



Greenhouse Gas Assessment for Reed Group UK

Assessment Period: July 2019 - June 2020

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Assessment Details

This report is prepared on behalf of Natural Capital Partners for Reed Group UK

Natural Capital Partners works with clients all over the world to develop carbon reduction strategies; including footprint measurement, establishing reduction targets and delivering carbon offset programmes.

Consolidation Approach

Operational control

Organisational Boundary

Operations of Reed Group UK

Included

- Reed Group UK
- UK Offices

Operational Boundary

- Air travel
- Bus and coach
- Cars
- Electricity
- Employee owned cars
- Hotel night stays
- Landfilled waste
- Natural gas
- R-22 Refrigerant gas
- Rail (train, tram, light rail, underground)
- Recycled waste
- Refrigerant gas loss and other fugitive emissions
- Taxi
- Water supply

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CarbonNeutral® Certification Summary

CarbonNeutral® certification:			CarbonNeutral® Company				
Reporting period:			July 2019 - June 2020				
CarbonNeutral® certification scope and emissions to be offset:							
Scope	Emissions source		Required or recommended	Included in assessment	Location-Based Method (tCO ₂ e)	Market-Based Method (tCO ₂ e)	
Scope 1	Direct emissions arising from owned or leased stationary sources that use fossil fuels		Required	✓	304	304	
	Direct emissions arising from owned or leased stationary sources that emit fugitive or process emissions		Required	✓	64.1	64.1	
	Direct emissions from owned or leased mobile sources		Required	✓	20.4	20.4	
Scope 2	Emissions from the generation of purchased electricity and/or steam		Required	✓	1,045	1,557	
Scope 3	Fuel and energy related activities	Transmission and distribution losses	Required	✓	89.8	89.8	
	Third party transportation of goods		Required*	n/a	-	-	
	Waste generated in operations		Required	✓	31.5	31.5	
	Business Travel	All transportation by air, public transport, rented/leased vehicle and taxi		Required	✓	835	835
		Emissions arising from hotel accommodation associated with business travel		Recommended	✓	50.1	50.1
	Commuting		Recommended	n/a	-	-	
	Water Supply and Treatment		Recommended	✓	5.72	5.72	
Homeworkers		Recommended	✗	-	-		
Overall compliance				✓			
TOTAL FOR OFFSET(tCO₂e)**					2,446	2,959	

* Per Natural Capital Partners' CarbonNeutral Protocol, the category "Third party transportation of goods" is required for product manufacturers and distributors only, and is intended to capture significant emissions from the transportation and storage of production-related goods (i.e. inputs into products manufactured and sold by the entity), when the entity takes ownership of the goods at the supplier's gate. This is not intended to capture or include emissions from the day-to-day movement of non-core business consumables, though these may have been included in this assessment as a recommended source.

** Please note total calculated GHG emissions are rounded up to the nearest whole tCO₂e for the purpose of offsetting. Rounding errors may apply.

Introduction

A greenhouse gas (GHG) emissions assessment quantifies the total greenhouse gases produced directly and indirectly from a business or organisation's activities. Also known as a carbon footprint, it is an essential tool, providing your business with a basis for understanding and managing its climate change impacts.

A GHG assessment quantifies all seven Kyoto greenhouse gases where applicable and is measured in units of carbon dioxide equivalence, or CO₂e¹. The seven Kyoto gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), nitrogen trifluoride (NF₃), sulphur hexafluoride (SF₆) and perfluorocarbons (PFCs). The global warming potential (GWP) of each gas is illustrated in the Table 1.

