

## READING BOROUGH COUNCIL: GREENHOUSE GAS (GHG) REPORT 2015 - 16

Reading Borough Council (RBC) is committed to working to reduce its Greenhouse Gas emissions across its estate and operations.

This year (2015/16) the Council had a 10.8 % decrease in absolute gross corporate emissions against our 2014/15 levels.

The gross emissions of the wider influence of the Council also decreased in 2015/16 compared to 2014/15 levels, by 9.5 %.

Reading Borough Council's 'Carbon Plan, 2015-2020', was approved last year, which reinforced the organisation's target to reduce carbon emissions by 50% against the 2008/9 baseline. In addition a renewable energy target was set to generate renewable energy equivalent to 15% of total energy consumed, by 2020. This plan identifies actions to further reduce carbon emissions and to generate renewable energy by 2020. Reading Borough Council has a vision to have energy and water efficient estate and operations, in which best practise is sought.

### 1 Introduction

#### 1.1 Our Vision

As part of Reading Borough Council's commitment to 'Reading's Climate Change Strategy 2013-2020; Reading Means Business on Climate Change', the council supports the vision that

*'Reading's thriving network of businesses and organizations will be at the forefront of developing solutions for reducing carbon emissions and preparing for climate change. Low carbon living will be the norm in 2050.'*

And work with others to '*...reduce the carbon footprint of the borough in 2020 by 34% compared with levels in 2005.*'

#### 1.2 Leading by Example

Reading Borough Council has been leading by example by actively reducing its carbon emissions. Since signing the Nottingham Declaration on Climate Change in March 2006, there have been numerous local and national policies and targets, and legislation which have influenced the council's energy management work. In 2007 RBC worked with the Carbon Trust to produce Reading's Local Authority Carbon Management Plan (LACM). Since 2008 the authority has managed a rolling investment programme in energy efficient technologies to achieve carbon reduction. The Council has been working in partnership with other public sector organisations, businesses and local residents to reduce emissions and dependency on fossil fuel.

Our Sustainable Community Strategy (2011) highlights renewable energy as one of eight key 'building blocks' for the future of Reading and Reading's Climate Change Strategy 2013-2020 also aims to '*increase the amount of energy generated locally using renewable technologies*'. RBC's investments in photovoltaic solar panel are

generating savings, with about over 934 MWh electricity generated in 2015/16 by schools, local businesses, corporate buildings and housing. The Council plans to continue to develop and facilitate renewable schemes across the borough. These schemes will be providing a return in investment to Reading as a whole and stimulate the local low carbon economy.

Reading Borough Council's 'Carbon Plan, 2015-2020', was approved in 2014/15, which reinforced the organisation's target to reduce carbon emissions by 50% against the 2008/9 baseline. In addition a renewable energy target was set to generate renewable energy equivalent to 15% of total energy consumed, by 2020. The Carbon Plan, 2015-2020 which aims to; reduce costs; reduce negative impacts on the environment; continue to decarbonise energy supply and manage demand; and make energy, carbon and water savings an integral part of the organisation.

## **2 Reading Borough Council Greenhouse Gas (GHG) Emissions**

### **2.1 The Organisation**

Reading Borough Council is a unitary local authority. The organisation has been subject to significant reorganisation over the last 5 years. RBC is now comprised of four directorates; Directorate of Environment and Neighbourhood Services (DENS); Directorate of Corporate Support Services (CSS); and Directorate for Adult Care & Health Services (AC&HS), Directorate for Children, Education & Early Help Services (CE&EHS). Carbon Management for the Council is managed in the Sustainability Team, within 'Planning, Development and Regulatory Services' in the Directorate of Environment and Neighbourhood Services.

This report covers the RBC corporate GHG footprint and the 'wider influence' GHG footprint for 2015/16 (1st April 2015 to 31st March 2016).

### **2.2 Scope**

As clarified in the 2013/14 GHG Report, RBC continues to report carbon emissions from corporate activities under its direct operational control separately from those activities which are (only) under its influence. As such, all schools (including community, voluntary aided, diocese, Academy and Free Schools) and managed services (including Rivermead Leisure centre, Academy Sports, Reading Buses and NCP car parks) will be reported in Scope 3, where RBC can influence, rather than control, the operations.

