Shred Station Limited

# Greenhouse Gas Assessment, CY2024

On behalf of Climate Impact Partners

3040799(0)

AUGUST 2025

nature positive
an RSK company

# GENERAL NOTES

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# EXECUTIVE SUMMARY

This greenhouse gas (GHG) assessment has been prepared by Nature Positive Ltd on behalf of Climate Impact Partners to estimate GHG emissions associated with the operations of Shred Station Name during the reporting period 1st January 2024 to 31st December 2024 in relation to CN Protocol 2024.

Shred Station Limited (Shred Station) provides secure confidential waste destruction and disposal services. They employ 182 full-time equivalent (FTE) staff and have three premises located in the UK in Norwich, Harlow and Manchester; these sites had a gross internal area (GIA) of 48,000 $m^2$.

## GHG emissions summary

Shred Station's total GHG emissions assessed for 2024 were 3,787 $tCO_2e$ using the market-based method and 3,887 $tCO_2e$ using the location-based method[1].

Absolute GHG emissions can vary over time and often correspond to the expansion or contraction of an organisation. It is therefore useful to use reporting metrics that take these effects into account to establish emissions intensity. Common emissions intensity metrics include $tCO_2e$ per £m turnover, employees, output, or floor area. Total emissions and Shred Station's chosen intensity metrics are presented in Table ES1.

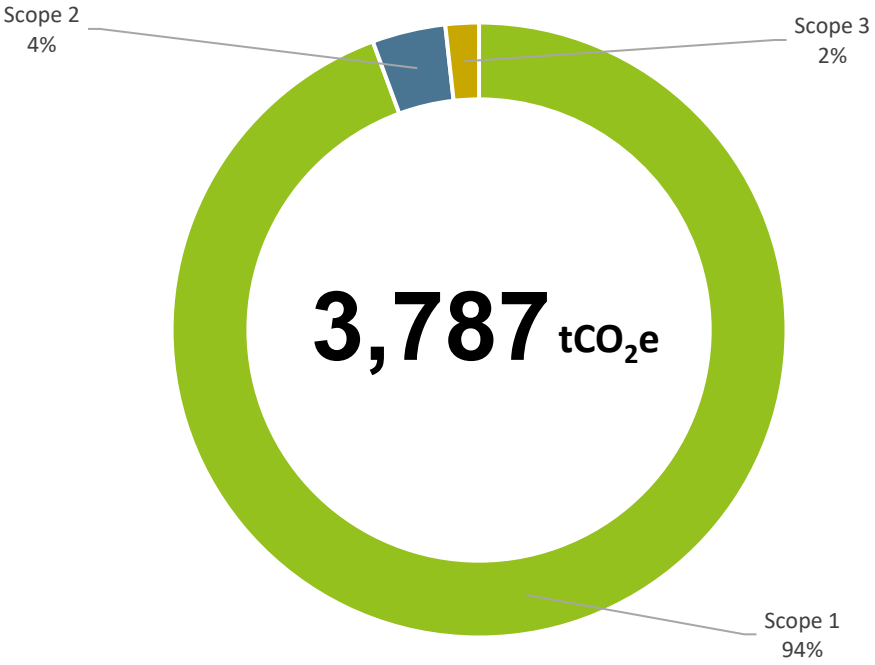
**Table ES1: GHG Summary metrics**

| Metric | GHG emissions ($tCO_2e$) | |
|---|---|---|
| | Market-based* | Location-based* |
| Total GHG emissions | 3,787 | 3,887 |
| GHG emissions per FTE (182) | 22 | 22 |
| GHG emissions per GIA (48,000 $m^2$) | 0.08 | 0.08 |

GHG emissions by scope are presented in Figure ES1. Scope 1 (direct) emissions from company owned vehicles represent the majority of emissions at 94%. Scope 2 emissions from electricity consumption account for 4% of total GHG emissions, while other Scope 3 emissions assessed make up the remaining 2% of the carbon footprint. Further details of Shred Station's GHG emissions can be found in Section 0.

[1] For an explanation of market-based and location-based emissions, see section 2.6.2.

**Table ES2 provides the year on year comparison of GHG emissions, showing an increase of emissions of 10% largely associated with fuel consumption from company owned**




**vehicles.**

**Figure ES1: Market-based GHG emissions by scope ($tCO_2e$)**

**Table ES2: Comparison of 2023 & 2024 GHG emissions**

| Emissions source category | GHG emissions ($tCO_2e$) | | | |
|---|---|---|---|---|
| | 2023 | 2024 | Change $tCO_2e$ | Change % |
| Company owned vehicles | 3,228 | 3,571 | 343 | 11% |
| Natural gas | 6 | 3 | -2 | -40% |
| Electricity (including T&D) | 180 | 168 | -12 | -7% |
| Water and paper only (PG&S) | 1 | <1 | <1 | n/a |
| Waste generated in operations | <1 | <1 | -<1 | -65% |
| Business travel | 19 | 42 | 22 | 115% |
| Remote working | 1 | 2 | <1 | 37% |
| **Total (market-based)** | **3,436** | **3,787** | **351** | **10%** |
| Market emissions per FTE | 20 | 22 | 2 | 10% |
| Market emissions per GIA, $m^2$ | 0.07 | 0.08 | <0.01 | 10% |
| **Total (location-based)** | **3,564** | **3,887** | **323** | **9%** |
| Location emissions per FTE | 20 | 22 | 2 | 8% |
| Location emissions per GIA, $m^2$ | 0.07 | 0.08 | <0.01 | 9% |

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# 1 INTRODUCTION

This GHG assessment has been prepared by Nature Positive, on behalf of Climate Impact Partners (CIP), to estimate GHG emissions associated with the operations of Shred Station Limited (Shred Station) during the reporting period 1 January 2024 to 31 December 2024.

