READING BOROUGH COUNCIL

REPORT BY DIRECTOR OF ENVIRONMENT AND NEIGHBOURHOOD SERVICES

TO:	**STRATEGIC ENVIRONMENT, PLANNING AND TRANSPORT COMMITTEE**		
DATE:	**15 MARCH 2021**		
TITLE:	**ANNUAL GREENHOUSE GAS EMISSIONS REPORT 2019/20**		
LEAD COUNCILLOR:	**COUNCILLOR PAGE**	**PORTFOLIO:**	**Strategic Environment, Planning and Transport**
SERVICE:	**SUSTAINABILITY**	**WARDS:**	**ALL**
LEAD OFFICER:	**Matthew Donkersley**	**TEL:**	**74144**
JOB TITLE:	**Energy Management Officer**	**E-MAIL:**	**matthew.donkersley@reading.gov.uk**

1. PURPOSE OF REPORT AND EXECUTIVE SUMMARY

1.1 This report summarises Reading Borough Council's progress in reducing corporate greenhouse gas emissions (our 'carbon footprint') for the 2019/20 year against (i) the baseline year 2008/09 (ii) the targets set out in the 2015-20 Carbon Plan (iii) the previous financial year 2018/19.

1.2 The report shows that in 2019/20, the Council's corporate carbon footprint (see section 4 for a definition of how this is calculated) was 63.5 % lower than the baseline year of 2008/09, substantially exceeding its Carbon Plan target of a 50% cut by 2020. This represented a reduction of 1% on the previous year 2018/19.

1.3 Emissions arising from schools and 'managed services', which do not form part of the corporate carbon footprint calculation described above, also fell markedly over the last year – by 9.4% and 13.7% respectively. This means that emissions from all sources within the Council's direct control and 'wider influence' (i.e. including those outside the more narrowly defined 'corporate carbon footprint' measure), fell by 6.5% (gross) between 2018/19 and 2019/20.

1.4 It is estimated that the cumulative costs avoided by the Council from reduced energy consumption since 2008 are c.£13m (excluding standing charges and other contract charges), compared to if no action had been taken. In 2019/20 alone these avoided costs were estimated at £1.6m. With energy costs set to rise, limiting the Council's exposure to increased energy bills remains a priority. The report therefore looks ahead to on-going and new initiatives which will be needed to deliver the more challenging targets set out in the new corporate Carbon Plan 2020-25 as the Council works towards net zero carbon operations by 2030.

1.5 Appendix 1 to this report provides the full *Reading Borough Council: Greenhouse Gas (GHG Appendix Government's expectations) Protocol Report*

2019/20. This is a technical document necessary to meet the performance reporting requirements and will be published on the Council's website.

2. RECOMMENDED ACTION

That the Committee notes:

2.1 The continued reduction in 2019/20 of the Council's carbon footprint which has fallen by 63.5% compared to the 2008/09 baseline figure.

2.2 The achievement of the target set in the Council's Carbon Plan 2015-20 of a 50% cut by 2020, which was exceeded by 13.5%.

2.3 The need for the Council to redouble its efforts to meet the more challenging targets set in the new corporate Carbon Plan as we work towards becoming a net zero Council by 2030.

3. POLICY CONTEXT

3.1 In 2008, following the adoption of the UK Climate Change Act 2008, the Council launched its first climate change strategy, '*Stepping Forward for Climate Change'*. A key commitment within this was to reduce the Council's carbon footprint by 50% by 2020. This target, and an action plan for its delivery, were later included in successive iterations of the Council's corporate Carbon Plan.

3.2 Government has more recently committed to a national target of 'net zero carbon' by 2050, having updated the Climate Change Act to aim for a 100% reduction in emissions compared to the 1990 baseline. In December 2020 the Climate Change Committee, established to advise the Government on how to meet its carbon reduction targets, published the sixth UK carbon budget report setting the country on a path to achieve a 68% reduction in emissions by 2030 (and 78% by 2035).

