

November 2019

1.0 Introduction

This report provides a summary of Brighton & Hove City Council Carbon Emission data for the 2018/19 financial year. The consumption figures are taken directly from supplier billing and are calculated based upon a mixture of manual, automatic and estimate meter readings.

The scope of the report includes a full picture of our organisational emissions including electricity, gas and oil use in corporate buildings, schools and housing(communal supplies); as well as emissions from street lighting electricity and fleet vehicle fuel usage. Emissions related to energy consumption in tenanted Commercial & Housing properties, where the building users are directly responsible for energy usage, are not included in the scope of this report. A detailed breakdown of the scope of this report is included in Appendix A.

Figures are provided in CO₂e (Carbon Dioxide Equivalent), the standard unit for measuring carbon footprints. The consumption figures are converted to CO₂e using the annual Greenhouse gas reporting conversion factors, calculated by BEIS (Department for Business, Energy & Industrial Strategy). Conversion factors for 2018/19 are included in Appendix B.

2.0 Annual Carbon Emissions 2018/19

Brighton & Hove City Council’s total Carbon footprint in 2018/19 was **21,793 tonnes CO₂e**, which compared with our 2017/18 footprint of **24,965 tonnes CO₂e** represents a total overall annual reduction of **12.7%**. The Council’s current voluntary annual emissions reduction target is **4%**, a breakdown of our total footprint compared to emissions in 2017/18 is shown in **Table 1** below.

Financial Year	Corporate	Housing	Schools	Street Lighting	Fleet Fuel	TOTAL
Annual Comparison - CO₂e Emissions (tonnes)						
2017/18	6,362	4,807	7,995	3,396	2,405	24,965
2018/19	5,220	4,690	6,801	2,712	2,370	21,793
	17.95%	2.43%	14.93%	20.14%	1.45%	12.70%
						
	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease

Table 1: Total Annual CO₂e Emissions comparison by area of the council.