Shred Station Limited (Shred Station) provides secure confidential waste destruction and disposal services. They employ 182 full-time equivalent (FTE) staff and have three premises located in the UK in Norwich, Harlow and Manchester; these sites had a gross internal area (GIA) of 48,000 $m^2$.

The report includes the following sections:

- Section 2: Context, reporting standards and emission scopes.
- Section 3: Methodology
- Section 4: Operational boundary, those categories assessed or not applicable and data quality.
- Section 5: GHG emissions summary
- Section 6: Comparison of GHG emissions with previous year.

## 1.1 Scope of work

This GHG assessment includes scopes 1, 2 and a subset of scope 3 categories as determined by Shred Station.

The GHG assessment will be used to prepare the CarbonNeutral certification summary for the requirements set out by the CarbonNeutral® Protocol 2024.

## 1.2 CarbonNeutral® Company

Table 1 displays the CarbonNeutral® certification scope and emissions to be offset for Shred Station. The CarbonNeutral® Protocol developed by CIP is an additional layer on top of the GHG Protocol and describes the requirements for achieving specific CarbonNeutral® compliant certifications (i.e., CarbonNeutral® 'Company', 'Product', 'Event' etc.).

The CarbonNeutral® Protocol requires the inclusion of all scopes 1 and 2 emissions, as well as the inclusion of certain scope 3 emissions for offsetting (such as waste and business travel) depending on the certification targeted. Other scope 3 sources may be included at the discretion of Shred Station.

The CarbonNeutral® Protocol uses a market-based method that reflects proportional emissions from specific electricity tariffs that consumers select in the market. As per The CarbonNeutral® Protocol, zero emissions for scope 2 electricity may only be awarded when double-counting is avoided. Organisations making a scope 2 reporting declaration

in support of CarbonNeutral® certification must complete and sign a disclosure form provided by CIP, which outlines the contractual instrument(s) purchased, the total consumption covered (MWh), and the reporting period it applies to. Refer to Section 2.6.2 for further details.

**Table 1: CarbonNeutral® Company certification emissions summary**

| | | | | | |
|---|---|---|---|---|---|
| Organisation: | | | **Shred Station Limited** | | |
| CarbonNeutral® certification: | | | **CarbonNeutral® Company 2024** | | |
| Reporting period: | | | **1 January 2024 – 31 December 2024** | | |
| Consolidation approach: | | | **Operational control** | | |
| **Scope** | **Emissions source category** | | **Offset status** | **Assessed** | **$tCO_2e$** |
| 1 | Direct emissions from owned, leased or directly controlled stationary sources that use fossil fuels or emit fugitive gases | | Required | Assessed | 3.3 |
| | Direct emissions from owned, leased or directly controlled mobile sources | | Required | Assessed | 3,571 |
| 2 | Emissions from generation of purchased energy | Location-based | Required | Assessed | 246 |
| | | Market-based | | | 146 |
| 3 (Up-stream) | Purchased goods and services | | Recommended | Assessed | 0.9 |
| | Capital goods | | Recommended | Not assessed | - |
| | Fuel and energy related activities | Upstream emissions from purchased fuels | Recommended | Not assessed | - |
| | | Upstream emissions from purchased electricity | Recommended | Not assessed | - |
| | | Transmission and distribution (T&D) losses | Required | Assessed | 22 |
| | Upstream transportation and distribution | Outbound courier deliveries of packages | Recommended | Not assessed | - |
| | | Third-party transportation and storage of inbound production-related goods, including internal movement of production-related goods | Recommended | Not applicable | - |
| | | Third-party transportation and storage of sold products to first customer | Required | Not applicable | - |
| | Waste generated in operations | Wastewater | Recommended | Assessed | 0.2 |
| | | Other waste | Required | Assessed | 0.2 |
| | Business travel | All transport by air, public transport, rented/leased vehicle, | Required | Assessed | 42 |

| | | | | | |
|---|---|---|---|---|---|
| Organisation: | | | **Shred Station Limited** | | |
| CarbonNeutral® certification: | | | **CarbonNeutral® Company 2024** | | |
| Reporting period: | | | **1 January 2024 – 31 December 2024** | | |
| Consolidation approach: | | | **Operational control** | | |
| **Scope** | **Emissions source category** | | **Offset status** | **Assessed** | **$tCO_2e$** |
| | | Emissions from hotel accommodation | Recommended | Not assessed | - |
| | Employee commuting | Employee transport between home and places of work | Recommended | Not assessed | - |
| | | Emissions arising from employee homeworking and remote work | Required | Assessed | 1.7 |
| | Upstream leased assets | | Recommended* | Not applicable | - |
| 3 (Downstream) | Downstream transportation and distribution | Third-party transportation and storage of sold products to first customer, not already included in upstream | Required | Not applicable | - |
| | | Third-party transportation and storage of sold products beyond first customer, including retail and storage | Recommended | Not applicable | - |
| Outside scopes[2] | Combustion of biofuel | | Recommended* | Assessed | |
| **Total: location-based scope 2** | | | | ✓ | **3,886** |
| **Total: market-based scope 2** | | | | ✓ | **3,786** |
| **Total for offset ($tCO_2e$)** | | | | | **216*** |

**Required** refers to those emissions required to be offset to meet the requirements of CN Certification. **Recommended** refers to other additional emissions associated with the organisation's operations, that fall outside the requirements of CN Certification. **Not applicable** refers to those emissions that Shred Station has identified as not applicable to their operations

* CarbonNeutral® Fleet certification includes direct emissions from owned, leased or directly controlled mobile sources (as well as associated transmission and distribution losses), therefore, these are not included within the CarbonNeutral® Company certification for offset, to ensure the emissions are not double counted.