3.3 Prior to the adoption of the national 'net zero by 2050' 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.

3.4 This report focuses on the data for corporate greenhouse gas emissions for 2019/20, the final year covered by the previous corporate Carbon Plan 2015-20. As such it represents both an annual report for 2019/20 and a closing report on the 5-year period covered by the Carbon Plan 2015-20.

4. THE COUNCIL'S CARBON FOOTPRINT

How we measure the Council's carbon footprint

4.1 The accepted protocols used by the Council to measure greenhouse gas emissions are summarised here. Emissions are classified into three categories:

- Scope 1: direct emissions from activities owned/controlled by the Council (gas and oil consumption, transport fleet, fugitive emissions from air conditioning and self-supplied renewably generated energy or heat)
- Scope 2: indirect emissions associated with the Council's consumption of electricity, heat, steam and cooling which arise from sources it does not own (principally purchased electricity)
- Scope 3: indirect emissions arising from the Council's actions from sources it does not own/control but not included in Scope 2 (electricity losses from transmission and distribution on the national grid, business travel by means not owned or controlled by RBC, emissions from schools not controlled by RBC, managed services, and outsourced services including car parks and leisure centres)

4.2 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 a 50% reduction by 2020 was based.

4.3 Additionally, we also measure our 'wider influence' carbon footprint, calculated by adding together everything in Scopes 1, 2 and 3. This means we can track both the change in emissions under our direct control and the change in emissions under the wider influence of our activities but over which we have more limited control.

Analysis of the Council's carbon footprint data for 2019/20

4.4 The Council's corporate carbon footprint in 2019/20 (i.e. scope 1, scope 2, plus the 'corporate' element of scope 3 emissions) was 7,219 tCO_2 This represents a 63.5% reduction compared to the baseline year of 2008/09, significantly in excess of the target of a 50% reduction by 2020 included in the Carbon Plan 2015-20. There has been a 2.6% year-on-year reduction in gross emissions compared to 2018/19, and performance compared to the baseline year 2008/09 has improved by a further 1%. The Council's greenhouse gas emissions figures for 2019/20 are summarised in Table 4.1 below, compared against 2018/19 data, with explanatory notes following the table.

***Table 4.1**: RBC greenhouse gas emissions 2019/20 compared to 2018/19 Figures*

YEAR	2018/19	2019/20	% change
	tCO_2	tCO_2	
SCOPE 1 – Corporate (direct emissions from activities owned/controlled by RBC)	**3,871**	**4,010**	**+3.6%**
SCOPE 2 – Corporate (indirect emissions from power/heat purchased by RBC but owned/controlled by others)	**3,114**	**2,801**	**-10.1%**
SCOPE 3 (emissions arising from RBC actions but not owned/controlled by RBC)			
3.1 Corporate	**424**	**409**	**-3.6%**
3.2 Schools	**6,013**	**5,451**	**-9.4%**
3.3 Managed assets/services.	**1,611**	**1,390**	**-13.7%**
GROSS 'CORPORATE' EMISSIONS (Scope 1 + Scope 2 + Scope 3.1 only)	**7,409**	**7,219**	**-2.6%**
GROSS 'WIDER INFLUENCE' EMISSIONS (Scope 1 + Scope 2 + Scope 3.1, 3,2 and 3.3)	**15,034**	**14,060**	**-6.5%**
ELECTRICITY EXPORTED/SOLD TO GRID/OTHERS	**412**	**371**	**-9.9%**
NET 'CORPORATE' EMISSIONS (Scope 1 + 2 + 3.1 minus Electricity Exported)	**6.997**	**6,848**	**-2.1%**
NET 'WIDER INFLUENCE' EMISSIONS (Scope 1 + 2 + 3 minus Electricity Exported)	**14,622**	**13,689**	**-6.4%**

NB - renewable energy generation figures incomplete due to a failure of monitoring equipment on 62 houses. Investigations are ongoing and estimates have been included in the figures presented.

