

## **APPENDIX A:**

### **Fareham Borough Council Services Carbon Footprint Calculation Report 2019/20**

#### **Introduction**

Fareham Borough Council is seeking to become carbon neutral by 2030. In order to provide a baseline upon which to measure improvements the Council must first establish its current carbon footprint. This work will be used to inform the Council's Carbon Reduction Plan.

The reporting period covers the 2019/2020 financial year. This is to be the baseline year and will be used to inform the Carbon Reduction Plan. Subsequent reports will be published annually to ensure continuous measurement towards carbon neutrality.

#### **Methodology**

The Council has used the guidance set out in the HM Government *Environmental Reporting Guidelines*<sup>1</sup> as this has been created for use in legislative reporting within the UK. As it is based on the Greenhouse Gas (GHG) Protocol Initiative *Corporate Accounting and Reporting Standard*<sup>2</sup>, elements of this document have also been included.

Emissions data has been obtained by multiplying the Council's activity data with the conversion factors<sup>3</sup> developed by the UK Department for Environment, Food and Rural Affairs (Defra) and the Department for Business, Energy & Industrial Strategy (BEIS).

Carbon emissions are shown in tCO<sub>2</sub>e (tonnes of carbon dioxide equivalent). This is a measure of how much a gas contributes to global warming, relative to carbon dioxide. The carbon dioxide equivalent of a gas is calculated by multiplying its mass (in tonnes) by the gas' global warming potential (GWP) over 100 years.

#### **What has been calculated**

The organisational boundary determines the operations included within the carbon footprint calculation. The operational boundary determines the emissions that are direct (come from sources owned by the Council) and indirect (are a consequence of the Council's activities but occur at sources owned or controlled by other entities).

There are two options for setting the Organisational Boundaries, the equity share<sup>4</sup> or the control approach. The Council is calculating the emissions from the delivery of its operations; therefore, the control approach has been used.

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<sup>1</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/850130/Env-reporting-guidance\\_inc\\_SECR\\_31March.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850130/Env-reporting-guidance_inc_SECR_31March.pdf)

<sup>2</sup> <https://ghgprotocol.org/>

<sup>3</sup> <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>

<sup>4</sup> Under the equity share approach, a company accounts for GHG emissions from operations according to its economic interest, which reflects the Company's rights for any risks and rewards.

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The Operational Boundary is set by categorising the emissions as direct or indirect. To help further delineate emission sources and improve transparency, three ‘scopes’ are defined for reporting purposes:

- **Scope 1** – These are all **direct** emissions released from the activities of an organisation. For example, fuel combustion from fleet vehicles
- **Scope 2** – These are any **indirect** emissions from electricity purchased and used by the organisation. For example, the emissions from the lighting in the Civic Offices.
- **Scope 3** – These are any other **indirect** emissions from the activities of the organisation, occurring from sources that they do not own or do not control. They are usually the greatest share of the carbon footprint, covering emissions such as those associated with business travel (grey fleet)<sup>5</sup> or procurement.

The table below shows the inclusions within the Operational Boundary.

Scope 1- Direct Emissions	Scope 2 Energy - Indirect Emissions	Scope 3 - Other Indirect Emissions
Fuel Combustion Natural gas, gas oil, petrol for heating Council Buildings	Consumption of purchased: • Lighting • Electricity For Council buildings and social housing <sup>6</sup>	Employee Business Travel (grey fleet)
Fuel consumption from Council owned fleet		Lighting and heating for leased/contracted services such as leisure centres and Solent Airport
Fugitive Emissions - Refrigerants		Fuel consumption from Grounds Maintenance HCC work
		Water supply and treatment for Council buildings
		Employee Commuting
		Waste Disposal for Council buildings
		Procurement (products/services)
Emissions in scope	Emissions not in scope	

Figure 1 – Operational Boundaries

### What has been excluded

It has not been possible to include all emissions within Scope 3. The carbon impact of staff commuting, business travel by rail, water supply, water treatment

<sup>5</sup> Any travel made by employee owned vehicles but for the purposes of carrying out Council activities. For example, site visits made by the Planning Officers.