[2] Outside of scopes: Scope 1 impact of the $CO_2$ released through combustion of biofuel. These emissions are not included in the total for offset and are considered 'outside of scopes' given that the net emissions are considered zero. This is because the fuel source itself absorbs an equivalent amount of $CO_2$ during the growth phase as the $CO_2$ released through combustion.

## 1.1 CarbonNeutral® Fleet

Table 2 displays the CarbonNeutral® certification scope and emissions to be offset:

**Table 2: CarbonNeutral® Company Fleet certification summary**

| | | | |
|---|---|---|---|
| Organisation: | **Shred Station Limited** | | |
| CarbonNeutral® certification: | **CarbonNeutral® Fleet** | | |
| Reporting period: | **1 January 2024 to 31 December 2024** | | |
| Consolidation approach: | **Operational control** | | |
| **Emissions Source Category** | **Required or Recommende** | **Included?** | **$tCO_2e$** |
| All direct emissions from mobile sources used to deliver the activity | Required | ✓ | 3,571 |
| Emissions from consumption of purchased electricity (including transmission losses) and/or steam used to deliver | Required | ✓ | 0.3 |
| Outside of scopes - combustion of biofuel | Recommended | ✓ | 3.3 |
| **Overall compliance** | | ✓ | **3,571** |
| **Total for offset ($tCO_2e$)** | | | **3,572** |

Note: Scope 1 impact of the $CO_2$ released through combustion of biofuel are not included in the total for offset and are considered 'outside of scopes' given that the net emissions are considered zero. This is because the fuel source itself absorbs an equivalent amount of $CO_2$ during the growth phase as the $CO_2$ released through combustion.

# 2 CONTEXT

## 2.1 Why measure greenhouse gas emissions?

Greenhouse gas (GHG) emissions assessments quantify the climate impact, direct and indirect, from a business' or organisation's activities, or for specific projects, events, products or services. Colloquially known as a carbon footprint, a GHG assessment is a key tool for monitoring and reducing an organisation's climate change impact as it allows carbon hotspots to be identified, reduction targets set, and action plans formulated.

GHG assessment results can also allow organisations to be transparent about their climate impacts through reporting results to customers, shareholders, employees, and other stakeholders. Regular – at a minimum, annual – assessments allow organisations to track their decarbonisation progress over time, and to contribute to broader sustainability or corporate social responsibility (CSR) reporting.

## 2.2 The Kyoto Protocol GHGs

GHG assessments quantify the Kyoto Protocol greenhouse gases, as applicable, and are measured in terms of tonnes carbon dioxide ($CO_2$) equivalence, or $tCO_2e$, where equivalence means having the same warming effect ('global warming potential', or GWP) as $CO_2$, typically measured over 100 years (see Section 2.3).

The six original Kyoto Protocol gas groups are $CO_2$, methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), sulphur hexafluoride ($SF_6$) and perfluorocarbons (PFCs); nitrogen trifluoride ($NF_3$), a chemical released in certain high-tech industries, was added in 2013. The global warming potential (GWP) of each is presented in Table 3.

**Table 3: Kyoto Protocol GHGs and their global warming potential (GWP)**

| Greenhouse gas/group | Chemical formula | GWP ($CO_2e$) |
|---|---|---|
| Carbon dioxide | $CO_2$ | 1 |
| Methane | $CH_4$ | 28 |
| Nitrous oxide | $N_2O$ | 265 |
| Hydrofluorocarbons | HFCs | Depends on specific gas |
| Sulphur hexafluoride | $SF_6$ | 23,500 |
| Perfluorocarbons | PFCs | Depends on specific gas |
| Nitrogen Trifluoride | $NF_3$ | 16,100 |

The global warming potentials above are aligned with the IPCC's Fifth Assessment Report (AR5) as per DESNZ methodology. Some UK emission factors – those for hotel stays, bioenergy, WTT bioenergy and material – are still based on the previous IPCC report, AR4. In most cases this will have minimal impact.

## 2.3 Methane's GWP

Methane ($CH_4$) is the most abundant GHG after $CO_2$. It has a higher heat-trapping potential than $CO_2$ but remains in the atmosphere for a shorter period (typically ~12 years). This means that its relative GWP depends on the reporting timeframe, which can lead to ambiguity. This is because when reporting GHG emissions, either the 20- or 100-year timeframe multiplier for methane can be used; use of the 100-year timeframe – as stipulated by the Greenhouse Gas Protocol Corporate Standard – can significantly underestimate the short-term warming impact of the emissions.

There is also evidence that methane leaks from parts of the oil and gas industry could be significantly higher than some official estimates (Alvarez *et al*., 2018), which will increase short-term atmospheric methane emissions. Again, this is not reflected in current official emissions factors.

The practical upshot is that the climate mitigation potential for any reductions in natural gas (and to some extent all fossil fuel) consumption may be considerably higher than reflected in figures derived using the most commonly used (100-year) $CO_2e$ emissions factors.

We recommend that organisations with significant emissions from these sources take this into account when assessing their decarbonisation priorities.

## 2.4 Calculating emissions

GHG assessments require two types of data: **activity data** and **emission factors**.

Activity data represents a level of activity (such as kilowatt hours of electricity consumed, or litres of fuel combusted) contributing to the organisation's climate impact. Activity data can be primary or secondary; this is discussed further in section 2.9 below. Activity data is typically supplied by the reporting organisation.

The activity data is then used to quantify GHG emissions by applying the most relevant emission factors. An emission factor is a representative value that relates the quantity of a pollutant released to the atmosphere with an activity associated with the release of that pollutant. Factors are typically available from government publications, independent agencies, and scientific research journals; however, the quality and accuracy of factors can vary. Factors can differ depending on the research body and/or underlying methodologies applied. It is therefore good practice to apply factors from reputable and reliable sources, such as the UK government or the US EPA.