- Scope 1 emissions increased by 3.6% between 2018/19 and 2019/20. Factors driving this included: weather, increasing heating demand; inclusion of previously unreported emissions from gas oil; and an increase in fugitive emissions from air conditioning.
- Scope 2 emissions fell by 10.1% between 2018/19 and 2019/20. This was largely as a result of continued decarbonisation of grid electricity.
- Scope 3 emissions fell across all categories with particularly significant reductions in the schools estate (which has seen a 30% increase in pupil numbers since 2008/09) and managed services, to the extent that the absolute carbon emissions of the organisation's wider activities fell to 14,060 tCO_2 (excluding fuel use from Reading Buses) in 2019/20, a reduction of 6.5% (gross) compared to 2018/19. It should be noted that several public car parks previously run by NCP were brought back into corporate management in 19/20. The associated emissions from these sites are no longer attributed to managed services, as they were in 18/19, but to the corporate estate.
- Renewably generated electricity, exported to the grid, or sold to third parties in 2019/20 was equivalent to 6.4% of energy consumed, excluding transport fuel. Whilst the kWh of power generated by the solar PV systems remained relatively stable from 2018/19 to 2019/20, the offset carbon emissions reduced in 2019/20, due to the falling carbon intensity of the National Grid. Whilst the 6.4% figure fell below the Carbon Plan target figure of 15% by 2020,

a more detailed analysis shows that the Council now generates the equivalent to 13.1% of its annual electricity demand using renewable technologies.

4.5 Table 4.2 below is based on the same headline data as table 1 but shows the % change in key categories compared to the baseline year 2008/09. This indicates that, as well as the Council's corporate carbon footprint being cut by 63.5% since the baseline year 2008/09, the Council's 'wider influence' carbon footprint was 49.9% lower over the same period. This excludes emissions from Reading Transport Ltd (buses and other vehicles), which are dealt with in section 5 below.

Table 4.2: RBC corporate, schools and managed services carbon emissions in 2019/20 compared to baseline year 2008/09

		2008/09	**2019/20**	**% CHANGE**
CORPORATE CARBON FOOTPRINT (Scope 1, 2 and 3.1 only)	**Total tCO_2**	19,761	7,219	-63.5%
	Annual target	19,761	10,099	-50.0%
SCHOOLS	Total tCO_2	7,203*	5,451	-24.3%*
MANAGED SERVICES	Total tCO_2	3,125	1,390	-55.5%
TOTAL 'WIDER INFLUENCE' CARBON FOOTPRINT (Scope 1, 2, and 3)	**Total tCO_2**	28,102	14,060	-49.9%

** Note - Due to early data from the schools sector being found to be variable in quality and coverage, consumption figures for 2008/09 were not accurate enough to be used for a baseline. The baseline is instead based on 2009/10 consumption, when coverage and quality was deemed appropriate.*

4.6 Figure 1 below shows the reduction in RBC's corporate carbon footprint compared to Carbon Plan targets from the baseline year 2008/09 to 2019/20 in bar chart format, while figure 2 shows the reduction in emissions under RBC's 'wider influence' over the same period.

Figure 4.1: RBC corporate emissions performance against annual Carbon Plan target from the baseline year 2008/09 through to 2019/20

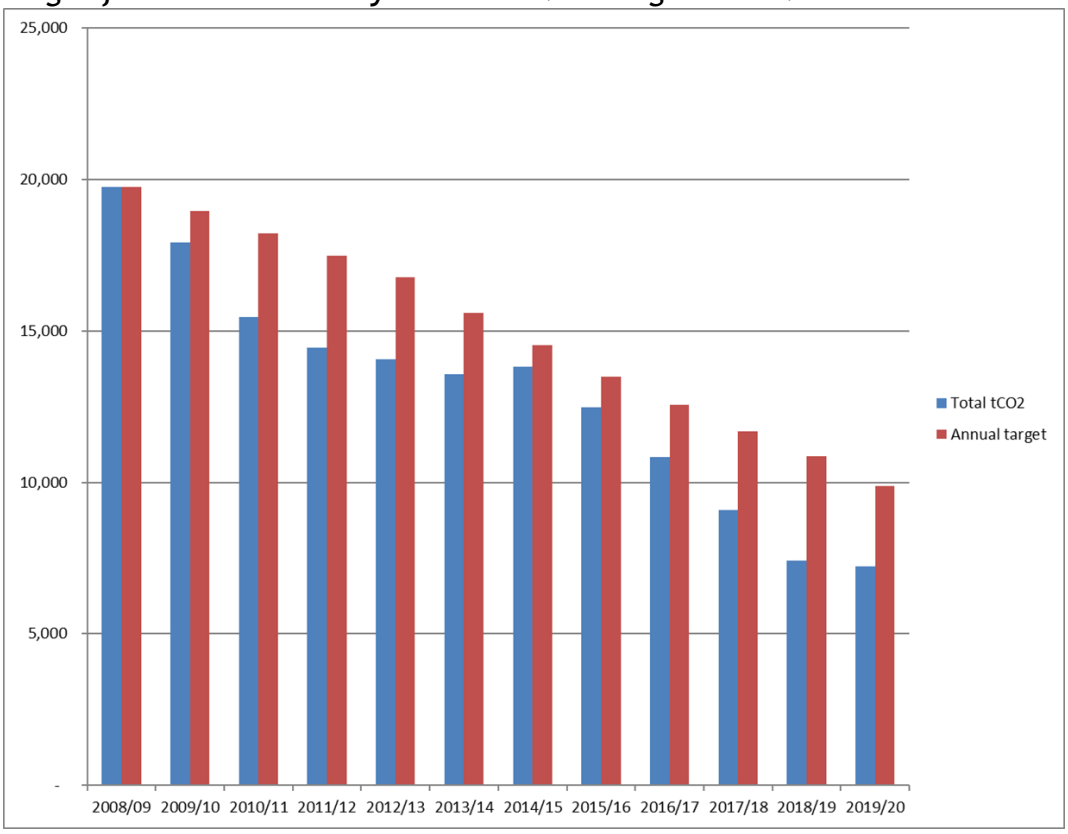
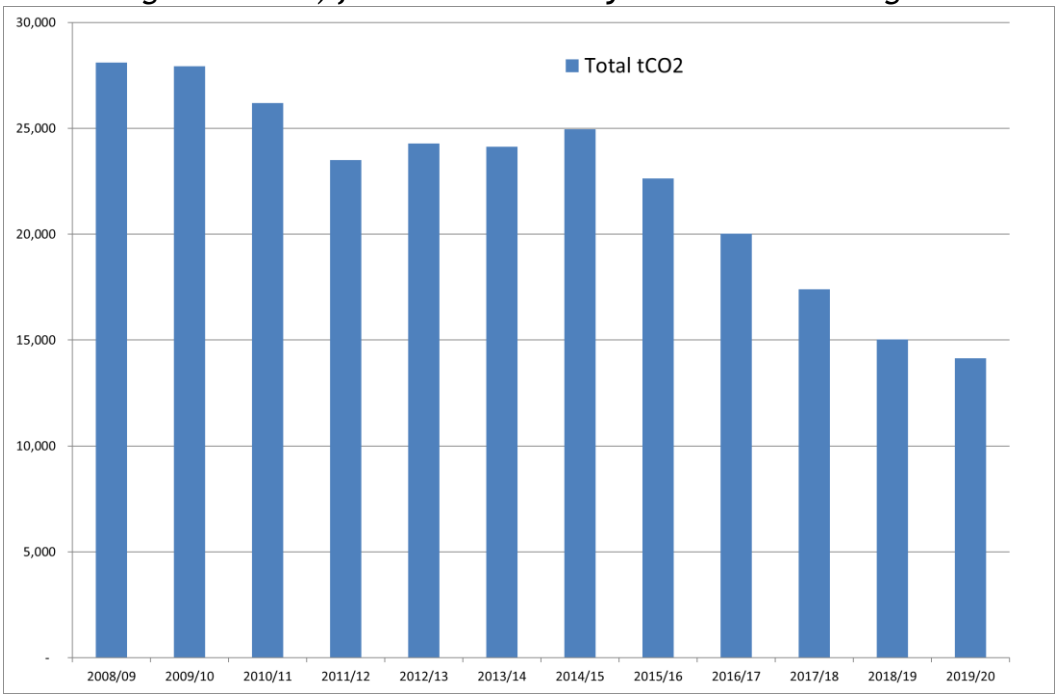


