



CONSIDERATE



BATTLESTEADS
HOTEL & RESTAURANT



Battlesteads Hotel

2023 Carbon Report

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1. Introduction

As part of the ongoing commitment to sustainability, Battlesteads have utilised the services of Considerate Group to develop a full carbon report outlining their Scope 1, 2 and essential Scope 3 emissions (under Battlesteads' operational control) over the course of 2023.

Considerate Group utilised the GHG Protocol Corporate Standard to ensure complete and verifiable emissions measurements that will show the sources and relative proportions of emissions across the property.

This report sets out the methodology and results of this project to collect and analyse the 2023 Scope 1, 2 and essential Scope 3 emissions data for Battlesteads. The data presented in this report can be analysed to see where emissions originate within the property, and which sources make the largest contributions to overall emissions, enabling appropriate targeting of reduction measures. This data can be used as a baseline from which to set emissions targets to motivate and track improved performance. This work should be completed and built upon in future years to ensure and scope emissions performance is accurately tracked and measured against targets, ensuring Battlesteads continues to make progress to a more sustainable future.

2. Methodology

The operational boundaries and all potential sources of Scope 1, 2 and essential Scope 3 emissions active in 2023 within these boundaries were identified to produce a full list of relevant emissions sources. Emissions factors for all sources were taken from the 2023 UK Government GHG Conversion Factors for Company Reporting, and used to produce emissions for 2023 for each source. Individual source emissions were then aggregated to give the overall Scope 1, 2 and 3 emissions for 2023.

Emissions Sources

Following the Operational Control approach as set out in the GHG Protocol Corporate Standards, the organisational boundary was set. Following this method, the sources of emissions active in 2023 within Scopes 1, 2 and 3 were:

- Emissions from electricity use
- Propane gas emissions
- Woodchip emissions
- Emissions from water usage

There was no refrigerant leakage throughout 2023 and waste data was not available, hence the exclusion of these emission sources in the final report.

Data and Emissions Factor Collection

The list of emission sources were provided by Battlesteads in an Excel document.

Emissions factors were taken from the 2023 UK Government GHG Conversion Factors for Company Reporting, which follows the GHG Protocol and is the standard source for reporting emissions for UK-based companies.

Estimates

Due to the overlapping invoice periods between 2022 and 2023 as well as 2023 and 2024, meter reads that span across two sets of years had their consumption divided by the number of days that were within the reporting year of 2023.

Calculations

Once consumption and emissions factor data were gathered, the total emissions for each source was calculated using the following formula:

$$\text{Emissions (kgCO}_2\text{)} = \text{Consumption (Unit)} \times \text{Emissions per unit of consumption (kgCO}_2\text{/Unit)}.$$

Following the GHG Protocol Corporate Standards, all emissions from electricity use were added together to give the total Scope 2 emissions and all emissions from sources other than electricity were added together to give the total Scope 1 emissions.

3. Results and Recommendations

Results

The total Scope 1, 2 and 3 emissions calculated for 2023 are presented in Section 3.

Table 1 (below) shows a total reduction of 74% total emission since the baseline year, dropping by 63,754 kg CO₂e. This was significantly influenced the purchasing of a renewable energy contract in 2015, which eliminated electricity location-based emissions, and consequently Scope 2 emissions. However, even with location-based factors used, there was a reduction of 74% in from the property's Scope 2 emissions. Scope 1 emissions have remained stable across the 10 year period, remaining virtually identical to 2013 emissions. Scope 3 emission saw a notable reduction of 78%.

Scope	2013 Baseline Emissions (kg CO ₂ e)	2023 Emissions (kg CO ₂ e)	Percentage Change Over 10 Years
Scope 1 total	21,627	21,549	-0.04%
Scope 2 (Location-based) total	62,009	25,045	-60%
Scope 2 (Market-based) total	62,009	0	-100%
Scope 3 total	2396	567	-78%
Total Emissions	86,032	22,278	-74%
<i>Avoided emissions (solar generation)</i>		2,029	N/A

Table 1: Scope 1, 2 and 3 emissions summary

Table 2 (below) highlights the emissions in relation to occupancy levels at the hotel. As with total emissions, Scope 2 emissions saw significant reductions in kg CO₂e per RN. Scope 1 emissions too, despite similar overall levels of emissions, saw a 40% decrease in emission per room night, as occupancy levels were higher in 2023.

Scope	2013 Baseline Emissions (kg CO ₂ e per RN)	2023 Emissions (kg CO ₂ e per RN)	Percentage Change Over 10 Years
Scope 1 total	5.6	3.6	-40%
Scope 2 (Location-based) total	16.2	4.2	-74%
Scope 2 (Market-based) total	16.2	0	-100%
Scope 3 total	0.6	0.1	-85%
Total Emissions	22.4	3.7	-74%
<i>Avoided emissions (solar generation)</i>		0.3	N/A

Table 2: Scope 1, 2 and 3 emissions per room night summary

Figure 1 (below) visualises how the carbon emissions per room night has evolved since the baseline year in 2013. A significant reduction of 18.7 kg CO₂e per room night, or 74% has occurred over the span of 10 years. Moreover, the total emissions value of 3.7 kg CO₂e per room night, is 88% below the UK benchmark of 31.1 kg CO₂e per room night as specified by the HCMI.