## 2.5 Reporting standards

GHG assessments are typically carried out in accordance with one of two recognised standards for accounting and reporting corporate GHG emissions. The best-known is the *Greenhouse Gas Protocol Corporate Accounting and Reporting Standard* (WRI and WBCSD, 2004), developed in a partnership between the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI).

The International Organization for Standardization (ISO) has also produced the ISO14064[3] series, detailing specification and guidance for the organisation and project levels, as well as for the validation and verification of emissions.

## 2.6 Emissions scopes

Most standards separate GHG emission sources into three categories, known as scopes. The GHG Protocol provides an overview of GHG scopes and emissions across the value chain as presented in Figure 1.

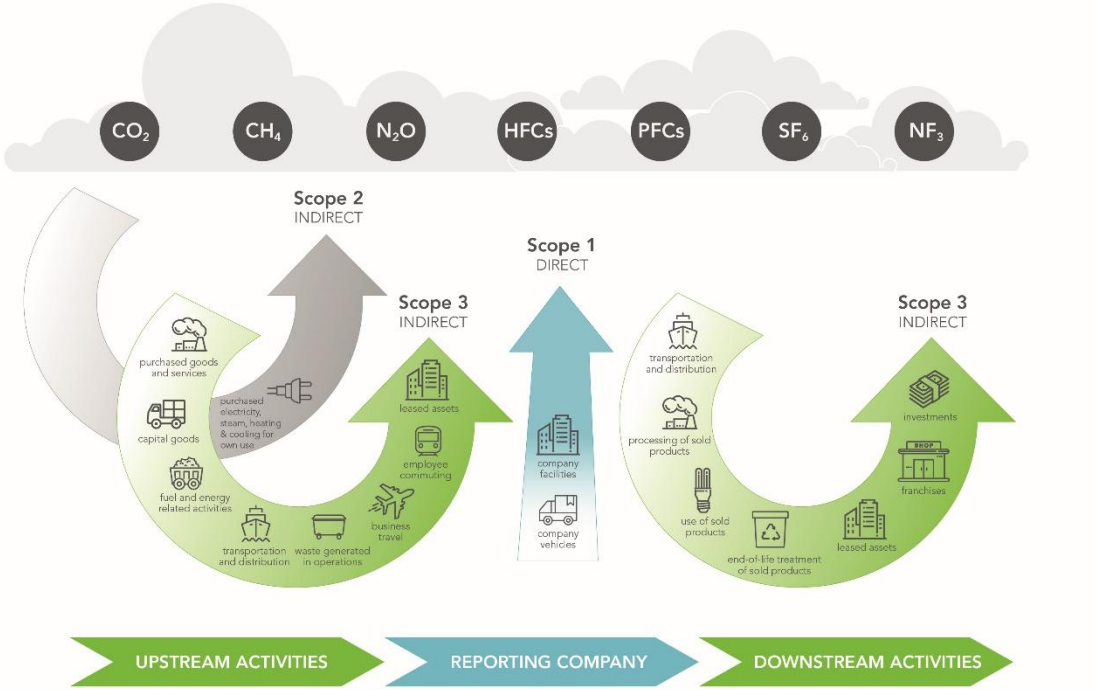


**Figure 1: All-scopes schematic (adapted from the GHG Protocol)**

### 2.6.1 Scope 1

Scope 1 accounts for direct emissions released from sources that are owned or controlled by the reporting company. It includes fuel used in vehicle fleets, fuel combustion for heating and power, and any process or fugitive emissions such as refrigerant gas leakages.

### 2.6.2 Scope 2

Scope 2 accounts for indirect emissions associated with off-site generation of energy purchased by the reporting organisation. This includes purchased electricity, heat, steam, and cooling.

The GHG Protocol's *Scope 2 Guidance, an amendment to the Corporate Standard* (WRI and WBCSD, 2015) states that operations in markets providing product- or supplier-specific data in the form of contractual instruments should report scope 2 emissions in

[3] ISO 14064 – *Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals*

two ways: using the location-based method, and the market-based method. This is termed ‘dual reporting’.

#### *2.6.2.1 Location-based reporting*

This reflects the average emissions intensity of grids on which energy (usually electricity) consumption occurs. This applies to all locations where grids are used for the distribution of energy and where electricity demand causes the need for energy generation and distribution. Grid-average emission factors are used, based on statistical emissions information and electricity output, aggregated and averaged within a defined boundary and timeframe. This includes regional, sub-national and national production grid averages.

#### *2.6.2.2 Market-based reporting*

The market-based method reflects proportional emissions from specific electricity tariffs that consumers select in the market. Under this method an energy consumer uses the emissions factor associated with the qualifying contractual instruments it purchases. Available contractual instruments vary by market, but can include Energy Attribute Certificates (EACs, which can include RECs, REGOs, and I-RECs), Power Purchase Agreements (PPAs) and other low-carbon products purchased from energy suppliers.

If an organisation does not have any such contracts (or its instruments do not meet the quality criteria), a residual mix factor, representing untracked or unclaimed energy emissions for that region, is used. If the residual mix is not available, the location-based method is applied, in which case the market-based and location-based totals will be the same.

### 2.6.3 Scope 3

Scope 3 includes all other indirect emissions sources not accounted for within scopes 1 and 2. The sources applicable will depend on a reporting organisation’s activities but could include purchased goods and services, capital goods, business travel, commuting, waste disposal, emissions from use of company-derived products or materials, and outsourced activities such as deliveries.

The GHG Protocol’s *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (WRI and WBCSD, 2011) groups scope 3 emissions into 15 categories to provide a framework to organise, understand and report these emissions.

Scope 3 activities typically contribute a significant proportion of an organisation’s overall emissions.

