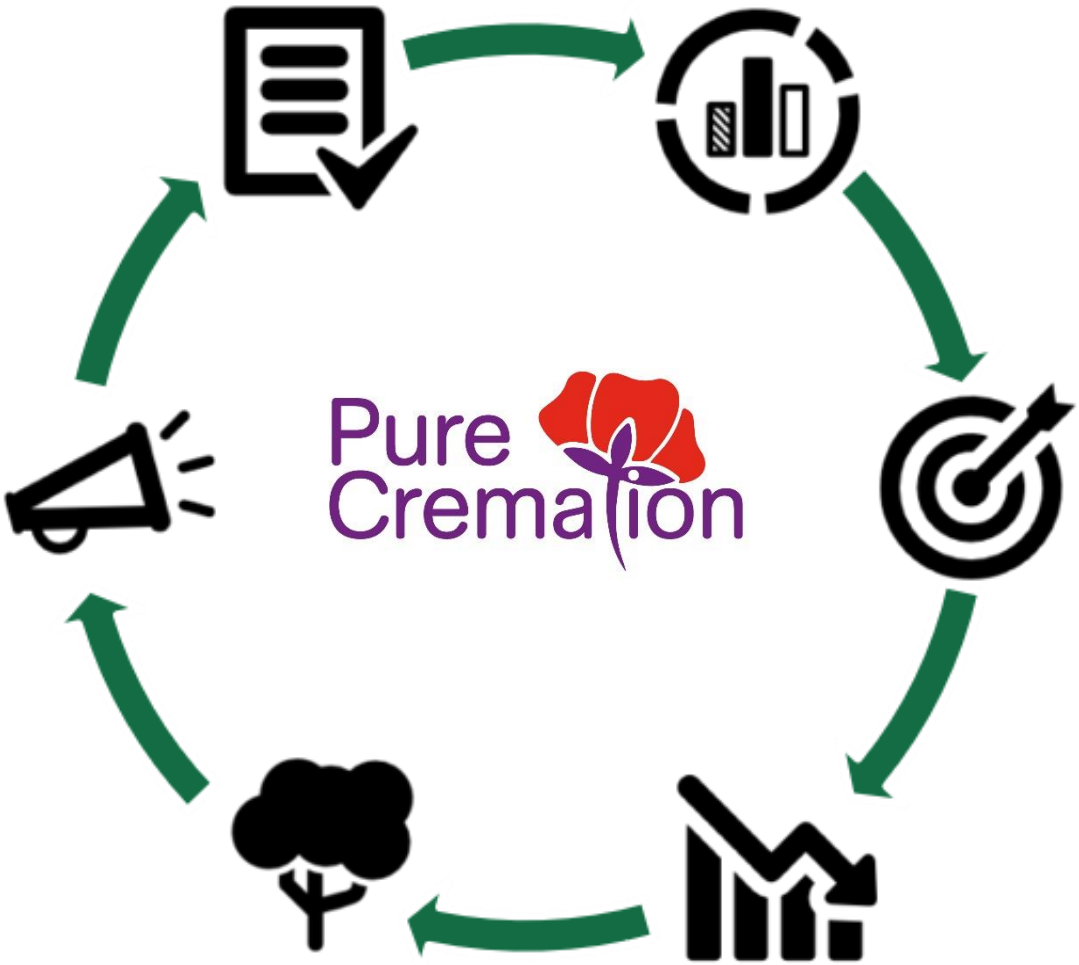
Carbon Footprint Appraisal Report



Carbon Footprint Appraisal for Pure Cremation

Assessment Period:
1st January 2020 – 31st December 2020

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Executive Summary

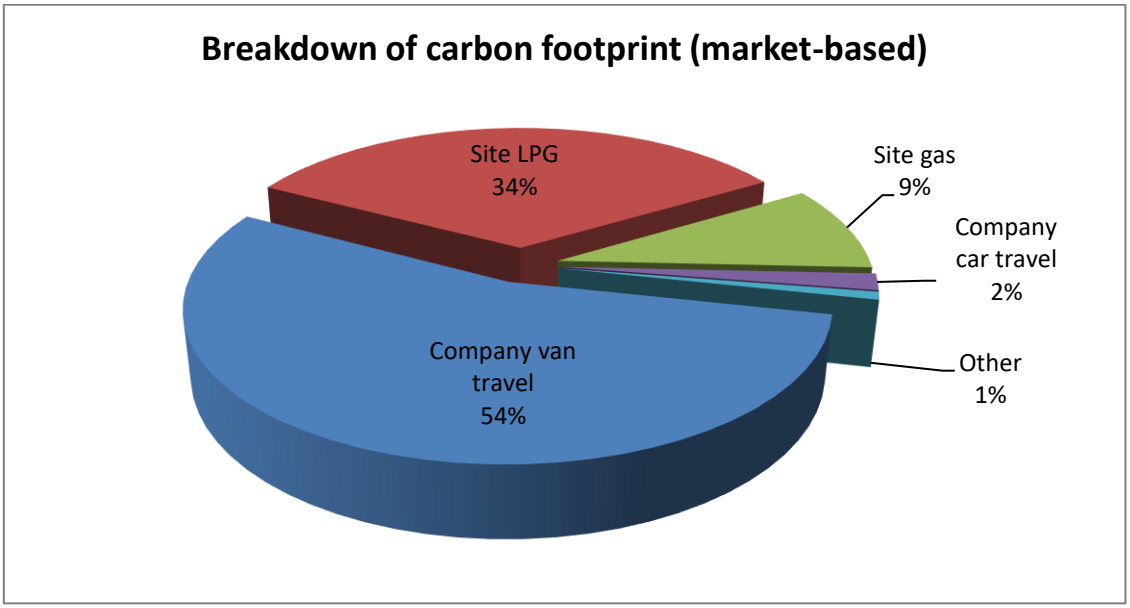
Carbon Footprint Ltd has assessed the greenhouse gas (GHG) emissions of Pure Cremation from 1st January 2020 to 31st December 2020 based on a dataset provided by the company.