Figure 4.2: RBC 'wider influence' emissions performance (including schools and managed services) from the baseline year 2008/09 through to 2019/20



Key factors driving corporate carbon reduction

4.7 Critical success factors in achieving the carbon reduction summarised in this report include the following:

- Since 2008 the Council has implemented a government-backed scheme called SALIX, which provides a revolving fund to invest-to-save in low carbon technologies. By the end of 2018/19 the Council had invested nearly £1.8m via this route in over 100 single or multi-technology projects.
- To date the Council has installed over 7,500 solar panels on 40 council, community and school buildings, and 457 houses. These provide renewable electricity to power the buildings and generate income from the Feed in Tariff scheme, which pays for each unit of electricity generated. In 2019/20 the systems generated 1.3MWh of electricity, the equivalent to powering approximately 400 houses with 100% of their electricity needs.
- A major building retrofit of the Town Hall continued into 2019/20 with further heating upgrades.
- 2019/20 was the fifth full year of operation of the refurbished Civic Offices building, which saw additional intensification of use prior to the pandemic.
- In 2017/18 Electric Vehicle Fast Charge facilities were installed outside the Civic Offices. These were installed alongside a bank of chargers in the basement car park for RBC fleet vehicles. In 2019/20 six additional EV charging points were installed at the Bennet Road depot to be used by RBC fleet vehicles.
- A programme of street lighting upgrades to LED technology started in 2016 and was completed in 2019 delivering significant reductions in electricity consumption.
- Asset rationalisation and disposal of buildings has made an important contribution to the reduction in corporate emissions.
- Since its launch in 2016 Reading Community Energy Society (RCES) has installed 6 solar arrays on council owned buildings (approximately 500 panels). The wider portfolio was extended to 548kWp (>2000 panels) and a large array at South Reading Leisure Centre was added in March 2020. The energy supplied from these systems in 2019/20 meant a further increase in clean energy supply in the borough, some of which is attributable to the Council which increased its shares in RCES from 4.4% to 11% in 2020.

5. Emissions from Reading Buses

5.1 As shown in table 5.1, total carbon emissions of the Reading Buses' fleet increased in 2019/20, compared to 2018/19. When this is compared to the distance travelled however, the emissions per km can be shown to have reduced significantly. A number of factors contributed to this increase in 2019/20. Despite the higher absolute carbon emissions of the fleet in 2018/19, the emissions from diesel buses were reduced. Overall consumption of diesel reduced by approx. 500K litres year-on-year, which is partly due to an improved consumption rate for diesel vehicles, travelling greater distances per litre of diesel. Although there is a corresponding increase in use of CNG, these vehicles have much lower tailpipe NOx emissions, and hence have been contributing to improving the air quality in Reading. It should also be noted that the majority of fleet growth has been in the CNG buses and whilst the carbon emissions from these are reported through the GHG methodology, these emissions are offset by injection of bio-methane into the gas grid, making them effectively 'zero carbon'.