## 2.7 Measuring climate impacts from aviation

To capture the overall aviation effects on climate, as well as GHG emissions, it is recommended that reporting organisations account for radiative forcing in their greenhouse gas assessment. This is a result of unfolding evidence suggesting that high altitude jet fuel combustion also provokes non-greenhouse gas climate effects; such as aviation induced clouds or soot particles. It is considered excluding emissions associated with radiative forcing would under-state the overall climate impact of flights and is therefore not recommended.

## 2.8 GHG accounting principles

Nature Positive's approach to carbon accounting is to follow the GHG Protocol's core principles where possible:

- Relevance: selecting an appropriate inventory boundary that reflects the GHG activities of the company and serves the decision-making needs of users.
- Completeness: accounting for all emission sources within the chosen inventory boundary, with any specific exclusions disclosed and justified.
- Consistency: aiming to collect meaningful and consistent data over time whilst transparently documenting any significant changes to data quality and/or format.
- Transparency: addressing all relevant issues in a coherent and clear manner.
- Accuracy: minimising uncertainty and avoiding systematic over- or under-quantification of emissions, and ensuring any necessary estimates or assumptions required are conservative and guided by industry standards.

## 2.9 Data quality and accuracy

The accuracy of a GHG assessment is directly related to the quality of the activity data provided. Primary data should be used where available: this represents actual activities during the reporting period (such as metered kWh of electricity consumed).

Secondary data – in the form of estimates, extrapolations, modelling, benchmarks, industry averages or other proxy sources – may be used when reliable primary data is not available. Assessments based largely on secondary data should be viewed as an estimate of GHG emissions impact, and actual emissions may vary significantly.

Although comprehensive primary data may not always be available for all emissions sources, in general it is good practice to continually improve the proportion of primary data over time. This applies to many scope 3 emissions sources, where primary data is unlikely to be available for an initial assessment but should be improved over time.

# 3 METHODOLOGY

## 3.1 Introduction

This report considers GHG emissions associated with Shred Station's sites listed in Table 4. During the reporting period Shred Station employed approximately 182 FTEs at their sites with a total GIA (floor area) of 48,000 $m^2$.

**Table 4: Locations assessed**

| Site name and location | Floor area ($m^2$) | FTE |
|---|---|---|
| Osborne House, Wendover Road, Rackheath. NR13 6LH. | 14,000 | 85 |
| Unit B River Way, Harlow. CM20 2DP. | 20,000 | 53 |
| Rok Court, Parkway, Denton. M34 3SG. | 14,000 | 37 |
| No location | N/A | 7 |
| **Total** | **48,000** | **182** |

## 3.2 Approach

On project commencement, possible emissions sources across the scopes were initially screened for relevance to Shred Station, following which a data collection form was provided and returned.

Nature Positive then completed a quality assurance form to review the activity data provided. Conservative benchmarks and assumptions were used where necessary in line with good practice, and in agreement with Shred Station, as described in Section 3.3.

GHG emissions were then quantified by applying the most relevant emission factors. GHG emission factors relating to the 2024 reporting year are predominantly sourced from the 2024 UK Government GHG Conversion Factors for Company Reporting (DESNZ July 2024).

Well-to-tank emissions (those associated with extraction and primary processing) for fuels and electricity were excluded. Transmission and distribution emissions (those associated with grid and network losses) from purchased electricity have been included. Radiative forcing (see Section 2.7) has been included for aviation.

Note, results within the tables of this report are accurate to the number of significant figures presented. Any inconsistencies in totals versus individual values are due to rounding and should not be viewed as erroneous.

### 3.2.1 Scope 3 methods

Obtaining activity data for some scope 3 emission sources can be challenging. For example, the typical scope 3 methods for estimating GHG emissions from purchased goods and services and capital goods are listed below in descending order of accuracy:

- Supplier-specific
- Hybrid (combination of supplier-specific and average data)
- Average data (such as industry average emission factors)
- Spend-based

The goal should therefore be to move from a spend-based assessment to a supplier-specific assessment (for key goods and emission sources) over time.

Similarly, when determining freight and business travel emissions, actual fuel consumption in vehicles is the most accurate data source but will often be unavailable, in which case mass, mileage and transportation method form an adequate proxy.

In this report, due to data limitations, some categories may have been assessed with high-level or spend-based data and emissions factors with a view to refining these in future iterations. Where appropriate, this report recommends priority areas for improving activity data or supplier-specific emissions factors.

## 3.3 Key assumptions

Primary data was used where possible for the GHG assessment. However, where data was unavailable, efforts were made to estimate the likely associated emissions for the reported activity. Following the quality assurance phase, the following assumptions were agreed for the reporting year.

- Purchased goods and services emissions included only those arising from paper and water consumption (these sources are typically minimal emissions sources for most organisations).
- Water discharge was assumed to equal the volume of water consumption.
- Office waste was estimated based 0.26 kg per litre (depending on the unit provided).
- For air travel, radiative forcing was applied.
- A cost-to-distance conversion of £0.15/km for national rail journeys was applied based on transportation cost research.
- A cost-to-distance conversion was applied to taxi journeys based on standard local tariffs.
- For van journeys where fuel type is unknown, diesel fuel was assumed.

# 4 OPERATIONAL BOUNDARY AND DATA QUALITY

## 4.1 Data review

Shred Station has advised those emissions sources for inclusion for the assessment as well as those emission sources that are not considered relevant to their operations. . Table 5 presents the GHG categories across all three scopes, and identifies whether they were assessed, not assessed or not applicable (NA) to the operation. It also provides a high-level data quality review, with suggested improvement actions for future GHG assessments.

A combination of primary and secondary data was considered for the assessment. Total primary data provided for the assessment was >99%.

Collation of primary data for scope 3 tends to be more challenging; however, efforts to obtain this data for significant scope 3 emissions sources would yield greater accuracy to the assessment. Further, it is advisable to expand scope 3 emission reporting to all relevant categories.

