



Carbon Footprint Appraisal
for
Salisbury City Council

Assessment Period:
1st April 2021 – 31st March 2022

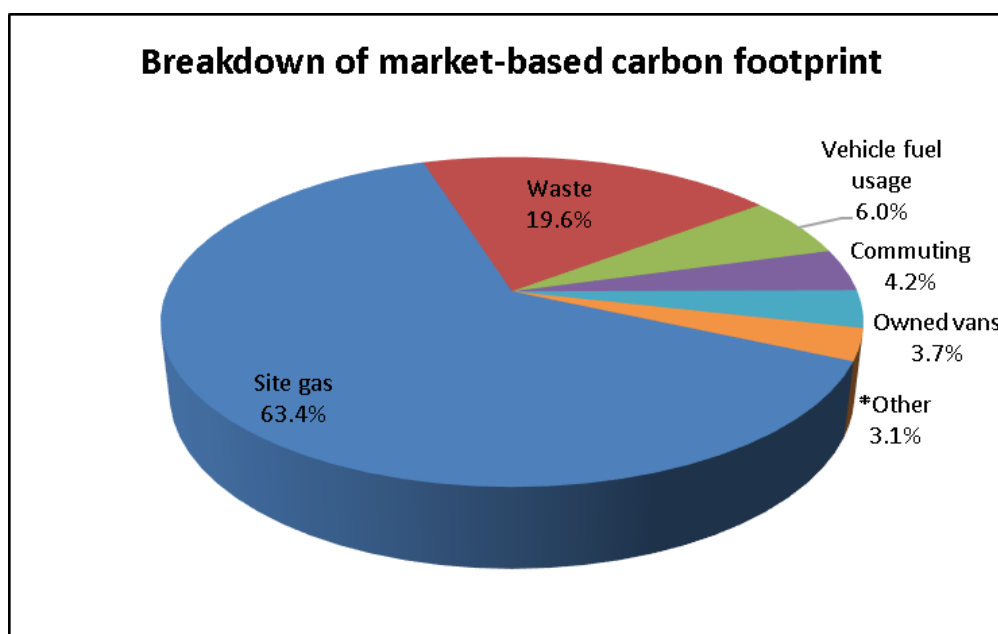
Executive Summary

Current Performance

- Salisbury City Council's total market-based emissions for the year ending 31st March 2022 were 427.98 tCO₂e.
- The most significant emission source was site gas accounting for 63.4% of the council's carbon footprint; this is largely due to natural gas use at the Crematorium.
- Salisbury City Council's emissions per £M turnover have decreased from the baseline year by 15.2%; this is mainly due to the switch to renewable electricity tariffs at all but one of the council's sites, reducing market-based emissions from electricity generation by 97.5%.

Recommendations

- Offset the GHG emissions created within this data period to become carbon neutral.
- Investigate opportunities to reduce site energy consumption across all sites through implementing regular energy monitoring and conducting an energy audit.
- For the crematorium, investigate low carbon means of cremation.
- Carry out a target setting and supply chain screening to facilitate your reduction strategy and increase the scope of your assessment.



*Other includes emissions from paper, outsourced van travel and distribution, employee-owned vehicle travel, site electricity, water (and wastewater), and homeworking.

Metric	Location-based	Market-based
Total Tonnes CO₂e	489.20	427.98
Tonnes of CO₂e per employee	8.43	7.38
Tonnes of CO₂e per £M turnover	81.53	71.33
Tonnes of CO₂e per 1000 residents¹	11.70	10.23

¹ Based on 2021 Census data

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Quality Control

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1. Introduction

1.1. Company Overview

Salisbury City Council was established in April 2009 following local government reorganisation and is based at The Guildhall in Salisbury's historic Market Place. The Council has 23 elected Councillors and is responsible for a variety of services including allotments, Avenue Cemetery, Bemerton Heath Centre, camping & caravan sites, car parks, parks and open spaces, public toilets, and community development.

A company overview is provided below:

- 58 employees
- 24 sites/offices
- 9 logistics vehicles (vans, one outsourced)

1.2. Data supplied for the carbon footprint appraisal

A summary of the data supplied by Salisbury City Council for the appraisal is presented in Annex B.

1.3. Methodology for the Carbon Footprint Appraisal

The methodology document can be downloaded using this link:

https://www.carbonfootprint.com/docs/carbon_footprint_appraisal_-_methodology_document.pdf

2. Calculation Scope and Accuracy

2.1. Scope of this work

Carbon Footprint has assessed the GHG emissions from 1st April 2021 to 31st March 2022 resulting from the energy consumption at Salisbury City Council’s facilities and its business transport activities. The results of the 2020-21 financial year assessment are included within the results section of this report.

