

APPENDIX A:

Fareham Borough Council Services Carbon Footprint Calculation Report 2020/21

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 first established its carbon footprint for the financial year 2019/20. This was then used to inform the Council's Carbon Reduction Plan.

The reporting period covers the 2019/2020 and 2020/2021 financial years. The year 2019/2020 is the baseline year and will be used to compare subsequent years to see the Council's progress in reducing its emissions.

Methodology

The Council has used the guidance set out in the HM Government *Environmental Reporting Guidelines*¹ 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*², elements of this document have also been included.

Emissions data has been obtained by multiplying the Council's activity data with the conversion factors³ 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_{2e} (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 share⁴ or the control approach. The Council is calculating the emissions from the delivery of its operations; therefore, the control approach has been used.

¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/850130/Env-reporting-guidance_inc_SECR_31March.pdf

² <https://ghgprotocol.org/>

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

⁴ 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.

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 linked to 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)⁵ or procurement.

The diagram 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 ⁶	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, and operational waste, such as refuse from the Council Offices, has been omitted due to availability of data. The carbon

⁵ 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.

⁶ Where we have operational control, such as a communal boiler.

impact of water supply and water treatment could not be included in the 2019/20 analysis due to the lack of availability of the relevant data. However, for the 2020/21 the Council has been able to obtain the relevant data and therefore, water treatment and water supply have been included in the Council's emission data for the year 2020/21.

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, and the fact that there is no legal obligation on suppliers to provide this information unless it was part of the contract. 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 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.

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.

Securing gas and electricity consumption data for all community centres in both 2019/20 and 2020/21 has proven challenging. For 2019/20 there is missing data from two of the community centres, whereas for 2020/21 we have been able to obtain all the relevant data from the centres.

In 2019/20 there was no data for water supply and water treatment. The reason for this is that the Council was not invoiced with the relevant data. The data has been found for 2020/21. However, the values for 2020/21 are minimal and therefore only have a small affect when making comparisons between the overall values for each year.

For the Scope 3 calculation of site electricity, the year 2020/21 includes the carbon emissions from leasehold properties (13.34 tCO₂e). The calculation for 2019/20 does not include this data due to a lack of availability. Therefore, it must be taken into account that the Scope 3 value for 2020/21 includes one extra source of emissions over that of the calculation for 2019/20.

To normalize the Scope 1 and 2 emissions, an intensity ratio based on tonnes of tCO₂e 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

As Table 1 shows over the page, the total carbon footprint over the period 1st April 2020 to 31st March 2021 was 2817.14 tCO₂e. When comparing this to the value for 2019/20 (3661.44 tCO₂e), it can be seen that the Council achieved a 23.1% decrease in its carbon footprint for the year 2020/21.

It must be taken into consideration that the global pandemic that started in January 2020 has had a large effect on the figures calculated for the year 2020/21. Therefore,

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some of the Council's carbon emission figures will have decreased significantly from

Table 1: Summary of the Council's Carbon Emissions						
Scope	Operational Unit	tCO₂e (2019/20)	% of Total Emissions (2019/20)	tCO₂e (2020/21)	% of Total Emissions (2020/21)	% Change in emissions from 2019/20 to 2020/21
Scope 1:	Fuel - Vehicle Operations	927.56	25.33	859.42	30.51	(-7.3%)
	Civic Offices Emergency Generator	0.5	0.01	0.48	0.02	(-4%)
	Site Gas	451.14	12.32	550.11	19.53	(21.9%)
	Sub-Total	1379.2	37.67	1410.01	50.05	(2.2%)
Scope 2:	Site Electricity	550.02	15.02	373.51	13.26	(-32.1%)
	Sub-Total	550.02	15.02	373.51	13.26	(-32.1%)
Scope 3:	Business Travel -Car	49.82	1.36	7.57	0.27	(-84.8%)
	Fuel - Solent Airport Vehicle Operations	24.45	0.67	4.15	0.15	(-83.0%)
	Fuel - Grounds Maintenance (Work undertaken for HCC)	39.94	1.09	31.8	1.13	(-20.4%)
	Site Electricity e.g., Leisure Centres	556.16	15.19	320.74	11.39	(-42.3%)
	Site Gas e.g. Community Centres	1061.86	29	665.06	23.61	(-37.4%)
	Water Supply	-	-	1.14	0.04	-
	Water Treatment	-	-	3.16	0.11	-
	Sub-Total	1732.22	47.31	1033.62	36.69	(-40.3%)
Total		3661.45		2817.14	-	(-23.1%)
Normalisation Factor – tCO ₂ e per household		0.04				

