

Carbon Footprint Appraisal Report



Assessment Period:
1st January 2019 – 31st December 2019

Executive Summary

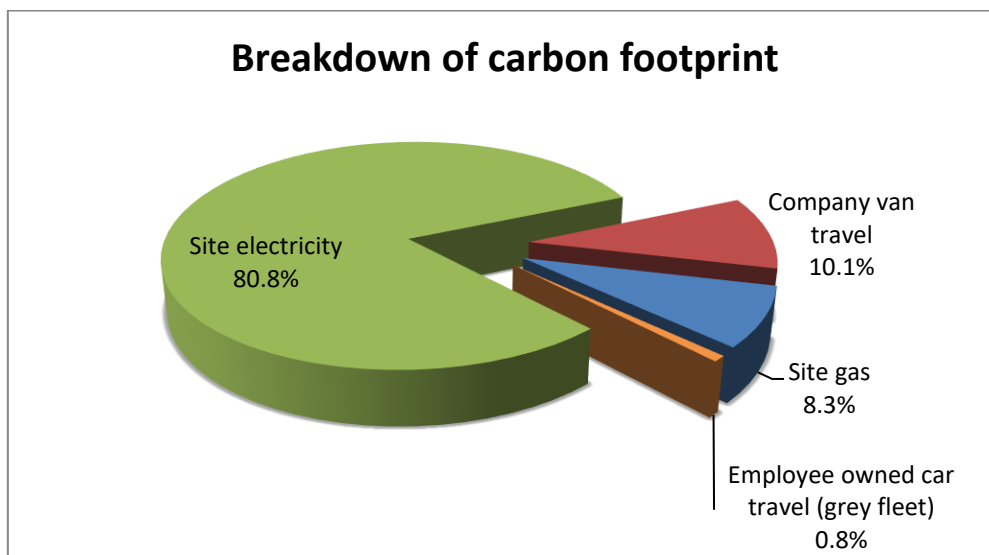
Carbon Footprint Ltd has assessed the greenhouse gas (GHG) emissions of Thatcham Town Council (henceforth referred to as Thatcham TC) from 1st January 2019 to 31st December 2019 based on a dataset provided by the company.

Current Performance

- Site utilities (electricity and gas) account for 89.1% of Thatcham TC’s GHG emissions.
- Business related travel (company vans and grey fleet) accounts for the remaining 10.9%.

Future Recommendations

- Offset the emissions you have not been able to avoid and become a carbon neutral organisation by funding a carbon saving elsewhere. You can do this using the following link <https://www.carbonfootprint.com/offset.aspx?o=16>
- Consider switching to a renewable energy tariff for purchased electricity at sites – focusing on the Frank Hutchings Community Hall and public conveniences as these have the highest emissions associated with purchased electricity.
- Improve accuracy of future assessments by taking regular meter readings, including the generation and export meters for Solar PV installations at the Thatcham TC Offices and the Frank Hutchings Community Hall.
- Investigate the feasibility of replacing the current diesel van with an electric van when replacement is required.



	Baseline Year (2019)
Total Tonnes CO₂e	15.05
Tonnes of CO₂e per employee	1.25
Tonnes of CO₂e per £M turnover	13.68
Tonnes of CO₂e per thousand residents	0.60

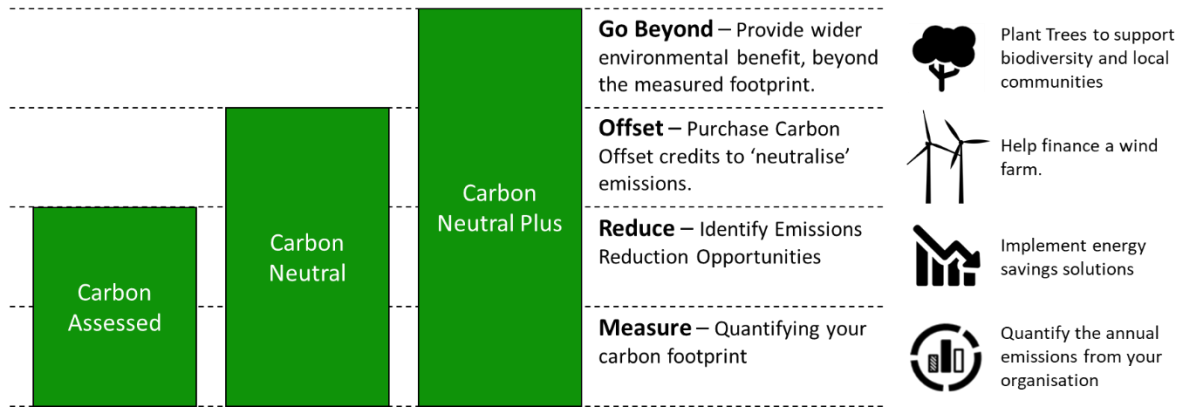


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Quality Control

Report issue number: 1.0
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1 Introduction

1.1 Thattham Town Council’s Carbon Management Journey

Thattham TC is the first tier of local government, serving the residents of Thattham at grassroots level. The Council is responsible for a number of local services including community spaces (e.g. allotments, cemeteries, community centres, play areas, open spaces and public toilets), community events and the Thattham Town market.