Salisbury City Council's baseline year data and emissions can be found in the 2019/20 report. Note: market-based emissions for the baseline year have now been calculated. This information can be found in section 4.1.

2.2. Organisational & reporting boundaries

Figure 1 shows the full boundaries of the *Greenhouse Gas Protocol Corporate and Value Chain Standards*. The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has financial control. This assessment covers the reporting boundaries shown in Table 1, in line with the *Greenhouse Gas Protocol Corporate* guidance.

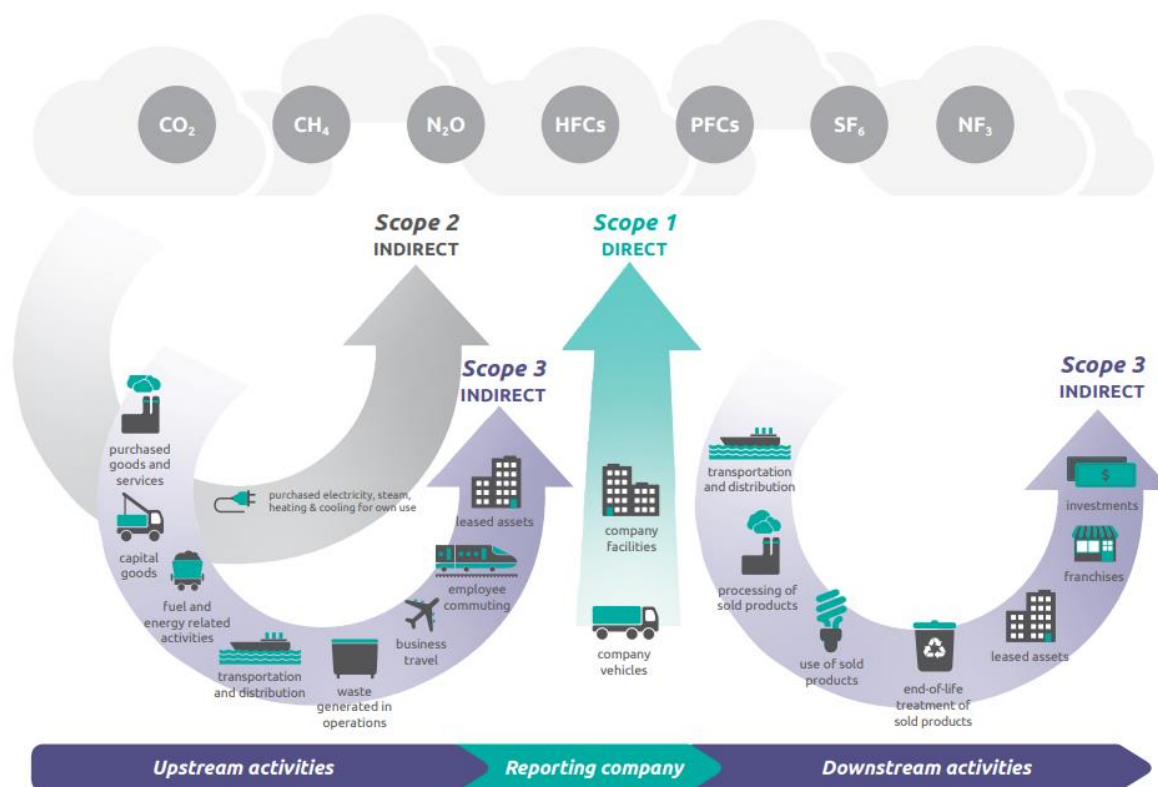


Figure 1: Overview of emissions scopes (GHG Protocol - Scope 3 Calculation Guidance v1.0 - 2013)

Table 1: Salisbury City Council's GHG Assessment boundary based on the Greenhouse Gas Protocol Corporate guidance
(All green rows have been included in this assessment; all grey rows are not applicable; orange rows have been excluded)