Current Performance

- Pure Cremation's total market-based footprint is 510.86 tCO_2e; the total location-based footprint is 585.36 tCO_2e.
- The majority of emissions can be attributed to company van travel (54%) and site energy (43% combined).

Recommendations

- **Offset the GHG emissions created within this data period to maintain your carbon neutrality**
- Switch to a renewable energy at your Scotland site to reduce emissions associated with electricity use.
- Ensure servicing of crematorium equipment takes place regularly to ensure the facility is run at its most efficient.



*Other includes emissions from flights, site electricity, home-workers, lorry freight (owned) and ferry travel.

Metric	Baseline Year (2019)	Current Year (2020)	% change from baseline year
Total Market-based Tonnes CO_2e	380.03	510.81	34.4%
Tonnes of CO_2e per employee[1]	9.05	8.81	-2.7%
Tonnes of CO_2e per £M turnover[1]	38.00	33.73	-11.2%
Tonnes of CO_2e per cremation[1]	0.16	0.10	-37.5%

[1] Based on market-based total tCO_2e.

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Quality Control

Report issue number:	1.0
Date:	07 November 2022
Calculations completed by:	Zoe Booth
Calculations reviewed by:	Rebecca Pattison
Report produced by:	Zoe Booth
Director approval:	John Buckley

1 Introduction

1.1 Company Overview

Pure Cremation Group (Pure Cremation) is the UK's leading direct cremation specialist. They have over 30 years' experience of serving the bereaved. They own and run Charlton Park Crematorium in Andover, an office site in Scotland, as well as providing professionalism and care to its clients through its funeral service.

1.2 Pure Cremation's Carbon Management Journey

Carbon Footprint provides a simple six step annual journey to enhance your sustainability credentials whilst complying to best practice and differentiating your brand. Pure Cremationhas completed the first step of its carbon management journey.

The purpose of this report is to:

- Summarise the results of the carbon footprint assessment.
- Provide practical recommendations to enhance your sustainability programme and reduce emissions.

1.3 What is a carbon footprint?

A carbon footprint is a measure of the impact our activities have on the environment in terms of the amount of greenhouse gases produced, measured in units of carbon dioxide equivalents (CO_2e). A carbon footprint is made up of two parts, direct emissions and indirect emissions.

1. **Direct emissions:**
   Direct emissions are produced by sources which are owned or controlled by the reporting organisation and include electricity use, burning oil or gas for heating, and fuel consumption as a result of business travel or distribution. Direct emissions correspond to elements within scopes 1, 2 and 3 of the World Resources Institute GHG Protocol, as indicated in Table 1.

Table 1: Direct emissions sources

Footprint	Activity	Scope
Direct	Electricity, heat or steam generated on-site	1
	Natural gas, gas oil, LPG or coal use attributable to company owned facilities	1
	Company-owned vehicle travel	1
	Production of any of the six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs and SF_6)	1

2. **Indirect emissions:**
   Indirect emissions result from a company's upstream and downstream activities. These are typically from outsourced/contract manufacturing, and products and the services offered by the organisation. Indirect emissions correspond to scope 3 of the World Resources Institute GHG Protocol excluding employee business travel as indicated in Table 2.

Table 2: Indirect emissions sources

Footprint	Activity	Scope
Indirect	Consumption of purchased electricity, heat steam and cooling	2
	Employee business travel (using transport not owned by the company)	3
	Employee commuting	3
	Transportation of an organisation's products, materials or waste by another organisation	3
	Outsourced activities, contract manufacturing and franchises	3
	GHG emissions from waste generated by the organisation but managed by another organisation	3
	GHG emissions from the use and end of life phases of the organisation's products and services	3
	GHG emissions arising from the production and distribution of energy products, other than electricity, steam and heat, consumed by the organisation	3
	GHG emissions from the production of purchased raw or primary materials	3
	GHG emissions arising from the transmission and distribution of purchased electricity	3

For businesses, the assessment focuses on direct emissions, as these lie under the control of the organisation. However, we ask companies to recognise that there is an indirect emissions footprint and select suppliers based on their environmental credentials alongside price and performance.

1.4 Why is it important?

Over the past two decades the effects of climate change have accelerated. Considerable evidence exists proving climate change has been exacerbated by human activity. Changes in our post-industrial lifestyles have altered the chemical composition of the atmosphere, generating a build-up of greenhouse gases – primarily carbon dioxide, methane, and nitrous oxide levels – raising the average global temperature.

The consequences are already evident and will continue to worsen unless significant action is taken and quickly**. Sea level will continue to rise and local climate conditions to be altered, causing an increase in extreme weather events, affecting forests, crop yields, and water supplies. This can lead to homelessness, famine and conflict as resources become scarcer.**

Environmental pollution and climate change affect human health, accelerate species extinction, and disrupt vital ecosystems. **Ambient (outdoor) air pollution is responsible for at least 4 million human**

deaths each year[2]. In addition to this, poor air quality and issues of clean water availability leave us more susceptible to diseases such as COVID-19. Combined with rises in temperature and deforestation (from direct human action and climate change related events), resulting in the displacement of animals from their native habitats, the frequency of disease occurrence will increase, as disease will transfer from animals to other geographical areas and larger human populations.

