

To: Climate and Ecological Emergency Working Group

Date: 23 June 2022

From: Olu Fatokun, Low Carbon & Sustainability Senior Specialist

SUBJECT: Update to Council's Carbon footprint 2019/20 & 2020/21

SUMMARY: This report sets out a summary of Folkestone & Hythe District Council's Carbon Footprint Update for the financial years 2019-20 and 2020-21, following from the analysis provided by LASER for the base year 2018-19, for the Working Group's information and comments.

1. BACKGROUND

- 1.1. The Climate Change Act (2008) as amended in 2019 commits the UK to achieving 'net zero' by 2050.
- 1.2. Folkestone & Hythe District Council along with many other councils declared a Climate Emergency in July 2019 and made a commitment to reach net zero carbon emissions by 2030. Since then, a baseline year 2018/19 was established, carbon footprint from the council's own operations and estate was calculated and the Carbon Action Plan (February 2021) was adopted setting out 33 actions to reduce our carbon emissions.

2. OVERVIEW OF THE BASELINE YEAR AND OPERATIONAL BOUNDARIES

- 2.1. In 2020, LASER Energy (a company wholly owned by Kent County Council) was contracted to identify emissions sources that were within the Council's organisational boundary (shown in Figure 1 below) and conduct a baseline carbon footprint analysis of our operations and estate. The total carbon emissions in the baseline year 2018/19 was **1,536 tonnes of carbon dioxide equivalent (tCO₂e)**. This calculation was done using a methodology based on the Greenhouse Gas Protocol. In line with the protocol, scope 1 (direct), scope 2 (electricity indirect) and some scope 3 (other indirect) emissions were included in the operational carbon footprint.
- 2.2. This process involved considering a number of factors such as the influence the council had over the various parts of the organisation and how this aligns with financial accounting, management information and performance reporting to decide what parts of the organisation to include within the organisational boundary.
- 2.3. After the organisational boundary had been determined, the operational boundaries were defined thus distinguishing between the council's own emissions and those that are the responsibility of other organisations in the supporting supply chains that it may be closely linked to.

2.4. [The Greenhouse Gas \(GHG\) Protocol Corporate Standard](#) is one of the best recognised international standards for assessing what sources of carbon emissions should be included in an assessment and how this should be reported. A key purpose of the standard is to provide public sector organisations and businesses with a guidance on how to develop inventories that provide an accurate and complete picture of greenhouse gas emissions both from their direct emissions operations and those along the value chain.

2.5. The GHG Protocol divides emissions into three scopes:

Scope 1: Direct sources of emissions including:

- Council-owned or controlled mobile combustion sources (e.g., petrol and diesel fuel consumed in buses and cars).
- Combustion of fuels in stationary sources (e.g., natural gas, burning oil, gas oil and LPG consumed within Council buildings) is also included

Scope 2: Indirect sources of emissions including:

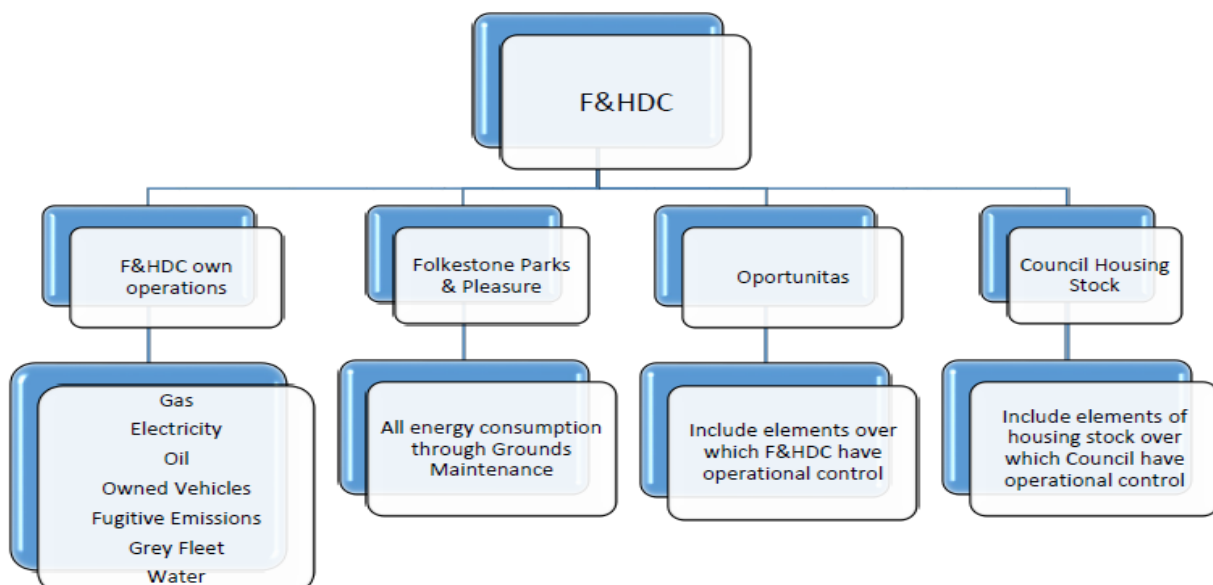
- Generation of purchased electricity, heat or steam that is consumed in the Council’s own or controlled equipment or operations (e.g., buildings and street lighting).

Scope 3: Other sources of emissions including:

- Emissions generated by business travel and water.

Note: No other Scope 3 emissions have been included in calculating the carbon footprint

Figure 1: Operational Boundaries



3. THE COUNCIL'S EMISSIONS IN 2019/20 AND 2020/21

3.1. The council's emissions data were collated from across relevant service areas including the council's owned and controlled combustion sources, combustion of fuels in stationary sources, generation of purchased energy as well as business travel and water. The council's individual housing stock, waste services (collection, street cleaning and disposal), coastal infrastructure and crematorium are excluded as we do not have direct control over these.

3.2. Rather than continuing to rely on consultancy services to calculate the annual carbon footprint, the Low Carbon and Sustainability Senior Specialist developed a spreadsheet that allows raw data on energy and fuel use to be entered and, by formulae, converted directly to carbon emissions equivalent. A sample of the calculations spreadsheet is shown in Figure 2.

Figure 2: Screenshot of Carbon Footprint Calculations Spreadsheet

Sheet num	Emission Source	Scope	Emission Source	Miles	km	Consumption data	Units	Tonnes	Emission factor	Units	Emissions (tCO ₂ e)	Comments
	Own Natural Gas		1 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Own Gas Oil		1 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Own Estate Grid Electricity - Generation		2 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Own Estate Grid Electricity - Transmission and Distribution		3 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Own Estate Grid Electricity (LMS)		2 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Opportunitas Grid Electricity		2 BEIS				kWh			kg CO ₂ e/kWh	0.00	
	Water Supply		3 BEIS				m ³			kg CO ₂ e/m ³	0.00	
	Water Treatment		3 BEIS				m ³			kg CO ₂ e/m ³	0.00	
	Council Sheltered Housing Gas		1 BEIS							kg CO ₂ e/kWh	0.00	
	Council Sheltered Housing Generation		2 BEIS							kg CO ₂ e/kWh	0.00	
	Council Sheltered Housing Transmission & Distribution		3 BEIS							kg CO ₂ e/kWh	0.00	
										Total	0.00	
	Travel											
	1 Own vehicles - Diesel		3 BEIS				litres			kg CO ₂ e/km	0.00	
	2 Own vehicles - Petrol		3 BEIS				litres			kg CO ₂ e/km	0.00	
	3 Grey Fleet - Petrol average		3 BEIS				litres			kg CO ₂ e/km	0.00	
	4 Grey Fleet - Diesel average		3 BEIS				litres			kg CO ₂ e/km	0.00	
										Total	0.00	
	Fleet											
	Ground Maintenance Fleet Diesel		1 BEIS				litres			kg CO ₂ e/litre	0.00	
	Fuel tank Diesel		1 BEIS				litres			kg CO ₂ e/litre	0.00	
	Fugitive Emissions		2 BEIS				litres			kg CO ₂ e/km	0.00	
	EKH Fugitive emissions		2 BEIS				litres			kg CO ₂ e/km	0.00	
										Total	0.00	
										Total		
										Overall total		
										Overall scope 1	0.00	
										Overall scope 2	0.00	
										Overall scope 3	0.00	

3.3. The results of this analysis are as follows:

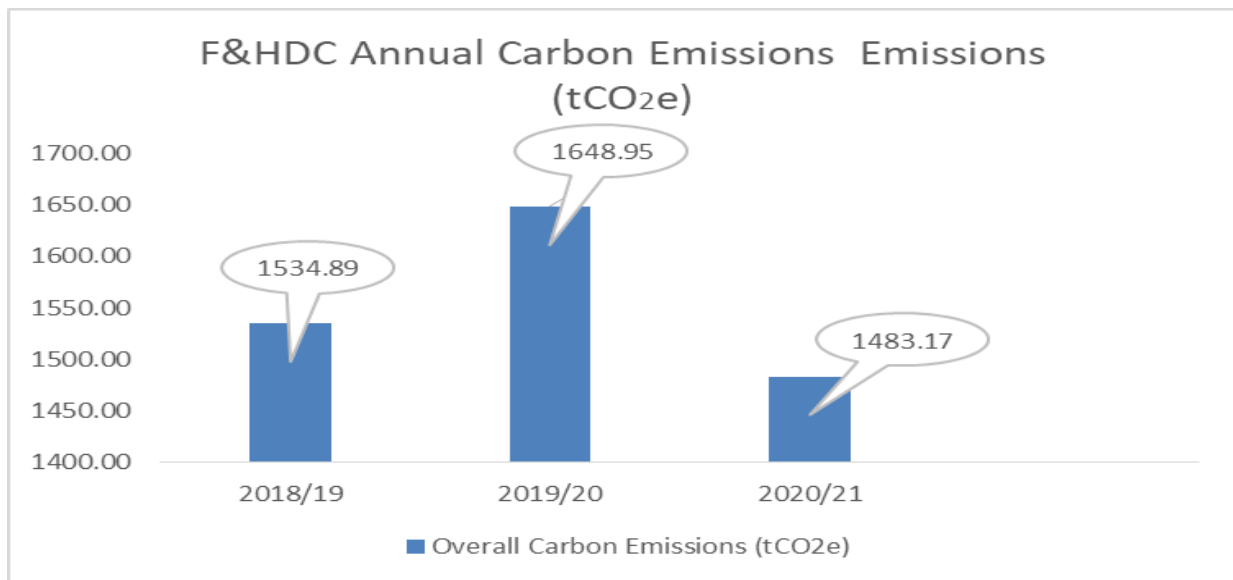
- Carbon emissions for 2019/20 were **1,649 tCO₂e**. This showed an increase of 113.95 tCO₂e when compared to that of the baseline year 2018/19.

- Carbon emissions for 2020/21 were **1,483 tCO₂e**. This shows a decrease in emissions of 165.78 tCO₂e compared to 2019/20 and 51.72 tCO₂e when compared with the baseline year 2018/19.

Table 1: Overall Carbon Emissions

Reporting Period	Overall Carbon Emissions (tCO ₂ e)
2018/19	1, 535
2019/20	1, 649
2020/21	1,483

Figure 3: Overall Emissions 2018/19 – 2020/21



4. CHANGE IN CONSUMPTION

4.1. Table 2 shows how consumption changed over the reporting periods compared with the baseline year 2018/19

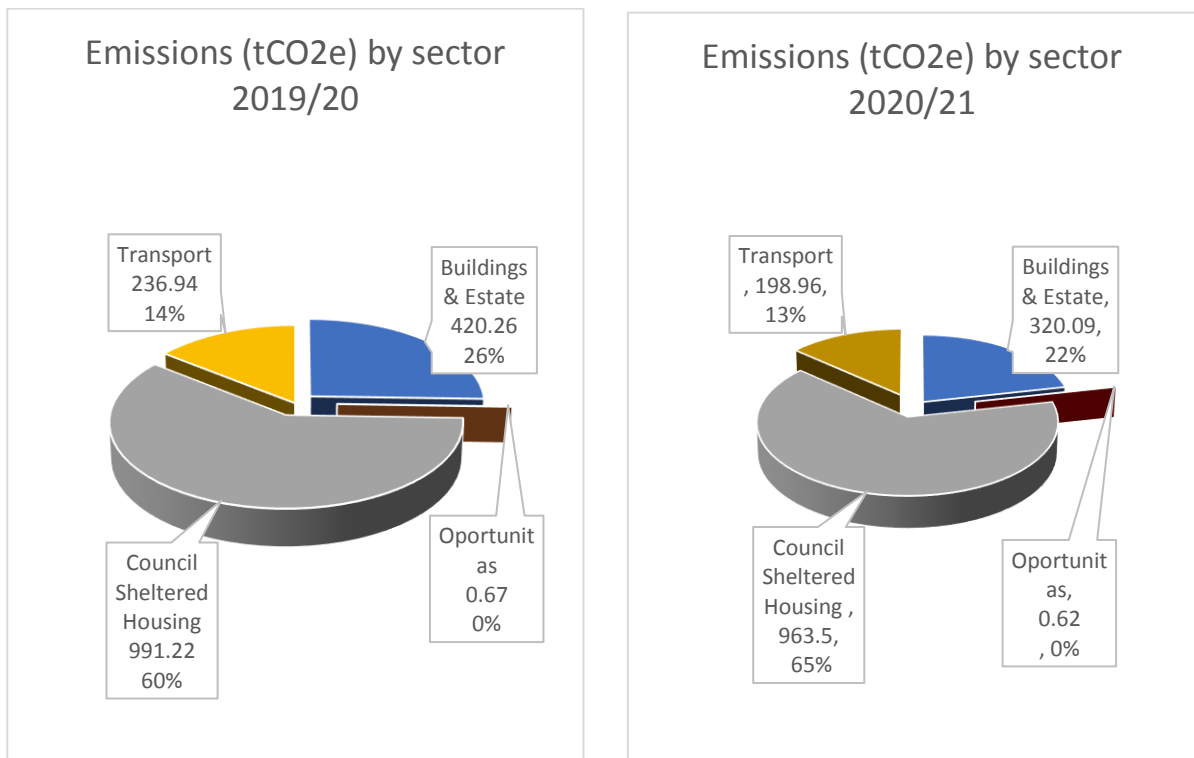
Emissions Source	Unit	2018/19	2019/20	2020/21
F&HDC Gas	kWh	1,241,226.00	1,158,598.00	842, 556.00
F&HDC Grid Electricity	kWh	759,935.00	673,196.00	577, 670.00
Oportunitas Grid Electricity	KWh	2,431.00	2,431.00	2,431.00
F&HDC water	M ³	52,339.74	20,238.0	18,606

Council Sheltered Housing - Gas	kWh	3, 653,319.56	3,653,319.56	3,653,319.56 ¹
Council Sheltered Housing - Electricity	kWh	1, 152,366.00	1, 152,368.00	1,152,368.00
Grey Fleet - Petrol	Litres	83, 960.56	81, 166.67	59, 162.56
Grey Fleet – Diesel	Litres	106,858.89	103, 305.14	75, 296.19
Red Diesel	Litres	23,000.00	21,099.00	19.641.00
White Diesel (Fuel Tank)	Litres	36,000.00	40,000.00	32,025.00
Fuel Card - Diesel	Litres	10,426.91	11,025.31	11,001.74
Fuel Card – Petrol	Litres	5, 965.40	6,657.40	6, 719.31

5. EMISSIONS BY SECTOR AND SECTOR 2019/20 & 2020/21

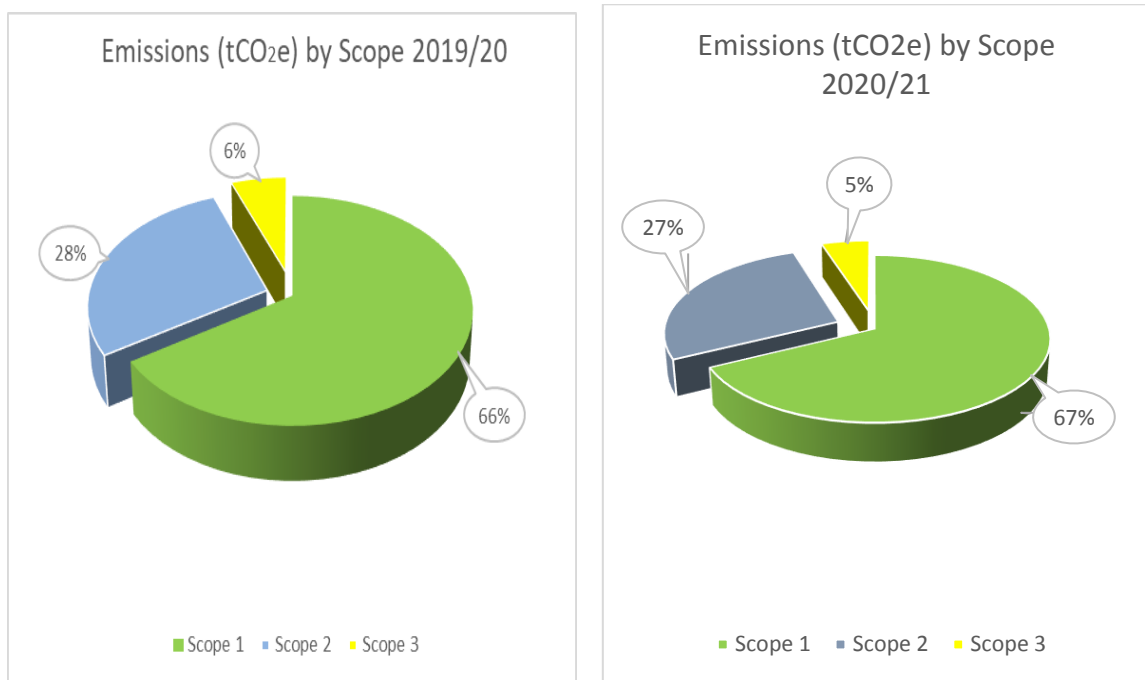
5.1 Figure 4 below shows changes in the distribution of emissions by sector with transport decreasing by 1% and buildings and estate decreasing by 4% while Council Sheltered Housing (former East Kent Housing) increased by 5%.

