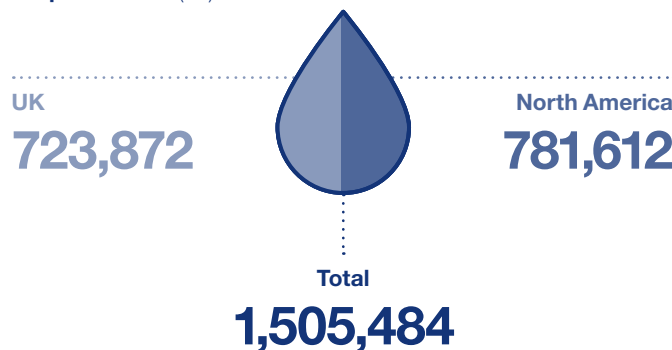
In June 2018 we moved to a new water supplier in the UK, and commenced a programme of data logger installations which has increased the scope of our water usage data. This year we have installed 135 data loggers to our water meters in First Rail with a further 45 planned.

These data loggers provide real-time data, thus improving our insight into water usage and helping with leak detection. Potential leaks in First Rail amounting to over 6,000 litres per hour have been discovered at 15 locations, which may not have been detected without the data logger installation.

Access to a data portal across First Bus for water usage has allowed us to report complete water consumption, a figure we have included in our Scope 3 emissions this year (2018/19). This has contributed 1,584 $tCO_2(e)$ to our total reported figures.

Environmental compliance

Environmental Management Systems

We operate environmental management systems (EMS) in all our divisions, providing a systematic, verifiable approach to minimise our environmental impacts, manage our legal compliance and continuously improve our environmental performance.

This means that all of our businesses follow a formal, documented and auditable approach for capturing and reporting environmental data.

Our environmental management systems all include:

- defined environmental roles and responsibilities for employees
- a training and awareness programme for relevant team members
- written procedures to control activities with a significant environmental impact
- a controlled system of records
- periodic auditing to ensure effective operation
- a formal review by senior management.

In the UK, First Bus and First Rail (excluding Hull Trains) are certified to BS EN ISO 14001, and First Rail are certified to BS EN ISO 50001. A small number of our US contracts also operate ISO 14001 systems.

Environmental Violations

We collect and record all environmental incidents and non-conformities, their associated fines, enforcement penalties or clean-up settlements received.

We report this information to our Executive Committee on a regular basis. Any single fine over $10,000 is considered 'significant'. This information is provided in the table below:

Table 8: FirstGroup Environmental Liabilities 2018/19:

Number of non-conformance penalties issued:	**6**
Number of non-conformance penalties issued in excess of $10,000.00:	**1 ($14,979.00)**
Total value of non-conformance penalties issued:	**$23,534.00**

Assurance

Carbon Credentials Energy Services Limited (Carbon Credentials) was commissioned by FirstGroup PLC to provide verification of the 2018/19 carbon footprint and energy data as detailed within this report, to a limited level of assurance and to the ISO 14064-3 standard.

The objectives of this verification exercise were, by review of objective evidence, to confirm whether any evidence existed that the carbon footprint and energy data as declared within this report was: accurate, complete, consistent, transparent and free of material error or omission.

Opinion

Based on the data and information provided by FirstGroup and the processes and procedures conducted, Carbon Credentials concludes, with limited assurance, there is no evidence that the carbon footprint and energy assertion:

- is not materially correct
- is not a fair representation of the carbon footprint and energy information
- is not prepared in accordance with the methods outlined within this report.

It is our opinion that FirstGroup has established appropriate systems for the collection, aggregation and analysis of quantitative data for determination of their carbon footprint and energy data for the stated period and boundaries.

The carbon footprint and energy information for 2018/19 within this document was verified by Carbon Credentials to a limited level of assurance. Exclusions to this assurance and prior assurance activities are provided.

Recommendations

- The implementation of a data management system would improve the accuracy of data and would aid resource utilization and help reduce FirstGroup's environmental impact.
- The level of validation of data prior to the independent audit varies between operating companies. It is recommended that a minimum level of validation is introduced across all operating companies, with a view to continually improve this process, to further improve data integrity analysis and control procedures throughout the Group.
- Maintain a comprehensive list of all emission factors, as well as their source, to clearly indicate where this information has come from.
- Consider expanding the scope of greenhouse gas reporting to include all relevant Scope 3 categories as defined in the GHG Protocol.
- Consider setting a science-based target to reduce emissions in line with climate science.

Assurance exclusions

Carbon Credentials does not cover the information on pages 6-8 in this report, specifically:

Air emissions

The North America section of this report contains data which has been compiled by Strata, a third party independent consultant, who has calculated air emissions using the EPA proprietary tool: Truck Carrier (2.0.16).