It is vital that all individuals, businesses, organisations and governments work towards the common goal of reducing greenhouse gas emissions. This carbon footprint assessment will enable Pure Cremation to continue doing its bit by monitoring, reducing and offsetting its emissions.

1.5 Assessment Methodology

This GHG report has been prepared in accordance with Part 1 of ISO 14064: 2018. The GHG inventory, report, or statement has not been verified.

This standard requires the estimation of likely error margin based on a simple error analysis, to identify uncertainty in the calculations. Our simple error analysis provides a level of uncertainty based on the accuracy of the data provided. This shows the error for each emissions source, as well as the sum of these divided by the total emissions, to produce a total percentage error.

The GHG calculation and report has also been prepared in accordance with The Greenhouse Gas Protocol Corporate Standard. The GHG inventory, report, or assertion has not been separately verified.

Location-based approach – reflects the emissions from electricity coming from the national grid energy supply.

Market-based approach – reflects the emissions from the electricity sources or products that the consumer has specifically chosen.

1.6 Calculation Methodology

The carbon footprint appraisal is derived from a combination of client data collection and data computation by Carbon Footprint's analysts.

Carbon Footprint's analysts have calculated Pure Cremation's footprint using the 2020 conversion factors developed by the UK Department for Environment, Food and Rural Affairs (Defra) and the Department for Business, Energy & Industrial Strategy (BEIS). These factors are multiplied with the company's GHG activity data. Carbon Footprint has selected this preferred method of calculation as a government recognised approach and uses data which is realistically available from the client, particularly when direct monitoring is either unavailable or prohibitively expensive.

Additional methodology information is presented in Annex A

[2] World Health Organisation. https://www.who.int/health-topics/air-pollution

1.7 Data supplied for the carbon footprint appraisal

A summary of the data supplied by Pure Cremation for the appraisal is presented in Annex B.

1.8 Abbreviations

BEIS	Department for Business Energy & Industrial Strategy
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EV	Electric Vehicle
GHG	Greenhouse Gas
ISO	International Standards Organisation
km	Kilometres
kWh	Kilowatt Hours
PHEV	Plug-in Hybrid Electric Vehicle