Table 1. GWP of Kyoto Gases (IPCC 2007)

Greenhouse Gas	GWP
Carbon dioxide (CO ₂)	1
Methane (CH ₄)	25
Nitrous oxide (N ₂ O)	298
Hydrofluorocarbons (HFCs)	124 - 14,800
Perfluorocarbons (PFCs)	7,390 - 12,200
Nitrogen trifluoride (NF ₃)	17,200
Sulphur hexafluoride (SF ₆)	22,800

This assessment has been carried out in accordance with the World Business Council for Sustainable Development and World Resources Institute's (WBCSD/WRI) Greenhouse Gas Protocol; a Corporate Accounting and Reporting Standard, including the GHG Protocol Scope 2 Guidance. This protocol is considered current best practice for corporate or organisational greenhouse gas emissions reporting. GHG emissions have been reported by the three WBCSD/WRI Scopes.

Scope 1 includes direct GHG emissions from sources that are owned or controlled by the company such as natural gas combustion and company owned vehicles.

Scope 2 accounts for GHG emissions from the generation of purchased electricity, heat and steam generated off-site. As the subject of this assessment operates in markets which offer contractual instruments with product or supplier-specific data, scope 2 emissions are reported using both the location-based method and the market-based method. The location-based method applies average emission factors that correspond to the grid where consumption occurs, whereas the market-based method applies emission factors that correspond to energy purchased (or not purchased) through contractual instruments. Contractual instruments include energy attribute certificates, direct energy contracts, and supplier specific emission rates. The subject of this assessment has ensured that any contractual instruments used in the market-based method have met the Scope 2 Quality Criteria, as defined in the Guidance. Where contractual instruments do not meet the Quality Criteria, or where contractual instruments were not purchased, market-based scope 2 emissions have been calculated using residual mix emission factors. Where residual mix emission factors are not available, market-based scope 2 emissions have been calculated using default location grid-average emission factors, per the Protocol hierarchy. This may result in double counting between electricity consumers, as an adjusted emission factor taking into account voluntary purchases of electricity with specific attributes was not available.

Scope 3 includes all other indirect emissions such as waste disposal, business travel and staff commuting. Reporting of these activities is optional under the WBCSD/WRI GHG Protocol, but as they can contribute a significant portion of overall emissions Ecometrica recommends they are reported where applicable.

A GHG assessment is an essential tool in the process of monitoring and reducing an organisation's climate change impact as it allows reduction targets to be set and action plans formulated. GHG assessment results can also allow organisations to be transparent about their climate change impacts through reporting of GHG emissions to customers, shareholders, employees and other stakeholders. Regular assessments allow clients to track their progress in achieving reductions over time and provide evidence to support green claims in external marketing initiatives such as product labelling or CSR reporting. Ecometrica GHG assessments are designed to be transparent, consistent and repeatable over time.

¹ Carbon dioxide equivalent or CO₂e is a term for describing different greenhouse gases in a common unit. For any quantity and type of greenhouse gas, CO₂e signifies the amount of CO₂ which would have the equivalent global warming impact.

Data Quality and Availability

In order to provide the most accurate estimate of an organisation's GHG emissions, primary (actual) data should be used where it is available, up to date and geographically relevant. Secondary data in the form of estimates, extrapolations and industry averages may be used when primary data is not available. Table 2 details the quality of data submitted for this assessment with the key assumptions used stated below.

Data Quality Overview



Location-based Accuracy Overview		
	tCO ₂ e/year	%
Actual	2,311	94.5
Estimated	134	5.48
Total	2,446	100



Market-based Accuracy Overview		
	tCO ₂ e/year	%
Actual	2,824	95.5
Estimated	134	4.53
Total	2,958	100

Table 2. Data Quality and Availability

Source of emissions	Data quality
Premises	
Composted waste	N/A
Electricity	Actual
Electricity - Green Tariff	N/A
Fuel oil	N/A
Incinerated waste	N/A
Landfilled waste	Actual
Natural gas	Actual
Other fuel(s)	N/A
R-22 Refrigerant gas	Actual
Recycled waste	Actual
Refrigerant gas loss and other fugitive emissions	Actual
Water supply	Mixed
Water treatment	N/A
Company owned vehicles	
Cars	Actual
Motorcycle	N/A