Footprint	Scope	Activity	Calculation Type	Completion Status	Justification
Direct	1	Electricity, heat, or steam generated on-site		Not relevant	Not applicable
	1	Natural gas, gas oil, LPG, or coal use attributable to company-owned facilities	Activity Data	Complete	
	1	Company owned vehicle travel	Activity Data	Complete	
	1	Fugitive emissions (incl. Refrigerant gases and AC)	Activity Data	Complete	
Indirect	2	On-site consumption of purchased electricity, heat steam and cooling	Activity Data	Complete	
Indirect	3	1. Purchased goods and services	Activity Data	Partial	Emissions from paper have been assessed. Looking to include further purchased goods and services in the next assessment
	3	2. Capital goods		Excluded	Relevance unknown due to lack of resources - intending to determine
	3	3. Fuel- and energy related activities (not included in scope 1 or scope 2)	Activity Data	Partial	Emissions from the transmissions and distribution of electricity have been included
	3	4. Upstream transportation and distribution		Excluded	Immaterial or not technically/financially feasible
	3	5. Waste generated in operation	Activity Data	Complete	
	3	6. Business travel (not included in scope 1 or scope 2)	Activity Data	Complete	
	3	7. Employee commuting	Activity Data	Complete	
	3	8. Upstream leased assets		Excluded	Immaterial or not technically/financially feasible
	3	9. Downstream transportation and distribution		Not relevant	Not applicable
	3	10. Processing of sold products		Not relevant	Not applicable
	3	11. Use of sold products		Not relevant	Not applicable
	3	12. End-of-life treatment of sold products		Not relevant	Not applicable
	3	13. Downstream leased assets		Excluded	Relevance unknown due to lack of resources - intending to determine
	3	14. Franchises		Not relevant	Not applicable
	3	15. Investments		Not relevant	Not applicable

2.3. Calculation uncertainty assessment & materiality

The result of a carbon footprint calculation varies in accuracy depending on the data set provided. The more accurate the data supplied, the more accurate the final result. Materiality is determined by the percentage contribution of each element to the overall footprint.

Based on the accuracy of the data provided (Table 2), a simple uncertainty analysis has been used to estimate the potential error margin for the appraisal results.

Table 2: Assessment accuracy, materiality, and simple error analysis

Dataset	Data source / comments	Accuracy	Materiality	Uncertainty (%)	Error Margin (tCO _{2e})	Total (tCO _{2e})
Site gas	The 2020-21 data provided was used as a proxy to calculate emissions from the consumption of natural gas due to issues in collecting accurate data on this element for the 2021-22 period. Consumption was provided in kWh.	Estimated	Very High (>40%)	50%	135.8	271.5
Commuting	Estimated based on the number of employees, the sector, and location.	Estimated	Low (1-5%)	50%	8.9	17.8
Waste	Waste serviced provider report giving waste type and weight produced in kg, alongside the disposal method.	Good	Medium (5-20%)	10%	8.4	83.9
Site electricity	Consumption report supplied showing consumption in kWh for all sites for the assessment period. Details on supplier specific emissions were provided.	Very Good	Medium (5-20%)	5%	3.2	64.2
Homeworking	Details were provided on the occupancy type, hours worked per day, days per week and weeks per year.	Estimated	Very Low (<1%)	50%	2.1	4.2
Vehicle fuel usage	Details provided from Salisbury City Council giving the fuel type and quantity in litres.	Very Good	Medium (5-20%)	5%	1.3	25.7
Water (and wastewater)	Consumption report provided showing usage in m ³ . Three sites were estimated based on the supply for sites where data was available.	Good	Very Low (<1%)	10%	0.4	3.6
Employee-owned car travel (grey fleet)	Expense records were used to back calculate mileage.	Good	Very Low (<1%)	10%	0.2	1.6

Dataset	Data source / comments	Accuracy	Materiality	Uncertainty (%)	Error Margin (tCO ₂ e)	Total (tCO ₂ e)
Owned vans	Engine size, fuel type, total distance travelled and annual fuel consumption, alongside emissions rating and vehicle efficiency were all provided.	Excellent	Low (1-5%)	1%	0.2	15.7
Van travel and distribution (outsourced)	The make, model, fuel type and total distance travelled in miles was provided for the one outsourced van used.	Very Good	Very Low (<1%)	5%	<0.1	0.9
Paper	Details provided by Salisbury City Council giving total reams, paper source, and paper size.	Very Good	Very Low (<1%)	5%	<0.1	0.1
Total				+/- 33%	+/- 160.4	489.20