The list of GHG activities measured by RBC is as follows below. A detailed breakdown of the activities that are reported, and within which scope, can be found in Appendix 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 (Energy indirect)

- Purchased electricity
- Passenger Vehicle - Reading Car Club

### Scope 3 (Other indirect)

- Electricity losses from transmission and distribution
- Managed Assets - Business travel
- Schools (Community, Voluntary Aided, Diocese, Academy and Free Schools)
- Outsourced services (5 car parks, 2 leisure centres and bus company)

### Outside Scopes

- CO<sub>2</sub> equivalent emissions from biofuels

### Renewable electricity

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

## 2.3 Baseline Year and reporting

The Council has been reporting its carbon footprint since 2005/6. Since this time, the reporting systems have changed several times and data collection has improved. As part of the development of the first Climate Change Strategy for Reading (2008-2013) our baseline line was recalculated in 2008; therefore the Council's current baseline year is 2008/9.

The Council has been required to annually report carbon emissions for the Carbon Reduction Commitment Energy Efficiency Scheme between 2010/11 to 2013/14.

The emissions factors for the GHG footprint 2015/16 (1st April 2015 to 31st March 2016) are those published by DEFRA, based on a 1 year average factor for each year.

## 2.4 Weather Correction

A considerable contribution to the greenhouse emissions of the Council is from space heating. With changing heat demand depending on the weather of each year; there can be an increased fuel demand, which will have an impact on our emissions. Weather correction calculations can be undertaken to adjust for this bias. Weather corrected figures can be found in Appendix 2.

## 2.5 Reading Borough Council Greenhouse Gas carbon footprint, 2015/16

Reading Borough Council's absolute (gross) corporate carbon emissions for 2015/16 were 12,485 tCO<sub>2</sub>, down 10.8 % (1,512 tCO<sub>2</sub>) against 2014/15 emissions. Renewably generated electricity, exported to the grid, or sold to third parties can be netted off against this gross figure, to the sum of 368 tCO<sub>2</sub>, giving net corporate carbon emissions of 12,117 tCO<sub>2</sub>.

The absolute carbon emissions of the organisations' wider activities were 22,628 tCO<sub>2</sub> for 2015/16. Carbon emissions from schools were 7,487 tCO<sub>2</sub> (gross) for 2015/16, down 6.5 % compared to 2014/15 figures.

The GHG carbon footprint figures for 2015/16 are illustrated in Table 2.1 below, compared against 2014/15 data. A full breakdown of the data can be found in Appendix 3.

YEAR	2014/15	2015/16
	tCO <sub>2</sub>	tCO <sub>2</sub>
SCOPE 1 - Corporate		
	4,740	4,609
SCOPE 2 - Corporate		
	8,283	7,054
SCOPE 3		
CORPORATE	974	822
SCHOOLS	8,005	7,487
MANAGED ASSETS/SERVICES	2,998	2,656
GROSS EMISSIONS - Scope 1, 2, 3 - CORPORATE	13,996	12,485
GROSS EMISSIONS - ALL	25,000	22,628
ELECTRICITY EXPORTED/SOLD TO GRID/OTHERS	186	368
NET EMISSIONS - Scope 1, 2, 3 - CORPORATE	13,810	12,117
NET EMISSIONS - ALL	24,814	22,260

Table 2.1: Reading Borough Council GHG Emissions 2015/16, compared to 2014/15 figures.

## 2.6 Intensity Measurement

This measures 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/DECCs guide is to measure using direct emissions (Scope 1 and 2) only which occurs as a direct result of staff activities.

In March 2015 we had 2,090.18 staff (FTE) employed by the Council as against 2,104.91 staff (FTE) in March 2014.