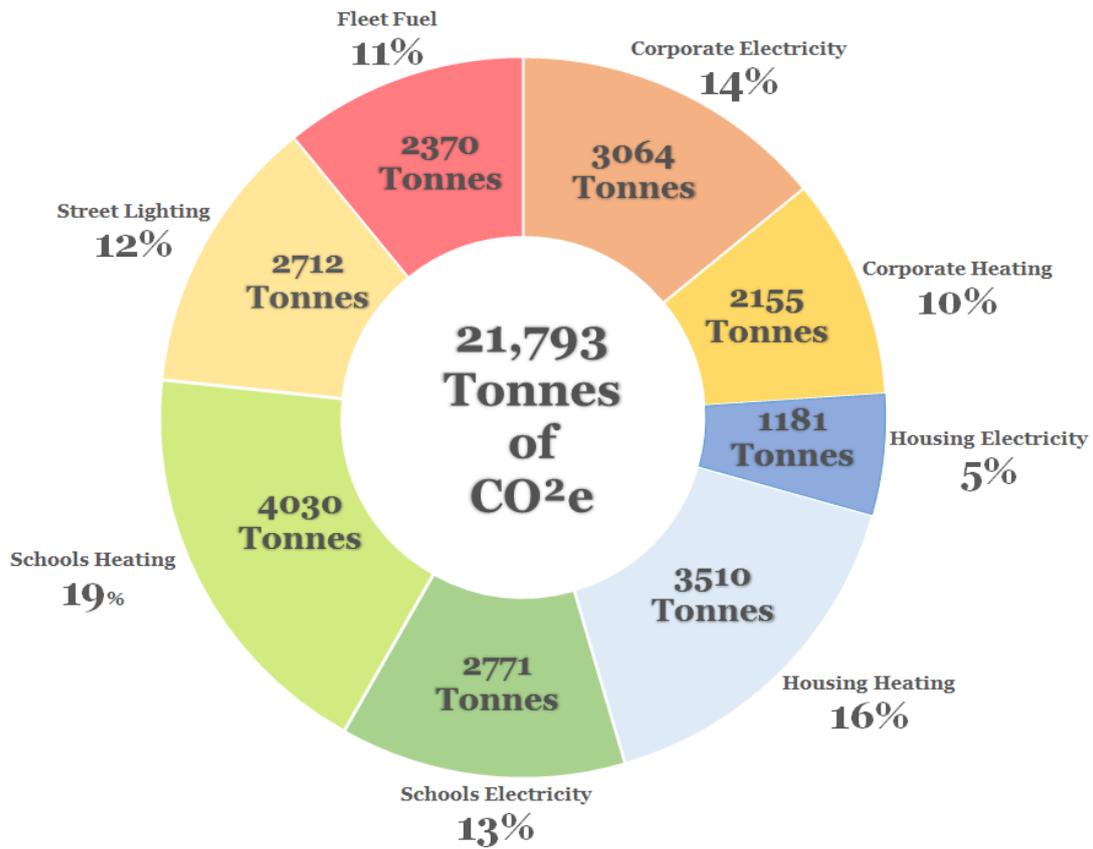


Figure 1: 2018/19 overall footprint broken down by energy type & area as a % of the total CO₂e

Financial Year	Corporate	Housing	Schools	Street Lighting	TOTAL
Annual Comparison - Electricity CO₂e Emissions (tonnes)					
2017/18	3,997	1,496	3,587	3,396	12,476
2018/19	3,064	1,181	2,771	2,712	9,728
	23.34%	21.06%	22.75%	20.14%	22.03%
	↓	↓	↓	↓	↓
	Decrease	Decrease	Decrease	Decrease	Decrease

Table 2: Total Annual Electricity CO₂e Emissions comparison by area of the council.

Financial Year	Corporate	Housing	Schools	TOTAL
Annual Comparison - Heating CO₂e Emissions (tonnes)				
2017/18	2,365	3,312	4,408	10,084
2018/19	2,155	3,510	4,030	9,695
	8.88%	5.98%	8.58%	3.86%
				
	Decrease	Increase	Decrease	Decrease

Table 3: Total Annual Heating CO₂e Emissions comparison by area of the council.

Corporate sites showed a total year-on-year Carbon emission reduction of **17.95%** (1142 tonnes CO₂e). Reductions in electricity emissions (933 tonnes CO₂e) were realised by a modest reduction in consumption **0.5m kWh** (5% of total consumption), and a favourable electricity conversion factor for 2018/19, due to an increase production of renewable electricity across the grid.

The Corporate portfolio also reduced heating emissions due to reductions in consumption across gas **0.6m kWh** (5% total consumption) & oil heated sites **0.35m kWh** (60% of total consumption). This resulted in a total reduction in heating emissions of gas **8.88%** (210 tonnes CO₂e). Oil boilers are being replaced across all areas of the portfolio as they come to the end of their life, currently there are only two remaining in the corporate portfolio.

Housing sites showed a total year-on-year Carbon emission reduction of **2.43%** (117 tonnes CO₂e). Reductions in electricity emissions (315 tonnes CO₂e) were realised by a small reduction in consumption **82,000 kWh** (2% of total consumption), and a favourable electricity conversion factor for 2018/19, due to an increase production of renewable electricity across the grid. Heating emissions have increased in 2018/19 by **5.98%** (198 tonnes CO₂e), this is mostly due to an increase in communal gas consumption **1.09m kWh** at 130 new residential units across Hobby & Kite Place and Brookemead housing scheme.

Schools sites showed a total year-on-year Carbon emission reduction of **14.93%** (1194 tonnes CO₂e). Reductions in electricity emissions (816 tonnes CO₂e) were realised by a small reduction in consumption **0.4m kWh** (4% of total consumption), and a favourable electricity conversion factor for 2018/19. Heating emissions have decreased in 2018/19 by **8.58%** (378 tonnes CO₂e). This is due to reductions in consumption across gas **0.9m kWh** (4% total consumption) & oil heated sites **0.8m kWh** (40% of total consumption). Currently only there are only three oil fired boilers in the school portfolio, two of which are due to be decommissioned in 2019/20.