Water and Waste

The carbon footprint of FirstGroup's water consumption and waste production has been assured within the Scope 3 GHG emissions, however the presentation of the raw data as provided has not been explicitly assured.

Assurance schedule

The following assurance activities cover the reported data in prior years:

2018 and 2017

- Carbon Clear Limited conducted a limited level of assurance to the ISO 14064-3 standard
- This included a re-baselining exercise back to 2016 due to the incorporation of South Western Railway on 20 August 2017. See Appendix B: Re-baselining and restatements on page 12

2016

- KPMG LLP conducted a limited level of assurance to the ISAE 3000 and ISAE 3410 standards.

Prior assurance reports are available on the FirstGroup website at www.firstgroupplc.com/responsibility/responsibility-reports

Carbon Credentials Energy Services Ltd

Lead Verifier: Oliver Smallman

Appendix A:
Our reporting approach

Reporting methodology and boundary

This report has been prepared in accordance with the World Resources Institute Greenhouse Gas (GHG) Protocol/Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, applying the operational control approach to our organisational boundary with a materiality threshold of 5% total GHG emissions and energy consumption.

FirstGroup undertakes an annual review of its corporate structure to ensure we continue to report a complete picture of our business activities. Significant changes would likely result in re-baselining of our data as per the policy in Appendix B: Re-baselining and restatements on page 12.

Reporting year

The baseline year for this data report is the financial reporting year 2015/16 for carbon emissions and 2017/18 for energy consumption. We consolidate divisional reporting periods to align to the financial year as outlined in the table below.

Exception	Reasoning	Reported Range
UK and North American fuel and km	Data provided in 'bus year' and 'bus periods' as per their reporting system	1 April 2018 – 30 March 2019
North American utilities	Data latency is three months for gas, electricity, heating fuels and steam	1 January 2018 – 31 December 2018

Reporting scope

We report our direct, indirect and out of scope emissions in the following format, with the following activities comprising each section:

Scope 1 – Direct emissions from: vehicle use (owned and leased); fugitive refrigerant gas emissions; heating fuels used in buildings, and road and rail fuel use.

Scope 2 – Indirect emissions from: electricity used in our buildings, and to power our electric rail and bus fleets. We report both location-based emissions (taking into account the UK grid average) and market-based emissions (reflecting the amount of energy from renewable sources).

Scope 3 – Indirect emissions from: First Travel Solutions (including third party vehicle provision); business travel by air; hotel stays; water supply and treatment, and waste recycling and disposal.

Out of Scope – Indirect emissions from: biofuel usage, including North American biofuels.

This year we increased our scope 3 reporting to include hotel stays, water supply and treatment, and third party vehicle provision data from First Travel Solutions. We increased the scope of our electricity reporting to include some leased assets.

Exclusions

The activities and emission sources that comprise our total carbon footprint and energy footprint are materially correct. Those sections of our business which have been excluded from the analysis are listed below:

Exclusion	Data Source	Further Information
South Western Railway's Isle of Wight Service	Rail electricity Passenger km Vehicle km	Estimated using cost data, the electricity associated with this service is less than 0.1% of South Western Rail (SWR) traction electric consumption. We do not receive consumption figures from Network Rail, thus it is excluded alongside its associated passenger and vehicle kms.
North American Rail	Diesel (100% mineral) Vehicle km	This is a single service operating in Denton, Texas, and accounts for less than 0.5% of the total diesel footprint of First Transit.
First Transit India and Panama	Diesel Vehicle km	These business divisions operate small and intermittent services. The total fuel consumption accounts for less than 0.5% of First Transit's total diesel consumption and isn't collected by their fleet software.
North American Assets	Fugitive emissions	Fugitive emissions are only collected for our fleet. This excluded data is estimated to have an immaterial impact on our total footprint.
First Rail Fleet First Bus Fleet	Fugitive emissions	Fugitive emissions for our trains and buses in the UK are not reported. This excluded data has an immaterial impact on our total footprint.
Tram Operations Limited	Rail electricity Vehicle km Passenger km	This information is outside our operational control boundary.

We review these exclusions annually to ensure they remain immaterial or outside of our operational control. Whilst fugitive emissions are considered immaterial, a standard framework to report fugitive emissions across all our business activities is in development for publication next year.

Data methodologies and processes

Each year we review the processes by which we collect and collate material information relating to our carbon footprint and energy calculations. This review seeks to understand if any process changes have had a significant effect on our results and whether restatement should be considered. This year we have:

1. Removed our sustainability data platform and used divisional systems with a manual approach to calculation. The raw data sources, emission factor choices, and calculation methodologies have not changed. As a result this change has a negligible impact on our total figures.

2. The US average grid emission factor for electricity has been used, as opposed to specific location-based factors (eGRID). The impact of this process change is insignificant given that the total contribution of US and Canadian electricity to our overall footprint is 1%.