The employee intensity ratio for Reading Borough Council, for 2015/16 is

$$\text{TCO}_2\text{e per FTE} = \frac{11,663}{2,090.18} = 5.57 \text{ tCO}_2\text{e/FTE}$$

Compared to the employee intensity ratio for Reading Borough Council, for 2014/15 is

$$\text{TCO}_2\text{e per FTE} = \frac{13,023}{2,104.91} = 6.18 \text{ tCO}_2\text{e/FTE}$$

## 2.7 Progress against target

Reading's Climate Change Strategy 2008 - 2013 set a reduction target of 4 % per annum, which equates to a total of 31.7 % carbon reduction by 2015/16, for Reading's owned estate and operations. The subsequent Reading Climate Change Strategy 2013-20, a collaborative strategy with business, community and public sector, has set a target for borough-wide carbon emissions reductions of 34 % by 2020, against a 2005 (2005/6) baseline. This would be achieved in part by encouraging participants to achieve a 7% per annum reduction. Figure 2.1 below illustrates RBC's corporate emissions reductions, compared against the annual reduction targets.

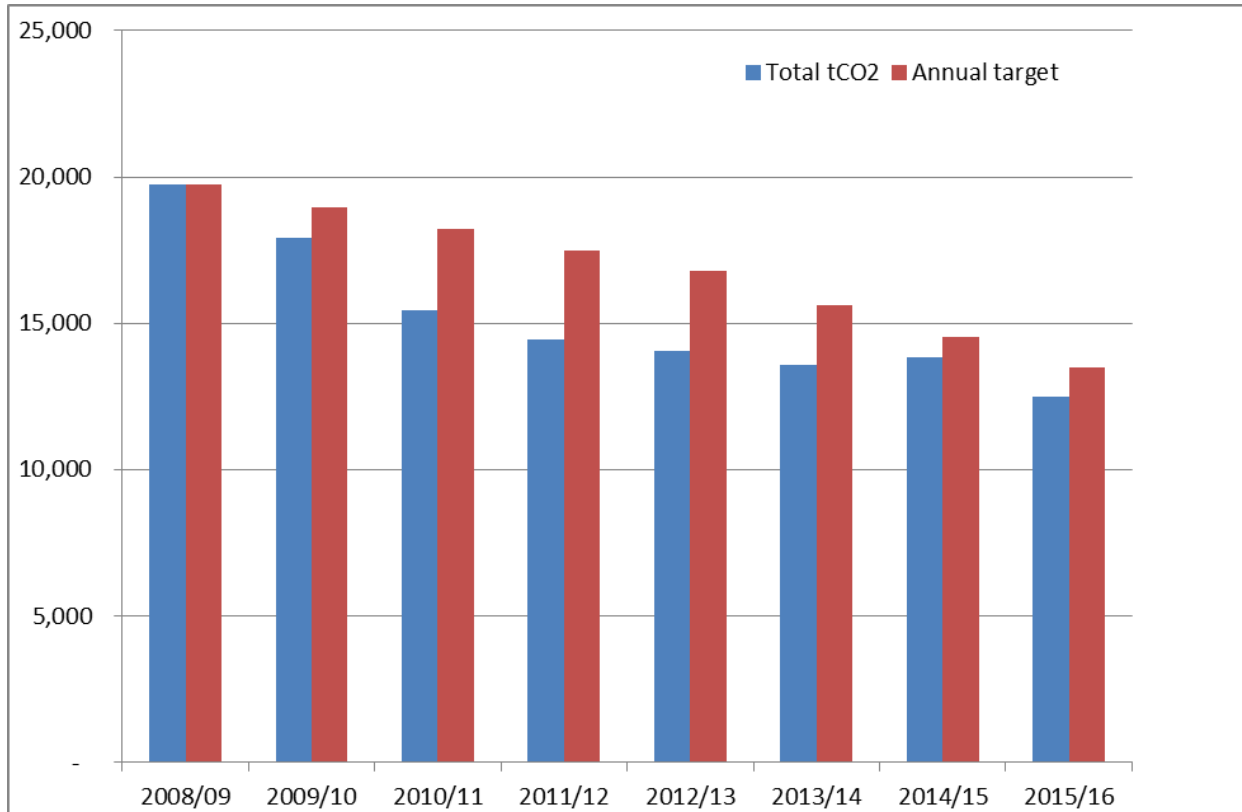


Figure 2.1: Reading Borough Council's corporate GHG emission performance against annual 4% target from the Baseline year (2008/9) through to 2015/16

## 2.8 Renewable / low carbon energy

Reading Borough Council no longer operates a gas-fired Combined Heat and Power (CHP) plant, as it was decommissioned when the organisation moved from the old Civic Offices.