<sup>6</sup> Where we have operational control, such as a communal boiler.

and operational waste, such as refuse from the Council Offices, has been omitted due to availability of data.

Procurement emissions are those associated with work undertaken by third parties as part of a contract arrangement with the Council. This can range from contractor work to purchasing of equipment. Procurement data has been excluded in this report due to the current financial reporting method. The information held cannot be easily converted into carbon emissions at the current time.

Fugitive emissions are those that are not physically controlled but result from unintentional release of GHGs in pressurised equipment. For the Council, these would apply to refrigerants, particularly from air conditioning. It has not been technically feasible to include fugitive emissions.

Carbon offsets refer to any activity that compensates for the emission of greenhouse gases by providing an emission reduction elsewhere. In accordance with the *Guidelines* the activity should meet DEFRA's good quality criteria; namely the offset project would not have happened otherwise, is permanent, and has been validated by an independent and accredited third party. An example of an offset would be a renewable energy project such as a solar farm. There are no carbon offsets to be considered within this report.

### **Data Quality**

The quality of the data is important in ensuring accuracy in carbon reporting. The data provided has been extracted from utility bills, expenses claims and the fuel management system.

Business travel has been taken from mileage expenses claims. The size and type of vehicle are not recorded, only the mileage. Therefore the 'average car' conversion factor has been used in the calculation.

Portchester Crematorium is a shared service with 3 other Local Authorities; Portsmouth City Council, Havant Borough Council and Gosport Borough Council. To determine the share of Fareham's emissions, the total has been divided by four. The figure presented here is the product of that division.

The electricity for Ferneham Hall and the Civic Offices is on the same meter with the two locations being billed as one. Historically, to understand the electricity consumption for each site a monthly reading was taken from a sub-meter and subtracted from the overall amount. However, due to technical issues at the time the meter was not read in November and December 2019 nor January 2020. Therefore, data from 2018 has been used for these three months. Analysis of historical data has found the consumption to be comparable over the years thereby providing some reassurance of consistency.

The Council leases space within the Civic Offices. The emissions from the heating and lighting for the tenants are therefore removed from Scope 1 and counted under Scope 3.

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The Council operates a series of partnerships with neighboring authorities. These are shared resources for Building Control, Environmental Health, Legal, The Coastal Partnership and Audit.

The Building Control Partnership is based in the Council's Broadcut Depot offices; however, partnership work is also undertaken here. To ensure only the Council's own operations are considered, Building Control emissions have been split 41:59 over Scope 1 and Scope 3. This based on the contract arrangements.

A similar calculation has also been undertaken for Environmental Health. However, the contracted split is 50:50 and so the Scope 1 and Scope 3 emissions have been shared accordingly. As the Legal, Coastal and the Audit partnerships make up such a small proportion of resources they remain under Scope 1.

The Council undertakes Grounds Maintenance work on behalf of Hampshire County Council (HCC). Under this agreement the Council cuts hedges, maintains shrub beds and grass verges. The emissions for HCC have been included under Scope 3.

To normalize the Scope 1 and 2 emissions, an intensity ratio based on tonnes of tCO<sub>2</sub>e per household in the borough has been used. Normalisation enables a stable comparison over time of the Council's services against the population it serves.

### Summary of Results

The total carbon footprint for the period covering 1 April 2019 to 31 March 2020 was 3661.44 tCO<sub>2</sub>e.

The Council has contract arrangements for its leisure centres, community and youth centres, Solent Airport and Portchester Crematorium. Therefore, the electricity and gas for these sites is grouped under Scope 3.

Table 1 provides a summary of results categorised by scope and operational unit.