The majority of this report follows standard methodologies outlined within the World Resources Institute Greenhouse Gas Protocol Corporate Accounting and Reporting Standard for each scope. The following alternative methodologies are explained below:

Market- and Location-Based Reporting

Location-based GHG reporting uses a geographical emission factor. These factors are detailed in the following section.

Market-based reporting reflects 'supplier specific' GHG emissions, from low-carbon electricity contracts. These emission factors are applied, where available, in place of location-based emission factors.

Passenger Kilometres

Passenger kilometre figures are calculated in specific ways as described below:

Greyhound – Calculated using ticket information on passenger start and end destination – route kilometres.

First Bus – Calculated using ticket sales information multiplied by the average bus journey length in the UK: National Travel Survey – NTS 0303: Average Bus Journey Length (2017)

First Rail – Calculated using the Office of Rail and Road (ORR) statistical methodology for passenger km, using ticking information. This information is available to First Rail via a national rail system called LENNON.

Car (UK Average) – Calculated using DEFRA 2018 average kg/CO_2(e) per km 'Average Diesel Car' divided by National Travel Survey – NTS0905: Average Car Occupancy (2017).

Car (US Average) – Calculated using EPA Centre for Corporate Climate Leadership (2018) 'Diesel Car' divided by the National Household Travel Survey: Average Car Occupancy 2017.

Domestic Flight – Calculated using DEFRA 2018 average kg/CO_2(e) per km 'Domestic Flight'.

Emission and energy conversion factors

We use the most appropriate emission factors from consistent sources applied across our reporting year (2018/19). Our two emission factor sources are:

EPA Center for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories	**North America and Canada:** ■ Stationary and mobile fuels ■ US average electricity ■ Steam and heat ■ Business travel ■ Fugitive emissions
DEFRA; Government Emission Conversion Factors for Company Reporting	**UK** ■ Stationary and mobile fuels ■ Electricity ■ Business travel ■ Fugitive emissions ■ Energy conversion (Higher Heating Value only) **Global** ■ Waste ■ Water treatment and supply ■ Out of scopes ■ Hotel stays

The most recent emission factor for each financial year is applied. In each year the following emission factor versions have been used:

Reporting Year	Source	Version
2019	EPA Center for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories	2018
	DEFRA; Government Emission Conversion Factors for Company Reporting	2018
2018	EPA Centre for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories	2018
	DEFRA; Government Emission Conversion Factors for Company Reporting	2017
2017	EPA Centre for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories	2015
	DEFRA; Government Emission Conversion Factors for Company Reporting	2016
2016	EPA Centre for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories	2015
	DEFRA; Government Emission Conversion Factors for Company Reporting	2015

Appendix B:
Re-baselining and restatements

Re-baselining Policy

To ensure meaningful comparison of emissions data over time and in relation to new business, franchises or developments, FirstGroup will consider re-baselining its carbon footprint and/or energy data if the following condition(s) is/are met;

- A single new development, divestment, franchise, re-organisation, or similar business change giving rise to a 5% or more change in gross/absolute figures

- Multiple business changes which alone may impact carbon footprint and/or energy data below the 5% threshold, yet in combination exceed this

- In the view of the Group Director of Corporate Responsibility, other significant reorganisation of the business, its assets and capital which would, on re-baselining enhance transparency or comparability of the Group's carbon and/or energy performance.

Re-baselining will be undertaken in accordance with 'Appendix E to the GHG Protocol Corporate Accounting and Reporting Standard Revised Edition (2005)'.

Restatement Policy

To ensure the provision of high quality, transparent data, FirstGroup will consider restating its carbon footprint and energy data if the following condition(s) is/are met;

- Raw data or calculations/methods contributing to this data is/are later found to be inaccurate or mis-reported

- This identified inaccuracy is giving rise to a 2% or greater change in gross and/or intensity figures.

Restatement will be undertaken in line with our described methods and processes for each reporting year to ensure a consistent figure is applied (e.g. restating data from 2016 will be undertaken using the emission factors and method as recorded in that year).

Re-baselining and restatement schedule

The following table provides an outline of any restatements or re-baselining exercises conducted within the data as presented.

2019

- First Transit data was restated due to historical errors in central reporting systems and a calculation error related to CNG conversion to $tCO_2(e)$. This restatement affected the total scope 1 emissions reported for reporting years 2016 to 2018.

2018

- The award of the SWR rail franchise and its incorporation within First Rail on 20 August 2017 had a significant impact on our gross emissions. In accordance with our policy above, emissions from the years 2016 to 2018 were re-baselined using figures calculated from data provided in the partial operating year to 31 March 2018.

These updated figures were applied to our intensity calculations, incorporating the associated increase in revenue and passenger km.

No further restatements or re-baselining activities have occurred with the data in this report.