Figure 4: Emissions by Sector



- 5.2 There is a slight change in the emissions by scope with scope 1 direct emissions increasing by 1% while scope 2 electricity indirect emissions decreased by 1% and scope 3 indirect emissions also decreased by 1% when comparing 2019/20 with 2020/21.

Figure 5: Emissions by Scope



6. ANALYSIS OF RESULTS

Results for the monitoring year 2019/20

For 2019/20, the increase of around 7 percent from the base year 2018/19 is as a result of:

- 6.1. **Changes in the annual emissions factors** - The original analysis undertaken by LASER used different factors to convert the raw data on energy and fuel use to carbon emissions. According to LASER, emission conversion factors were taken from both the Department of Business, Energy and Industrial Strategy (BEIS) and HM Treasury “The Green Book”. LASER explained that this was because BEIS initially did not provide forecast figures to take into account factors such as increasing renewable energy generation which might impact on the pathway to net zero. Therefore, where there were forecast factors available in the Green Book, it was used. Also, there was a time lag of two years between BEIS and the Green Book conversion factors data sets for specific years, meaning that the data did not align at the time of conducting the baseline analysis. LASER confirms that they now work with BEIS data sets which shows ongoing emissions factor changes. In the subsequent reporting years, only BEIS emissions factors are used for the calculations.

- 6.2. Annually, a new set of conversion factors is produced, together with a methodology paper explaining how the conversion factors are derived, and a paper explaining the major changes in the latest year's factors. For the reporting years in question, the conversion factors varied due to emissions from electricity generation by type of fuel/energy source and by type and efficiency of electric power plants. Note that the amount of CO₂ produced per kilowatt hour (kWh) during any given period of time will vary according to the sources of electricity supplied to the electric power grid during that time.
- 6.3. **Increase in the use of fuel in fuel tanks and fuel cards** - In reviewing this work the Low Carbon Senior Specialist had discussions with officers from the service areas, and the discussions have highlighted the following reasons for the increase in the use of fuel.
- 6.4. An increase in fuel usage for diesel is as a result of operating all vehicles on a daily basis as well as an increase in fleet with the new housing service acquiring a lease vehicle, three enforcement vehicles and four area officer vehicles.
- 6.5. An increase in petrol usage is down to milder weather increasing the mowing season; the wetter summer has kept the grass growing so whilst normally the growth would slow down in July/August, due to the dry hot weather, this has not happened in the reporting year. More time has been spent mowing thus increasing petrol usage.

Results for the monitoring year 2020/21

- 6.6. For 2020/21, the decrease in emissions of approximately 10% when compared to the previous monitoring year (2019/20) and approximately 3.5% when compared to the base year (2018/19) is as a result of:
- 6.7. **Changes in emissions factors** - as explained section 6.1.above.
- 6.8. **Decrease in scope 1 and scope 2 consumption** - Consumption of electricity, gas, water, grey fleet (petrol and diesel), red diesel, white diesel and fuel card (diesel) were all lower than in 2019/20 due to the reduced use of buildings as a result of the Covid-19 restrictions. Covid-19 is an unprecedented circumstance and it is anticipated that emissions will increase in subsequent reporting years as we transition into hybrid home and office working from a period when all staff were solely working from home.
- 6.9. **Increase in use of petrol from fuel cards** - as explained in section 6.3. above
- 6.10. **Change in local temperature** - Several other external factors can influence emissions year-on-year, such as changes in the weather patterns. The warmer-than-normal spring period in 2020/21 reduced the heating demand and a return to a cooler 30-year average spring temperature will increase consumption in the council's estate.
- 6.11. In addition, due to Covid-19 restrictions, part of 2019/20 and most of 2020/21 reporting would not be a representative year for emissions due to reduced use of buildings and services during the pandemic. Covid-19 presents an unprecedented circumstance and it is anticipated that the actual impact on emissions would start to show when restrictions started to ease back to near normal services and activities started to resume later in 2021. Moreover, there are other external factors which can influence emissions year-on-year, such as changes in annual emissions factors,