Carbon Footprint provides a simple six step annual journey to enhance your sustainability credentials whilst complying to best practice. Thattham Town Council has completed the first step of its carbon management journey.



The purpose of this report is to:

- Summarise your carbon emission assessment results
- Recommend realistic aims for your carbon reduction target
- Provide practical recommendations to enhance your sustainability programme and reduce your emissions

1.2 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 (CO₂e). 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 6 GHGs	1
	Consumption of purchased electricity, heat steam and cooling	2
	Employee business travel (using transport not owned by the company)	3

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	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.

1.3 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 of inaction will be disastrous. 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. It will also affect human health, accelerate species extinction, and disrupt many ecosystems.

Climate change is a global threat which will impact the lives of everyone on the planet. Hence, 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 Thatcham Town Council to begin doing its bit by monitoring, reducing and offsetting its emissions.

1.4 BS ISO 14064-1:2018

This GHG report has been prepared in accordance with Part 1 of BS 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.

1.5 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 Thatcham Town Council's footprint using the 2019 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

1.6 Abbreviations

BEIS	Department for Business, Energy & Industrial Strategy
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
Defra	Department for Environment, Food and Rural Affairs
EU	European Union
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
ISO	International Standards Organisation
km	Kilometres
kW	Kilowatt
kWh	Kilowatt Hours
PR	Public Relations
PV	Photovoltaic
UN	United Nations

2 Calculation scope and accuracy

2.1 Scope of this work

Carbon Footprint has assessed the GHG emissions from 1st January 2019 to 31st December 2019 resulting from the energy consumption at Thatcham Town Council’s facilities and its business transport activities.

This report will set the base year for all further reporting emissions to be compared to.

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

Scope 1 Direct Emissions	Scope 2 Energy Indirect	Scope 3 Other Indirect
<u>Fuel combustion</u> Natural gas	Consumption of <u>purchased electricity, heat steam and cooling</u> Electricity	<u>Purchased materials and fuels</u> Water, paper
<u>Owned Transport</u> Company van travel		<u>Transmission and distribution of energy</u> Electricity
<u>Process emissions</u> None		<u>Leased assets outsourcing and franchising</u> None
<u>Fugitive emissions</u> None		<u>Transport related activities</u> Employee owned car travel
		<u>Sold goods and services</u> None
		<u>Waste Disposal</u> Residual & Recyclable

Key:

Within the assessment boundary	Not included within assessment boundary
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Grounds maintenance, waste disposal, leisure facilities, sheltered housing and schools are excluded from the assessment as they are not under the operational control of Thatcham TC. 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 Thatcham Town Council. An overview of the expected accuracy provided per element for this assessment is shown in Table 3.

Table 3: Assessment accuracy, materiality and simple error analysis

Dataset	Source of data and comments	Accuracy	Materiality	Uncertainty	Estimated Error Margin (tCO ₂ e)
Site electricity	Utility bills	Very Good	High	5%	+/- 0.61
Company van travel	Company fuel card data	Excellent	Medium	1%	+/- 0.02
Site gas	Utility bills	Very Good	Medium	5%	+/- 0.06
Employee owned car travel (grey fleet)	Mileage claim logs	Excellent	Very Low	1%	+/- 0.001

The total estimated error margin is +/- 0.69 tCO₂e, which equates to +/- 4.6% of the total footprint.

To improve accuracy for future assessments, we recommend you take actual meter readings at the start and end of each data period for both gas and electricity as a minimum, and submit to your energy provider. For electricity generated on-site through the Solar photovoltaic (PV) panels, Thatcham TC should also take regular readings from the generation meter, as well as the export meter.



3 Carbon Footprint Results

3.1 Summary of results

The total carbon footprint for Thattham Town Council for the period ending 31st December 2019 was 15.05 tonnes CO₂e. Table 4 and Figure 2 provide a summary of results for Thattham Town Council’s carbon footprint calculation by scope and source activity.