Street Lighting supplies showed a total year-on-year Carbon emission reduction of **20.14%** (684 tonnes CO₂e). This was mostly due to a favourable electricity conversion factor and a small reduction in consumption **0.1m kWh** (1% of total consumption). Further reductions are expected in 2019/20 as the LED replacement program progresses.

Fleet Fuel emissions reduced by **1.45%** (35 tonnes CO₂e), these were achieved by small reductions in the amount of diesel fuel emissions (32 tonnes CO₂e or 1% of total consumption), and reductions in Gas Oil emissions (8 tonnes CO₂e or 52% of total consumption). Emissions from unleaded fuel have increased slightly in 2018/19 (5 Tonnes or 10% of total consumption).

3.0 Carbon Budgets

In April each year the council set carbon budgets alongside the financial budget to provide accountability in carbon emissions for the following year. A 4% reduction target was set for (landlord level) housing, schools, corporate buildings, street lighting and fleet fuel in 2018/19. Most areas set out action plans for reducing emissions in that year. **Figure 2** below summarises performance by year across all budget areas between 2013/14 & 2018/19. All areas have seen a reduction in emissions over this period, exceeding our target in every year.

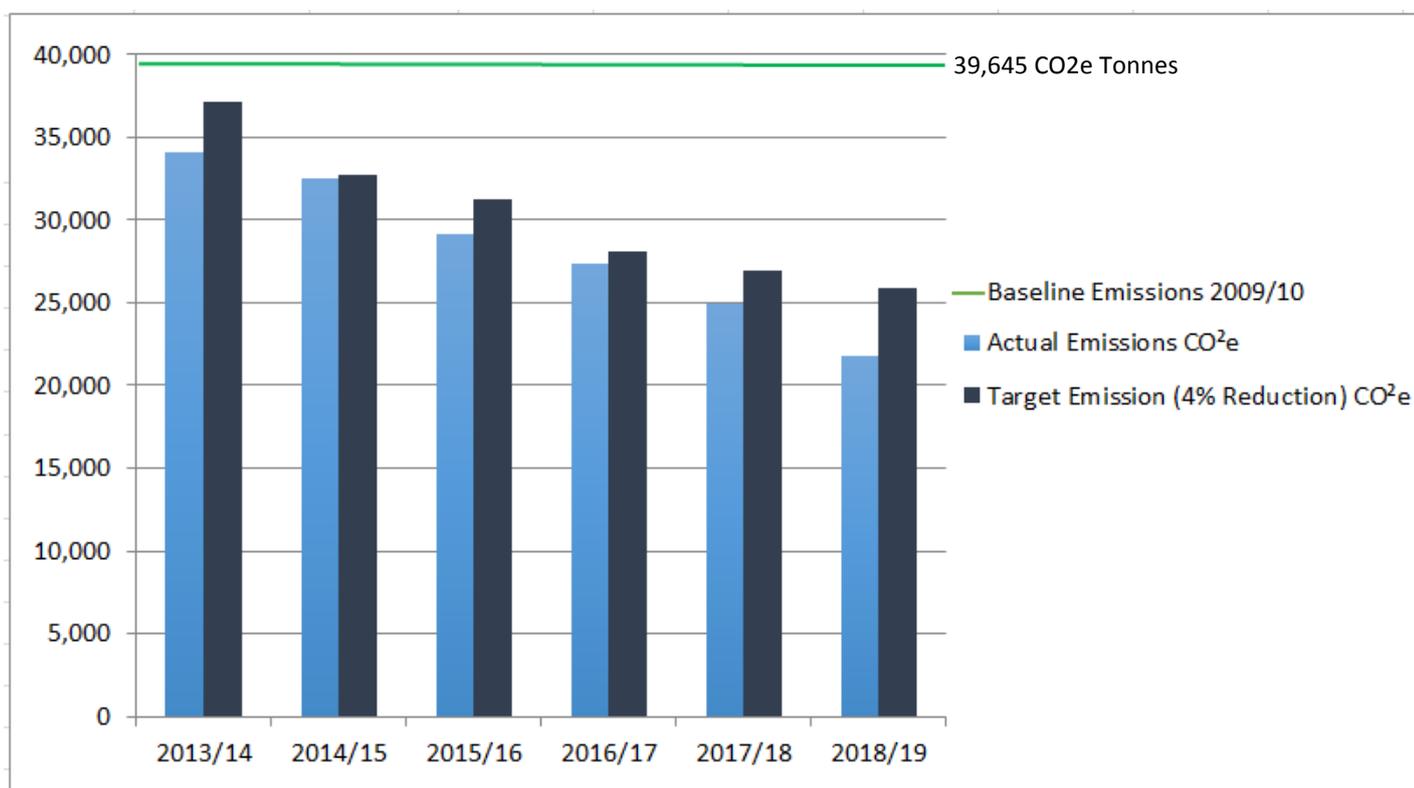


Figure 2: Reduction in Total CO₂e emissions (Tonnes) for carbon budgets 2013/14 – 2018/19.

The table below shows how we have performed against our own internal reduction targets over the last six years and the aggregate total percentage reduction vs our 2009/10 Baseline year (39,645 tonnes CO₂e).

Year	Actual Emissions CO ₂ e	Target Emission (4% Reduction) CO ₂ e	% Change Against Previous Year	TOTAL% Change Against 2009/10 Baseline
2013/14	34,111	37,106	-11.75%	-13.96%
2014/15	32,511	32,747	-4.69%	-17.99%
2015/16	29,214	31,211	-10.14%	-26.31%
2016/17	27,377	28,045	-6.29%	-30.94%
2017/18	24,965	26,281	-8.81%	-37.03%
2018/19	21,793	23,966	-12.70%	-45.03%

Table 4: Percentage Reduction in CO₂e emissions (Tonnes) for carbon budgets 2013/14 – 2018/19.

4.0 Solar PV Installations

The table below shows a breakdown of commissioned Solar Photovoltaic (PV) panel installations as of April 2019. School installations split into two sections, panels that are owned outright by the schools, and panels that are owned by a third party provider. The arrays in the latter category still produce the same amount of Carbon saving, however the schools buy the electricity produced by the panels at a discounted rate via a Power Purchase Agreement (PPA).

PV arrays on housing property are also split into two sections; installations that provide electricity to communal areas and one that are connected to the tenant's personal supply. In the latter category the panels produce the same Carbon saving but this does not affect the council's internal Carbon footprint as tenanted supplies are outside of reported scope.

Area	Installed Net Capacity of Solar 2018/19 (kW)	Est Annual Solar Yield (kWh)	Total Estimate Carbon Savings (Tonnes)
Corporate	75.68	56,760	16.07
Schools (Self-Owned)	132.69	99,518	28.17
Schools (Rent-a-Roof)	125.18	93,885	26.58
Housing (Communal Supplies)	269.1	240,053	68
Housing (Tenant Supplies)	841.76	728,796	206.3
Total (Less Tenant Supplies)	602.65	490,216	138.82

Table 5: Current Solar PV capacity, potential yield and estimate annual Carbon Saving.

It is expected that the annual amount of electricity produced by Solar Panels across the councils portfolio will increase significantly in the 2019/20 emissions year. There has been an additional 250kw of Schools 'Rent-a-Roof' solar commissioned in the beginning portion of 2019. Planned installs of approximately 500kw of additional PV panels have been approved across the Corporate and Housing portfolios for the latter portion of the year.

5.0 Carbon Reduction Commitment (CRC)

At the end of July each year the council has a duty to submit a Carbon Footprint Report for qualifying emissions (Carbon Reduction Commitment) to the Environment Agency (EA). 2018/19 will be the final reporting year for Carbon Reduction Commitment scheme, as the government announced its closure in 2016. We also publish a total Greenhouse Gas Footprint Report (GHG) to the council website.

The Carbon Report (CRC) only includes for carbon dioxide (CO₂) emissions arising from non-domestic electricity usage in its operational buildings and from gas supplies using over 73,000 kWh a year.

The CRC Energy Efficiency Scheme is a mandatory scheme to improve energy efficiency and therefore cut CO₂ emissions in large public and private sector organisations. All UK bodies with large energy bills (>£50k per annum) have to disclose their annual emissions and purchase CO₂ allowances, designed to incentivise the organisation to reduce emissions and to develop accurate data systems.

The CRC footprint uses CO₂ conversion factors and only requires an organisation to report on electricity usage in its buildings (excluding domestic building usage, street lighting and fleet fuel) and all gas supplies using over 73,000 kWh a year.

In July 2019 we submitted our annual 2018/19 footprint of **8,500 tonnes** CO₂ and this means that we will be surrendering **£140,742** worth of allowances.

Our 2017/18 CRC footprint accounted for **10,375 tonnes** of CO₂ from our buildings and we surrendered **£167,038** worth of CRC allowances – a year on year reduction of **18.07%**.

2018/19 was the last year of the final phase of the CRC Energy Efficiency Scheme. The government have announced that there will be no replacement for the scheme; however they have instead introduced a large increase in the amount of Climate Change Levy (CCL) that is paid on gas and electricity energy bills.

Appendix A

Operational Scopes	Emissions included in our reporting	Specific emissions excluded from our reporting
Scope 1 (Direct)		
Gas consumption: in buildings we fully own and control	Yes - Civic buildings, schools and council housing communal areas (and all other buildings owned by BHCC)	Council Housing (Tenant level – household energy bills)
Gas consumption: in buildings we own and lease out to others	Yes – Some sites where a managing agent are not present.	Commercial property portfolio, unless included on corporate utility contracts
Gas consumption: in buildings we lease in from others	Yes leased-in properties	
Other fuel consumption (in owned transport – diesel, petrol, LPG)	Yes - vehicle fleet	
Process emissions (e.g. waste processing)	No	This is contracted out
Fugitive emissions (e.g. air conditioning and refrigeration leaks)	No	Emissions from air conditioning refrigerant have been excluded due to the nature of data collection – we will be looking to improve data collection going forward
Scope 2 (Energy Indirect)		
Purchased electricity: in buildings we fully own and control	Yes - Civic buildings, schools and council housing (communal areas) (and all other buildings owned by BHCC)	Social Housing (Tenant level – household energy bills)
Purchased electricity: in buildings we own and lease out to others	Yes – Some sites where a managing agent are not present.	Commercial property portfolio, unless included on corporate utility contracts
Purchased electricity: in buildings we lease from others	Yes leased-in properties	
Purchased electricity: street lighting and illuminated bollards	Yes - street lighting and traffic signals	
Other fixed power sources	Yes - electric vehicle charging points	
Scope 3 (Other Indirect)		
Indirect emissions from purchased energy and fuels ¹	No	
Procured goods and services	No	We do not have monitoring systems in place
Sold goods and services e.g. emissions related to local people's use of local authority services	No	We do not have monitoring systems in place
Business travel	No	We no longer have monitoring systems in place
Commuter travel	No	We do not have monitoring systems in place
Waste disposal	No	We do not have monitoring systems in place
Water usage	No	We do not have monitoring systems in place
Leased assets and franchising, outsourced activities e.g. Leisure and swimming pools	No	We do not have monitoring systems in place

Appendix B

Fuel	Conversion Factor 2018/19	Unit
Elec	0.28307	kWh
Gas	0.18396	kWh
Fuel Oil	0.26831	kWh
Diesel	2.62694	Litres
GasOil	2.97049	Litres
Unleaded	2.20307	Litres