2 Calculation scope and accuracy

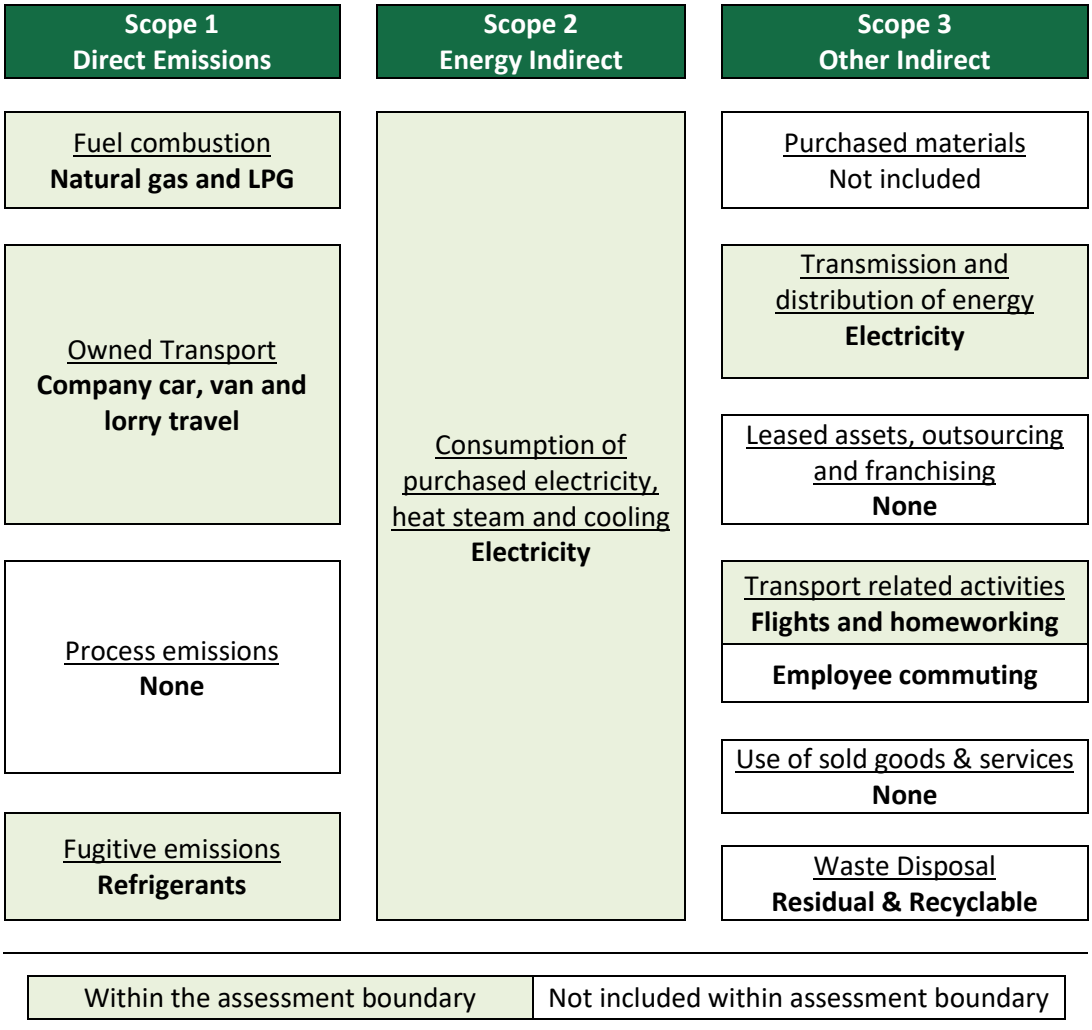
2.1 Scope of this work

Carbon Footprint has assessed the GHG emissions from 1st January 2020 to 31st December 2020 resulting from the energy consumption at Pure Cremation's facilities and its business transport activities. Pure Cremation's baseline year data and emissions can be found in the 2019 report

2.2 Organisational & reporting boundaries

The organisation has accounted for all quantified GHG emissions and/or removals from facilities over which it has operational control. The assessment covers the following reporting boundaries:

Figure 1: Assessment boundary



Indirect GHG sources that are outside the assessment boundary have been excluded from quantification as it is not technically feasible or cost effective, to include these in the GHG assessment.

2.3 Calculation accuracy & 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 which will subsequently allow for better targeting of areas where improvements can be made. Materiality is determined by the percentage contribution of each element to the overall footprint.

The data provided is derived from energy bills, expenses claims and data collected by Pure Cremation (Table 3). Based on the accuracy of the data provided, a simple error analysis has been used to estimate the error margin for the appraisal results.

Table 3: Assessment accuracy, materiality and simple error analysis

Dataset	Data source / comments	Accuracy	Materiality	Uncertainty	Error Margin (tCO_2e)[3]
Company van travel	Mileages provided for all vans based on data from their fleet tracker.	Very Good	Very High (>40%)	5%	13.9
Site LPG	Data provided based on litres of LPG purchased.	Very Good	High (20-40%)	5%	8.6
Site gas	Gas consumption (kWh/m^3) provided based on bills. This is used for heating at sites.	Very Good	Medium (5-20%)	5%	2.4
Company car travel	Mileage provided based on fleet tracker data.	Very Good	Low (1-5%)	5%	0.5
Flights	Origin and destination airports, along with cabin class was provided for all flights using data from the online booking system.	Excellent	Very Low (<1%)	1%	<0.1
Site electricity	Electricity consumption (kWh) provided based on energy bills. Renewable energy is supplied by Opus energy.	Very Good	Very Low (<1%)	5%	0.1
Home-workers	Details of the number of homeworkers, number of hours and weeks worked at home were provided.	Average	Very Low (<1%)	50%	0.6
Lorry freight (owned)	The lorry was purchased in 2020 to transport coffins to and from their third-party storage facility. Distance to facility was used, along with an estimate of the number of trips taken. There were no formal records of trips taken or weight transported.	Poor	Very Low (<1%)	90%	<0.1

[3] Estimated error margin figures are for market-based emissions.

Dataset	Data source / comments	Accuracy	Materiality	Uncertainty	Error Margin (tCO_2e)[3]
Ferry travel	Origin and destination ports were provided, along with passenger type.	Excellent	Very Low (<1%)	1%	<0.1
Total for market-based tCO_2e				**+/- 5%**	**+/- 26.0**
Total for location-based tCO_2e				**+/- 5%**	**+/- 29.7**

To improve accuracy for future assessments, please see recommendations provided in Section 5.

3 Carbon Footprint Results

3.1 Summary of results

The total market-based carbon footprint for Pure Cremation for the period ending 31st December 2020 was 510.86 tonnes CO_2e. Table 4 provide a summary of results for Pure Cremation's carbon footprint calculation by scope and source activity.

Table 4: Results of Pure Cremation's carbon footprint assessment by scope and source activity

Scope	Activity	Market-based (tCO_2e)	Location-based (tCO_2e)
Scope 1	Company van travel	277.86	277.86
	Site LPG	172.43	172.43
	Site gas	47.19	47.19
	Company car travel	9.10	9.10
	Lorry freight (owned)	0.03	0.03
Scope 1 Sub Total		**506.62**	**506.62**
Scope 2	Electricity generation	1.24	69.82
Scope 2 Sub Total		**1.24**	**69.82**
Scope 3	Electricity transmission & distribution	0.08	6.00
	Flights	1.79	1.79
	Home-workers	1.12	1.12
	Ferry travel	0.02	0.02
Scope 3 Sub Total		**3.00**	**8.93**
Total tonnes of CO_2e		**510.86**	**585.36**
Tonnes of CO_2e per employee		**8.81**	**10.09**
Tonnes of CO_2e per £M turnover		**33.73**	**38.65**
Tonnes of CO_2e per cremation		**0.10**	**0.11**

Company van travel and LPG account for the majority of market-based GHG emissions at 54% and 34%, respectively (Figures 2 &3). These are both essential activities for the business model as the vans are required for transportation of stock and LPG is used to carry out cremations. As a result, it is not possible to stop the activities themselves. However, to reduce associated GHG emissions, Pure Cremation should look to take measure such as **switching to electric vans**, and ensuring that **crematorium equipment is serviced regularly** to ensure it is running efficiently. They should also consider the feasibility of using a district heating/waste heat recovery model within their own Charlton Park site to **distribute waste-heat from the Crematorium to all buildings on-site, preventing the need for natural gas** used for heating at this site. It should be noted that Charlton Park accounts for 99% of the GHG emissions associated with natural gas consumption.