3. Carbon Footprint Results

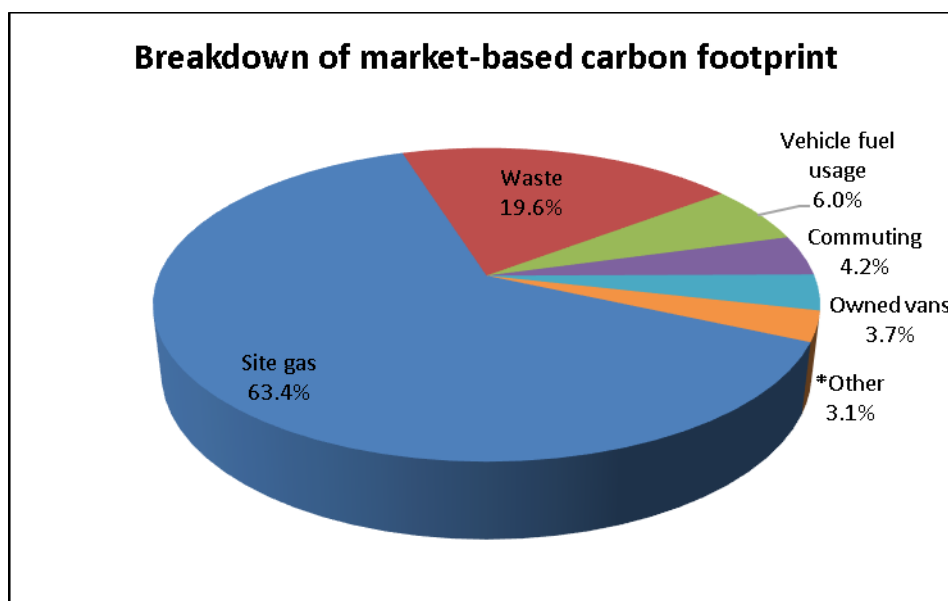
3.1. Summary of results

The total location-based carbon footprint for Salisbury City Council for the period ending 31st March 2022 was 489.20 tonnes CO₂e, and the market-based total is 427.98 tonnes CO₂e.

Table 3: Results of Salisbury City Council's carbon footprint assessment by scope and source activity

Scope	Activity	Location-based	Market-based
Scope 1	Site gas	271.52	271.52
	Vehicle fuel usage	25.71	25.71
	Owned vans	15.72	15.72
Scope 1 Sub Total		312.95	312.95
Scope 2	Electricity generation	58.93	2.76
Scope 2 Sub Total		58.93	2.76
Scope 3	Waste	83.88	83.88
	Commuting	17.81	17.81
	Electricity transmission and distribution	5.22	0.16
	Homeworking	4.23	4.23
	Water (and wastewater)	3.55	3.55
	Employee-owned car travel (grey fleet)	1.60	1.60
	Van travel and distribution (outsourced)	0.93	0.93
	Paper	0.10	0.10
Scope 3 Sub Total		117.32	112.26
Total tonnes of CO₂e		489.20	427.98
Tonnes of CO₂e per employee		8.43	7.38
Tonnes of CO₂e per £M turnover		81.53	71.33
Tonnes of CO₂e per 1000 residents¹		11.70	10.23

¹ Based on 2021 Census data



*Other includes emissions from paper, outsourced van travel and distribution, employee-owned vehicle travel, site electricity, water (and wastewater), and homeworking.

Figure 2: Percentage contribution of each element of Salisbury City Council's market-based carbon footprint

3.2. Emissions from energy usage at site facilities

The table below shows the total market-based emissions at each site operated by Salisbury City Council. Natural gas is the predominant cause of market-based emissions from site facilities, as every site but Unit 12 Netherhampton Road is on a renewable electricity tariff with Pozitive, with only eight sites using natural gas. When comparing this against the 2020-21 assessment, only one site (Salisbury Crematorium) was on a renewable tariff. As expected, the crematorium makes up the largest proportion of these emissions from natural gas use.

Table 4: Market-based CO₂e emissions as a result of site energy consumption

Site	No. of employees	Electricity (location-based) (tCO ₂ e)	Electricity (market-based) (tCO ₂ e)	Natural Gas (tCO ₂ e)	Total Emissions (market-based) (tCO ₂ e)
Salisbury Crematorium, London Road, Salisbury, SP1 3JB	-	24.85	0.00	208.43	208.43
Guildhall Square, Salisbury, SP1 1JH	-	15.88	0.00	28.86	28.86
Toilets & Kitchen, Victoria Park, Castle Road, Salisbury, SP1 3SA	-	2.35	0.00	19.19	19.19
Victoria Park Stratford Road, Salisbury, Wiltshire, SP1 3JJ	-	0.00	0.00	8.21	8.21
60 Pinewood Way, Salisbury, SP2 9HU	5	2.16	0.00	4.14	4.14
Unit 12 Netherhampton Road, Harnham Trading Est, Salisbury, SP2 8NW	17	2.02	2.93	-	2.93
Community Room, 114 Carmelite Way, Salisbury, SP1 2HW	-	0.34	0.00	2.67	2.67

Site	No. of employees	Electricity (location-based) (tCO ₂ e)	Electricity (market-based) (tCO ₂ e)	Natural Gas (tCO ₂ e)	Total Emissions (market-based) (tCO ₂ e)
Sports Pavilion, Bishopdown Road, Salisbury, SP1 3EE	-	<0.01	0.00	0.01	<0.02
58 Pinewood Way, Salisbury, SP2 9HU	-	1.72	0.00	-	0.00
Unit 36 Netherhampton Road, Harnham Trading Est, Salisbury, SP2 8NW	-	0.40	0.00	-	0.00
18 College Street, Salisbury, SP1 3AL (closed 21/10/21)	-	0.13	0.00	-	0.00
The Market Stalls, Guildhall Square, Salisbury, SP1 1JH	-	4.66	0.00	-	0.00
Hudsons Field, Castle Road, Salisbury, SP1 3RR	-	1.24	0.00	-	0.00
Pavilion, The Portway, Stratford Sub Castle, Salisbury, SP1 3LD	-	0.03	0.00	-	0.00
Pavilion, Stratford Road, Salisbury, SP1 3JH	-	1.82	0.00	-	0.00
Public Conveniences, Lower Road, Salisbury, SP2 9NW	-	0.17	0.00	-	0.00
Toilet Block, Chhcl Gdn, Southampton Road, Salisbury, SP1 2LE	-	1.54	0.00	-	0.00
Lush Car Park, Crane Bridge Road, Salisbury, SP2 7TD	-	1.57	0.00	-	0.00
Public Toilets, Fisherton Recreation Ground, Westminster Road, Salisbury, SP2 7DG	-	0.10	0.00	-	0.00
Gardeners Asc'n Bld, Westminster Road, Salisbury, SP2 7DG	-	0.08	0.00	-	0.00
58a Pinewood Way, Salisbury, SP2 9HU	-	1.46	0.00	-	0.00
The Guildhall, Market Place, Salisbury, SP2 8NW	36	0.38	0.00	-	0.00
Sports Pavilion, Harnham Road, Salisbury, SP2 8JG	-	0.27	0.00	-	0.00
Plot 1 (Dxz469a01), Queen Street, Guildhall Square, Salisbury, SP1 1JH	-	0.97	0.00	-	0.00
Total	58	64.15	2.93	271.52	274.45

*Totals include emissions from generation, transmission, and distribution

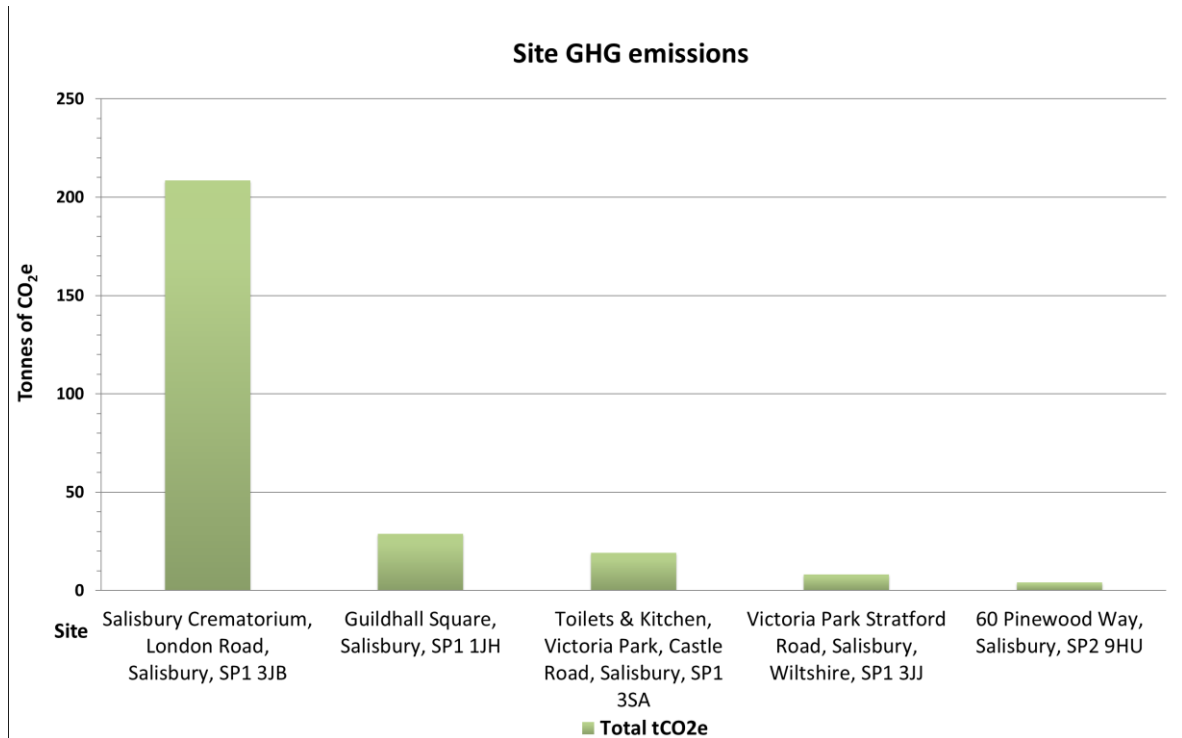


Figure 3: CO₂e emissions from the top 5 emitting sites



4. Comparison and Benchmarking

4.1. Comparison to base year emissions

Table 5 below shows Salisbury City Council's emissions calculated for the 2020-21 period, alongside the results from the most current assessment and baseline year assessment for comparison.

Key points of observation:

- Emissions from waste have increased significantly since the baseline year due to the quantity of waste bound for landfill increasing. In the 2019-20 assessment, 175.75 tonnes of waste were produced, of which 0.4 tonnes were sent to landfill. In the 2021-22 period 297.13 tonnes of waste were produced, of which 177.22 tonnes were sent to landfill. This is a substantial increase and hence emissions from the processing and disposal of waste increased accordingly.
- Emissions from owned vans have increased as the distance travelled by the vehicle fleet has increased. In the 2019-20 assessment, 12 vehicles travelled a total of 7,237.11 miles, whereas in the 2021-22 assessment this has increased to 34,656.20 miles (+378.87%).

Table 5: Salisbury City Council's carbon footprint comparison and percentage change

Element	Baseline Year 2019/20	Previous Year 2020/21	Current Year 2021/22	Change on baseline year (%)	Change on previous year (%)
Site electricity (location-based)	88.60	66.66	64.15	-27.6%	-3.8%
Site electricity (market-based)	117.96 ²	27.97	2.93	-97.5%	-89.5%
Site gas	307.44	272.57	271.52	-11.7%	-0.4%
Refrigerants	17.23	0.00	0.00	-100.0%	0.0%
Vehicle fuel usage	19.80	28.21	25.71	+29.9%	-8.9%
Employee-owned car travel (grey fleet)	2.76	2.15	1.60	-41.8%	-25.4%
Taxi travel	<0.01	-	-	-100.0%	0.0%
Owned vans	2.93	17.15	15.72	+436.4%	-8.3%
Van travel and distribution (outsourced)	-	-	0.93	n/a	0.0%
Waste	3.27	37.35 ²	83.88 ³	+2,461.8%	+124.6%
Water (and wastewater)	14.80	2.44	3.55	-76.0%	+45.5%
Home-workers	*	4.29	4.23	n/a	-1.3%
Paper	1.11	0.11	0.10	-91.1%	-6.0%
Commuting	*	18.05	17.81	n/a	-1.3%
Total Tonnes of CO₂e (location-based)	456.82	448.98	489.20	+7.1%	+9.0%
- Tonnes of CO₂e per employee	7.14	7.74	8.43	+18.2%	+9.0%
- Tonnes of CO₂e per £M turnover	96.17	89.80	81.53	-15.2%	-9.2%
- Tonnes of CO₂e per 1000 residents	11.36	10.74¹	11.70¹	+3.0%	+8.9%

*Not assessed.

² This is an update to the baseline year calculation, using historic data provided.

³ The scope of this element has been expanded and is to be further investigated, with plans in place for Salisbury City Council to take operational control over the element in the future. This will likely require a re-baseline of emissions in the next assessment.

¹ Based on 2021 Census data

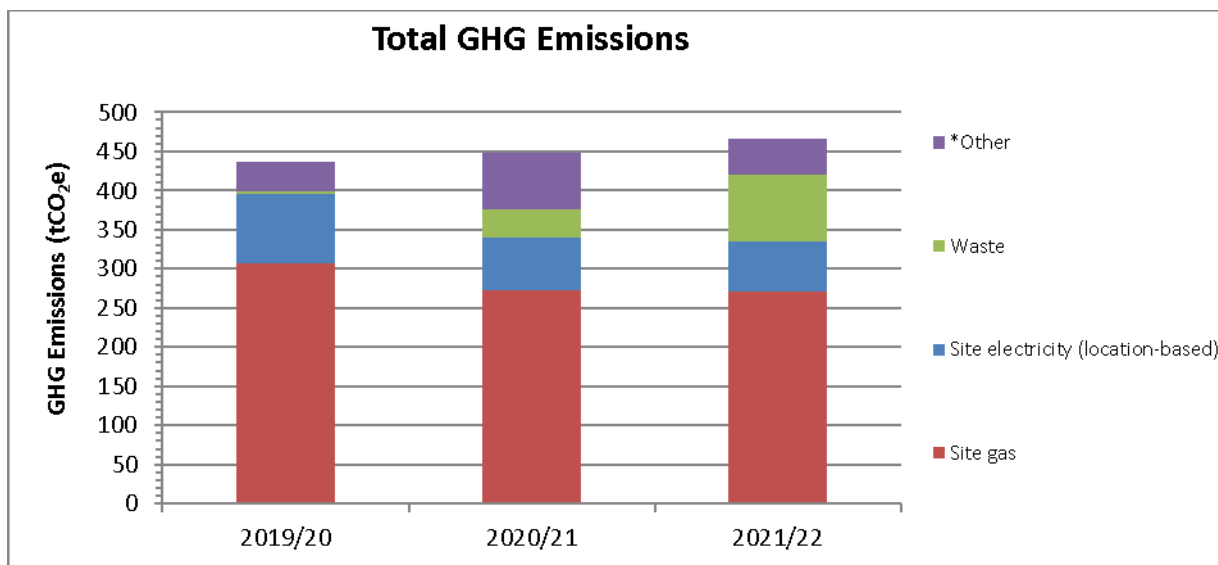


Figure 3: Detailed emissions comparison for the various aspects of Salisbury City Council’s location-based emissions

Benchmarked against employee numbers and company turnover (adjusted for inflation) the carbon emissions statistics show a decrease in tonnes of CO₂e per £M turnover since 2019/20.

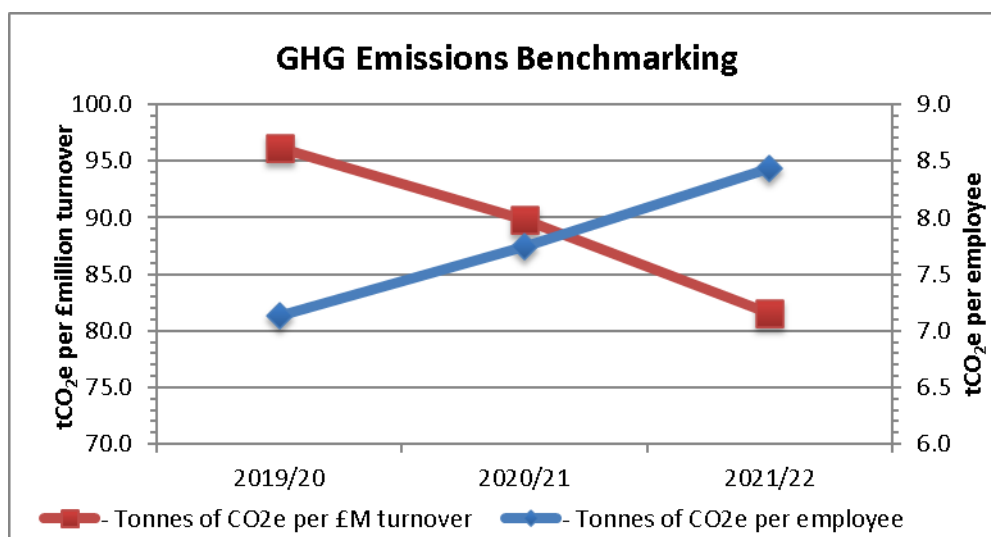


Figure 4: Carbon footprint of Salisbury City Council for internal benchmarks

4.2. External benchmarking

Companies often like to benchmark themselves against similar organisation in their sector. Carbon Footprint Ltd has an online tool you can use to find publicly available information on other organisations that have reported their emission.

The Carbon Benchmarking Tool is free to use and can be found online at:

https://www.carbonfootprint.com/carbon_benchmark.html

Many companies report Scope 1 & 2 emissions for comparison against others as elements included in Scope 3 can vary greatly. Table 6 summarises the emissions across these Scopes, along with metrics showing emissions per unit turnover and per employee, to help your benchmarking.

Table 6: Salisbury City Council's benchmarked GHG emissions

Year/Element	Location-based	Market-based
Turnover in £million	6.00	6.00
Total number of employees	113	113
Tonnes of CO ₂ e	489.20	427.98
Tonnes of CO ₂ e per £ million	81.53	71.33
Tonnes of CO ₂ e per employee	8.43	7.38
Tonnes of CO ₂ e per 1000 residents ¹	11.70	10.23
Scope 1 & 2 Emissions		
Scope 1 & 2 tonnes CO₂e	371.89	315.71
Scope 1 & 2 tonnes CO₂e per £ million	61.98	52.62
Scope 1 & 2 tonnes CO₂e per employee	3.29	2.79
Scope 1 & 2 tonnes CO₂e per 1000 residents¹	8.89	7.55

¹ Based on 2021 Census data

5. Conclusion

Salisbury City Council, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and has achieved a successful assessment of both their 2020-21 and 2021-22 emissions, alongside a reduction in emissions per £M turnover against both the baseline and previous year's assessment.

By achieving this Salisbury City Council has qualified to use the Carbon Footprint Standard branding. This can be used on all marketing materials, including website and customer tender documents, to demonstrate your carbon management achievements.



6. Recommendations

6.1. Carbon & sustainability targets

6.1.1. Target setting

Salisbury City Council should set targets based on per employee and/or per £M turnover, which will account for business growth. Many organisations are now setting targets based on the Science Based Target initiative. Typical targets cover mid-term and longer terms goals such as:

- A 50% reduction in emissions per £M turnover/employee by 2030.
- A 90% reduction in emissions per £M turnover/employee by 2045.

All targets set should be reviewed regularly and amended accordingly (i.e. target increased if it is met ahead of schedule). A clear roadmap for individual emissions sources should be in place. This will ensure the strategy for reducing CO₂e emissions and tracking toward a net zero target is appropriate for the business.

A hyperlink to Carbon Footprint Ltd's whitepaper on target setting can be found below:

https://www.carbonfootprint.com/docs/2021_12_cfp_practical_target_setting_-_white_paper_v10.pdf

6.1.2. Expand the Scope of the Assessment

We recommend that the scope of the assessment is expanded in future to include an assessment of:

- 2. Capital goods
- 3. Fuel- and energy related activities (not included in scope 1 or scope 2) (Well-to-Tank)
- 4. Upstream transportation and distribution
- 8. Upstream leased assets
- 13. Downstream leased assets

6.1.3. Improving the accuracy of future carbon footprint assessments

The estimated overall error margin is +/- 33% (160.4 tCO₂e).

To improve the accuracy of future assessments, we recommend the following:

- For natural gas, ensure consumption reports provided only cover the period being assessed, to avoid the need to apportion data which extends the period, or use previous year's data as a proxy.
- When supplying information on site energy consumption via consumption reports, reconcile the data for 'sites' which are located within the same building/unit together to avoid emissions being reported at the wrong location.

- When recording commuting details, ask employees to fill out the mode of transport, distance travelled, fuel type, and engine size (for cars) to also be recorded in addition to the number of employees and total distance travelled.
- Implement measures in regard to data storage and collection to ensure that external issues do not have knock on effects on the availability of data for reporting. This should include consistency in the location of stored documents, naming conventions, etc.

6.2. Reducing emissions

To reduce GHG emissions, we recommend the following:

- Offset the calculated footprint by supporting climate change solutions around the world to become a 'Carbon Neutral Organisation'.
- For the crematorium, begin to investigate and transition to low carbon means of cremation. This should be aligned with the ICCM Burial and Cremation Educational Trust's framework for adopting environmental cremation processes via targets and staged adoption.
- Investigate opportunities to reduce site energy consumption across your sites. This could be done through conducting an onsite energy audit at your most energy intensive site. Carbon Footprint Ltd can complete site energy audit for you and provide recommendations for saving energy.
- Investigate swapping owned sites from gas-powered heating to sustainable alternatives such as hydrogen, solar thermal, and air-source heat pumps.
- Consider conducting a feasibility assessment to identify potential opportunities to install on-site renewable energy generation. A typical payback period for solar photovoltaic (PV) panels is around 8 years (the business case for these may be far stronger given steeply rising energy prices).
- Continue switching your final site to renewable energy tariff to reduce your market-based emissions from electricity consumption to 0. When acquiring new sites, ensure measures are in place to move this onto a renewable tariff as soon as possible.
- Explore the possibility of utilising the heat by-product of the cremation process to produce electricity at the crematorium site.
- Encourage employees to commute using more sustainable forms of transport, such as public transport, carpool schemes, and cycling to work initiatives. A good way to achieve this is to implement a cash opt out scheme for the use of public transportation within your business.

6.3. Carbon offsetting

Carbon offsetting is a great way to compensate for the emissions that you cannot reduce, by funding an equivalent carbon dioxide saving elsewhere.

We can provide both UK-based and international projects for you to support. The majority of projects focus on the development of renewable energy in developing countries, however there are others which have a greater focus on social benefits as well as environmental benefits. Further detail on the type and specific projects that we currently have in our portfolio can be provided on request or be found at: <http://www.carbonfootprint.com/carbonoffsetprojects.html>.

The cost of offsetting has reduced considerably over recent times. This could be readily funded via the internal carbon pricing system.

Example of Carbon Offsetting Projects:



Tree Planting in UK Schools



Avoided Deforestation in the Brazilian Amazon



Clean Water in Rwanda