### 4.1.1 Key data improvement recommendations

The following steps are recommended to improve data quality for future assessments:

- Expand scope 3 emission reporting for all relevant categories.
- Collect primary data for waste generated and water used on all sites (if practical). If impractical to measure waste in weight, it is recommended to record annual waste in terms of capacity of bins (e.g., 20 L bin x 50% full each week x 52 weeks per year, is equivalent to 520 litres per year.) Given type of business, it is recommended to record waste by type such as general waste (e.g. office waste).

**Table 5: Operational boundary and data quality**

| Ref | Emission source description | Emissions source | Boundary | Data quality review | Suggested improvement actions | Priority |
|---|---|---|---|---|---|---|
| 1 | Scope 1 | Refrigerant gas losses | Not applicable | No refrigerant gas leaks were recorded during the reporting period | - | - |
| | | Stationary sources | Assessed | Primary data provided in $m^3$ of natural gas consumption | - | - |
| | | Mobile sources | Assessed | Primary data provided in fuel type and consumption. Hybrid vehicles provided as mileage. | - | - |
| 2 | Scope 2 | Electricity consumption | Assessed | Primary data provided in kWh | - | - |
| 3-1 | Purchased goods and services (PG&S)[4] | Water | Assessed | Water: Primary data provided in $m^3$ for Norwich and Manchester. Estimate provided for Harlow | Collect primary data for all sites if possible– as noted by the client next year the data will be primary for all sites. | Very low |
| | | Paper | Assessed | Paper: Primary data provided in weight of paper consumed | - | - |
| | | All other PG&S | Not assessed | Not assessed | Recommend inclusion in future assessments. Likely this will involve providing high-level spend data in the first year. | Medium |

[4] Purchased goods and services tends to be a significant emissions source for most organisations, however, water and paper tend to only account for a very minor portion of this, but often monitored by organisations for wider ESG purposes.

| Ref | Emission source description | Emissions source | Boundary | Data quality review | Suggested improvement actions | Priority |
|---|---|---|---|---|---|---|
| 3-2 | Capital goods[5] | All capital goods | Not assessed | Not assessed | Recommend inclusion in future assessments | High |
| 3-3 | Fuel- and energy-related activities (not included in scope 1 or scope 2) | T&D losses[6] | Assessed | Derived from electricity consumption data | Refer to electricity consumption. | - |
| | | Upstream electricity (WTT[7]) | Not assessed | Not assessed | Suggest inclusion for future assessment. | Medium |
| | | Upstream fuels (WTT) | Not assessed | Not assessed | Suggest inclusion for future assessment. | High |
| 3.4 | Upstream transportation and distribution[8] | Outbound courier deliveries of packages | Not assessed | Not assessed | Possibly immaterial. | - |
| | | Upstream third-party distribution and storage of production-related goods | Not assessed | Not applicable | Not applicable | - |
| 3-5 | Waste generated in operations | Waste | Assessed | Waste provided as a mix of mass and volume. For the latter, a density benchmark was applied to estimate mass | Waste to be measured by weight in most appropriate means, typically kg if viable. Recommend checking capacity of bins/skips. | Low |
| | | Wastewater | Assessed | Derived from water consumption | Wastewater discharge volume derived from water consumption is a suitable proxy | N/A |

[5] Capital goods may be a significant emissions source, where assessed this is limited to laptops, monitors and printers.

[6] Transmission and distribution (T&D) losses refer to the scope 3 emissions associated with grid losses (the energy loss that occurs in getting the electricity from the power plant to the organisations that purchase it).

[7] Well-to-Tank (WTT) emissions refer to the impact of the extraction, refining and transportation of primary fuels before their use in the generation of electricity.

[8] Upstream WTT emissions are included for all relevant categories, including freight, business travel, staff commuting and use of sold products

| Ref | Emission source description | Emissions source | Boundary | Data quality review | Suggested improvement actions | Priority |
|---|---|---|---|---|---|---|
| 3-6 | Business travel[8] | Business travel | Assessed | Flight data with distance travelled and class (e.g. economy/business) provided as primary data. Taxi and some car journeys provided as distance travelled and fuel type (primary data). Secondary data provided in spend for rail travel. | Collect business travel data in km distance travelled by mode and fuel type. If possible, collect litres of fuel used (e.g. hire cars), if this is not possible, mileage is also acceptable | Medium |
| | | Hotel stays | Not assessed | Not assessed | Consider for future assessments | Low |
| 3-7 | Employee commuting[8] | Employee commuting | Not assessed | Not assessed | Recommended inclusion in future assessments | Medium |
| | | Remote working | Assessed | Primary data provided in homeworking days | - | - |
| 3-9 | Downstream transportation and distribution[8] | Downstream third-party distribution and storage of production related goods (not already included in 3-4) | Not assessed | Not assessed | - | - |
| **Assessment emissions based on primary data:** | | | | | | **>99%** |

Scope 3 upstream emission source category 8, and scope 3 downstream emission source categories 10-15 were not required or recommended under the CarbonNeutral® entity certifications

# 5 GHG EMISSIONS OVERVIEW

## 5.1 GHG emissions metrics

Shred Station's total GHG emissions assessed for 2024 were 3,786 tCO2e using the market-based method and 3,886 tCO2e using the location-based method.

Absolute GHG emissions can vary over time and often correspond to the expansion or contraction of an organisation. It is therefore useful to use reporting metrics that take these effects into account to establish emissions intensity. Common emissions intensity metrics include $tCO_2e$ by turnover, employees, or GIA.

GHG emissions for market and location-based reporting, together with intensity metrics related to company activities, are presented in Table 6.