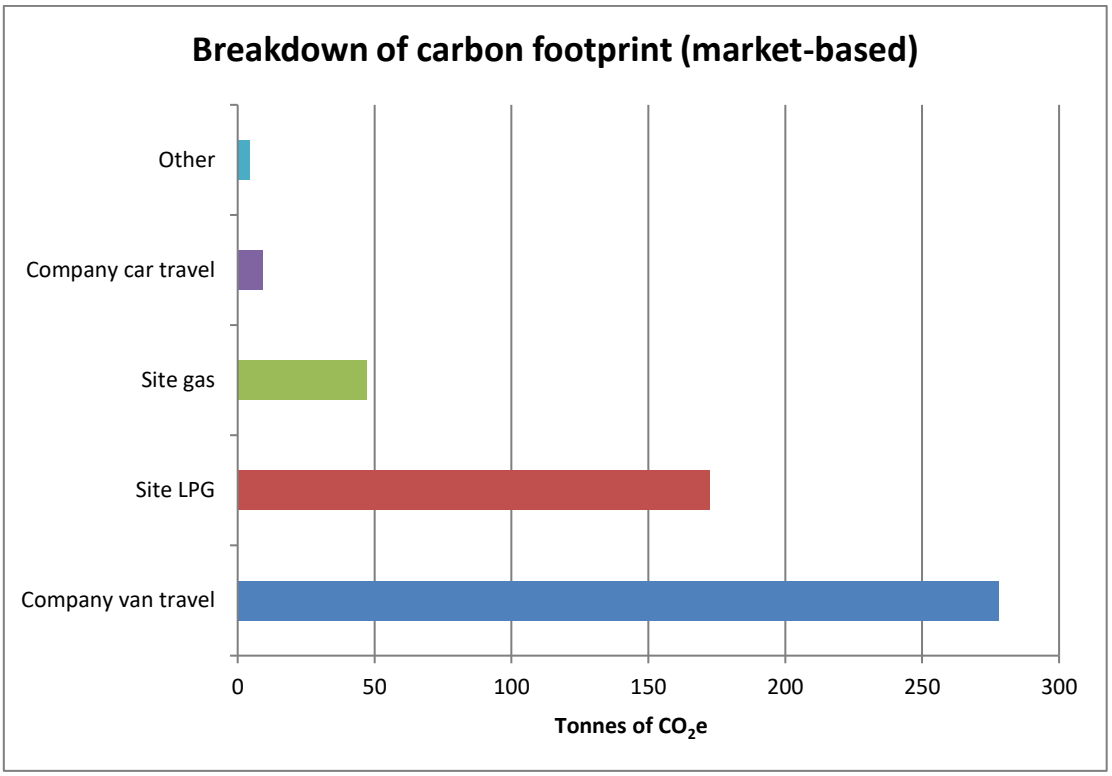


Figure 2: Contribution in tonnes of CO_2e of each element of Pure Cremation's carbon footprint

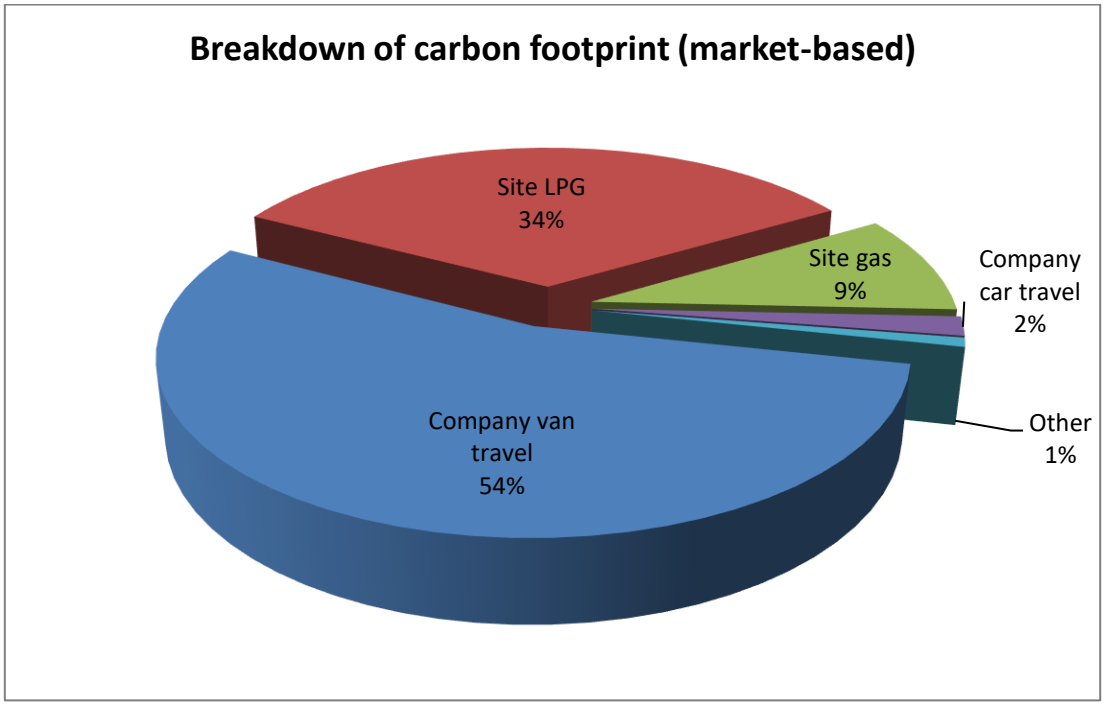


Figure 3: Percentage contribution of each element of Pure Cremation's carbon footprint

*Other includes emissions from flights, site electricity, home-workers, lorry freight (owned) and ferry travel.