Table 4: Results of Thattham Town Council’s carbon footprint assessment by scope and source activity

Scope	Activity	Tonnes CO ₂ e
Scope 1	Company van travel	1.53
	Site gas	1.25
Scope 1 Sub Total		2.77
Scope 2	Electricity generation	11.20
Scope 2 Sub total		11.20
Scope 3	Electricity transmission & distribution	0.95
	Employee owned car travel (grey fleet)	0.12
Scope 3 Sub Total		1.07
Overall Total		15.05
Tonnes of CO ₂ e per employee		1.25
Tonnes of CO ₂ e per £M turnover		13.68
Tonnes of CO ₂ e per thousand residents		0.60

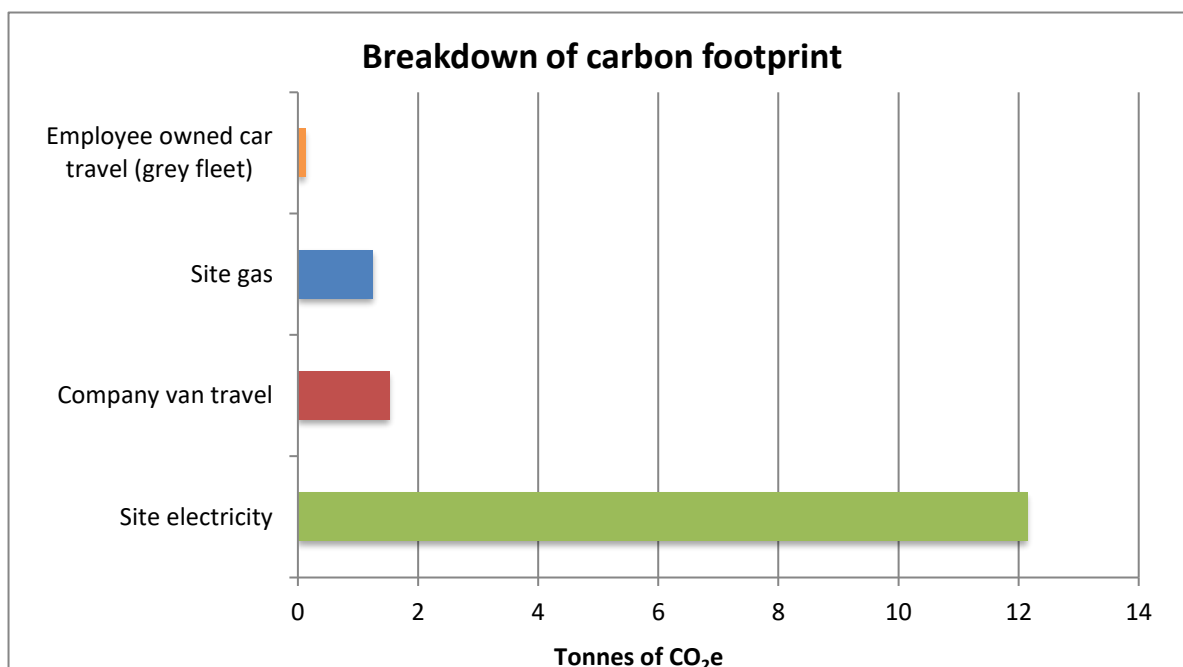


Figure 2: Contribution in tonnes of CO₂e of each element of Thattham Town Council’s carbon footprint

Figure 3 below shows the percentage breakdown of the total carbon footprint produced by Thattham TC. It can be seen that the majority of GHG emissions are produced through site utility use, with electricity accounting for 80.8% and natural gas contributing to a further 8.3% of total emissions. The top three sites for electricity consumption (tCO₂e) are public conveniences (2.05 tCO₂e), Frank Hutchings Community Hall (1.98 tCO₂e), and Thattham market (1.83 tCO₂e). Thattham TC also own one van and had mileage claims for one employee-owned vehicle during 2019. In total, 5,223 miles were travelled by vehicles, with the majority associated with the van.