***Table 5.1**: Reading Buses emissions since the introduction of CNG fuelled vehicles for the last 5 years*

	2015/16		2016/17		2017/18		2018/19		2019/20	
FLEET	tCO_2	kg CO_2/ km	tCO_2	kg CO_2/ km	tCO_2	kg CO_2/ km	tCO_2	kg CO_2/ km	tCO_2	kg CO_2/ km
DIESEL	9,203		7,952		8,204		8,289		7,614	
CNG	2,610		2,599		3,110		3,036		4,469	
TOTAL	**11,813**	**1.23**	**10,551**	**1.11**	**11,314**	**1.28**	**11,324**	**1.28**	**12,083**	**1.04**

6. THE JOURNEY TO BECOMING A NET ZERO COUNCIL BY 2030

6.1 Whilst the achievement of the 2015-20 Carbon Plan target of a 50% reduction in RBC emissions by 2020 is to be celebrated, the adoption of the 'net zero by 2030' target represents a step change in ambition. This has led to the development of a new Carbon Plan for 2020-25 which was adopted by Policy Committee in November 2020. This is based on a headline target of an 85% cut in emissions by 2025 *en route* to net zero by 2030, and the creation of new capital budget commitments for energy efficiency and renewable energy to help deliver the targets.

6.2 It should be noted that while the Covid-19 pandemic became a reality in the UK towards the end of the 2019/20 reporting period, the full impact on energy use in our buildings, services and transport will not be seen until the subsequent 2020/21 reporting year onwards. Available data does not demonstrate any significant statistical trends for emissions arising from Covid response in the 2019/20 reporting period, and as such the pandemic has not been directly referenced in the analysis. However, it is expected that the pandemic will have a significant impact on the upcoming 2020/21 reporting year, and potentially the 2021/22 reporting year also. Analysis of this impact will be a major function of GHG reporting for upcoming years, and decisions on how we use our buildings in particular in the light of the pandemic will have a major impact on our ability to deliver the aims of and targets within our Carbon Plan.

6.3 Whilst the Council has been very successful in reducing emissions, the costs of energy have risen substantially over the same period, meaning that our energy costs continue to rise despite the fact that we are using less of it. Electrification of Council operations, and the phasing out of fossil fuels, will be essential to achieve the targets in the new Carbon Plan. Electricity is currently more expensive than gas but less expensive than vehicle fuel. It therefore remains important that energy consumption is reduced to mitigate the impact of any increase in electricity costs. Some of the key considerations in delivery of new Carbon Plan targets are summarised below:

- In 2020, the Council made a number of significant commitments in its capital programme including increased investment in energy efficiency and a new renewable energy fund alongside a number of projects and programmes which will improve the operational and wider borough carbon emissions. These included programmes such as housing, electric vehicles, sustainable transport etc. A supplementary paper to the 2020 budget paper

was taken to Council which outlined c.£34m in capital committed to low carbon investment over the Medium-Term Financial Strategy period.

- The above commitments were made alongside the existing SALIX investment programme and will continue to be integrated through the Council's property programmes, such as the Estate Strategy, the Condition/Compliance programme, and the community hubs programme. This approach secures capital funding to support scheduled building improvements through energy efficient technology and enables investigation of opportunities for further energy saving measures whilst building work is planned/taking place.
- Work is already planned and underway to upgrade insulation, switch to LED lighting and improve heating systems in various facilities across the Council's estate.
- Major upgrade works at the Council's Bennet Road depot begun in 2020 with the full refurbishment of the building including renewable energy installations. Further works are being planned for the site to accommodate more renewable energy and enable the conversion of more of the vehicle fleet to EVs.
- 2019/20 year was the first year for some time that an incremental reduction did not occur from streetlighting, which remains a significant element of the Council's carbon footprint. Further projects to reduce emissions from this source are therefore under consideration.
- An application has been made for EU (ESIF) funds to support innovative, low carbon projects in the Council's buildings estate. These include 'whole building' approaches to energy efficiency, ground/water source heat pumps, solar car parking canopies, solar PV and battery storage and/or electric vehicle charging with 'vehicle to grid' capability.
- Applications were made to the first round of the government's Public Sector Decarbonisation Fund to secure grant support for energy saving investments, with £3.52m secured for schools' window replacements and further projects being prepared for future rounds.
- Work continues to improve the council's energy data capture. Improvements in accuracy and precision of data will aid our understanding of energy use and help target work to reduce emissions.
- Business cases for investment in renewable energy technology have become more challenging to make following reductions in the subsidy available, although as market prices fall, opportunities will still present themselves. The new Carbon Plan sets out decarbonisation of heat as a key priority, so low carbon and renewable technologies such as heat pumps and solar PV in combination with battery storage are under development.
- The Council has approved within its budget the capital funds to phase out diesel/petrol vehicles in favour of EVs wherever possible and is installing appropriate charging infrastructure to support this.
- A coordinated awareness raising programme has been in operation which seeks to make all staff aware of energy and carbon, and how their actions can influence it. It is planned that this programme will be reviewed and further developed, and 'carbon literacy' training for staff developed, to support delivery of the new Carbon Plan.