2019/20 to 2020/21.

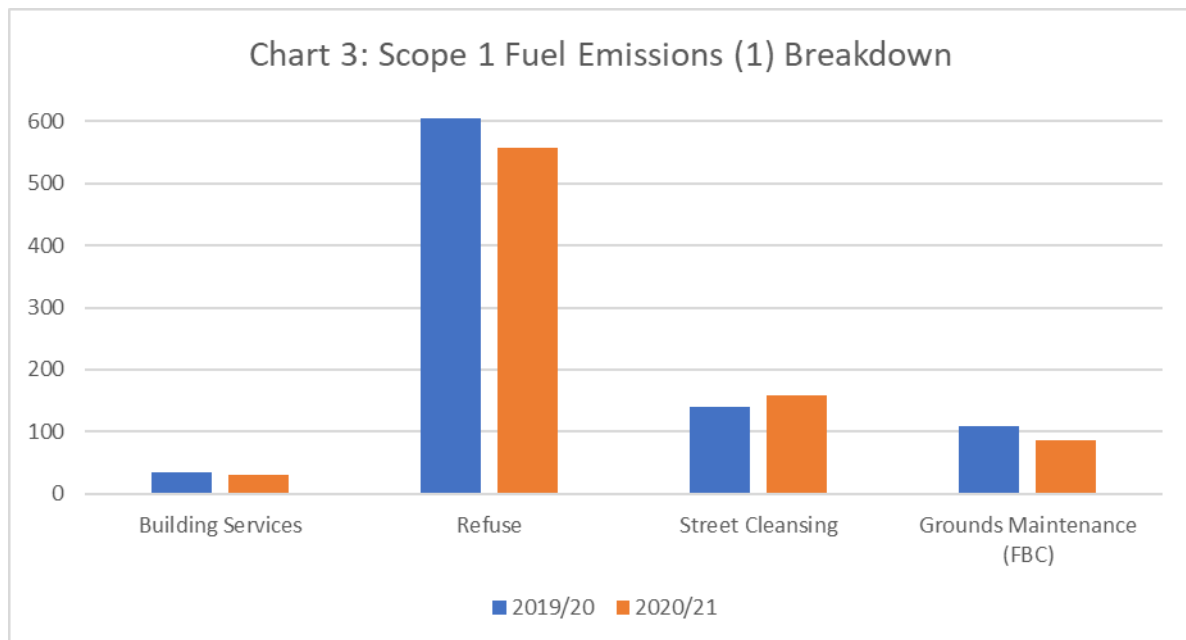
In order to understand the source of the scope emissions in more detail, further breakdown is demonstrated below.

Scope 1 Emissions

Scope 1 covers all direct emissions released from the activities of an organisation. These emissions are shown in the figures below and are broken down into service area.