Trucks	N/A
Vans	N/A
Business Travel	
Air travel	Estimated
Bus and coach	Actual
Employee owned cars	Actual
Hired cars	N/A
Hotel night stays	Actual
Rail (train, tram, light rail, underground)	Actual
Taxi	Actual
Outbound third-party deliveries	
Air freight	N/A
Bicycle	N/A
Motorcycle	N/A
Rail freight	N/A
Road freight, shared vehicle (tonne.km factors)	N/A
Road freight, whole vehicle (km factors)	N/A
Sea freight (basic options list)	N/A
Commuting	
Bicycle	Unknown
Bus and coach	Unknown
Cars	Unknown
Motorcycle	Unknown
On foot	Unknown
Rail (train, tram, light rail, underground)	Unknown

Key Assumptions

- No AIF has been applied to air travel to account for the additional negative effects air travel has on the environment.
- Short-, medium-, and long-haul air travel has been estimated based on the number of return journeys and the Defra/DECC (2012) typical return distances for short-, medium-, and long-haul flights.
- Business travel by local bus has been estimated based on the amount spent and the DFT/TFS (2020) average cost per [pass.km](#) for travel by local bus.
- Business travel by train, underground and tram has been estimated based on the amount spent and the DFT (2020) average cost per [pass.km](#) for travel by train, underground and tram.
- Business travel by taxi has been estimated based on the amount spent and the DFT (2003) average cost per [pass.km](#) for travel by taxi.
- Electricity consumption has been estimated based on the amount spent and the BEIS (2020) average electricity price per kWh for a small/medium consumer during the assessment period.
- Natural gas consumption has been estimated based on the amount spent and the BEIS (2020) average natural gas price per kWh for a small consumer during the assessment period.

Assessment Summary for Reed Group UK

Gross Overall Emissions (location-based): 2,446 tCO₂e

Gross Overall Emissions (market-based): 2,958 tCO₂e

Key Performance Indicators

Absolute GHG emissions will vary over time and often correspond to the expansion or contraction of an organisation. It is useful therefore to use reporting metrics that take these effects into account and monitor relative GHG emissions intensity. A common emissions intensity metric is tonnes of CO₂e per full time equivalent. This has been calculated, along with other relevant metrics, in the table below:

Data	KPI
2,993 Full Time Equivalent Employees	0.817 tCO ₂ e per Full Time Equivalent Employee (Location-Based)
2,993 Full Time Equivalent Employees	0.988 tCO ₂ e per Full Time Equivalent Employee (Market-Based)

Summary by Activity (Location-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	1,540	63
Company owned vehicles	20.4	0.836
Business Travel	885	36.2
Total	2,446	100

Summary by Activity (Market-Based, tCO₂e)



By Activity	tCO ₂ e/year	%
Premises	2,053	69.4
Company owned vehicles	20.4	0.691
Business Travel	885	29.9
Total	2,958	100

Summary by WBCSD/WRI Scope (Location-Based, tCO₂e)



Scope	tCO ₂ e/year	%
Scope 1	389	15.9
Scope 2	1,045	42.7
Scope 3	1,012	41.4
Total	2,446	100

Summary by WBCSD/WRI Scope (Market-Based, tCO₂e)



Scope	tCO ₂ e/year	%
Scope 1	389	13.1
Scope 2	1,557	52.6
Scope 3	1,012	34.2
Total	2,958	100

Summary by Greenhouse Gas

Greenhouse Gas	GWP	tGHG/year (Location-Based)	tCO ₂ e/year (Location-Based)	tGHG/year (Market-Based)	tCO ₂ e/year (Market-Based)
CO ₂	1	2,326	2,326	2,848	2,848
CH ₄	25	1.46	36.4	1.33	33.2
N ₂ O	298	0.0448	13.4	0.0241	7.17
Biogenic CO ₂	0	0.893	0	0.893	0
HFC-407c	1773.85	0.0166	29.4	0.0166	29.4
HFC-410a	2087.5	0.0166	34.7	0.0166	34.7
CO ₂ e	1	5.72	5.72	5.72	5.72
		Total	2,446		2,958