Reading Borough Council owns numerous PV arrays which generate onsite electricity through the Feed In Tariff (FiT) subsidy. In total, these arrays exported 149,590 kWh to the Grid (deemed) in 2015/16. Twenty-three systems generated and self-supplied 179,520 kWh to RBC sites. The remaining arrays generated and supplied 398,246 kWh to schools and other parties in 2015/16. These carbon emissions savings are 'netted off' against the RBC gross emissions (excluding those 'self-supplied').

A number of schools own their own PV arrays, self-supplying and generating electricity on site. In 2015/16 these systems generated 19,338 kWh.

In 2013, a project to install photovoltaic solar panels onto over 400 Council houses was instigated. Tenants benefit from free electricity from the panels and the Council receive payment from the Feed in Tariff and export of electricity to the National Grid. The programme was completed in 2015, on 457 properties. The total annual energy generation is predicted to be 1,070 MWh. In 2015/16 the solar pv on these properties generated 374,510 kWh from systems installed part-way through the year, 50 % of this is deemed to be exported to the Grid and 50 % is deemed to be supplied to the tenant.

### 3. Risks and Opportunities

There is overwhelming global consensus that society should rise to the challenge of tackling climate change. In times of economic uncertainty and with the planet facing unprecedented pressures on natural resources, energy reserves and land use; Reading Borough Council is committed to playing its part in averting the risks of severe climate change. We will act locally in the global interest, but we will not overlook the local opportunities and benefits of this action. These benefits include improving the efficiency and resilience of our local communities and infrastructure.



## References

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

Reading's Climate Change Strategy 2008-2013. Stepping forward for Climate Change

Reading's Climate Change Strategy 2013-2020; *Reading Means Business on Climate Change*

Reading's Local Authority Carbon Management Plan (LACM) 2007

Sustainable Community Strategy, 2011. Levers for change.

## Appendices

### Appendix 1: GHG Protocol scope and treatments of renewables

Reporting of GHG emissions for RBC, divided into 3 scopes	
<b>Scope 1 (Direct emissions):</b> 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.
<b>Scope 2 (Energy indirect):</b> 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.
Passenger Vehicle - Reading Car Club	Emissions from use of cars due to RBC activity, but Car Club not owned by RBC.
<b>Scope 3 (Other indirect):</b> 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
<b>Outside Scopes:</b>	
CO <sub>2</sub> equivalent emissions from biofuels	Other GHG emissions from combustion of biofuels. Awaiting emissions factors
<b>Renewable electricity:</b>	
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.

Fleet fuel data from Managed Services (Reading Buses) in Scope 3 are quoted, but not included in total carbon footprint figures, due to some missing data (2014/15).



