

# Bromford Housing Group Carbon Report 2022– 2023



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## Executive Summary

Bromford Housing Group is a housing association with almost 45,000 homes spread across central and south-west England, who are committed to providing safe, secure, and warm homes, but also care about the people who live there. This carbon baseline assessment is an initial step towards becoming a more sustainable organisation, with the organisation's carbon footprint now quantified.

Data was collected to reflect the performance across reporting period of 1<sup>st</sup> April 2022-31<sup>st</sup> March 2023. Carbon reporting is an important way to identify carbon reductions and explain and manage any unexpected trends. Accuracy in reporting will be imperative for future ESG requirements. Emissions from Bromford's homes, for which they have Decent Homes Responsibility, far outweigh their operational emissions.

- Total annual emissions accounted to 111,764.67 tonnes CO<sub>2</sub>e per annum.
- Of this total, housing stock emissions from Bromford's independently heated housing stock were estimated at 102,652.46 tonnes CO<sub>2</sub>e (excludes communally heated homes).
- Emissions per independently heated home have decreased from 2.71 tCO<sub>2</sub>e to 2.42 tCO<sub>2</sub>e. This area should remain the focus of decarbonisation efforts, as leased assets account for 91.8% of Bromford's emissions.
- An increase of 1667 tCO<sub>2</sub>e due to maintenance activities and 1382 tCO<sub>2</sub>e due to mileage claims were reported. These rises were due to increased maintenance activities and face to face meetings post Covid-19.
- Average SAP rating increased to 74.21 from 71.95.

The Sankey diagram (figure 1) visualises this by providing a breakdown of CO<sub>2</sub> emissions across Bromford Housing's stock. Identifying where most of the carbon is being emitted enables decision makers to prioritise carbon reduction interventions. Note that figures may differ slightly between the Sankey and totals in the tables due to rounding differences and excludes electricity T&D losses. All values in these diagrams are in tonnes of CO<sub>2</sub> equivalent per year.

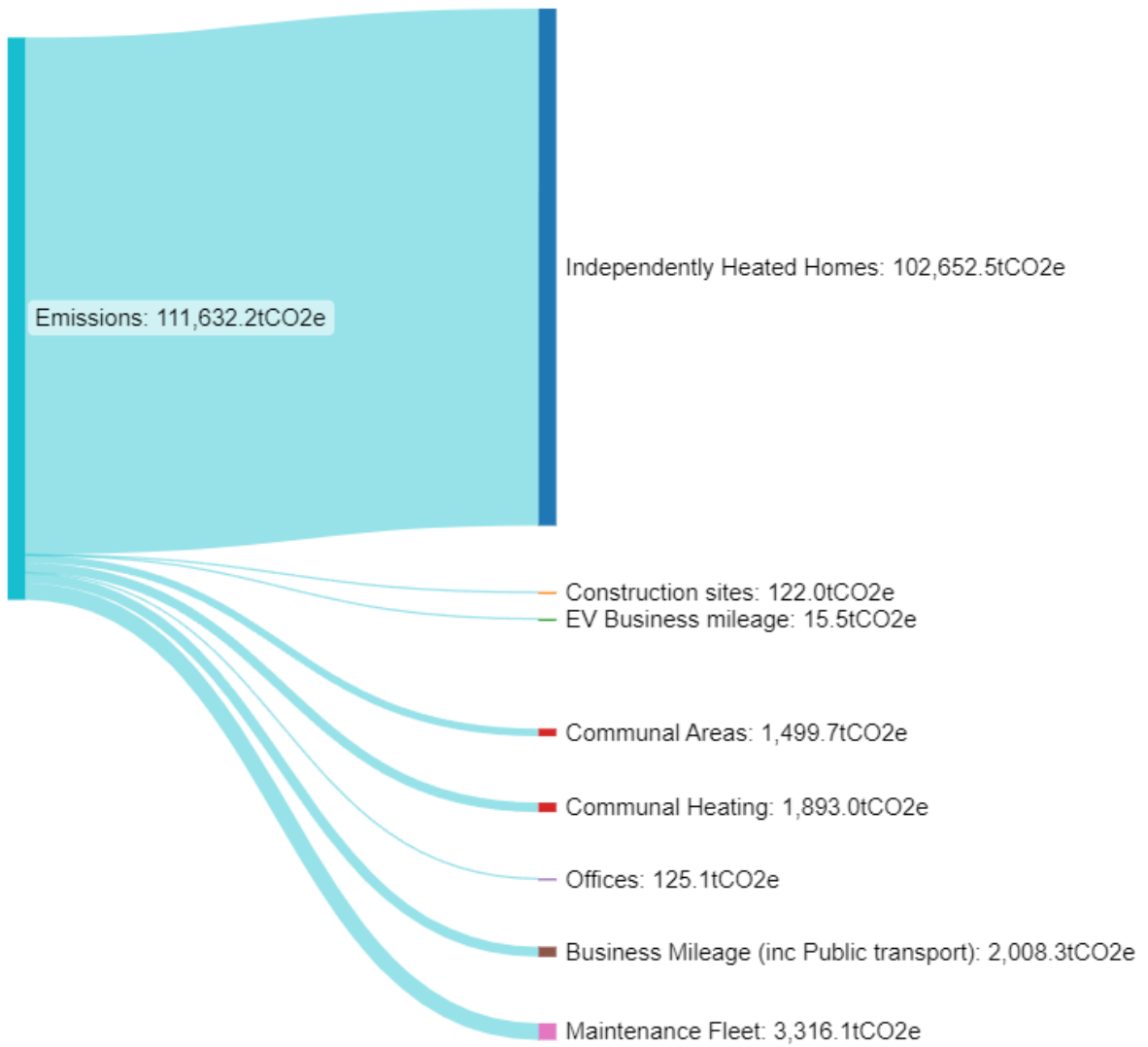


Figure 1. Sankey diagram providing a high-level overview of carbon emissions for the 2022-23 financial year (excludes T&D losses).

## Carbon Baseline

### Baseline Data

Base data for this project was provided by Bromford Housing Group's Head of Home Investment, as well as the Director of Strategic Property Planning. It was collected from across the organisation which covered Scope 1, 2 and relevant Scope 3 emissions. This data is outlined in Appendix 1 – Base Data.

To convert the data to CO<sub>2</sub>-equivalent (CO<sub>2</sub>e) emissions (to represent all carbon emissions in a standardised way).

### Results

Bromford's independently heated homes account for over 90% of the organisation's total emissions. At an estimated 102,652.46 tonnes CO<sub>2</sub>e per annum, it emphasises the importance of decarbonising housing stock.

A further breakdown of Bromford's emissions excluding independently heated housing stock, is shown in the Sankey diagram, (figure 2). It shows energy usage breakdown amongst communal properties, maintenance office and travel. It shows that diesel combustion from maintenance activities, gas and electricity usage from communal buildings and employee business mileage. These activities can be seen to be significant contributors to Bromford's CO<sub>2</sub> emissions.

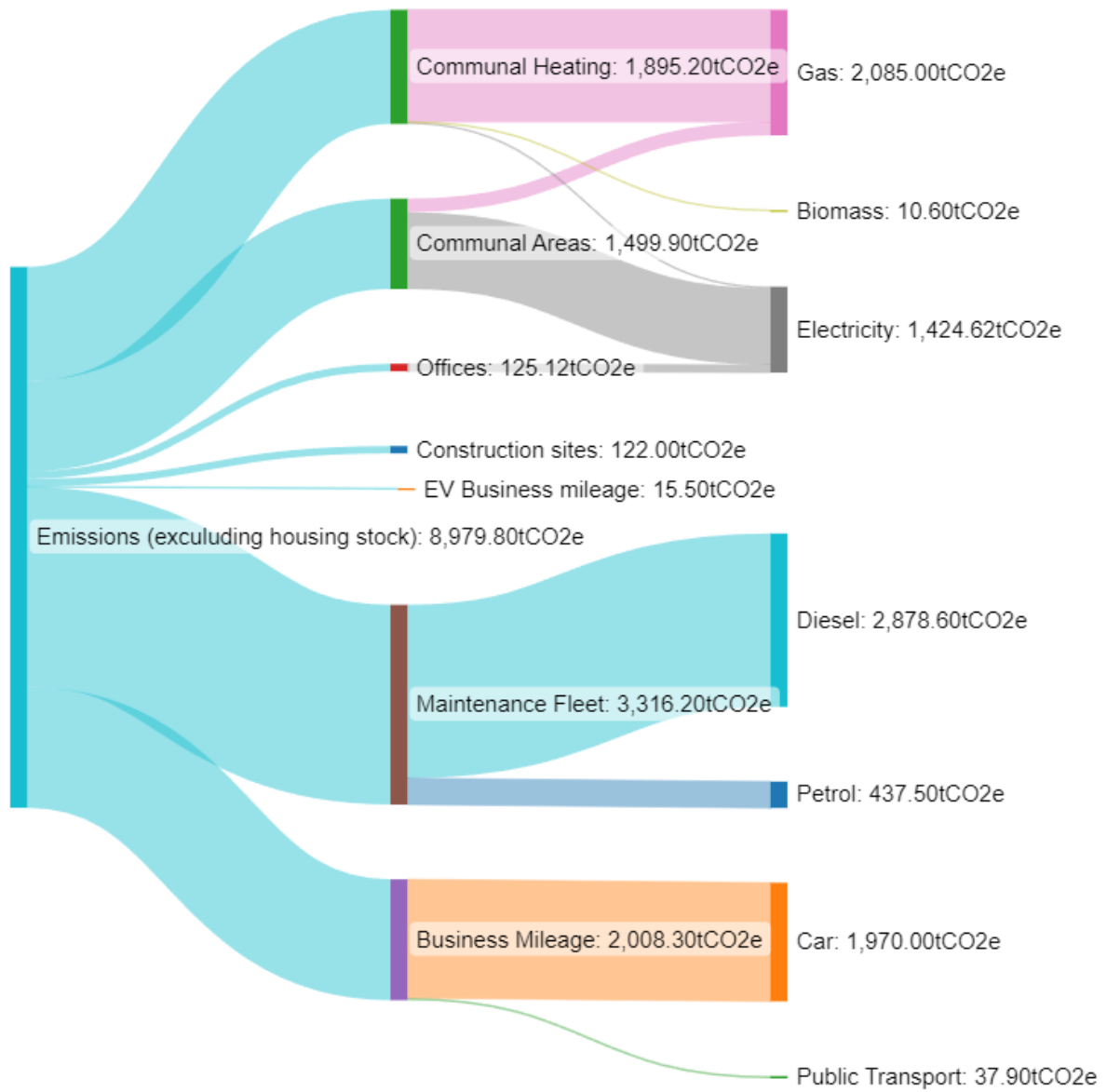


Figure 2. Sankey diagram of operational carbon emissions for the 2021-22 financial year (excludes T&D losses).

## Scope 1, 2 and 3 emissions

Bromford Housing Group's emissions have also been reported in accordance with government recommendations, into categories of Scope 1, 2 and 3. For future reporting, clarification is required regarding the number of homes that Bromford have Decent Homes Responsibility for. Primary data submitted this year indicate Decent Homes Responsibility for 43,668 homes. Data from the energy consumption report lists

Homes communally heated by gas 1,192 (scope 1).

Homes communally heated biomass 17 (Scope 1).

Homes communally heated electric 79 (scope 2).

Homes independently heated 42,380 (scope 3).

- Scope 1 emissions are direct emissions which include emissions from activities owned or controlled by the organisation that release emissions into the atmosphere. This includes emissions from the combustion of gas, oil and other fuel.
- Scope 2 emissions are indirect emissions relating to the consumption of purchased electricity, heat, steam and cooling, and the associated emissions this releases into the atmosphere.
- Scope 3 (voluntary) emissions are other indirect emissions, which are a consequence of an organisations' actions. These occur at sources which you do not fully control. Here we have covered housing stock, business mileage, transmission and distribution losses associated with electricity generation and public transport.

As Bromford Housing Group have previously reported their carbon emissions, most recently within a Carbon Report (2021 - 2022), the current reporting year carbon emissions are presented alongside the previous year to provide a comparison.

Using the methodology and conversion factors covered in Appendix 2 – Methodology, the following CO<sub>2</sub> emissions were calculated:

## Global GHG emissions and energy use data for period 1<sup>st</sup> April 2022 – 31<sup>st</sup> March 2023

	Current reporting year 1 <sup>st</sup> April 2022-31 <sup>st</sup> March 2023	Comparison reporting year 1 <sup>st</sup> April 2021-31 <sup>st</sup> March 2022
Scope 1 – direct emissions from gas, diesel and petrol directly purchased by Bromford Housing Group	<b>5533.52 tonnes CO<sub>2</sub>e</b>	<b>4,989.45 tonnes CO<sub>2</sub>e</b>
Scope 2 – indirect emissions from electricity purchased by Bromford Housing Group	<b>1,437.98 tonnes CO<sub>2</sub>e</b>	<b>2,148.39 tonnes CO<sub>2</sub>e</b>
Scope 3 – indirect emissions from Bromford Housing Group housing stock, business mileage, public transport usage and electricity T&D losses	<b>104,793.18 tonnes CO<sub>2</sub>e</b>	<b>106,061.14 tonnes CO<sub>2</sub>e</b>
<b>Total</b>	<b>111,764.68 tonnes CO<sub>2</sub>e</b>	<b>113,198.98 tonnes CO<sub>2</sub>e</b>

### Scope 1:

	Current reporting year 1 <sup>st</sup> April 2022-31 <sup>st</sup> March 2023	Comparison reporting year 1 <sup>st</sup> April 2021-31 <sup>st</sup> March 2022
Emissions from gas used at offices <sup>1</sup>	<b>0 tonnes CO<sub>2</sub>e</b>	<b>49.09 tonnes CO<sub>2</sub>e</b>
Emissions from gas used in communal areas (even if recharged to residents) <sup>2</sup>	<b>225.87 tonnes CO<sub>2</sub>e</b>	<b>832.21 tonnes CO<sub>2</sub>e</b>
Emissions from gas bought for communal heating systems (even if recharged to residents)	<b>1,858.98 tonnes CO<sub>2</sub>e</b>	<b>2,367.57 tonnes CO<sub>2</sub>e</b>
Emissions from the combustion of fuel used for maintenance fleet <sup>3</sup>	<b>3,316.12 tonnes CO<sub>2</sub>e</b>	<b>1,649.18 tonnes CO<sub>2</sub>e</b>
Emissions from diesel (or other fossil fuels) used on construction sites	<b>121.99 tonnes CO<sub>2</sub>e</b>	<b>91.4 tonnes CO<sub>2</sub>e<sup>1</sup></b> <i>(2020 figure applied)</i>
Emissions from Biomass bought for communal heating systems (even if recharged to residents)	<b>10.56 tonnes CO<sub>2</sub>e</b>	<b>N/A</b>
<b>Total Scope 1</b>	<b>5,533.52 tonnes CO<sub>2</sub>e</b>	<b>4,989.45 tonnes CO<sub>2</sub>e</b>

<sup>1</sup> The number of offices has been reduced from five to four, with no gas usage reported.

<sup>2</sup> The communal areas emissions are shown to have decreased when compared to previous reporting year as methodology differed due to issues identifying communal heating systems.

<sup>3</sup> Scope 1 maintenance and transport fuel emissions were higher in this reporting period due to 'catching up' with works post Covid and more meetings taking place face to face.



## Scope 2:

	Current reporting year 1 <sup>st</sup> April 2022-31 <sup>st</sup> March 2023	Comparison reporting year 1 <sup>st</sup> April 2021-31 <sup>st</sup> March 2022
Emissions from electricity used at offices <sup>1</sup>	<b>125.12 tonnes CO<sub>2</sub>e</b>	<b>299.36 tonnes CO<sub>2</sub>e</b>
Emissions from electricity used in communal areas (even if recharged to residents)	<b>1,273.86 tonnes CO<sub>2</sub>e</b>	<b>1,297.27 tonnes CO<sub>2</sub>e</b>
Emissions from electricity used for communal heating systems (even if recharged to residents) <sup>2</sup>	<b>23.46 tonnes CO<sub>2</sub>e</b>	<b>518 tonnes CO<sub>2</sub>e</b>
Emissions from electricity used for company pool EV vans (not charged at the office)	<b>15.54 tonnes CO<sub>2</sub>e</b>	<b>33.76 tonnes CO<sub>2</sub>e</b>
<b>Total Scope 2</b>	<b>1,437.98 tonnes CO<sub>2</sub>e</b>	<b>2,148.39 tonnes CO<sub>2</sub>e</b>

<sup>1</sup>Energy use reduction attributed to reduction of the number of offices operated by Bromford reducing from five to four.

<sup>2</sup>Due to re-categorisation.

## Scope 3:

	Current reporting year 1 <sup>st</sup> April 2022-31 <sup>st</sup> March 2023	Comparison reporting year 1 <sup>st</sup> April 2021-31 <sup>st</sup> March 2022
Housing stock emissions <sup>1</sup>	<b>102,652.46 tonnes CO<sub>2</sub>e</b>	<b>105,283.16 tonnes CO<sub>2</sub>e</b>
Emissions from business mileage (employee-leased cars)	<b>1,970.39 tonnes CO<sub>2</sub>e</b>	<b>588.10 tonnes CO<sub>2</sub>e<sup>3</sup></b>
Electricity T&D losses	<b>132.39 tonnes CO<sub>2</sub>e</b>	<b>189.88 tonnes CO<sub>2</sub>e</b>
Public transport mileage	<b>37.94 tonnes CO<sub>2</sub>e</b>	<b>N/A</b>
<b>Total Scope 3</b>	<b>104,793.18 tonnes CO<sub>2</sub>e</b>	<b>106,061.14 tonnes CO<sub>2</sub>e</b>

<sup>1</sup>Housing stock emissions have fallen in line with SAP rating increase.

<sup>2</sup> Business mileage emissions were identified as employee-leased vehicles therefore have been reported in Scope 3. These are higher than in the previous reporting period due to post Covid 'catch up works' and increased face to face meetings.

## Findings / recommendations

- Integrating legacy Bromford, Merlin and Severn Vale housing stock into one database will make future reporting more efficient.
- Identify which properties have Decent Homes Responsibility attached to them.
- Continue cross-referencing communal heating systems to UPRN's and energy broker data. This will enable accurate reporting and year-on-year analysis. Sub-metering would be a way to assess the actual kWh demand of each property and help to distribute the cost to residents more fairly.
- Review business mileage claims and expenses and attempt to categorise by vehicle and fuel type, this will allow more accurate emissions to be calculated. Consider different budget codes for petrol/diesel/hybrid cars so the appropriate conversion factor can be used for calculating carbon emissions. Review this regularly to ensure that only essential journeys are taking place, it is possible this will also emphasise the emissions implications of this transport.
- Bromford Housing Group's independently heated homes account for 91.8% of total carbon emissions and equates to 2.42 tCO<sub>2</sub>/homes managed, this has decreased from the previous report from 2.71 tCO<sub>2</sub>/homes managed. Bromford's average SAP is 74.2, this is up from 71.95 in the previous report. Improving the average SAP of Bromford's housing stock will result in lower emissions and help align with net zero targets. It is worth noting that Bromford was only able to provide SAP values of 38,470 of their 43,668 properties and therefore an average was applied to the missing data. It would be recommended that the SAP data of the remaining properties are recorded to enable improved accuracy of calculations. It will also identify homes with lower SAP values, to support knowledge of which homes should be the focus of retrofit plans for decarbonisation.
- Bromford Housing Group have reduced the number of main offices they inhabit to 4. This has resulted in a reduction of total office carbon emissions to 125.12 tCO<sub>2</sub>e in total or 17.18 kgCO<sub>2</sub>/m<sup>2</sup>. This is a reduction from 34.38 kgCO<sub>2</sub>/m<sup>2</sup> in the previous report. Along with remote and hybrid working, this suggests that when reducing the number of offices, the buildings energy efficiency was considered when deciding which offices to continue operating.
- Bromford may wish to consider switching to a renewable energy supplier as this may cut operational emissions and contribute to demand for renewable energy. However, it is important to note that formal reporting requires standard conversion factors. The use of renewable tariffs can still be referenced as a footnote in any formal carbon reporting.

## Conclusions

- Total annual emissions accounted to 111,764.67 tonnes CO<sub>2</sub>e per annum, a reduction of 1434.77 tCO<sub>2</sub>e on the previous reporting period.
- Of this total, emissions from Bromford's independently heated housing stock were estimated at 102,652.46 tonnes CO<sub>2</sub>e (excludes communally heated homes).
- Emissions per independently heated home have decreased from 2.71 tCO<sub>2</sub>e to 2.42 tCO<sub>2</sub>e.
- As independently heated homes account for 91.8% of emissions, it is recommended as the major focus area for decarbonisation efforts.
- Recommendations have been made that cover improvements in data quality but also practical approaches for reducing Bromford Housing Group's carbon footprint.



## Appendices

### Appendix 1 – Base Data

#### Gas and Electricity data

- All energy usage data was provided in the spreadsheet ‘Bromford and Merlin Consumption Report’ submitted by Bromford’s Head of Home Investment, who obtained the data covering the 2022-23 financial year.
- Stowe Road office did not have a full 12-months data, so the available data, in combination with previous data, was scaled up to provide a figure to cover the full reporting period.

#### Transport

- Company pool EV van mileage, Litres of diesel bought for company pool vans, and mileage for employee-owned cars data was provided by Bromford’s Director of Strategic Planning via the Offices and Operations spreadsheet. This was used to calculate emissions related of transport for the 2022-23 financial year. (Fuel split was not possible for employee-owned cars).

#### Homes

- SAP ratings and carbon emission estimations from Bromford’s asset management were used to calculate independently heated homes emissions. From the 42,397 total of Bromford’s independently heated housing stock, 5,188 had no SAP rating/3<sup>rd</sup> party calcs. The average was calculated and applied to the total number of independently heated homes.

#### Offices

- Bromford have reduced the number of their main offices to 4, (table 1). A number of property’s were listed as offices on the Existing Homes template, but these were identified by Bromford’s Head of Home Investment as single rooms in schemes, that were powered by landlord supply.

Table 1, Bromford’s Offices

Main Offices	Area (m <sup>2</sup> )
5 Stowe Road, WS13 6WA	1643 m <sup>2</sup>
Venture Court, WV10 6TA	1686 m <sup>2</sup>
Riverside Court, BS37 6JX	1713 m <sup>2</sup>
Shannon Way, GL20 8NB	2240 m <sup>2</sup>

## Appendix 2 – Methodology

Where possible, standard DEFRA conversion factors (2022) have been used for these calculations. These are the recommended conversion factors to use for the 2022-23 financial year.

The factors are:

Scope 1:

- For each kWh of gas used, 0.18254 kgCO<sub>2</sub>e are emitted.
- For each litre of diesel used, 2.51233 kgCO<sub>2</sub>e are emitted.
- For each mile of business travel by average diesel car 0.27492 kgCO<sub>2</sub>e are emitted.
- For each mile of business travel by average petrol car 0.27436 kgCO<sub>2</sub>e are emitted.
- No biomass emissions fuel details submitted. Emissions taken from 3<sup>rd</sup> party calculations.

Scope 2:

- For each 1 kWh of UK electricity used, 0.19338 kgCO<sub>2</sub>e are emitted (this excludes transmission and distribution losses).
- For each mile travelled by an EV (Average car), 0.0399 kgCO<sub>2</sub>e are emitted.
- For each mile of business travel by an average diesel van (up to 3.5 tonnes) 0.27492 kgCO<sub>2</sub>e are emitted.

Scope 3:

- For each kWh of UK electricity used, 0.01769 kg CO<sub>2</sub>e are emitted in transmission and distribution losses.
- For each mile of business travel with unknown fuel type 0.27492 kg CO<sub>2</sub> e are emitted for cars.
- For each train kilometre travelled 0.03549 kg CO<sub>2</sub>e are emitted (National rail).
- For each taxi kilometre travelled 0.20826 kg CO<sub>2</sub>e are emitted (Regular taxi)
- For each bus kilometre travelled 0.0965 kg CO<sub>2</sub>e are emitted (Average local bus).
- For each air travel kilometre travelled 0.15353 kg CO<sub>2</sub>e are emitted (European short haul).

### Appendix 3 – Energy consumption used to calculate emissions

The following figures are the mandatory kWh usage used to calculate emissions for SECR (i.e., Scope 1 and 2)

Energy consumption used to calculate emissions: /kWh [mandatory] – optional to provide separate figures for gas, electricity, transport fuel and other energy sources	<b>Gas: 11,421,323.57 kWh<sup>4</sup></b> <b>Electricity 7,497,748.00 kWh</b> <b>Transport fuel: 13,682,750.77 kWh</b> <b>Site fuel 505,850.91 kWh</b> <b>Total: 33,164,624.35 kWh</b>
Scope 1	Office gas: 0 kWh Communal area gas: 1,237,370 kWh Communal heating gas: 10,183,953 kWh Fleet fuel (diesel): 13,862,751kWh Site fuel (diesel) 505,851 kWh  <b>Total: 25,789,925 kWh</b>
Scope 2	Office electricity: 647,028 kWh Communal area electricity: 6,587,340 kWh Communal heating electricity: 121,327 kWh EV company pool vans electricity: 79,917 kWh EV Company pool cars 62,136 kWh  <b>Total: 7,497,748 kWh</b>

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