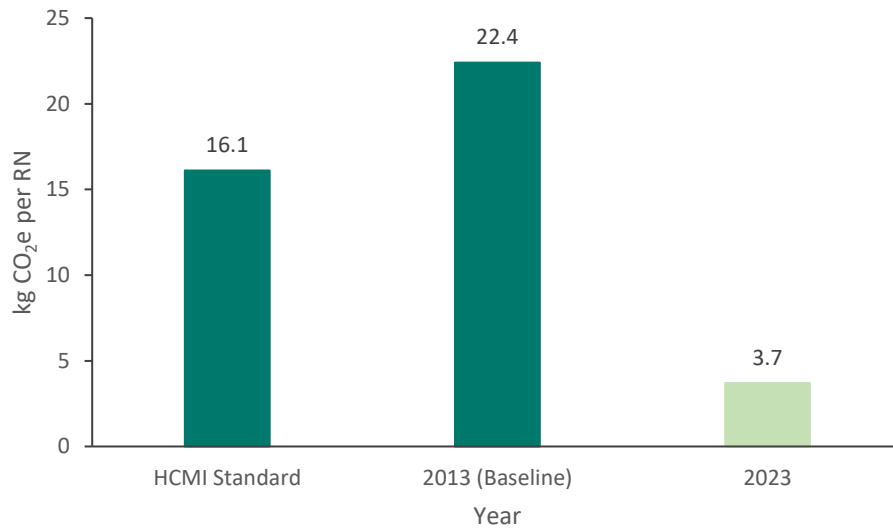


Figure 1: Change in per room night emission from the baseline year, and comparison to 2023 HCMI Standard (Cornell University Hotel Sustainability database mean UK four-star hotel carbon emissions per occupied room)

Finally, Table 3 (overleaf) breaks down the property's scope emissions, highlighting what areas within each scope contributed significantly to total emissions. When using market-based factors, Scope 1 emissions contributed 97% to total emissions of the hotel, of which, the vast majority (83%) were generated by utility consumption (Calor gas). Through the burning of Biomass, a further 14% of the hotel's emissions were produced under the Scope 1 bracket.

When considering location-based factors, Scope 1 emissions contribute to 46% of the hotels emissions, whilst Scope 2 emissions become the highest contributor, making up 53% of emissions.

Emissions Source	2013 Baseline Emissions (kg CO ₂ e)	2023 Emissions (kg CO ₂ e)	Percentage Change Over 10 Years
Scope 1			
Calor (LPG) Gas	21,627	18,592	-14%
Biomass (Scope 1 relevant)	0	3,119	N/A
Scope 1 total	21,627	21,549	-0.04%
Scope 2 (Location-based)			
Hotel Electricity	53,514	20,120	-62%
Lynwood Electricity	8,494	4,924	-42%
Scope 2 (Location-based) total	62,009	25,044	-60%
Scope 2 (Market-based)			
Hotel Electricity (Ecotricity)	53,514	0	-100%
Lynwood Electricity (Ecotricity)	8,494	0	-100%
Scope 2 (Market-based) total	62,009	0	-100%
(Essential) Scope 3			
Water	2,396	567	-78%
Scope 3 total	2396	567	-78%
Total Emissions	86,032	22,278	-74%
Total Emissions per room night	22.4	3.7	-83%
Avoided and Outside of scope emissions			
<i>Outside of scope (Biomass) emissions</i>	219,608	101,643	-54%
<i>Avoided emissions (solar generation)</i>	0	2,029	N/A

Table 3: Breakdown of Scope 1, 2 and 3 emissions

4. Appendix

Emissions Factors

All Emissions factors bar market-based electricity factors were taken from the 2023 UK Government GHG Conversion Factors for Company Reporting. The Reference column details the section within this document that the factors can be found. For electricity, the DEFRA emissions factor displays the location-based emission factor whilst the market-based emissions factor provided by Ecotricity is also included.

Emissions Source	Unit	Reference	Emissions (kg CO₂e) per unit
Biomass	kWh	<i>DEFRA: Bioenergy -> Wood chips -> kWh</i>	0.011
Biomass (outside of scope)	kWh	<i>DEFRA: Outside of scope -> Biomass -> Wood chips -> kWh</i>	0.350
Electricity (location-based)	kWh	<i>DEFRA: UK Electricity -> Electricity generated</i>	0.207
Electricity (market-based)	kWh	<i>Ecotricity 100% renewable energy contract</i>	0
LPG	Liters	<i>DEFRA: Fuels -> Gaseous Fuels -> LPG -> litres</i>	1.560
Water	m ³	<i>DEFRA: Water supply -> cubic meters</i>	0.177

Table 4: GHG conversion factors for emission sources at the hotel.