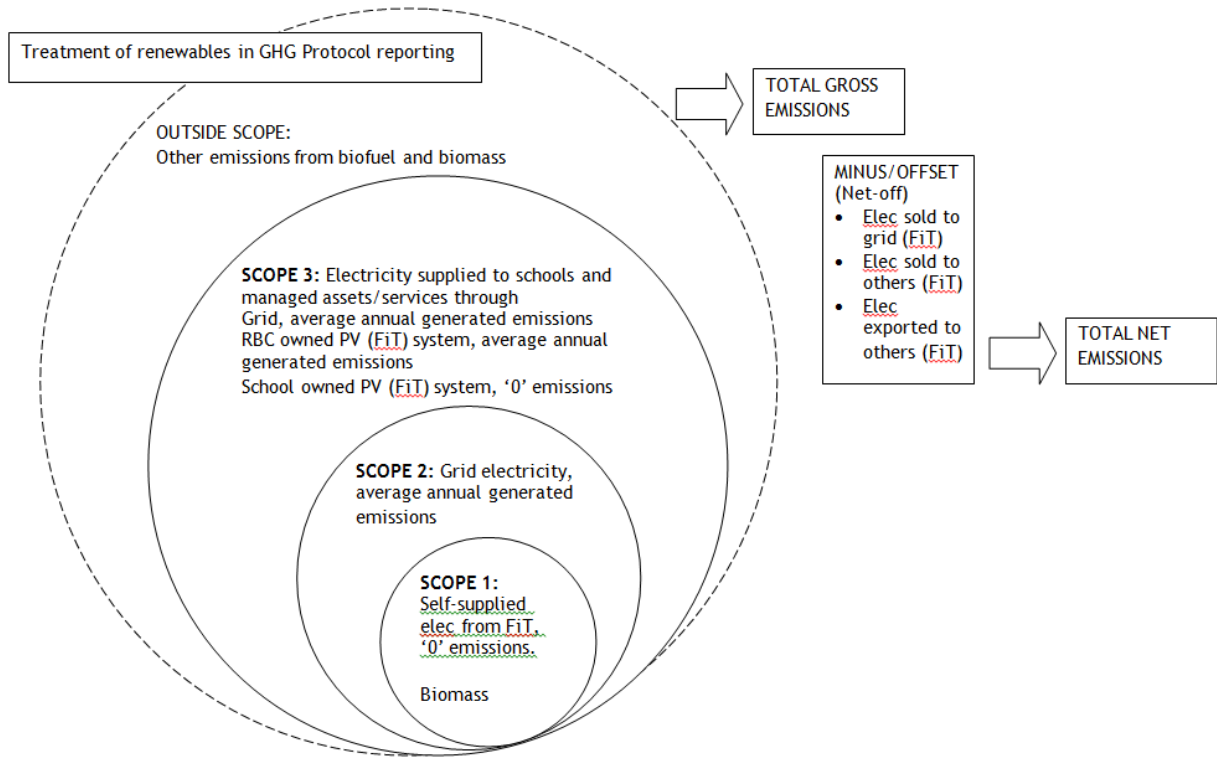


Figure A1: Treatment of renewables in GHG Protocol reporting, depending on system ownership and reporting scope