Scope 1 – Fuel Emissions

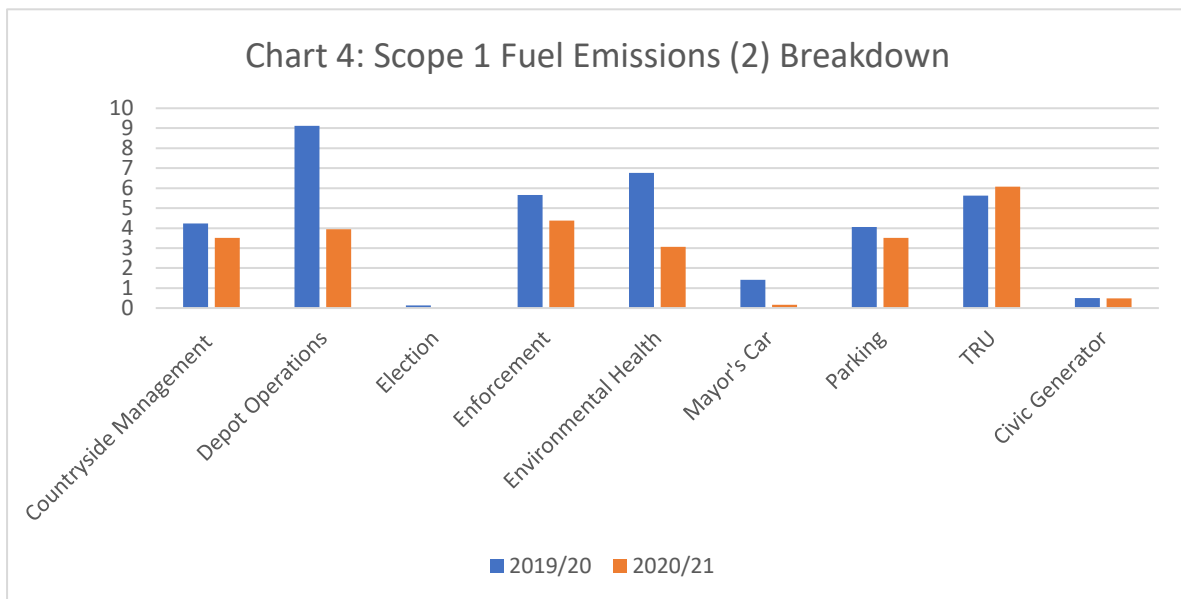
Chart 3 below details the main sources of Scope 1 emissions that come from the Council’s fleet fuel usage. These are the categories that have the biggest impact on the Council’s overall emissions levels.



In Chart 3 above it can be seen that the largest source of emissions within Scope 1, come from the Refuse and Recycling fleet vehicles. These large vehicles travel approximately 345 miles each week causing this large contribution to CO2 emissions. The reduction in emissions is most likely linked to the temporary pausing

of garden waste collections due to the impact of COVID-19 during the summer of 2020.