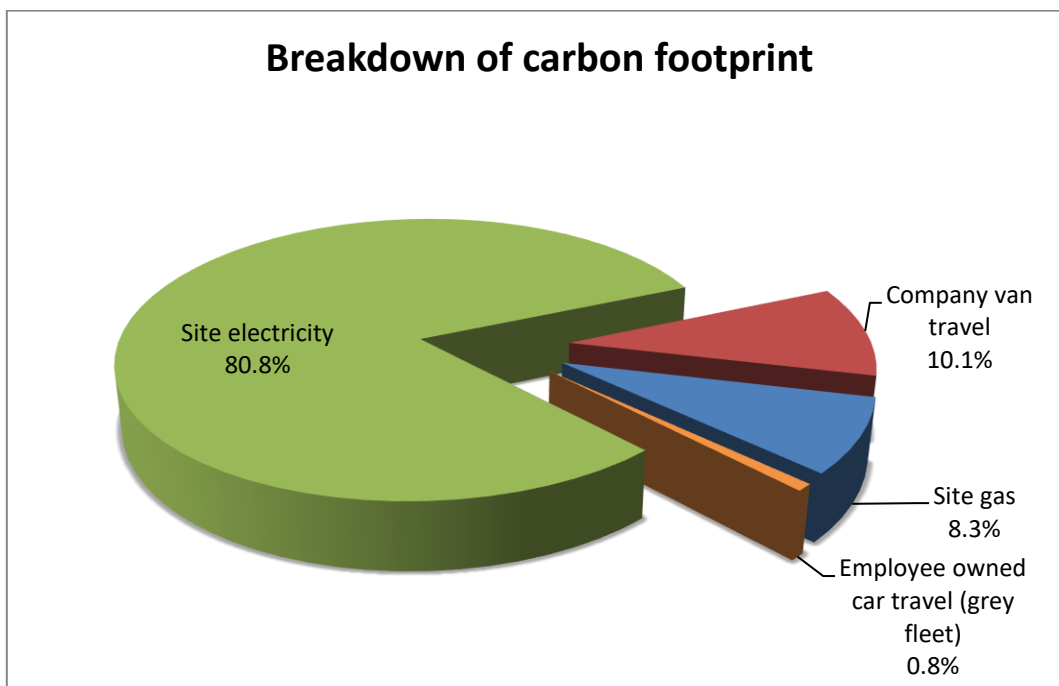


Figure 3: Percentage contribution of each element of Thattham Town Council’s carbon footprint

Thattham TC has an 8kW roof-mounted Solar PV system at its main Council office building, as well as a 4kW roof-mounted Solar PV system at the Frank Hutchings Community Hall. During 2019, these systems generated 12,140 kWh of electricity, which amounts to 3.37 tonnes of avoided GHG emissions.

Table 5: Thattham Town Council’s purchased and generated electricity

Site	Total Electricity Consumption (kWh)	Amount consumed/generated by on-site solar (kWh) ¹	Proportion of electricity demand generated from on-site Solar PV (%)
Thattham Town Council Offices	13,183	7,725	58.6%
Frank Hutchings Community Hall	11,548	4,415	38.2%

¹ It is unknown what proportion of energy generated was exported to the grid so it has been assumed it was all consumed by the Council.



4 Comparison and Benchmarking

4.1 Comparison to base year emissions

This is the first carbon footprint assessment Thattham Town Council has carried out and, therefore, it will serve as a base year for future carbon footprint assessments. Table 6 shows Thattham Town Council’s total carbon footprint and carbon intensity metrics (tonnes of CO₂e per employee, per £M turnover, and per thousand residents).

Table 6: Thattham Town Council’s carbon footprint comparison and percentage change

Element	2019
Site electricity	12.15
Company van travel	1.53
Site gas	1.25
Employee owned car travel (grey fleet)	0.12
Total Tonnes of CO₂e	15.05
Tonnes of CO₂e per employee	1.25
Tonnes of CO₂e per £M turnover	13.68
Tonnes of CO₂e per thousand residents	0.60

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.

4.2 External benchmarking

Table 7 shows benchmark data, against which external benchmarking can be undertaken comparing your sustainability performance against similar organisations.

Table 7: Thattham Town Council’s benchmarked GHG emissions

Year/Element	2019
Turnover in £million	1.10
Total number of employees	12
Tonnes of CO ₂ e	15.05
Tonnes of CO ₂ e per £ million	13.68
Tonnes of CO ₂ e per employee	1.25
Tonnes of CO ₂ e per thousand residents	0.60
Scope 1 & 2 Emissions	
Scope 1 & 2 tonnes CO ₂ e	13.98
Scope 1 & 2 tonnes CO ₂ e per employee	1.16
Scope 1 & 2 tonnes CO ₂ e per £ million	12.71



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. Set targets to reduce emissions by at least 7% year on year.
2. Offset your remaining emissions to become a Net Zero Carbon council and achieve a higher level of “Carbon Footprint Approval”
3. Consider switching to a renewable energy tariff for purchased electricity at sites – focusing on the Frank Hutchings Community Hall and public conveniences initially, as these have the highest emissions associated with purchased electricity.
4. Communicate targets and actions to employees, customers and other stakeholders
5. Monitor your usage of electricity, fuels and travel during the year, to ensure you stay on track towards meeting your targets
6. Improve accuracy of future assessments by taking regular meter readings, including the generation and export meters for Solar PV installations at the Thatcham TC Offices and the Frank Hutchings Community Hall.
7. Investigate the feasibility of replacing the current diesel van with an electric van when replacement is required.
8. Market the council 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

Thatcham Town Council, in conjunction with Carbon Footprint Ltd, has assessed its carbon footprint. By achieving this Thatcham Town 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.



The Carbon Footprint Standard is recognition of your organisations 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 done – 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 (July 2019)
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-CO₂ greenhouse gases to CO₂e 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 tCO₂e.

A.2 Biomass

There are no CO₂ emissions from the combustion of biomass to be considered within this report.

A.3 Greenhouse gas removals

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