7. CONTRIBUTION TO STRATEGIC AIMS

7.1 The Council's efforts to reduce greenhouse gas emissions also support the following Corporate Plan priorities:

- Securing the economic success of Reading and provision of job opportunities: the Council's investment in energy efficiency and renewable energy stimulates the low carbon economy and provides employment in this sector.
- Keeping Reading's environment clean, green and safe: reducing emissions is integral to delivery of this aim.
- Ensuring the Council is fit for the future: the corporate Carbon Plan contributes to this aim by minimising the risks and costs associated with energy use and by improving the efficiency of Council operations.

8. ENVIRONMENTAL AND CLIMATE CHANGE IMPLICATIONS

8.1 The Council declared a climate emergency at its meeting in February 2019 (minute 48 refers). This commits to the ambitious goal of a net zero carbon Reading by 2030. The Council's new Carbon Plan for 2020-25 aligns with this goal, setting more ambitious targets for reducing emissions compared to the Council's previous Carbon Plan. Annual greenhouse gas reports such as the attached will therefore continue to be an important mechanism for tracking progress towards these targets.

9. COMMUNITY ENGAGEMENT AND INFORMATION

9.1 As required by the government Department for Business Energy and Industrial Strategy, the Reading Borough Council Greenhouse Gas (GHG) Report: 2019-20 is published on the Reading Borough Council website.

10. EQUALITY IMPACT ASSESSMENT

10.1 An Equality Impact Assessment (EIA) is not required for this report.

11. LEGAL IMPLICATIONS

11.1 There are no legal implications arising from this report. The completion of the annual Greenhouse Gas Emissions report is not mandatory but is, however, important for transparency in demonstrating progress towards key policy objectives.

11.2 Legal obligations in respect of climate change are incorporated into legislation through a range of regulations set out under the Climate Change Act 2008. These include the Energy Performance of Buildings Regulations 2012, Heat Network (Metering and Billing) Regulations 2014 and the Energy Efficiency Regulations 2015.

12. FINANCIAL IMPLICATIONS

12.1 There are no financial implications arising directly from this report. The Council's actions in relation to carbon reduction do, however, make an important contribution to corporate plan aims around being an efficient Council. Annual energy bills for the Council's corporate estate amount to around £2m. The cost of energy is predicted to rise beyond inflation and therefore it is important to maintain investment and operational control on energy and fuel to enable significant reductions in energy consumption. Prices increased by around 14% in 2019/20 against 18/19. The reduced energy

consumption of the council is estimated to have avoided costs of around £1.6m in 2019/20 compared to if no action had been taken. It is estimated that the avoided energy costs to the Council from the reduced energy consumption since 2008 are c.£13m (excluding costs such as standing charges and other contract charges), compared to if no action has been taken.

12. BACKGROUND PAPERS

Environmental Reporting Guidelines: Including mandatory greenhouse gas emissions reporting, June 2013, Department for Environment, Food and Rural Affairs

Reading Borough Council: Carbon Plan, 2015-2020