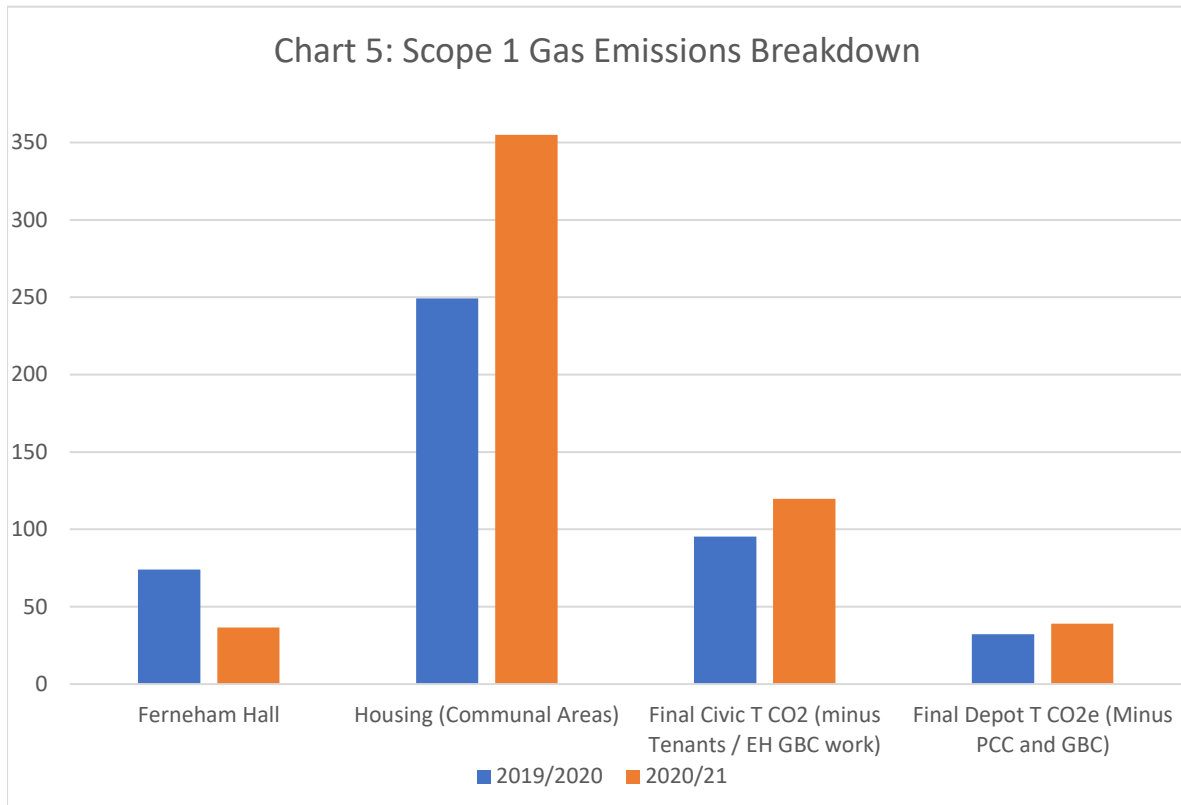
Chart 4 below shows the emissions categories which have a smaller impact than the primary Scope 1 fuel emitters identified in Chart 3. The overall trend for each of these variables when compared to 2020/21 is downwards apart from the Transport Repair Unit (TRU).



Scope 1 – Social Housing Heating Emissions

The second largest contribution to overall scope 1 emissions is the site gas (heating) for Social Housing. This is where we have operational control over heating, namely a communal boiler.

Chart 5 below shows that there has been a slight increase in the amount of site gas emissions for social housing and at the Council owned sites e.g. the Depot in 2020/21 when compared to 2019/20.