changes in the weather pattern, and changes in estate size and/or increases in services delivered.

Other points to note

- 6.12. The results reported above show gas and electricity consumption for sheltered housing remaining constant across the monitoring years. It has proved very difficult to get detailed energy consumption figures for the period when the sheltered housing buildings were managed by the former East Kent housing. As the majority of the monitoring years reported above (2018/19 to 2020/21) fall within the period when East Kent housing managed the buildings - with the buildings only returning to the direct management of the district council on 1 October 2020 - the only option has been to use historic consumption data from the suppliers for electricity and gas over this period.
- 6.13. Now that these buildings are directly managed by the council, however, it will be possible to get detailed consumption figures to report in future monitoring years. Energy bills are currently logged manually, which means that collating these figures takes considerable time, but officers are examining whether this can be automated (see Next Steps below).

7. ADDITION TO COUNCIL'S ESTATE

- 7.1 Recent property acquisitions have been explored to understand if they need to be included in the operational boundaries going forward. The council housing stock which was brought in house in October 2020 was included (only areas of communal use) in these calculations. Former Debenhams (FOLCA) that was acquired in September 2021 is currently being leased to the National Health Service (NHS) while the Racecourse and surrounding buildings acquired July 2021 is part of the Otterpool development which is excluded from our operational boundaries and is currently being sublet.
- 7.2 It should be noted that the Greenhouse Gas Protocol allows organisations to review their original baseline position in light of subsequent changes to the organisation. The protocol is an internationally-accepted standard for assessing emissions that is used by organisations including large multi-national corporations which may regularly acquire or divest themselves of sites or subsidiaries; the protocol is designed to account for these organisational changes and avoid unfairly penalising or crediting companies as a result of changes to their structure, rather than the efforts they have made to reduce their emissions.

8. NEXT STEPS

- 8.1 Subject to any minor amendments or corrections that may be necessary, the emissions figures for the monitoring years 2019/20 and 2020/21 set out in this report will be published on the council's website, on the same page as the adopted Carbon Action Plan which sets out the figures for the 2018/19 base year, with explanatory text, to inform the public about the council's progress in reaching net zero emissions. Assumptions and caveats affecting the results will be made clear.
- 8.2 Progress is being made on the 33 high level actions set out in the Carbon Action Plan which should have a positive impact on reducing emissions over the next few years. In addition changes to the carbon content of grid-supplied energy is also likely to reduce the emissions attributable to electricity use.

- 8.3 However, it is uncertain whether these changes will be enough in themselves for the council to reach net zero emissions by 2030. Officers are therefore looking to commission a review of the Carbon Action Plan to provide more detailed information on a number of questions, including:
- Is the scope defined by LASER for the council's operational boundary still appropriate in light of recent council acquisitions or divestments?
 - Does a more detailed analysis of the 33 high level actions in the Carbon Action Plan indicate that these actions would by themselves reduce our emissions to net zero by the 2030 deadline?
 - If further actions are needed, what are the most effective actions to take and what are their likely impacts in terms of costs/savings, profile of emissions reduction, ease of implementation and effect on public services?
- 8.4 The Low Carbon and Sustainability Senior Specialist is working closely with specialists from the council's housing, operations and procurement teams to commission this work, and updates will be provided to future meetings of the Working Group.
- 8.5 As noted in paragraphs 6.12 and 6.13, work is underway to improve data collection in relation to the sheltered housing buildings. The Low Carbon & Sustainability Senior Specialist is working with the Case Management Lead officer to explore options to automate the process of collating data on energy use to ensure more accurate reporting in the future. This will minimise the time spent in manually inputting data into existing systems as well as allow for robust data monitoring and trend analysis.

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