When analysing the location-based GHG emissions[4], site electricity accounts for 13% of emissions (Figure 4). However, as Pure Cremation has a renewable electricity tariff at their Charlton Park crematorium, which has a higher energy consumption than the Scotland office, electricity accounts for an insignificant proportion of the overall footprint within the market-based calculations (0.26%).

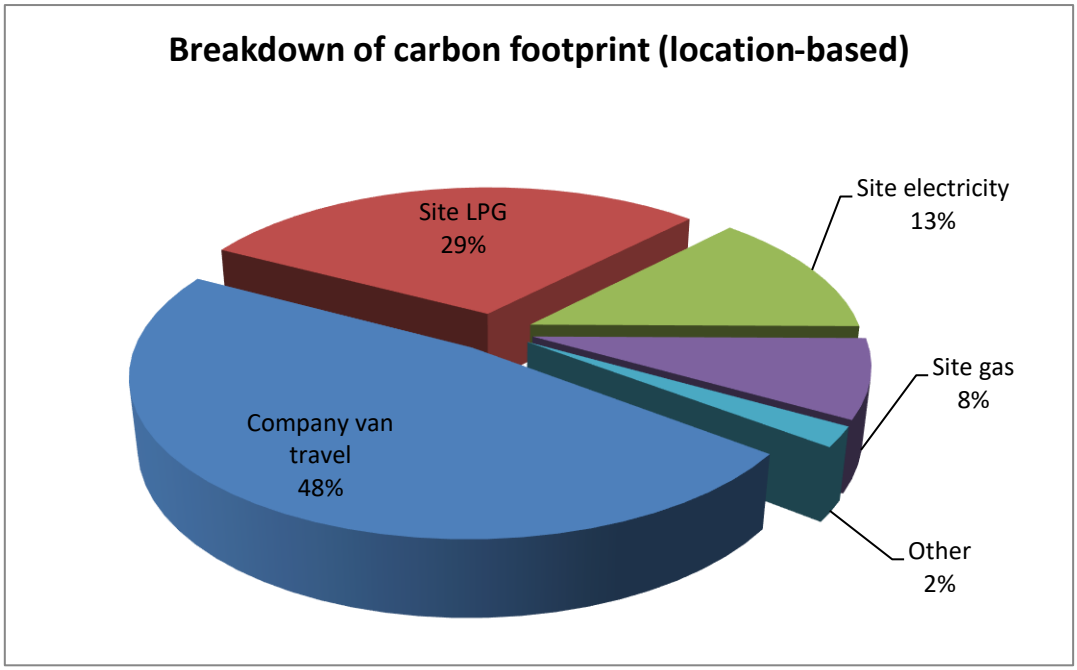


Figure 4: Percentage contribution of each element of Pure Cremation's carbon footprint

[4] Location-based figures use national average electricity factors. Market-based figures represent the customers tariff choices.

4 Comparison and Benchmarking

4.1 Comparison to base year emissions

Pure Cremation's baseline year data and emissions can be found in the 2019 report.

Table 5 shows historical market-based emissions per activity, as well as Pure Cremation's total carbon footprint and carbon intensity metrics (e.g. tonnes of CO_2e per employee and tonnes of CO_2e per £M turnover).

Table 5: Pure Cremation's carbon footprint comparison and percentage change

Element	Market-based Baseline Year (2019)	Market-based Current Year (2020)	% change on baseline year
Company van travel	175.72	277.86	58.1%
Site LPG	193.10	172.43	-10.7%
Site gas	-	47.19	n/a
Company car travel	3.56	9.10	155.6%
Flights	6.03	1.79	-70.4%
Site electricity	0.00	1.32	n/a
Home-workers	-	1.12	n/a
Lorry freight (owned)	-	0.03	n/a
Ferry travel	0.05	0.02	-69.5%
Rail travel	1.57	0.00	-100.0%
Total Tonnes of CO_2e	**380.03**	**510.86**	**34.4%**
Tonnes of CO_2e per employee	**9.05**	**8.81**	**-2.7%**
Tonnes of CO_2e per £M turnover	**38.00**	**33.73**	**-11.2%**
Tonnes of CO_2e per cremation	**0.16**	**0.10**	**-37.5%**

Pure Cremation has increased its total carbon footprint by 34.4% between this period and the baseline year. This is largely due to increases in company van travel, which is responsible for 78% of the increase in total GHG emissions (130.83 tCO_2e). The remaining increases are due to increased company car travel. It should also be noted that a new office was opened in Scotland during the data period, which may have influenced the increased travel in some areas.

Decreases can be seen across a number of individual elements of Pure Cremations business activities. This is largely due to reduced use of rail, ferry and flight transport modes which can be partly attributed to restrictions and government guidance in place during the Covid-19 pandemic. These reductions have resulted in reductions of the tCO_2e per employee, tCO_2e per £M turnover and the tCO_2e per cremation metric (Figures 5 and 6).