## Appendix 2: Historic data

YEAR		BASELINE: 2008/09			2012/13			2013/14			2014/15			2015/16		
	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	kWh/litres/km/ m3/kg	conversion factor	tCO2
<b>SCOPE 1</b>																
GAS	kWh	26,624,860	0.1836	4,888	19,048,224	0.18521	3,528	16,479,082	0.18404	3,033	17,244,563	0.184973	3,190	17,930,037	0.18445	3,307
OIL	litres	329,462	0.2468	81	13,384	2.5443	34	14,800	2.538	38	15,702	2.537971	40	13,851	2.53215	35
FLEET - DIESEL	litres	616,794	2.5725	1,587	538,214	2.5835	1,390	538,259	2.6008	1,400	526,743	2.6024	1,371	474,783	2.5839	1,227
FLEET - PETROL	litres	16,717	2.2450	38	15,404	2.2423	35	13,051	2.2144	29	12,538	2.1914	27	11,577	2.1944	25
FUGITIVE - R12	kg			-	0.33	1725	1	-					-		0	
FUGITIVE - R22	kg			-	1.60	1810	3	-			0.65	1810	1	-	0	-
FUGITIVE - R407C	kg										10.3	1526	16	-	0	-
FUGITIVE - R134A	kg													0	1300	0
FUGITIVE - R410A	kg										0.31	1725	0.5	-	0	-
FUGITIVE - R49a	kg													-	0	-
FUGITIVE - R404a	kg													4	3921.6	14.5
CHP - GAS	kWh			-	2,552,025	0.18521	473	1,737,886	0.18404	320	509,368	0.184973	94	-	0	-
CHP - ELECTRICITY	kWh			-	806,081	0	-	453,745	0	-	146,961	0	-	-	0	-
BIOMASS				-										-	0	-
ELECTRICITY FROM RENEWABLES	kWh			-	58,450	0	-	74,674	0	-	77,214	0	-	179,520	0	-
	<b>TOTAL</b>			<b>6,594</b>			<b>5,463</b>			<b>4,819</b>			<b>4,740</b>			<b>4,609</b>
<b>SCOPE 2</b>																
ELECTRICITY FROM GRID	kWh	24,416,596	0.4853	11,850	16,742,424	0.46002	7,702	17,594,359	0.44548	7,838	16,751,671	0.49426	8,280	15,256,177	0.46219	7,051
CAR CLUB - SMALL	km	-	-	-	15,720	0.16522	3	15,654	0.16192	3	13,491	0.16061	2	12,843	0.15859	2
CAR CLUB - MEDIUM	km	-	-	-	7,580	0.20765	2	6,178	0.2049	1	5,755	0.20088	1	5,000	0.19931	1
	<b>TOTAL</b>			<b>11,850</b>			<b>7,706</b>			<b>7,842</b>			<b>8,283</b>			<b>7,054</b>
<b>SCOPE 3</b>																
<i>CORPORATE</i>																
ELECTRICITY FROM GRID T&D	kWh	24,416,596	0.0391	954	16,742,424	0.03634	608	17,594,359	0.03809	670	16,751,671	0.0432	724.01	15,256,177	0.0382	582
BUSINESS MILEAGE	km	1,742,835	0.2086	364	1,429,879	0.19469	278	1,331,431	0.19023	253	1,320,563	0.1894	250.15	1,284,393	0.1864	239
BUSINESS CYCLE	km										12,992		-	-	-	-
BUSINESS MOTORCYCLE	km										1,794	0.1196	0.21	-	-	-
WATER SUPPLIED	m3			-		0.3441	-		0.3441	-			-	-	-	-
WATER SEWERAGE	m3			-		0.7085	-		0.7085	-			-	-	-	-