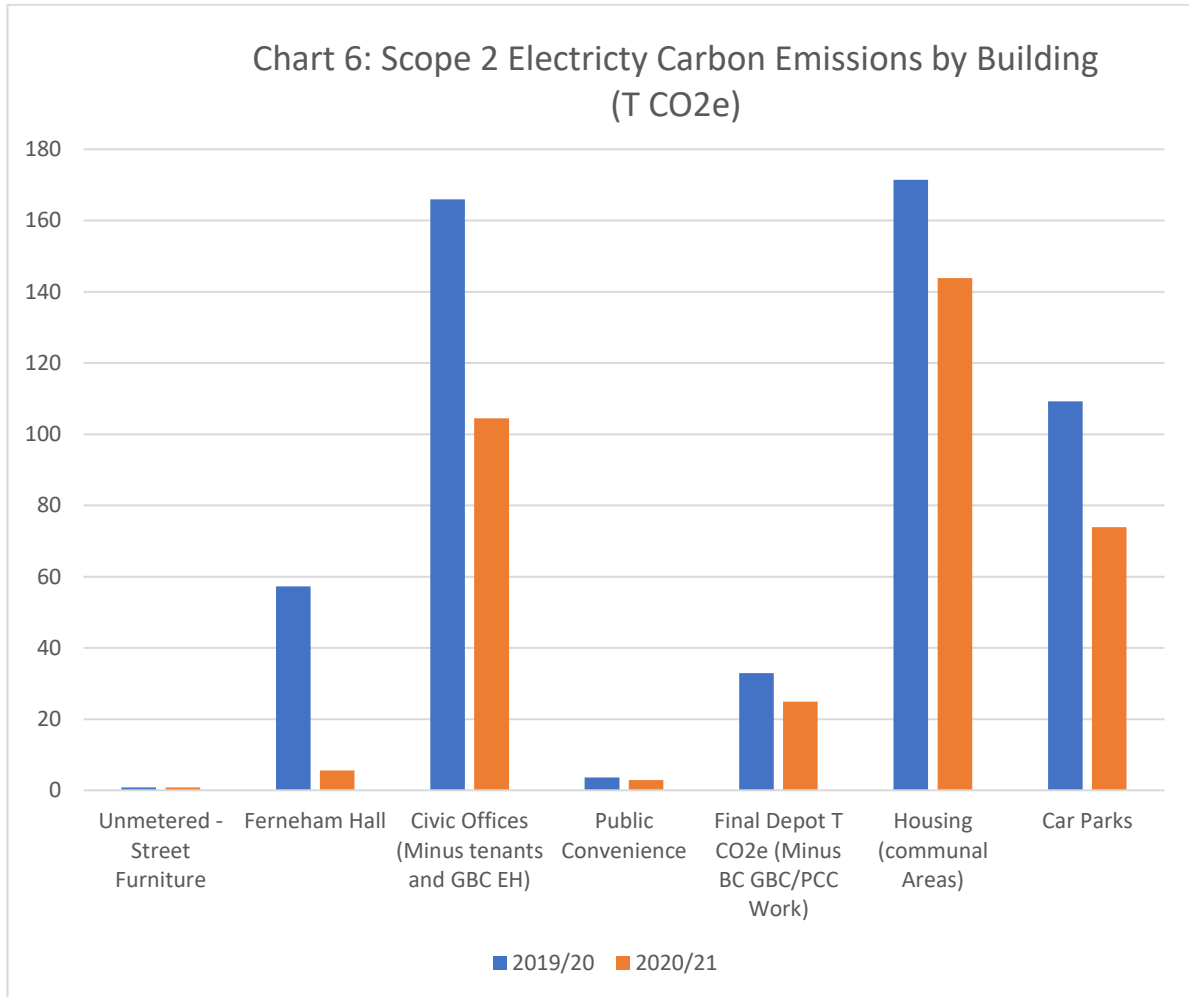
The primary reason for this was that the Council increased the amount of fresh air it circulated in its buildings e.g. Civic Offices, as well as in public areas of some social housing stock, in order to reduce the risk of COVID-19 transmission. This required more gas to be burned as the additional air needed to be either heated or cooled down before circulation into the buildings so that stable temperatures could be maintained

Scope 2 Emissions

Scope 2 emissions are any indirect emissions from electricity purchased and used by the Council.

Scope 2 – Electricity emissions in Council owned buildings

Chart 6 below details the electricity used by the Council’s offices and owned sites. This does not include buildings owned by the Council but operated by external organisations e.g. Leisure Centre. Unmetered street furniture means street lighting and furniture clocks which are also included.



In both 2019/20 and 2020/21 the Council’s housing sites (communal areas) were the highest Scope 2 emission sources. Chart 6 shows that electricity for the Civic offices had the second highest tCO₂e and followed by the lighting for Council car parks in both years.

It can be seen in chart 6 that as expected usage for buildings decreased in 2020/21 when compared to 2019/20. The largest decrease in emissions from one year to the next was seen at Ferneham Hall following its closure in January 2020.

The increase of home working and the reduced employee presence at the Civic during parts of lockdown are the main reasons for the significant reduction in electricity emissions in the Civic Offices between 2019/20 and 2020/21.