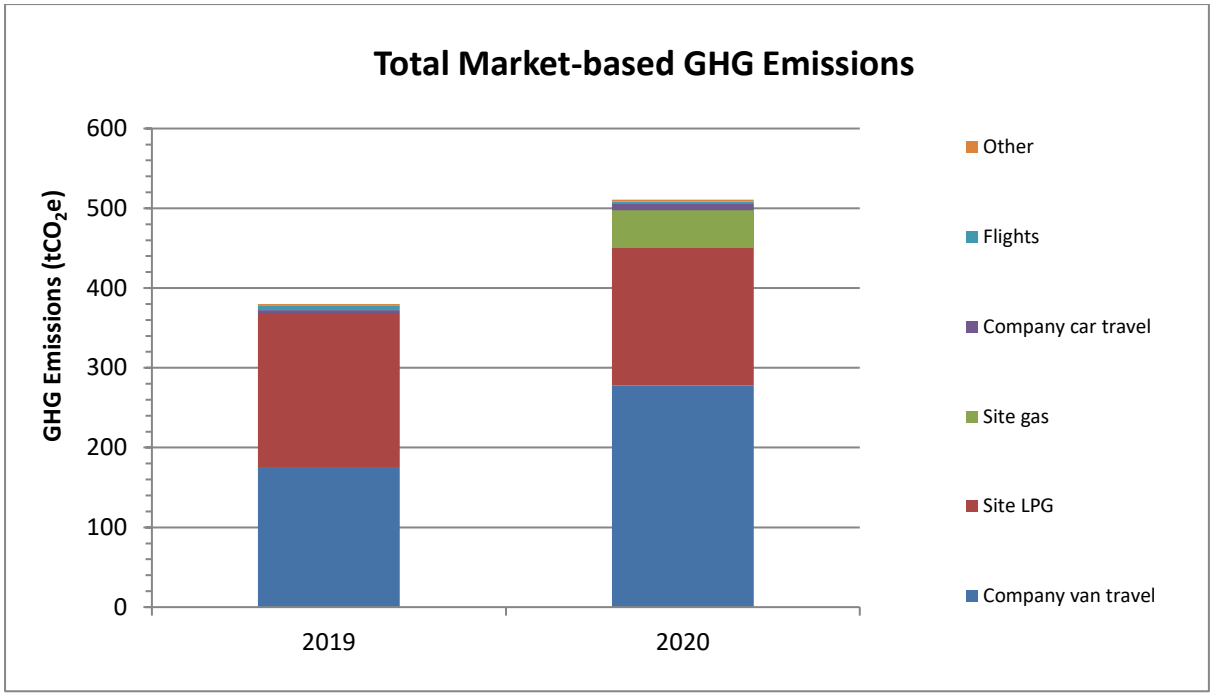


Figure 5: Detailed emissions comparison for the various aspects of Pure Cremation's emissions

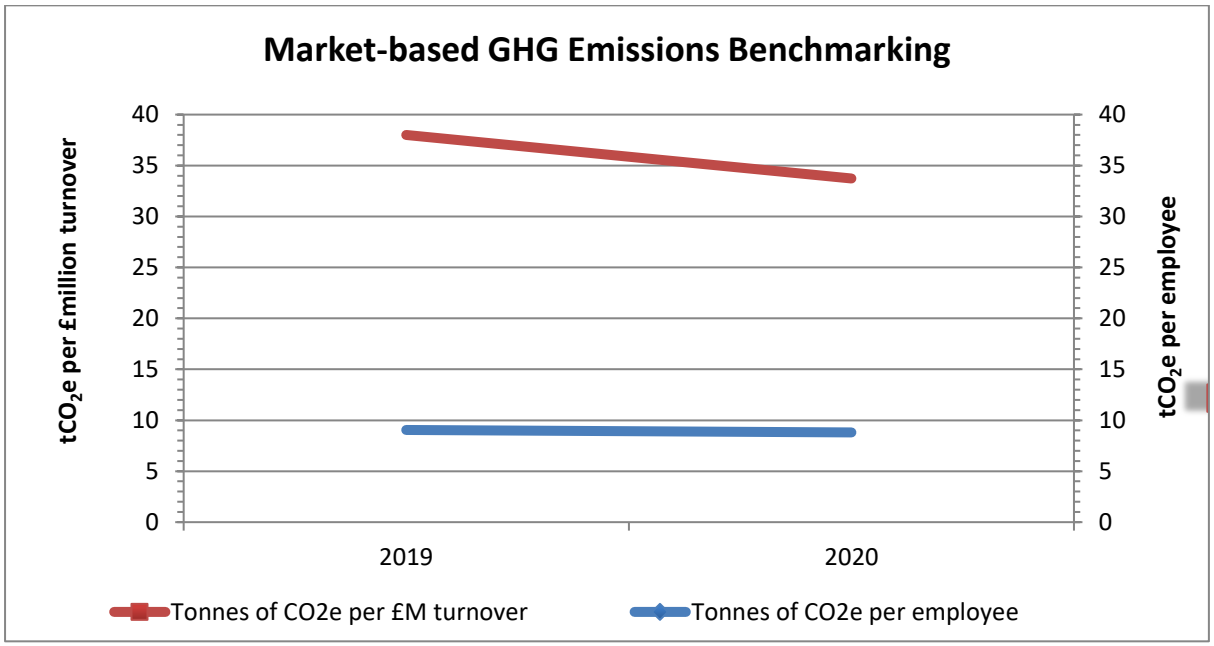


Figure 6: Carbon footprint of Pure Cremation for internal benchmarks

Carbon Footprint recommends that organisations use the base-year GHG inventory as a benchmark to measure against. When using the base-year GHG inventory as a benchmark, organisations can set realistic reduction targets and measure their progress year on year. This can also provide excellent marketing opportunities, where real figures can demonstrate your commitment towards helping fight climate change.