Summary of Scope 2 Market-Based Method for Reed Group UK

Energy Consumed and Emissions By Factor Type In Scope 2 Market-Based Method

Scope 2 Market-Based Energy



Scope 2 Market-Based Emissions



Emission Factor Type	Energy		Market-Based Emissions	
	MWh	%	tCO ₂ e	%
Client-supplied market-based instrument	0	0	0	0
Residual mix factors	4,481	100	1,557	100
Default location-based factors	0	0	0	0
Total	4,481	100	1,557	100

Detailed Results

Detailed Summary by WBCSD/WRI Scope

Location-Based methodology

Source of Emissions	tCO ₂ /yr	tCH ₄ /yr	tN ₂ O/yr	Total Emissions (tCO ₂ e/yr)	%
Scope 1 Total	324	0.0166	0.0015	389	15.9%
Company owned vehicles Total	20.2	8.03e-5	9.44e-4	20.4	0.836%
Cars	20.2	8.03e-5	9.44e-4	20.4	0.836%
Premises Total	304	0.0165	5.56e-4	368	15.1%
Natural gas	304	0.0165	5.56e-4	304	12.4%
Refrigerant gas loss and other fugitive emissions	0	0	0	64.1	2.62%
Scope 2 Total	1,035	0.129	0.0207	1,045	42.7%
Premises Total	1,035	0.129	0.0207	1,045	42.7%
Electricity	1,035	0.129	0.0207	1,045	42.7%
Scope 3 Total	967	1.31	0.0226	1,012	41.4%
Business Travel Total	878	0.0379	0.0208	885	36.2%
Air travel	127	0.00297	0.00403	128	5.25%
Bus and coach	6.62	4.47e-5	1.88e-4	6.67	0.273%
Employee owned cars	470	0.0177	0.0101	473	19.3%
Hotel night stays	49.9	0.00357	4.05e-4	50.1	2.05%
Rail (train, tram, light rail, underground)	206	0.0137	0.00547	208	8.52%
Taxi	18.2	1.26e-5	5.56e-4	18.4	0.751%
Premises Total	89	1.27	0.00181	127	5.2%
Electricity: Electricity - transmission & distribution losses	89	0.0108	0.00181	89.8	3.67%
Landfilled waste	0	1.26	0	31.5	1.29%
Recycled waste	0	0	0	0	0%
Water supply	0	0	0	5.72	0.234%
Total	2,326	1.46	0.0448	2,446	100%

Market-Based methodology

Source of Emissions	tCO ₂ /yr	tCH ₄ /yr	tN ₂ O/yr	Total Emissions (tCO ₂ e/yr)	%
Scope 1 Total	324	0.0166	0.0015	389	13.1%
Company owned vehicles Total	20.2	8.03e-5	9.44e-4	20.4	0.691%
Cars	20.2	8.03e-5	9.44e-4	20.4	0.691%
Premises Total	304	0.0165	5.56e-4	368	12.5%
Natural gas	304	0.0165	5.56e-4	304	10.3%
Refrigerant gas loss and other fugitive emissions	0	0	0	64.1	2.17%

Scope 2 Total	1,557	0	0	1,557	52.6%
Premises Total	1,557	0	0	1,557	52.6%
Electricity	1,557	0	0	1,557	52.6%
Scope 3 Total	967	1.31	0.0226	1,012	34.2%
Business Travel Total	878	0.0379	0.0208	885	29.9%
Air travel	127	0.00297	0.00403	128	4.34%
Bus and coach	6.62	4.47e-5	1.88e-4	6.67	0.226%
Employee owned cars	470	0.0177	0.0101	473	16%
Hotel night stays	49.9	0.00357	4.05e-4	50.1	1.69%
Rail (train, tram, light rail, underground)	206	0.0137	0.00547	208	7.04%
Taxi	18.2	1.26e-5	5.56e-4	18.4	0.621%
Premises Total	89	1.27	0.00181	127	4.3%
Electricity: Electricity - transmission & distribution losses	89	0.0108	0.00181	89.8	3.04%
Landfilled waste	0	1.26	0	31.5	1.07%
Recycled waste	0	0	0	0	0%
Water supply	0	0	0	5.72	0.193%
Total	2,848	1.33	0.0241	2,958	100%