Scope	Operational Unit	tCO <sub>2</sub> e	% of Total Emissions
Scope 1:	Fuel - Vehicle Operations	927.56	25.33
	Civic Offices Emergency Generator	0.5	0.01
	Site Gas	451.14	12.32
	<b>Sub-Total</b>	<b>1379.2</b>	<b>37.67</b>
Scope 2:	Site Electricity	550.02	15.02
	<b>Sub-Total</b>	<b>550.02</b>	<b>15.02</b>
Scope 3:	Business Travel -Car	49.82	1.36
	Fuel - Solent Airport Vehicle Operations	24.45	0.67
	Fuel - Grounds Maintenance (Work undertaken for HCC)	39.94	1.09
	Site Electricity	556.16	15.19
	Site Gas	1061.86	29.0
	<b>Sub-Total</b>	<b>1732.22</b>	<b>47.31</b>

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<b>Total</b>	<b>3661.44</b>	<b>-</b>
Normalisation Factor – tCO <sub>2</sub> e per household	0.04	

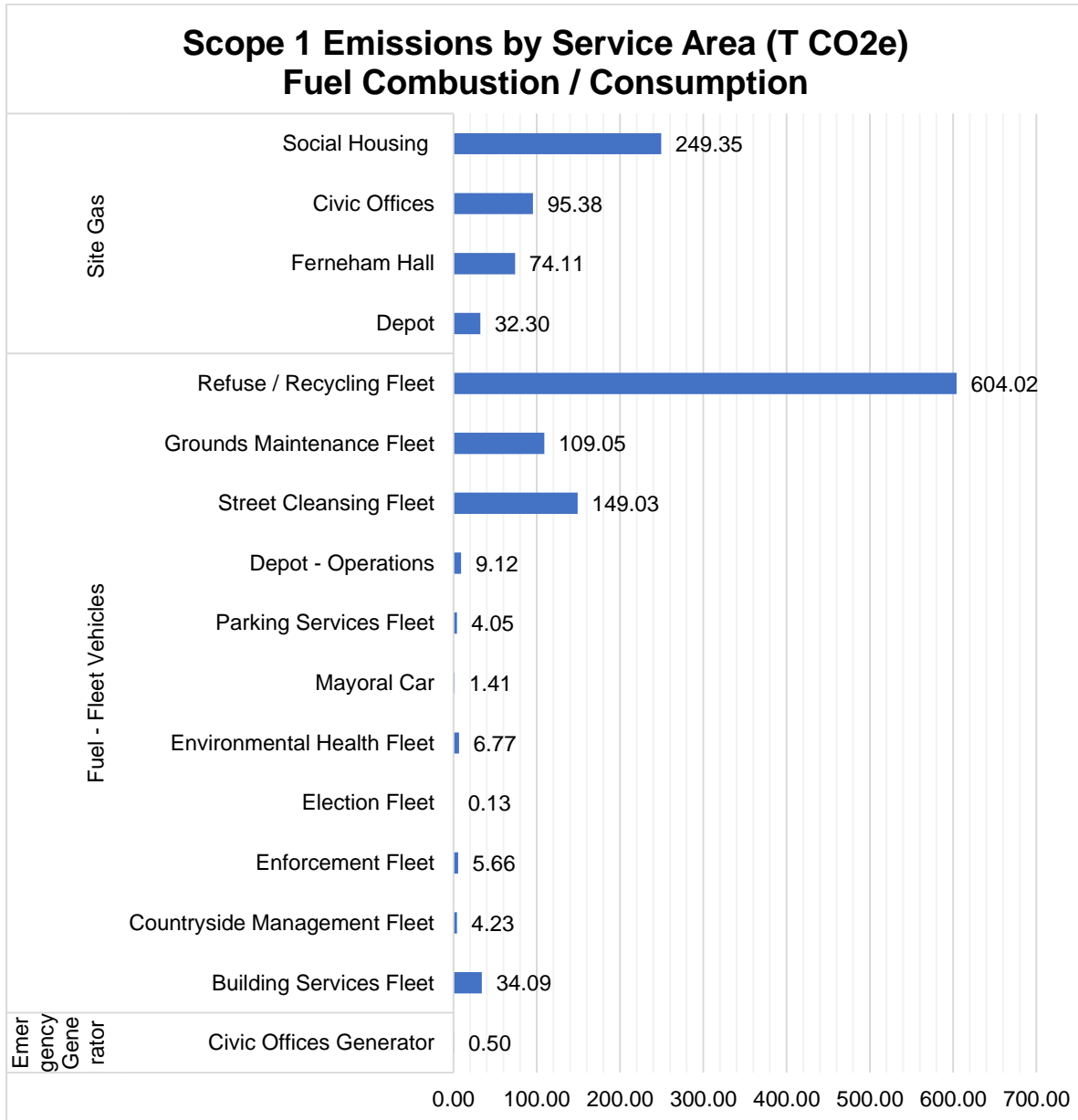
*Table 1: Summary of the Council's carbon emissions  
May not sum due to rounding*