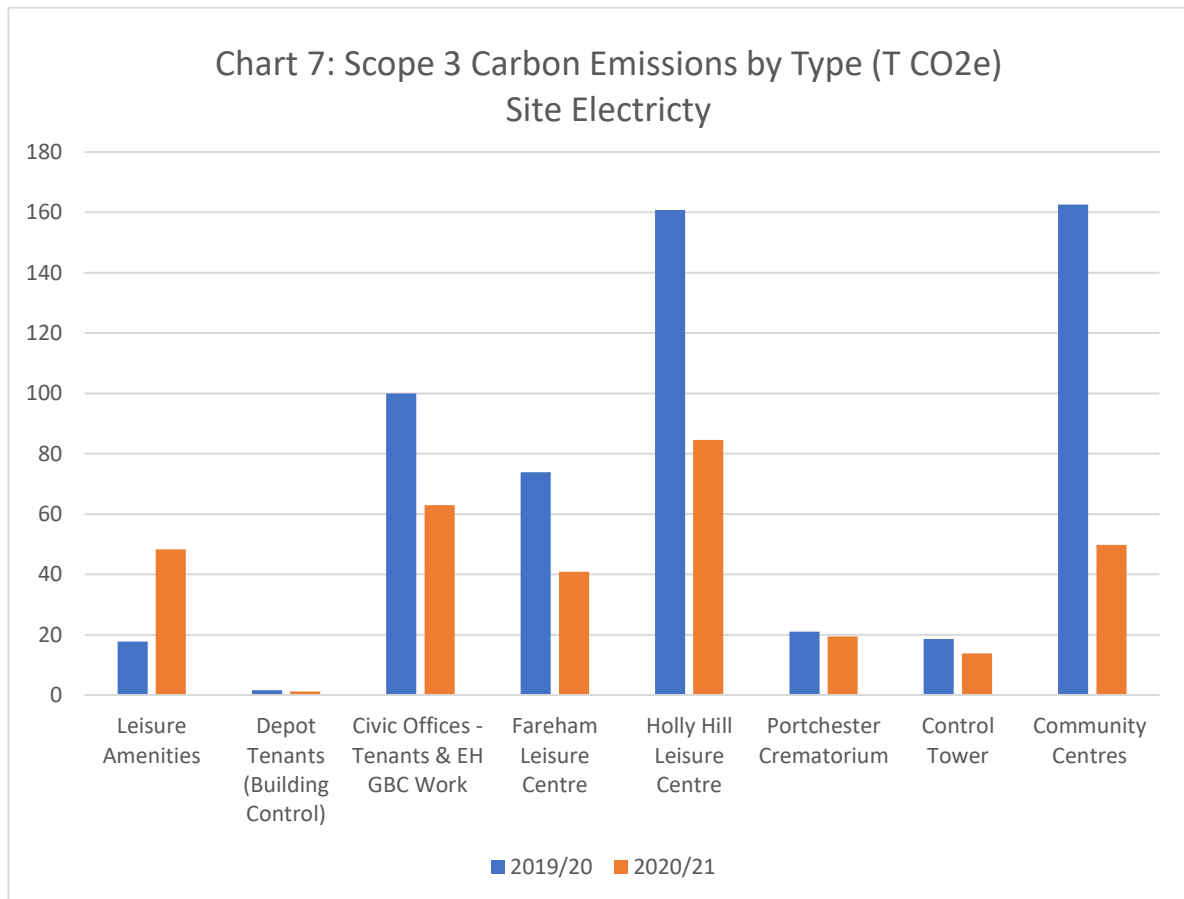
Scope 3 Emissions

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 accounted for 47.31% of the total tCO₂e for 2019/20. Whereas in 2020/21, Scope 3 emissions accounted for only 36.69% of the total tCO₂e.

Scope 3 Emissions – Site Electricity

Charts 7 breakdowns the Scope 3 emissions by site electricity.