Summary by Company Unit

Location-Based methodology

Assessment	July 2018 - June 2019		July 2019 - June 2020	
Company Unit	Total Emissions (tCO ₂ e)	Emissions per FTE (tCO ₂ e/FTE)	Total Emissions (tCO ₂ e)	Emissions per FTE (tCO ₂ e/FTE)
Reed Group UK	2,784	0.956	2,446	0.817
UK Offices	2,784	0.956	2,446	0.817

Market-Based methodology

Assessment	July 2018 - June 2019		July 2019 - June 2020	
Company Unit	Total Emissions (tCO₂e)	Emissions per FTE (tCO₂e/FTE)	Total Emissions (tCO₂e)	Emissions per FTE (tCO₂e/FTE)
Reed Group UK	3,287	1.13	2,958	0.988
UK Offices	3,287	1.13	2,958	0.988

Annual Activity Data

Source of Emissions	Value	Unit
Business Travel		
Air travel		
Long-haul, average class	35	return journey
Medium-haul, average class	20	return journey
Short-haul	623	return journey
Bus and coach		
Local bus	7,614	GBP
Employee owned cars		
Average car (unknown fuel)	1,715,321	mi
Hotel night stays		
Hotel night stays	2,387	night
Rail (train, tram, light rail, underground)		
Intercity/National train	842,630	GBP
Light rail/Tram	1,933	GBP
Underground/Subway	19,521	GBP
Taxi		
Average taxi	56,866	GBP
Company owned vehicles		
Cars		
Average diesel car	10,114	GBP
Premises		
Electricity		
Electricity spend, small/medium consumer	596,956	GBP
Landfilled waste		
Waste, landfilled, MSW	56.8	tonne
Natural gas		
Natural gas spend, small consumer	41,568	GBP
R-22 Refrigerant gas		
R-22 emissions	9	kg
Recycled waste		
Waste, recycled	32	tonne
Refrigerant gas loss and other fugitive emissions		
R407c emissions	16.6	kg
R410a emissions	16.6	kg
Water supply		
Water supply	2,459	l
Water supply	16,634	m3

Key Observations

Overall

- No market-based instruments have been applied. Reed Group UK is located in the United Kingdom, which has a valid electricity residual mix factor available. This residual mix factor has been applied to the electricity consumption to derive a result in line with the Scope 2 market-based methodology.
- Reed have decided not to report on commuting at the moment or even estimate as their commuting data was highly inaccurate in previous years and they don't want to skew the reporting further.

Location-based methodology

- Overall emissions have decreased by 338 tonnes of CO₂e, or 12%, from 2,784 tonnes of CO₂e during the 2018/19 assessment period to 2,446 tonnes of CO₂e during the 2019/20 assessment period. This decrease in emissions is mainly due to a reduction in traveling by rail and employee owned car.
- Electricity consumption (including transmission & distribution losses) accounts for the largest portion of emissions with 1,135 tonnes of CO₂e, or 46% of the total emissions.
- Business travel in employee owned cars accounts for the second largest portion of emissions with 473 tonnes of CO₂e, or 19% of the total emissions.

Market-based methodology

- Overall emissions have decreased by 329 tonnes of CO₂e, or 10%, from 3,287 tonnes of CO₂e during the 2018/19 assessment period to 2,958 tonnes of CO₂e during the 2019/20 assessment period. This decrease in emissions is mainly due to a reduction in traveling by rail and employee owned car.
- Electricity consumption (including transmission & distribution losses) accounts for the largest portion of emissions with 1,647 tonnes of CO₂e, or 56% of the total emissions.
- Business travel in employee owned cars accounts for the second largest portion of emissions with 473 tonnes of CO₂e, or 16% of the total emissions.

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