**Table 6: GHG emissions metrics**

| Metric | GHG emissions ($tCO_2e$) | |
|---|---|---|
| | Market-based | Location-based |
| Total GHG emissions | 3,787 | 3,887 |
| GHG emissions per FTE (182) | 22 | 22 |
| GHG emissions per GIA $m^2$ (48,000 $m^2$) | 0.08 | 0.08 |

## 5.2 GHG emissions by scope

Scope 1 (direct) emissions largely from company owned vehicles represent the majority of emissions at 94%. Scope 2 emissions from electricity consumption account for 4% of total GHG emissions, while other Scope 3 emissions assessed make up the remaining 2% of the carbon footprint.

**Table 7: GHG emissions by scope**

| Scope | GHG emissions ($tCO_2e$) | |
|---|---|---|
| | Market-based | Location-based |
| Scope 1 | 3,575 | 3,575 |
| Scope 2 | 146 | 246 |
| Scope 3 | 67 | 67 |
| **Total** | **3,787** | **3,887** |

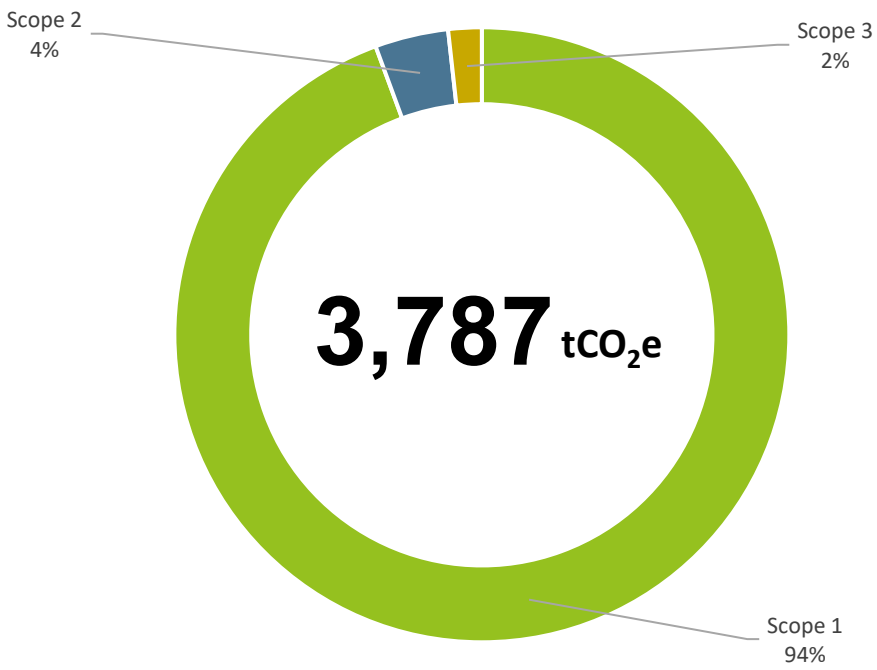


**Figure 2. Market-based GHG emissions by scope ($tCO_2e$)**

## 5.3 GHG emissions by category

Table 8 presents the detailed GHG emissions for the scopes, including those scope 3 categories assessed (as per the GHG Protocol), these results are further illustrated in Figure 3.

The largest category assessed, accounting for 94% of the total, is company owned vehicles, followed by electricity consumption accounting for 4% of total GHG emissions.

**Table 8: GHG emissions category overview**

| Scope | Category name | GHG emissions ($tCO_2e$) | % of total |
|---|---|---|---|
| 1 | Direct emissions | 3,575 | 94% |
| 2 | Purchased energy | 146 | 4% |
| 3-1 | Purchased goods and services | <1 | <1% |
| 3-3 | Fuel and energy related activities | 22 | 1% |
| 3-5 | Waste generated in operations | <1 | <1% |
| 3-6 | Business travel | 42 | 1% |
| 3-7 | Remote working (excludes employee commuting) | 1.7 | <1% |
| **Total** | | **3,787** | **100%** |
| Outside of scopes (biogenic $CO_2$ emissions from HVO) | | 3 | |

WTT emissions excluded for assessment. Transmission and distribution losses were included in assessment for purchased electricity. Purchased goods and services includes only water, which is considered a minimal source of GHG emissions within this scope 3 category. Shred Station advises that categories 3-8 and 3-10 through to 3-15 are not applicable to their company.

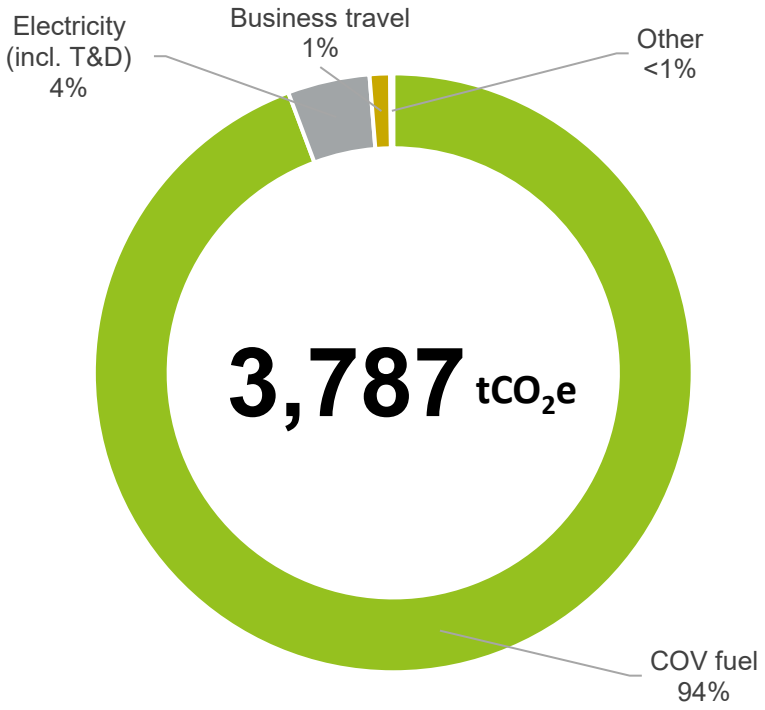


**Figure 3. Market-based GHG emissions by category ($tCO_2e$)**

## 5.4 GHG emissions by source category

Figure 4 presents GHG emissions by source relating to company activities. Total GHG emissions attributed to Shred Station's premises were 172 $tCO_2e$, company owned vehicles were 3,571 $tCO_2e$, business travel emissions were 42 $tCO_2e$, and other activities predominantly from remote working were 2 $tCO_2e$.