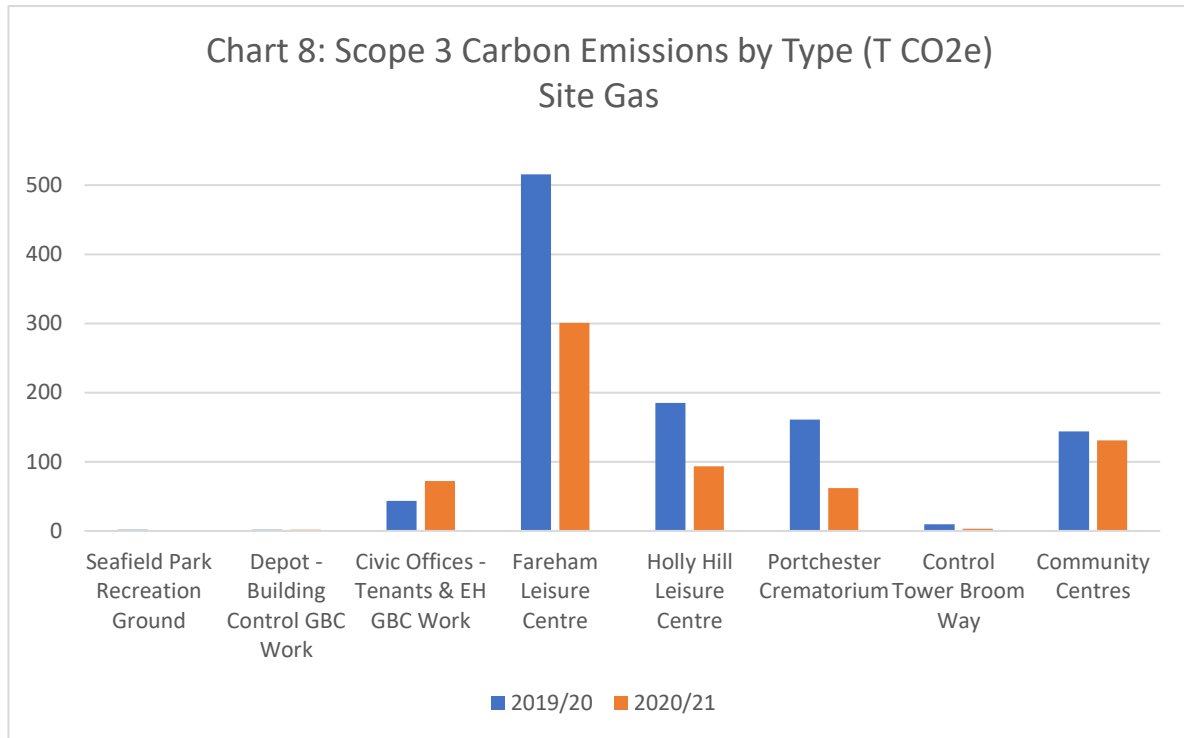


For electricity, the highest contributor to Scope 3 emissions are the community and youth centres. Leisure amenities are sites such as changing rooms in the Council’s recreation grounds. The reason for the sharp increase in their level of emissions is because in 2020/21 there were significantly more emitters included in the calculation than in 2019/20.

As with other emission areas the main reason behind the reductions in most categories would have been the impact of COVID-19 and the resultant reduction in the use of sites e.g. Leisure Centres, during lockdowns.

Scope 3 Emissions – Site Gas

Chart 8 below identifies the gas emissions



Portchester Crematorium follows the two leisure centres as the highest for gas emissions. The emissions for the crematorium are based on the operations undertaken by the crematorium shared by the 4 local authorities.

There is a small increase in the gas usage by Civic Offices – Tenants and Environmental Health Partnership covering the team work for Gosport. This is because of the increase in the use of fresh air in the Civic described earlier. However, the overall trend is downwards for all other sources of carbon emissions when moving from 2019/20 to 2020/21.