YEAR		BASELINE: 2008/09			2012/13			2013/14			2014/15			2015/16				
	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	kWh/litres/km/ m3/kg	conversion factor	tCO2		
<b>SCOPE 3</b>																		
<i>SCHOOLS</i>																		
GAS	kWh	12,243,654	0.1836	2,248	18,710,786	0.18521	3,465	18,210,886	0.18404	3,352	17,814,444	0.1850	3,295	17,306,100	0.1845	3,192		
OIL	litres	4,375,859	0.2468	1,080	165,777	2.5443	422	158,565	2.538	402	120,654	2.5380	306	100,637	2.5322	255		
ELECTRICITY FROM GRID	kWh	3,599,802	0.4853	1,747	7,503,153	0.46002	3,452	8,233,209	0.44548	3,668	8,121,358	0.4943	4,014	7,939,271	0.4622	3,669		
ELECTRICITY FROM GRID T&D	kWh	3,599,802	0.0391	141	7,503,153	0.03634	273	8,233,209	0.03809	314	8,121,358	0.0432	351	7,939,271	0.0382	303		
ELECTRICITY FROM RBC FIT	kWh		0.4853	-	84,986	0.46002	39	95,940	0.44548	43	77,970	0.4943	39	145,993	0.4622	67		
ELECTRICITY FROM RENEWABLES	kWh	-	-	-	31,422	0	0	49,566	0	0	20,431	0.0000	-	19,383	0.0000	-		
WATER SUPPLIED	m3	-	-	-	-	0.3441	-	-	0.3441	-	-	-	-	-	-	-		
WATER SEWERAGE	m3	-	-	-	-	0.7085	-	-	0.7085	-	-	-	-	-	-	-		
<i>MANAGED ASSETS/SERVICES</i>																		
GAS	kWh	6,108,386	0.1836	1,121	3,462,697	0.18521	641	4,549,139	0.18404	837	4,847,143	0.1850	897	4,952,281	0.1845	913		
OIL	litres	-	-	-	-	2.5443	-	-	2.538	-	-	-	-	-	-	-		
ELECTRICITY FROM GRID	kWh	3,822,312	0.4853	1,855	3,868,240	0.46002	1,779	3,970,380	0.44548	1,769	3,838,088	0.4943	1,897	3,405,270	0.4622	1,574		
ELECTRICITY FROM GRID T&D	kWh	3,822,312	0.0391	149	3,868,240	0.03634	141	3,970,380	0.03809	151	3,838,088	0.0432	166	3,405,270	0.0382	130		
ELECTRICITY FROM RBC FIT			0.4853	-	41,273	0.46002	19	43,826	0.44548	20	78,782	0.4943	39	83,326	0.4622	39		
ELECTRICITY FROM RENEWABLES	kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
FLEET - DIESEL	litres	3,817,389	2.5725	9,820	3,085,432	2.5835	7,971	2,714,427	2.538	6,889				3561684	2.5839	9,203		
FLEET - CNG	litres	-	-	-	165,384	0.476774	79	630,095	0.473762	299				957421	0.47706	457		
WATER SUPPLIED	m3	-	-	-	-	0.3441	-	-	0.3441	-	-	-	-	-	-	-		
WATER SEWERAGE	m3	-	-	-	-	0.7085	-	-	0.7085	-	-	-	-	-	-	-		
	<b>TOTAL</b>			<b>9,659</b>			<b>11,118</b>			<b>11,478</b>			<b>11,978</b>			<b>10,964</b>		
<b>OUTSIDE SCOPE</b>																		
FLEET - DIESEL - BIOFUEL MIX	litres				538,213			538,259			526,743							
FLEET - PETROL - BIOFUEL MIX	litres				15,404			13,051			12,538							
CNG	litres																	
BIOMASS																		
	<b>TOTAL</b>																	
<b>GROSS EMISSIONS - CORPORATE</b>				<b>19,761</b>					<b>14,056</b>					<b>13,584</b>				
<b>GROSS EMISSIONS - ALL</b>				<b>28,103</b>					<b>24,287</b>					<b>24,139</b>				
<b>GROSS EMISSIONS - CORPORATE - weather corrected</b>				<b>19,606</b>					<b>13,353</b>					<b>13,399</b>				
<b>GROSS EMISSIONS - ALL - weather corrected</b>				<b>27,809</b>					<b>22,691</b>					<b>23,677</b>				
ELECTRICITY EXPORTED/SOLD TO GRID	kWh				319,090	0.49636	158	384,704	0.48357	186	346,924	0.53748	186	735,091	0.50035	368		
<b>NET EMISSIONS - CORPORATE</b>				<b>19,761</b>					<b>13,898</b>					<b>13,398</b>				
<b>NET EMISSIONS - ALL</b>				<b>28,103</b>					<b>24,128</b>					<b>23,953</b>				
<b>NET EMISSIONS - CORPORATE - weather corrected</b>				<b>19,606</b>					<b>13,739</b>					<b>13,212</b>				
<b>NET EMISSIONS - ALL - weather corrected</b>				<b>27,809</b>					<b>23,970</b>					<b>24,754</b>				

Note: Fleet fuel data in 'Managed Services' Scope 3 are not included in total emissions figures