5 Key Recommendations

Carbon Footprint Ltd advises organisations like yours to work towards the reduction of their emissions. In so doing this will maximise business benefits through reduced energy and travel costs, and new marketing opportunities.

Below are top level recommendations to ensure your organisation leverages the most out of being a carbon footprint approved business.

1. Offset the GHG emissions produced during this data period to become a carbon neutral business and fund projects which are providing solutions to climate change.
2. Set targets to reduce emissions year on year.
3. Monitor your usage of electricity and travel during the year, to ensure you stay on track towards meeting your targets.
4. Communicate targets and actions to employees, customers and other stakeholders.
5. Investigate opportunities with the building owner/manager to switch onto a renewable tariff at your Scotland site.
6. Investigate setting up an ‘energy champions’ scheme within the office to maximise energy efficiency and identify opportunities to reduce energy wastage.
7. When leasing/purchasing new vehicles, consider transitioning to EVs or PHEVs and ensure employees have access to suitable charging points (e.g. dedicated rapid charge points at your sites and/or charge points at home).
8. Improve accuracy of your lorry freight by recording the fuel usage to get the most accurate calculation of associated GHG emissions.
9. Ensure servicing of crematorium equipment takes place regularly to ensure the facility is run at its most efficient.
10. Investigate the feasibility of using a district heating/waste heat recovery model to distribute waste-heat from the Crematorium to all buildings on-site, to prevent the need for purchased natural gas for heating.
11. Market your company as “Carbon Footprint Approved” by using the branding on all your marketing and sales materials, including web site, leaflets, business cards, e-mails, letter headed paper etc.

Contact Carbon Footprint Ltd if you would like to discuss these or any other carbon management activities.

6 Carbon Footprint Standard

6.1 Brand endorsement

Pure Cremation, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint and shown a reduction of -10.71% from the baseline year, based on its emissions per £M turnover. By achieving this Pure Cremation 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.

The Carbon Footprint Standard is recognition of your organisation's commitment to carbon management. The text to the right-hand side of the logo demonstrates what level you have achieved in line with international best practice.

6.2 Communicate

Make sure you communicate your actions and achievements effectively, both within your organisation, to help develop your culture, and externally to help improve your brand image.

When promoting your actions, utilise all marketing channels available to you, such as website, newsletters, brochures, press releases, conferences/events and social media etc.

Ensure to:

- Explain why climate change matters to you (for more information visit: www.carbonfootprint.com/warming.html).
- Tell the story of where you have come from, the progress you have made and what your commitment is for the future (e.g. targets).
- Be clear and accurate about what you have achieved – take care not to exaggerate.
- Use the Carbon Footprint Standard branding provided, certificates, images of any offset projects you are supporting and graphs of your carbon performance, to help communicate your point in a clear and enticing manner.

7 References

1. BEIS GHG Conversion Factors for Company Reporting (2020)
2. Guidelines to Defra's Greenhouse Gas (GHG) Conversion Factors for Company Reporting – annexes (June 2013)
3. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition (March 2004)

A. Annex A – Calculation Methodology (Additional Notes)

A.1 How is the carbon footprint calculated?

Carbon Footprint confirms that the methodology used to quantify the carbon footprint meets the following principles:

a) The subject and its boundaries have been clearly identified and documented.
b) The carbon footprint has been based on primary activity data unless the entity could not demonstrate that it was not practicable to do so, in which case an authoritative source of secondary data relevant to the subject was used.
c) The methodology employed minimised uncertainty and yielded accurate, consistent and reproducible results.
d) Emission factors used are germane to the activity concerned and current at the time of quantification.
e) Conversion of non-CO_2 greenhouse gases to CO_2e has been based upon the 100-year Global Warming Potential figures published by the IPCC or national (Government) publication.
f) Carbon footprint calculations have been made exclusive of any purchases of carbon offsets.
g) All carbon footprints have been expressed as an absolute amount in tCO_2e.

A.2 Biomass

There are no CO_2 emissions from the combustion of biomass to be considered within this report.

A.3 Greenhouse gas removals

Within the calculation of Pure Cremation's carbon footprint, there are no business processes resulting in the reduction of greenhouse gases from the atmosphere to be deducted from the calculation.

A.4 Scope 1 and 2 emissions breakdowns

The table below demonstrates the company's Scope 1 CO_2e emissions in their respective greenhouse gases.

Table 6: CO_2e Emissions breakdown for Scope 1 emissions into their greenhouse gases.

Activity	kg CO_2e	kg CO_2 in CO_2e	kg CH_4 in CO_2e	kg N_2O in CO_2e
Site gas	47,188.63	47,101.48	62.01	25.20
Site LPG	172,434.54	113.29	112.28	-
Company car travel	9,099.69	8,978.55	1.07	120.07
Company van travel	277,858.69	274,159.62	32.66	3,666.19
Lorry freight (owned)	33.55	33,099.27	0.00	0.44
Total	**506,615.10**	**363,452.21**	**208.02**	**3,811.90**