The table shows that there are two clear areas that make up the emissions produced by the Council's operations. These are site gas consumption from Scope 3 contract operations (29%) and Scope 1 fuel use by the Council's fleet (25.33%).

In order to understand the source of the scope emissions in more detail, further breakdown is demonstrated below.

### **Scope 1 Emissions**

Scope 1 covers all direct emissions released from the activities of an organisation. These emissions are shown in figure 2 and are broken down into service area. The graph includes emissions from the Council's vehicles, heating the Council's offices, heating other Council owned buildings and the emergency generator.



*Figure 2 - Scope 1 Emissions Breakdown*

There is a distinct source of emissions within Scope 1, these come from the Refuse and Recycling fleet vehicles. These vehicles travel approximately 345 miles each week causing this large contribution to CO<sub>2</sub> emissions.

The second largest contribution is the site gas (heating) for Social Housing. This is where we have operational control over heating, namely a communal boiler.

### Scope 2 Emissions

Scope 2 emissions are any indirect emissions from electricity purchased and used by the Council. Figure 3 details the electricity used by the Council's offices and owned sites.

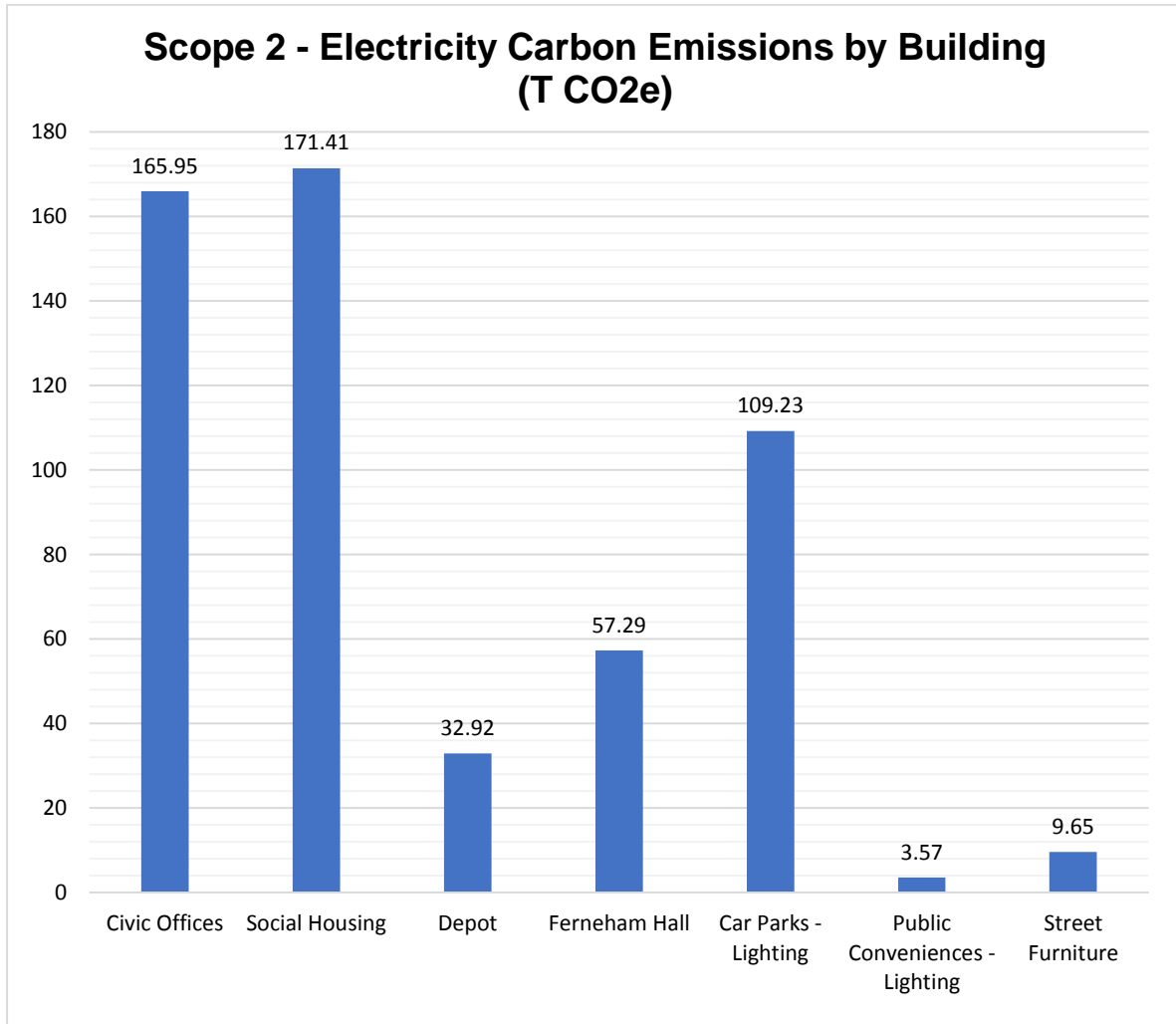


Figure 3 - Scope 2 Emissions Breakdown

The housing sites have the highest emissions from Scope 2 sources. Electricity for the Civic offices has the second highest tCO<sub>2</sub>e and is followed by the lighting for Council car parks.

### Scope 3 Emissions

Scope 3 covers indirect emissions from the activities of the Council, occurring from sources that they do not own or do not control. The Council's Scope 3 emissions are made up of gas and electricity used at leased and contracted sites, such as the leisure centres and Solent Airport, the fuel used in running Solent Airport's operations, the fuel used by Grounds Maintenance for work undertaken for Hampshire County Council (HCC), and business travel.

The emissions for Scope 3 provides 47.31% of the total tCO<sub>2</sub>e. Business travel makes up 49.82 tCO<sub>2</sub>e, the Solent fuel at Solent Airport totals 24.45 tCO<sub>2</sub>e and the Grounds Maintenance work for HCC is 39.94 tCO<sub>2</sub>e.

The remaining 556.16 tCO<sub>2</sub>e and 1061.86 tCO<sub>2</sub>e are made up by site electricity and gas emissions respectively.

Figures 4 and 5 breaks down the Scope 3 emissions not covered above. These are the electricity and gas emissions by site. Leisure amenities are sites such as

changing rooms in the Council's recreation grounds.