### Appendix 3: Full breakdown 2015/16 GHG data

YEAR		2014/15			2015/16		
	REPORTING UNITS	kWh/litres/km/m <sup>3</sup> /kg	conversion factor	tCO <sub>2</sub>	kWh/litres/km/m <sup>3</sup> /kg	conversion factor	tCO <sub>2</sub>
<b>SCOPE 1</b>							
GAS	kWh	17,244,563	0.184973	3,190	17,930,037	0.18445	3,307
OIL	litres	15,702	2.537971	40	13,851	2.53215	35
FLEET - DIESEL	litres	526,743	2.6024	1,371	474,783	2.5839	1,227
FLEET - PETROL	litres	12,538	2.1914	27	11,577	2.1944	25
FUGITIVE - R12	kg						
FUGITIVE - R22	kg	0.65	1810	1			
FUGITIVE - R407C	kg	10.3	1526	16			
FUGITIVE - R134A	kg				0.22	1300	0.3
FUGITIVE - R410A	kg	0.31	1725	0.5			
FUGITIVE - R49a	kg						
FUGITIVE - R404a	kg				3.7	3921.6	14.5
CHP - GAS	kWh	509,368	0.18497	94			
CHP - ELECTRICITY	kWh	146,961	0	0			
BIOMASS							
ELECTRICITY FROM RENEWABLES	kWh	77,214	0	0	179,520	0	0
	<b>TOTAL</b>			<b>4,740</b>			<b>4,609</b>
<b>SCOPE 2</b>							
ELECTRICITY FROM GRID	kWh	16,751,671	0.49426	8,280	15,256,177	0.46219	7,051
CAR CLUB - SMALL	km	13,491	0.16061	2	12,843	0.15859	2
CAR CLUB - MEDIUM	km	5,755	0.20088	1	5,000	0.19931	1
	<b>TOTAL</b>			<b>8,283</b>			<b>7,054</b>
<b>SCOPE 3</b>							
<b>CORPORATE</b>							
ELECTRICITY FROM GRID T&D	kWh	16,751,671	0.04322	724	15,256,177	0.03816	582
BUSINESS MILEAGE	km	1,320,563	0.18943	250	1,284,393	0.18635	239
BUSINESS CYCLE	km	12,992					
BUSINESS MOTORCYCLE	km	1,794	0.11955	0.2			
WATER SUPPLIED	m <sup>3</sup>						
WATER SEWERAGE	m <sup>3</sup>						

YEAR		2014/15			2015/16		
	REPORTING UNITS	kWh/litres/km/m3/kg	conversion factor	tCO2	kWh/litres/km/m3/kg	conversion factor	tCO2
<b>SCOPE 3</b>							
<b>SCHOOLS</b>							
GAS	kWh	17,814,444	0.184973	3,295	17,306,100	0.18445	3,192
OIL	litres	120,654	2.537971	306	100,637	2.53215	255
ELECTRICITY FROM GRID	kWh	8,121,358	0.49426	4,014	7,939,271	0.46219	3,669
ELECTRICITY FROM GRID T&D	kWh	8,121,358	0.04322	351	7,939,271	0.03816	303
ELECTRICITY FROM RBC FIT	kWh	77,970	0.49426	39	145993	0.46219	67
ELECTRICITY FROM RENEWABLES	kWh	20,431	0	0	19383	0	0
WATER SUPPLIED	m3						
WATER SEWERAGE	m3						
<b>MANAGED ASSETS/SERVICES</b>							
GAS	kWh	4,847,143	0.184973	897	4952281	0.18445	913
OIL	litres						
ELECTRICITY FROM GRID	kWh	3,838,088	0.49426	1,897	3405270	0.46219	1,574
ELECTRICITY FROM GRID T&D	kWh	3,838,088	0.04322	166	3405270	0.03816	130
ELECTRICITY FROM RBC FIT		78782	0.49426	39	83326	0.46219	39
ELECTRICITY FROM RENEWABLES	kWh						
FLEET - DIESEL	litres				3561684	2.5839	9,203
FLEET - CNG	litres				957421	0.47706	457
WATER SUPPLIED	m3						
WATER SEWERAGE	m3						
	<b>TOTAL</b>			<b>11978</b>			<b>10964</b>
<b>OUTSIDE SCOPE</b>							
FLEET - DIESEL - BIOFUEL MIX	litres	526,743					
FLEET - PETROL - BIOFUEL MIX	litres	12,538					
CNG	litres						
BIOMASS							
	<b>TOTAL</b>						
<b>GROSS EMISSIONS - CORPORATE</b>				<b>13997</b>			<b>12,485</b>
<b>GROSS EMISSIONS - ALL</b>				<b>25,000</b>			<b>22,628</b>
ELECTRICITY EXPORTED/SOLD TO GRID/	kWh	346,924	0.53748	186	735,091	0.50035	368
<b>NET EMISSIONS - CORPORATE</b>				<b>13810</b>			<b>12,117</b>
<b>NET EMISSIONS - ALL</b>				<b>24,814</b>			<b>22,260</b>