**Table 9: GHG market emissions by source category**

| Activity | GHG emissions ($tCO_2e$) | Subtotal ($tCO_2e$) |
|---|---|---|
| **Premises** | | |
| Natural gas | 3 | **172** |
| Electricity | 168 | |
| Water | <1 | |
| Waste and wastewater | <1 | |
| Paper | <1 | |
| **Company owned vehicles** | | |
| Lorry | 3,564 | **3,571** |
| Car (HVO) | <1 | |
| Car (hybrid) | 7 | |
| **Business travel** | | |
| Flights | 25 | **42** |
| Road and public transport | 17 | |
| **Other** | | |
| Remote working | 2 | **2** |
| **Total** | | **3,786** |

All fuels and company owned vehicles exclude WTT, all electricity includes T&D only.

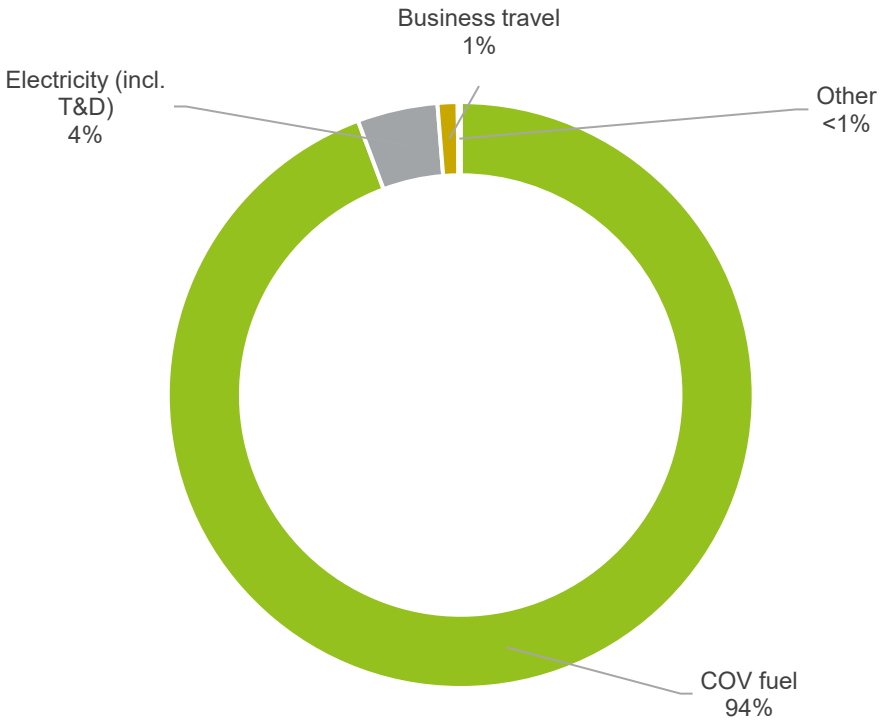


**Figure 4. Market-based GHG emissions by source ($tCO_2e$)**

# 6 COMPARISON OF ANNUAL EMISSIONS

Table 10 compares GHG emissions from Shred Station's current (2024) and previous (2023) GHG assessments. Shred Station's emissions increased by 10% in 2024, largely attributed to a 10% increase in diesel fuel consumption for their fleet.

**Table 10: Comparison of 2023 & 2024 GHG emissions (market-based)**

| Emissions source category | GHG emissions ($tCO_2e$) | | | |
|---|---|---|---|---|
| | 2023 | 2024 | Change $tCO_2e$ | Change % |
| Company owned vehicles | 3,228 | 3,571 | 343 | 11% |
| Natural gas | 6 | 3 | -2 | -40% |
| Electricity (including T&D) | 180 | 168 | -12 | -7% |
| Water and paper only (PG&S) | - | <1 | <1 | n/a |
| Waste generated in operations | <1 | <1 | <1 | -65% |
| Business travel | 19 | 42 | 22 | 115% |
| Remote working | 1 | 2 | <1 | 37% |
| **Total (market-based)** | **3,436** | **3,787** | **351** | **10%** |
| Market emissions per FTE | 20 | 22 | 2 | 10% |
| Market emissions per GIA, $m^2$ | 0.07 | 0.08 | <0.01 | 10% |
| **Total (location-based)** | **3,564** | **3,887** | **323** | **9%** |
| Location emissions per FTE | 20 | 22 | 2 | 8% |
| Location emissions per GIA, $m^2$ | 0.07 | 0.08 | <0.01 | 9% |

# 7 REFERENCES


Alvarez et al. (2018) Assessment of methane emissions from the U.S. oil and gas supply chain. Science. 361(6398) p186.188. DOI: 10.1126/science.aar720

BSRIA (2011), Rules of Thumb 5th Edition, Energy Benchmarks

Carbon Disclosure Project (2021) Global Supply Chain Report 2020: Transparency to Transformation: A Chain Reaction

CIBSE (2012) Guide F – Energy Efficiency in Buildings

Climate Impact Partners (2024), The CarbonNeutral® Protocol

Cundall (2013) $CO_2e$ Emissions Due to Office Waste, Information Paper 6

Cundall (2013), Comparison of Building Energy Benchmark to Total energy

Department for Energy Security and Net Zero. (2024). *Greenhouse gas reporting: Conversion factors 2024*.

Department for Environment, