

READING BOROUGH COUNCIL: GREENHOUSE GAS (GHG) REPORT 2023 - 24

EXECUTIVE SUMMARY

Reading Borough Council (RBC) is committed to reducing greenhouse gas emissions (GHG) across its estate and operations. The means to do so are set out in the Council's corporate Carbon Plan.

The Council's 'Carbon Plan 2020-2025' was approved by Policy Committee in November 2020, and sets out actions to meet an ambitious carbon emissions reduction target of 85% by 2025, *en route* to becoming a 'net zero' organisation by 2030.

This year (2023/24) the Council's carbon footprint (gross corporate emissions) has increased marginally compared to the previous year, with a total reduction of 72.7% against the 2008/09 baseline, or 254 tCO₂. This equates to an increase of 1.2% in absolute gross corporate emissions compared to the 2008/9 baseline. In order to achieve the 2025 target set in the Carbon Plan, a further 13% reduction in the carbon footprint is therefore required.

In addition to measuring our corporate GHG emissions as summarised in the figures above, we also measure and report on the gross emissions of the Council's 'wider influence', taking account of other factors outside our direct control but within the scope of our influence. This is explained further in section 2.6.

The UK electricity carbon emissions intensity factor is prone to fluctuate from year to year as the fuel mix consumed in UK power stations (and auto-generators) and the proportion of net imported electricity changes. In the 2023 UK government update, the UK Electricity CO₂e factor has increased by 7% (compared to the 2022 update) due to an increase in natural gas use in electricity generation and a decrease in renewable generation. The increase in carbon emissions intensity of UK electricity in 2023/24 accounts for 139 tCO₂ of this year's emissions, equivalent to over half the increase of RBC's corporate carbon footprint.

The financial cost of energy provides a further incentive to reduce its use, particularly in the light of the current high prices and the volatility of wholesale markets. In this regard, it is estimated that the cumulative costs avoided by the Council from reduced energy consumption since 2008/09 are c.£28.5m (excluding standing charges and other contract charges) compared to if no action had been taken. In 2023/24 alone these avoided costs were estimated at £6.2m.

1. Introduction

1.1 Policy context

Prior to the Government's adoption of the national 'net zero by 2050' carbon reduction target, Reading Borough Council had declared a climate emergency at its meeting in February 2019, committing to the more ambitious aim of a 'net zero carbon Reading by 2030'. In November 2020, the Council subsequently endorsed the new Reading Climate Emergency Strategy 2020-25 (prepared by the Reading Climate Change Partnership) based on the 'net zero by 2030' ambition, and adopted a new corporate Carbon Plan for the period 2020-25, including a more ambitious target to reduce the Council's own emissions by 85% by 2025 *en route* to net zero by 2030.

The vision for the Reading Climate Emergency Strategy is *'for a Reading which is working rapidly towards (i) Net zero carbon dioxide emissions in the Reading area by 2030 (ii) Being better prepared to deal with the impacts of a changing climate.'*

This sets the context for Reading Borough Council's efforts to reduce its own corporate emissions.

1.2 Leading by Example

While the Council's emissions represent only a small proportion of the total emissions for the Borough (less than 1.3%), the Council recognises the importance of demonstrating leadership by example in terms of delivering deep and meaningful reductions in its own emissions.

The Council has a long history of carbon reduction initiatives adopted since it signed the Nottingham Declaration on Climate Change in March 2006. In 2007 RBC worked with the Carbon Trust to produce Reading's first Local Authority Carbon Management Plan (LACM). Since 2008 the authority has managed a rolling investment programme in energy efficiency and renewable energy technologies to achieve carbon reduction. The 2015-20 Carbon Plan set a target of achieving a 50% reduction in corporate emissions by 2020, a target which was achieved three years early. The 2020-25 Carbon Plan therefore represents just the latest in a series of actions to reduce corporate emissions.

1.3 The Carbon Plan 2020-25

Reading Borough Council's 'Carbon Plan 2020-25', was approved in November 2020, confirming the organisation's target to reduce carbon emissions by 85% against the 2008/9 baseline. In addition the following targets were also included: 1) a renewable energy target to generate 50% of total energy consumed from renewable sources by 2025. 2) A fossil fuel target to reduce fossil fuel consumption by 50% by 2025. Progress against these targets is reported in section 2.8.

2. Reading Borough Council Greenhouse Gas (GHG) Emissions

2.1 The Organisation

Reading Borough Council is a unitary local authority. RBC is now comprised of three directorates; Directorate of Economic Growth & Neighbourhood Services (DEGNS); Directorate of Resources (DoR); and Directorate for Adult Social Care & Health (DASCH). Brighter Futures for Children, which is a not-for-profit company, manages the services which look after the children of Reading, and is responsible for its own carbon emissions reporting. Carbon management for the Council is managed in the Sustainability Team which sits within DEGNS.

2.2 How we measure the Council's emissions: scope

The headline measure against which progress towards our Carbon Plan targets is measured is the Council's corporate GHG emissions, or 'corporate carbon footprint', comprising activities under its direct operational control (see section 2.5). We also measure and report on the Council's 'wider influence' GHG emissions which includes activities outside of its direct control but within its 'wider influence' (see section 2.6).

As of the 2021/22 reporting year, all schools (including community, voluntary aided, diocese, Academy and Free Schools) and managed services (including GLL managed leisure centres, Reading Transport and Smallmead Materials Recycling Facility (MRF)) are included within our 'wider influence' measure, where RBC can influence, rather than control, the operations.

The Council measures its GHG emissions in line with accepted protocols for doing so and a list of activities which are used to calculate the Council's carbon footprint is as follows. A detailed breakdown of the activities that are reported, and within which scope, can be found in Annex 1.

Scope 1 (Direct emissions)

- Fossil fuels – natural gas and burning oil consumption
- Transport fleet
- Fugitive emissions from air conditioning units only (excluding emissions from domestic fridges and freezers)
- Self-supplied renewably generated electricity or heat

Scope 2 (Indirect Emissions)

- Purchased electricity

Scope 3 RBC Corporate (Other Indirect Emissions) –

- Electricity losses from transmission and distribution
- Managed assets - business travel

Scope 3 Non-Corporate (Other Indirect Emissions)

- Schools (Community, Voluntary Aided, Diocese, Academy and Free Schools)
- Outsourced services (4 leisure centres, 1 bus company, 1 waste MRF)

Outside Scopes

- None this year

Renewable electricity

- Renewably generated electricity from systems owned by RBC, but supplying electricity to other parties

The Council's headline corporate carbon footprint measure is calculated by adding Scope 1 and 2 plus an element of Scope 3 which is considered 'corporate'. This is the measure on which the Carbon Plan target of an 85% reduction by 2025 is based. By contrast, we calculate the 'wider influence' emissions by adding together everything in Scopes 1, 2 and 3.

We also calculate net emissions for both measures taking into account renewable energy generation exported to the grid or sold to others, although the reporting protocols recommend reporting based on gross emissions. As such, net figures are included for illustrative purposes only, and do not affect the headline measures of our 'corporate carbon footprint' or 'wider influence' footprint which are based on gross figures.

2.3 Baseline Year and reporting

The Council has been reporting its carbon footprint since 2005/06. Since this time, the reporting systems have changed several times and data collection has improved. The Council's baseline year for the purposes of the current Carbon Plan is 2008/09.

Since 2013/14, the Council is no longer required to annually report carbon emissions for the Carbon Reduction Commitment Energy Efficiency Scheme. However, we continue to report on emissions annually in the interests of transparency and public accountability.

The emissions factors used for calculation of the GHG footprint for 2023/24 (1st April 2023 to 31st March 2024) are those published by DEFRA, based on a 1-year average factor for the calendar year 2023.

2.4 Weather Correction

A considerable contribution to the GHG emissions of the Council is from space heating. With changing heat demand depending on the weather of each year there can be increased or decreased fuel demand, which has an impact on the emissions. Weather correction calculations can be undertaken to adjust for this bias. Weather corrected figures can be found in Annex 2. The official annual reported emissions are uncorrected.

2.5 Reading Borough Council Greenhouse Gas emissions 2023/24

Reading Borough Council's absolute (gross) corporate GHG emissions for 2023/24 were 5,403.3 tCO₂, a reduction of 72.7% compared to the 2008/09 baseline. This represented a year-on-year increase of 4.9% against 2022/23 (5,149 tCO₂) emissions, or 254 tCO₂. An increase in intensity of the electricity carbon emissions factor in 2023 accounts for 139.9 tCO₂, or over half of this increase.

When renewably generated electricity, exported to the grid, or sold to third parties is netted off against this gross figure, to the sum of 343 tCO₂, this gives a net corporate carbon emissions figure of 5,060 tCO₂, 4% higher than 2022/23 emissions.

In emissions reporting, 'intensity measurement' calculates an organisation's GHG emissions against a specific relevant activity. There are a number of factors that determine and influence the level of GHG emissions of an organisation, such as size of buildings, number of employees (activity ratios), financial turnover of the business (financial ratio) etc.

For Reading Borough Council, the intensity ratio is measured by number of Full Time Equivalent (FTE) staff working for the Council. The recommended methodology by the Defra/DESNZ guide is to measure this using direct emissions (Scope 1 and 2) only which occur as a direct result of staff activities.

The employee intensity ratio for Reading Borough Council, for the latest reporting year 2023/24 was:

$$\text{tCO}_2\text{e per FTE} = \frac{5,158}{1,612.56} = 3.19 \text{ CO}_2\text{e/FTE}$$

This compares to the employee intensity ratio for Reading Borough Council as a whole for the previous reporting year 2022/23 which was:

$$\text{tCO}_2\text{e per FTE} = \frac{4,864}{1,555.63} = 3.13 \text{ tCO}_2\text{e/FTE}$$

This shows that the intensity measurement for RBC (emissions per employee) increased slightly by 1.9% in 2023/24.

2.6 Reading Borough Council 'wider influence' emissions 2023/24

Work is underway to develop a more comprehensive understanding of the Council's full 'Scope 3' emissions and we envisage including a more robust measure of these in their entirety in the next iteration of our Carbon Plan for the period 2025-30. In the interim, in addition to measuring our corporate GHG emissions as summarised above in 2.5, we also measure and report on the

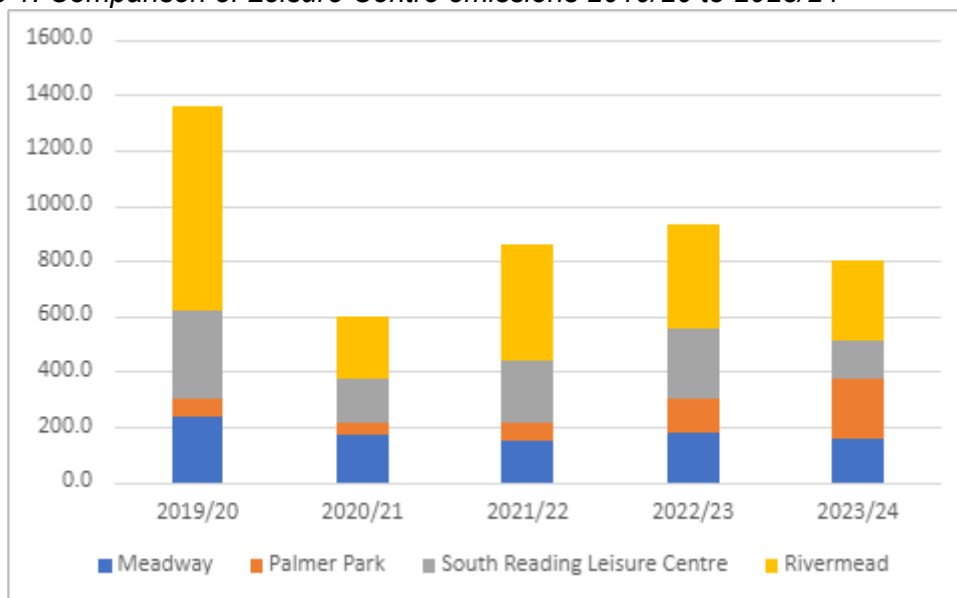
gross emissions from some significant elements of our Scope 3 emissions. We refer to these emissions as the Council's 'wider influence' emissions, taking account of sources of emissions which are outside our direct control but within the scope of our influence.

By this measure, the 'wider influence' GHG emissions of the organisation, including schools and managed services, were 30,711.8 tCO₂ for 2023/24, down 21.9% against the 2008/09 baseline. This figure represented a year-on-year decrease of 16.6% against equivalent figure for 2022/23 emissions.

The assets in the 'wider influence' category include leisure centres, Reading Transport, schools and the Smallmead Materials Recycling Facility.

- Leisure sites:** Greenwich Leisure Ltd has now managed the four leisure centres in Reading since July 2021, with the new Rivermead leisure centre building (dry-side) opening in 2023. The emissions from these leisure facilities are reported in the Council's 'wider influence' emissions dataset, and represent a significant source of emissions within Reading. As such, to ensure continued improvements within its scope of influence, RBC has invested heavily in energy efficiency, decarbonisation and renewable energy generation within the leisure facilities, all of which will support the reduction of the carbon emissions from the operations. The year 2023/24 was the first full year of operation of the larger and greatly improved facilities at Palmer Park Sports Stadium. This facility predictably had a parallel increase in energy use in 2023/24. On the other hand, the other facilities had some periods of closure, whilst the new Rivermead facilities opened in 2023 (dry side). When comparing against the last pre-Covid year, 2019/20, which is a more meaningful comparison, the carbon emissions from the leisure facilities as a whole are now 40% lower (see figure 1). In other words, we have greatly enhanced and expanded the leisure centre offer in Reading but reduced emissions from it at the same time. With the full Rivermead facilities opening in 2024/25 (the wet facilities opened in July 2024), a more full representation of the carbon footprint of the leisure centres will be seen in future years. With the investment in energy efficient, low carbon and renewable technologies, it is anticipated that the new facilities will be much more energy efficient than the pre-covid service.

Figure 1: Comparison of Leisure Centre emissions 2019/20 to 2023/24



- Reading Transport Ltd:** Fleet fuel data for 2022/23 is subject to query and requires final verification. Reading Transport carbon emissions will be published as an amendment to this report.
- Schools:** gathering accurate data for emissions from schools remains a challenge, particularly for Academy schools, so confidence in the following data is lower than for other

categories. Based on best available data, however, carbon emissions from schools were 4,401 tCO₂ (gross) for 2023/24, down 12% compared to 2022/23 emissions.

- **Smallmead Materials Recycling Facility:** the data shows a 12% reduction in emissions from Smallmead compared to 2022/23.

2.7 Statistical summary of RBC GHG emissions

The figures for 2023/24 are illustrated in Table 1 below, compared against 2008/09 baseline data. A full breakdown of the data can be found in Annex 3.

Table 1: Reading Borough Council GHG Emissions 2023/24, compared to 2008/09 (with the headline measure of corporate GHG emissions highlighted)

YEAR	Baseline 2008/09	2023/24	% change
	tCO ₂	tCO ₂	
SCOPE 1 – Corporate			
	6,594	3,029	-54%
SCOPE 2 - Corporate			
	11,850	2,081	-82.5%
SCOPE 3 (part thereof)			
CORPORATE	1,318	300	-77.3%
SCHOOLS	7,203*	4,401	-39%
LEISURE CENTRES	1,209	812	-32.9%
READING TRANSPORT [^]	10,538	19,771	141%
WASTE MRF	598*	324	-54.1%
GROSS 'CORPORATE' EMISSIONS (Scope 1, Scope 2, and Scope 3 'CORPORATE')	19,761	5,403	-72.7%
GROSS 'WIDER FOOTPRINT' EMISSIONS – Scope 1, Scope 2 and all of Scope 3	39,310	30,711	-21.9%
ELECTRICITY EXPORTED/SOLD TO GRID/OTHERS	0	343	n/a
NET EMISSIONS - Scope 1, 2, 3 - CORPORATE	19,761	5,060	-74.4%
NET EMISSIONS - ALL	39,310	30,369	-22.8%

*Baseline data for schools and waste MRF have been set at 2009/10 and 2010/11 respectively, due to unreliable data in prior years.

[^] Reading Transport fleet fuel data requires final verification. Amendment to follow.

2.8 Progress against Carbon Plan targets

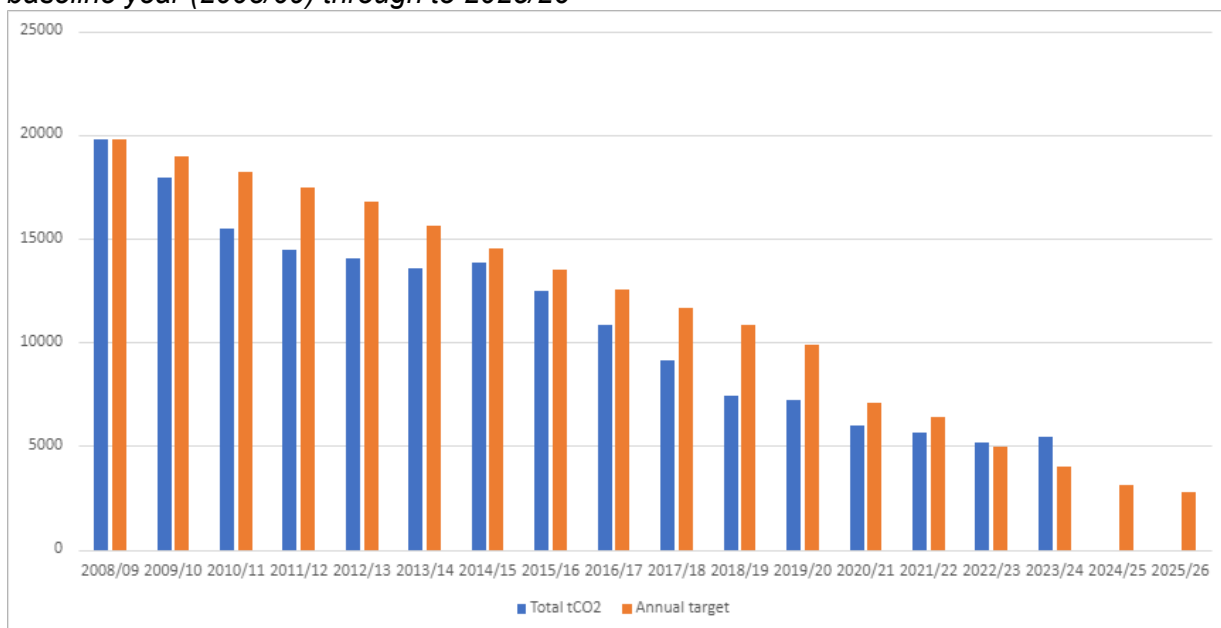
Reading Borough Council's Carbon Plan 2020-2025 sets out actions and projects which have been translated into a notional set of annual emissions reductions for each year of the 5-year plan (see table 2). These provide benchmarks for measuring progress towards the interim target of an 85% reduction in corporate emissions by 2025, *en route* to the ultimate target of net zero by 2030.

The gross annual CO₂ emissions from RBC's operations in 2023/24 was 5,403 tonnes, , above the 2023/24 target benchmark of 3,977 tonnes. To meet the 2025/26 target, an annual reduction of over 1,300 tCO₂ will be required for the next two years. This is a challenging target, and it is therefore of vital importance that action on emissions be continued, as there is no room for complacency.

Table 2: projected annual benchmarks to achieve 85% reduction in RBC corporate carbon footprint by 2025

Business year	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
RBC Net corporate CO ₂ emissions tonnes eq. /p.a.	7,107	6,394	4,957	3,977	3,105	2,787

Figure 2: RBC corporate GHG emissions performance against annual benchmarks from the baseline year (2008/09) through to 2025/26



The Council produced the equivalent of 8.35% of its total energy consumed in buildings from renewable sources in 2023/24. This represents 17.52% of its electricity consumption. While this is some way short of the ambitious Carbon Plan target of 50% of our energy needs to be met from renewables by 2025, as energy and fossil fuel use continues to come down, and as further capital investment in renewables comes on stream, the gap should begin to close.

The council used 388,610 litres of fuel/oil, and 11,029 MWh of natural gas in 2022/23. The Carbon Plan includes a target to reduce this to half of this level by 2025 through removal of fossil fuel heating and electrification of vehicles. This target has now been achieved two years early – the Council’s gas use is currently 59% lower than 2008/09 and oil/fuel is 60% lower than 2008/09.

2.9 Renewable/low carbon energy

Reading Borough Council owns over 500 solar PV arrays, and has shareholdings in a community renewable energy generation scheme in the borough operated by Reading Community Energy Society. In total these generated 1,761,219 kWh of electricity in 2023/24, of which over 490,937 kWh was deemed to have been exported to the National Grid. Twenty-three systems generated and self-supplied 236,770 kWh to RBC sites, whilst the remaining arrays generated and supplied 907,661 kWh to schools, housing tenants and other parties in 2023/24. The renewably generated electricity leads to 343 tCO₂ carbon emissions savings, which can be ‘netted off’ against the RBC gross emissions (excluding those ‘self-supplied’).

3. Risks and Opportunities

Future climate change presents a number of significant risks for Reading. These risks present themselves in terms of a number of key societal and natural impacts caused by, for example, urban heat island effects and surface water flooding. These risks underline the need for the

Council to continue to give a high priority to climate action, not least as there could be significant cost and service pressures arising directly or indirectly from climate impacts.

In addition to this, and as the policy landscape develops, there are significant additional risks to inaction relating to the volatility and costs associated with fossil fuel use and extraction. The Council, whilst an early adopter of net zero carbon commitments, is now in the majority among councils across the UK that have embarked on highly ambitious decarbonisation plans. Failure to do so would expose the borough to high risks associated with fossil fuel dependency.

Set against this wider risk are the opportunities associated with decarbonisation. The financial and reputational benefits of reducing the costs and risk associated with inaction now far outweigh the costs of action. The development of a low carbon skill base also represents an economic opportunity.

The financial cost of energy provides a further incentive to reduce its use, particularly in the light of the current high prices and the volatility of wholesale markets. In this regard, it is estimated that the cumulative costs avoided by the Council from Carbon Plan implementation and reduced energy consumption since 2008/09 are c.£28.5m (excluding standing charges and other contract charges) compared to if no action had been taken. In 2023/24 alone these avoided costs were estimated at £6.2m.

References

Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting, June 2013

The Reading Climate Emergency Strategy 2020-25

The Carbon Plan 2020-2025: Reading Borough Council – our pathway to net zero Carbon

ANNEXES

Annex 1: GHG Protocol scope and treatments of renewables

Reporting of GHG emissions for RBC, divided into 3 scopes	
Scope 1 (Direct emissions): Emissions from activities owned or controlled by your organisation that release emissions into the atmosphere. They are direct emissions.	
Fossil fuels – Natural Gas and burning oil consumption	Direct emissions from combustion of natural gas and oil
Transport Fleet	Direct emissions from combustion of diesel and petrol
Fugitive emissions from air conditioning units only (excluding emissions from domestic fridges and freezers)	Emissions released from equipment leaks
Self-supplied renewably generated electricity or heat	Direct emissions at site (zero emissions). See Figure A1 below for further detail on treatment of renewables.
Scope 2 (Energy indirect): Emissions released into the atmosphere associated with your consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of your organisation's activities but which occur at sources you do not own.	
Purchased electricity	Electricity purchased from supplier. Emissions at source, outside RBC control.
Scope 3 (Other indirect): Emissions that are a consequence of your actions, which occur at sources which you do not own or control and which are not classed as scope 2 emissions.	
Electricity losses from transmission and distribution	Emissions as a result of losses from transmission and distribution of electricity on the national grid
Managed Assets – Business travel	Emissions as a result of travel by means not owned or controlled by RBC
Schools (Community, Voluntary Aided, Diocese, Academy and Free Schools)	Emissions from activities within schools, which are not controlled by RBC
Outsourced services (5 car parks, 2 leisure centres and bus company office)	Emissions from activities within managed services, which are not controlled by RBC
Outside Scopes:	
CO ₂ equivalent emissions from biofuels	Other GHG emissions from combustion of biofuels. Awaiting emissions factors
Renewable electricity:	
Renewably generated electricity from systems owned by RBC, but supplying electricity to other parties	Emissions avoided by generating electricity renewably at site. See Figure A1 below for further detail on treatment of renewables.

Exclusions:

Water supplied & sewerage: to date the data available for reporting emissions from water use is not sufficiently robust. Work is being undertaken to enable this for future years.

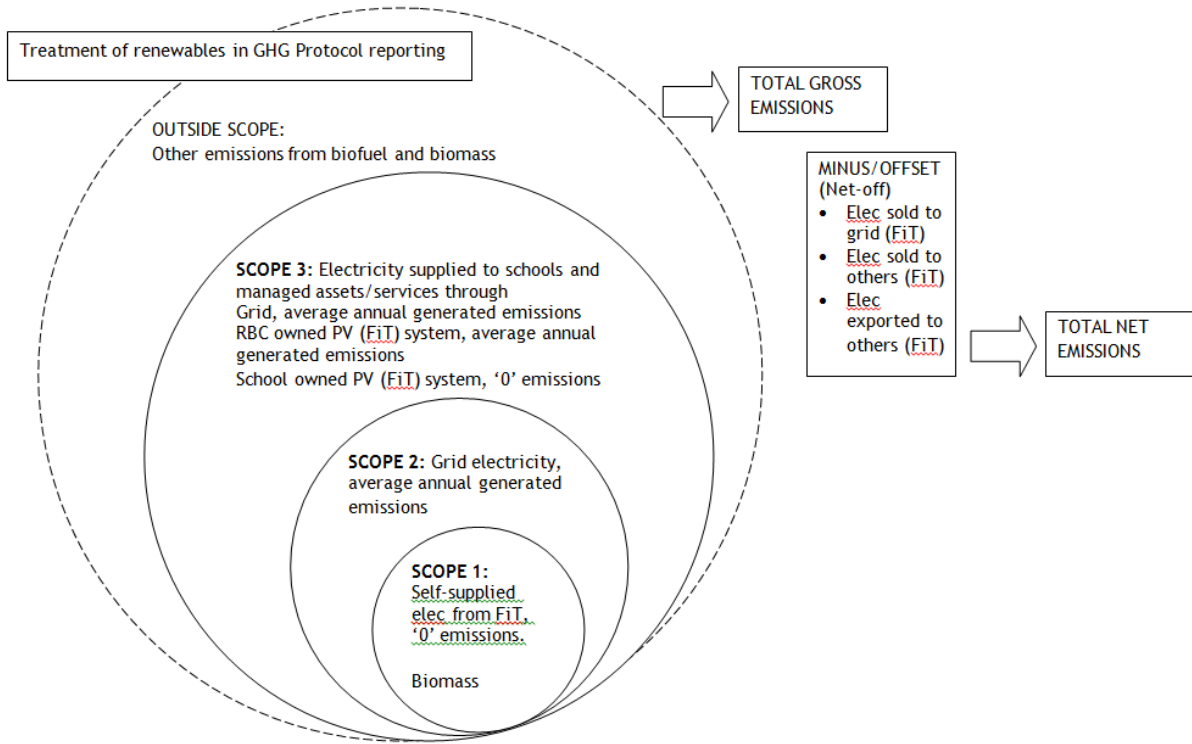


Figure A1: Treatment of renewables in GHG Protocol reporting, depending on system ownership and reporting scope

Annex 2: Full breakdown 2022/23 GHG data vs baseline

GHG PROTOCOL REPORTING							
YEAR	REPORTING UNITS	BASELINE: 2008/09			2023/24		
		kWh/litres/km/ m3/kg	conversion factor	tCO2	kWh/litres/km/ m3/kg	conversion factor	tCO2
SCOPE 1							
GAS	kWh	26,624,860	0.1836	4,888	11,029,898	0.18256	2,014
OIL	litres	329,462	0.2468	81	-	-	-
FLEET - DIESEL	litres	616,794	2.5725	1,587	379,004	2.51000	951
FLEET - PETROL	litres	16,717	2.2450	38	8,509	2.10000	18
FLEET - GAS OIL	litres				1,097	2.76000	3
FUGITIVE - R12	kg			-			-
FUGITIVE - R22	kg			-			-
FUGITIVE - R407C	kg						-
FUGITIVE - R134A	kg						-
FUGITIVE - R410A	kg				18.9	1,924.00000	36.4
FUGITIVE - R49a	kg						-
FUGITIVE - R404a	kg						-
CHP - GAS	kWh			-			-
CHP - ELECTRICITY	kWh			-			-
BIOMASS	kg			-			-
ELECTRICITY FROM RENEWABLES	kWh			-	236,770		0
TOTAL				6,594			3,022.2
SCOPE 2							
ELECTRICITY FROM GRID	kWh	24,416,596	0.4853	11,850	10,048,637	0.20707	2,081
CAR CLUB - SMALL	km	-	-	-			
CAR CLUB - MEDIUM	km	-	-	-			
TOTAL				11,850			2,081
SCOPE 3							
<i>CORPORATE</i>							
ELECTRICITY FROM GRID T&D	kWh	24,416,596	0.0391	954	10,048,637	0.02	180
BUSINESS MILEAGE - average fuel unknown	km	1,742,835	0.2086	364	617	0.17	0.1
BUSINESS MILEAGE - average petrol	km				177,890	0.16	29
BUSINESS MILEAGE - supermini petrol	km					0.00	0
BUSINESS MILEAGE - dual purpose 4 x 4	km					0.00	0
BUSINESS MILEAGE - MPV petrol	km					0.00	0
BUSINESS MILEAGE - luxury	km					0.00	0
BUSINESS MILEAGE - MPV diesel	km					0.00	0
BUSINESS MILEAGE - executive petrol	km					0.00	0
BUSINESS MILEAGE - executive diesel	km					0.00	0
BUSINESS MILEAGE - lower medium petrol	km					0.00	0
BUSINESS MILEAGE - small petrol	km				186,333	0.14	26
BUSINESS MILEAGE - med petrol	km				200,871	0.18	36
BUSINESS MILEAGE - large petrol	km				6,936	0.27	2
BUSINESS MILEAGE - small diesel	km				87,757	0.14	12
BUSINESS MILEAGE - med diesel	km				47,889	0.17	8
BUSINESS MILEAGE - large diesel	km				32,851	0.21	7
BUSINESS MILEAGE - Small electric	km				33,178		0
BUSINESS MILEAGE - Medium Electric	km				11,413		0
BUSINESS MILEAGE - Large Electric	km				510		0
BUSINESS CYCLE	km						
BUSINESS MOTORCYCLE	km						
WATER SUPPLIED	m3			-	137490		
WATER SEWERAGE	m3			-			
TOTAL				1,318			300.3
SCHOOLS*							
GAS	kWh	18,387,800	0.1836	3,376	15,031,404	0.1826	2,744
OIL	litres	3,130,463	0.2468	773		2.5400	-
ELECTRICITY FROM GRID	kWh	6,224,888	0.4521	2,814	6,800,962	0.2071	1,408
ELECTRICITY FROM GRID T&D	kWh	6,224,888	0.0386	240	6,800,962	0.0179	122
ELECTRICITY FROM RBC FIT	kWh		0.4521	-	75,952	0.2071	16
ELECTRICITY FROM RENEWABLES	kWh		-	-	535,770	0.2071	111
WATER SUPPLIED	m3			-			
WATER SEWERAGE	m3			-			
FUGITIVE - R410A	kg				0.0		
FUGITIVE - R32	kg						
FUGITIVE - R407C	kg				0.0		
TOTAL				7,203			4,401.0

LEISURE CENTRES							
GAS	kWh	2,722,149	0.1836	500	2,427,223	0.1826	443
ELECTRICITY FROM GRID	kWh	1,353,406	0.4853	657	1,602,400	0.2071	332
ELECTRICITY FROM GRID T&D	kWh	1,353,406	0.0391	53	1,602,400	0.0179	29
ELECTRICITY FROM RBC FIT	kWh		0.0391	-	8,349	0.2071	2
ELECTRICITY FROM RENEWABLES	kWh		0.4853	-	30,865	0.2071	6
TOTAL	kWh			-	1,209		812
READING BUSES							
GAS	kWh	914,874	0.1836	168	1,232,538	0.183	225
ELECTRICITY FROM GRID	kWh	1,049,393	0.4853	509	1,482,286	0.207	307
ELECTRICITY FROM GRID T&D	kWh	1,049,393	0.0391	41	1,482,286	0.018	27
ELECTRICITY FROM RBC FIT	kWh		0.0391	-	-	-	-
ELECTRICITY FROM RENEWABLES	kWh		0.4853	-	-	-	-
FLEET - DIESEL	litres	3,817,389	2.6	9,820	5,756,917	2.510	14,450
FLEET - CNG	litres				1,859	2,562.570	4,763
TOTAL				10,538			19,771
WASTE MRF SMALL MEAD*							
TOTAL							
ELECTRICITY FROM GRID	kWh	1,140,310	0.4853	553	1,443,390	0.2071	299
ELECTRICITY FROM GRID T&D	kWh	1,140,310	0.0391	45	1,443,390	0.0179	26
ELECTRICITY FROM RENEWABLES	kWh						
TOTAL				598			324.8
OUTSIDE SCOPE							
FLEET - DIESEL - BIOFUEL MIX	litres						
FLEET - PETROL - BIOFUEL MIX	litres						
CNG	litres						
BIOMASS							
TOTAL							
GROSS EMISSIONS - CORPORATE	Tonnes			19,761			5,403.3
GROSS EMISSIONS - ALL	Tonnes			39,310			30,711.8
GROSS EMISSIONS - CORPORATE - weather corrected	Tonnes			19,606			5,435.3
GROSS EMISSIONS - ALL - weather corrected	Tonnes			39,030			30,797.8
ELECTRICITY EXPORTED/SOLD TO GRID/OTHERS	kWh				1,524,448	0.22499	343
NET EMISSIONS - CORPORATE	Tonnes			19,761			5,060.4
NET EMISSIONS - ALL	Tonnes			39,310			30,369
NET EMISSIONS - CORPORATE - weather corrected	Tonnes			19,606			5,092.4
NET EMISSIONS - ALL - weather corrected	Tonnes			39,030			30,455

* Reading Transport fleet fuel data requires verification. Amendment to this report to follow.

Annex 3: Historic data

GHG PROTOCOL REPORTING														
		2020/21			2021/22			2022/23			2023/24			
YEAR	REPORTING UNITS	kWh/litres/km/m3/kg	conversion factor	tCO2	kWh/litres/km/m3/kg	conversion factor	tCO2	kWh/litres/km/m3/kg	conversion factor	tCO2	kWh/litres/km/m3/kg	conversion factor	tCO2	
SCOPE 1														
	GAS	kWh	12,054,110.0	0.18387	2,216	11,617,587.0	0.18316	2,128	10,325,887.0	0.18254	1,885	11,029,898	0.18256	2,014
	OIL	litres	18,561	2.54039	47	4,800	2.54014	12	-	2.54013	-	-	-	-
	FLEET - DIESEL	litres	435,665.29	2.54603	1,109	449,841.73	2.51233	1,130	420,973.70	2.55784	1,077	379,004	2.51000	951
	FLEET - PETROL	litres	10,353.00	2.16802	22	10,617.80	2.19352	23	10,915.32	2.16185	24	8,509	2.10000	18
	FLEET - GAS OIL	litres	21,049	2.75776	58	18,492	2.75857	51	1,325	2.75857	4	1,097	2.7600	3
	FUGITIVE - R12	kg												
	FUGITIVE - R22	kg												
	FUGITIVE - R407C	kg	9.26	1774	16.4	1774	0.0	1774	0.0	1774	0.0			
	FUGITIVE - R134A	kg		1430	0.0		0.0		0.0		0.0			
	FUGITIVE - R410A	kg	2.8	2088	5.8	17.9	2088	37.4	19.5	2088	40.7	18.9	1924.0	36.4
	FUGITIVE - R49a	kg												
	FUGITIVE - R404a	kg		3922	0.0		3922	0.0		3922	0.0			
	CHP - GAS	kWh												
	CHP - ELECTRICITY	kWh												
	BIOMASS			0	0		0				0			
	ELECTRICITY FROM RENEWABLES	kWh	154,417	0	0	0	0	22,575	0	0	0	236,770	0	0
	TOTAL				3,475.5			3,381.9			3,029.6			3,022.2
SCOPE 2														
	ELECTRICITY FROM GRID	kWh	9,463,044	0.23314	2,206	9,416,978	0.21233	2,000	9,486,441	0.19338	1,834	10,048,637	0.20707	2,081
	CAR CLUB - SMALL	km		0.14652	0.00			0.00			0.00			
	CAR CLUB - MEDIUM	km		0.1847	0.000			0.000			0.000			
	TOTAL				2,206			2,000			1,834			2,081

SCOPE 3				5,682			5,381			4,864			
CORPORATE													
ELECTRICITY FROM GRID T&D	kWh	9,463,044	0.02005	190	9,416,978	0.01879	177	9,486,441	0.01769	168	10,048,637	0.02	180
BUSINESS MILEAGE	km	395	0.1714	0.1		0.17148	0.0	1,598	0.17067	0.3	617	0.17	0.1
BUSINESS MILEAGE - average petrol	km	250,086	0.1743	43.6	267,135	0.17431	46.6	230,217	0.17048	39.2	177,890	0.16	29
BUSINESS MILEAGE - supermini petrol			0.15017	0.0		0.1513	0.0		0.14802	0.0			C
BUSINESS MILEAGE - dual purpose 4 x 4	km												C
BUSINESS MILEAGE - MPV petrol			0.19351	0.0		0.19479	0.0		0.19118	0.0			C
BUSINESS MILEAGE - luxury	km												C
BUSINESS MILEAGE - MPV diesel			0.17627	0.0		0.17503	0.0		0.177844	0.0			C
BUSINESS MILEAGE - executive petrol			0.22699	0.0		0.22342	0.0		0.21999	0.0			C
BUSINESS MILEAGE - executive diesel			0.16735	0.0		0.17399	0.0		0.174684	0.0			C
BUSINESS MILEAGE - lower medium petrol			0.17343	0.0		0.17497	0.0		0.17162	0.0			C
BUSINESS MILEAGE - small petrol	km	108,531	0.14836	16.1	156,256	0.14946	23.4	191,736	0.14652	28.1	186,333	0.14	26
BUSINESS MILEAGE - med petrol	km	103,634	0.18659	19.3	128,899	0.18785	24.2	126,187	0.1847	23.3	200,871	0.18	36
BUSINESS MILEAGE - large petrol	km	3,129	0.27807	0.9	4,208	0.27909	1.2	4,744	0.27639	1.3	6,936	0.27	2
BUSINESS MILEAGE - small diesel	km	19,988	0.13721	2.7	78,451	0.13758	10.8	104,442	0.13989	14.6	87,757	0.1	12
BUSINESS MILEAGE - med diesel	km	86,098	0.16637	14.3	37,400	0.16496	6.2	31,727	0.168	5.3	47,889	0.2	8
BUSINESS MILEAGE - large diesel	km	17,606	0.20419	3.6	22,792	0.20721	4.7	23,237	0.20953	4.9	32,851	0.2	7
BUSINESS MILEAGE - Small electric	km		0	0.0	801	0	0.0	16,547	0	0.0	33,178		C
BUSINESS MILEAGE - Medium Electric	km	161	0	0.0	1,669	0	0.0	1,984	0	0.0	11,413		C
BUSINESS MILEAGE - Large Electric	km		0	0.0	4,971	0	0.0	538	0	0.0	510		C
WATER SUPPLIED	m3							397125			137490		
WATER SEWERAGE	m3												
TOTAL				290.4			293.9			284.9			300.3

SCHOOLS													
GAS	kWh	17,331,695	0.18387	3,187	16,866,611	0.18316	3,089	18,614,656	0.18254	3398	15,031,404	0.1826	2,744
OIL	litres	88,192	2.54039	224	35,465	2.54014	90	29,757	2.54013	76		2.5400	-
ELECTRICITY FROM GRID	kWh	7,273,687	0.23314	1,696	7,503,748	0.21233	1,593	7,174,470	0.19338	1,387	6,800,962	0.2071	1,408
ELECTRICITY FROM GRID T&D	kWh	7,273,687	0.02005	146	7,503,748	0.01879	141	7,174,470	0.01769	127	6,800,962	0.0179	122
ELECTRICITY FROM RBC FIT	kWh	98,858	0.23314	23		0.21233	0		0.19338	0	75,952	0.2071	16
ELECTRICITY FROM RENEWABLES	kWh	53,398	0	0		0	0		0	0	535,770	0.2071	111
WATER SUPPLIED	m3												
WATER SEWERAGE	m3												
FUGITIVE - R410A	kg	10.61	2088	22.2	4.8	2088	10.0	4.8	2088	10.0	0.0		
FUGITIVE - R32		3.2											
FUGITIVE - R407C			1774	0.0		1774	0.0		1774	0.0	0.0		
TOTAL				5,274.6			4,923.7			4,997.8			4,401.0
LEISURE CENTRES													
GAS	kWh	680,752	0.18387	125	2,401,196	0.18316	440	3,268,124	0.18254	597	2,427,223	0.1826	443
ELECTRICITY FROM GRID	kWh	381,917	0.23314	89	1,241,494	0.21233	264	1,586,958	0.19338	307	1,602,400	0.2071	332
ELECTRICITY FROM GRID T&D	kWh	381,917	0.02005	8	1,241,494	0.01879	23	1,586,958	0.01769	28	1,602,400	0.0179	29
ELECTRICITY FROM RBC FIT		20,162	0.23314	5	37,703	0.21233	8		0.19338	-	8,349	0.2071	2
ELECTRICITY FROM RENEWABLES	kWh										30,865	0.2071	6
TOTAL				222			727			932			812
READING BUSES													
GAS	kWh	1,334,455	0.18387	245	1,129,870	0.18316	207	1,055,505	0.18254	193	1,232,538	0.183	225
ELECTRICITY FROM GRID	kWh	1,307,373	0.23314	305	1,464,363	0.21233	311	1,523,630	0.19338	295	1,482,286	0.207	307
ELECTRICITY FROM GRID T&D	kWh	1,307,373	0.02005	26	1,464,363	0.01879	28	1,523,630	0.01769	27	1,482,286	0.018	27
ELECTRICITY FROM RBC FIT		16,668	0.23314	4	10,291	0.21233	2		0.19338	-			-
ELECTRICITY FROM RENEWABLES	kWh												-
FLEET - DIESEL	litres	1,335,486	2.5	3,400	2,686,750	2.5	6,750	6,662,388	2.6	17,041	5,756,917	2.51	14,450
FLEET - CNG	litres	813	2533.0	2,061	1,470	2538.5	3,730	3,090	2539.3	7,846	1,859	2,563	4,763
TOTAL				6,037			11,026			25,402			19,771
SMALL MEAD													
ELECTRICITY FROM GRID	kWh	1,633,650	0.23314	381	1,760,270	0.21233	374	1,691,865	0.19338	327	1,443,390	0.2071	299
ELECTRICITY FROM GRID T&D	kWh	1,633,650	0.02005	33	1,760,270	0.01879	33	1,691,865	0.01769	30	1,443,390	0.0179	26
ELECTRICITY FROM RENEWABLES	kWh		0	0		0	0		0	0			
TOTAL				413.6			406.8			357.1			324.8
OUTSIDE SCOPE													
FLEET - DIESEL - BIOFUEL MIX	litres												
FLEET - PETROL - BIOFUEL MIX	litres												
CNG	litres												
BIOMASS	tonnes												
TOTAL													
GROSS EMISSIONS - CORPORATE				5,972.1			5,675.3			5,149.0			5,403.3
GROSS EMISSIONS - ALL				17,919.3			22,758.4			36,837.3			30,711.8
ELECTRICITY EXPORTED/SOLD TO GRID/OTHERS	kWh	1,375,999	0.25319	348	1,298,673	0.23112	300	1,370,495	0.21107	289	1,524,448	0.22499	343
NET EMISSIONS - CORPORATE				5,624			5,375.2			4,859.7			5,060.4
NET EMISSIONS - ALL				17,571			22,458			36,548			30,369

Note: Fleet fuel data in 'Managed Services' Scope 3 are not included in total emissions figures in pre-2020/21 historical data

* Reading Transport fleet fuel data for 2023/24 requires verification. Amendment to this report to follow.