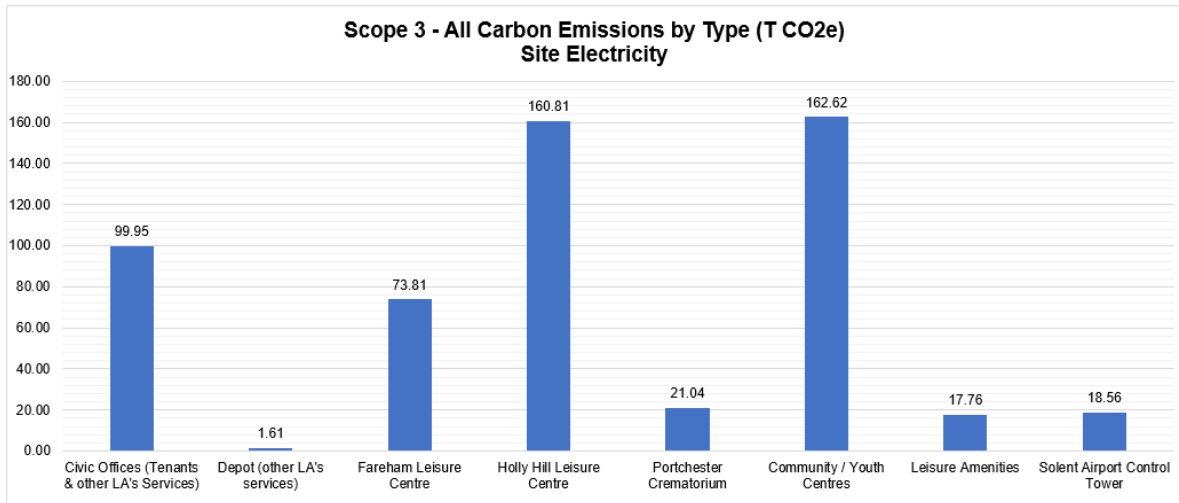


Figure 4 - Scope 3 Emissions Breakdown – Site Electricity

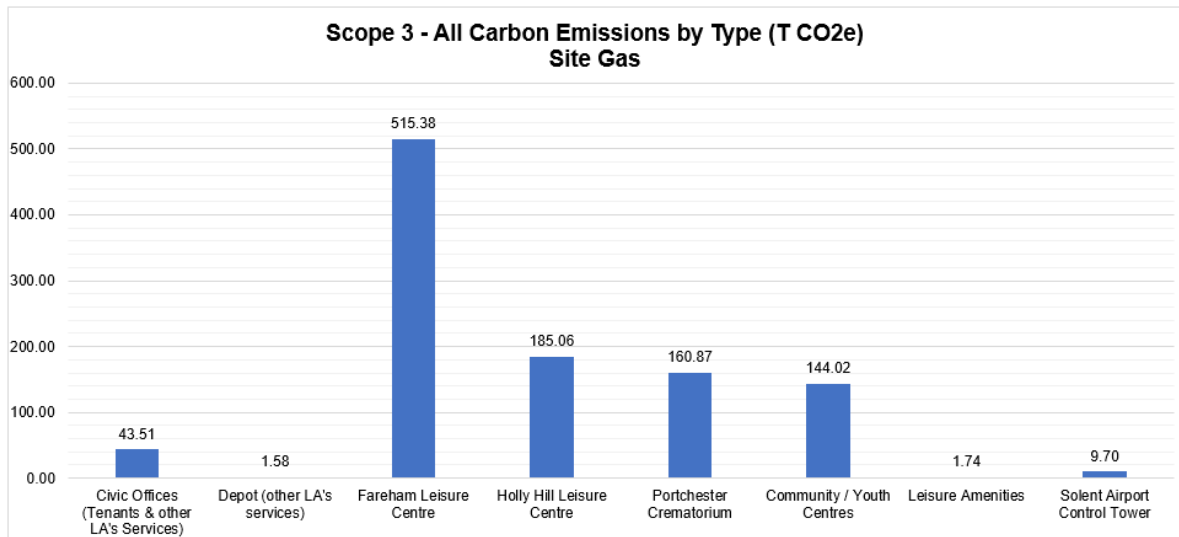


Figure 5 - Scope 3 Emissions Breakdown – Site Gas

For electricity, the highest contributor to Scope 3 emissions are the community and youth centres. Next are the two leisure centres, although where Holly Hill Leisure Centre has the highest electricity contribution, Fareham Leisure Centre has the highest gas contribution.

Portchester Crematorium follows the two leisure centres for gas emissions. The emissions for the Crematorium are the total tCO<sub>2</sub>e for the year divided by 4, this is to delineate the Council's share. It is based on the operations undertaken by the crematorium shared by the 4 local authorities.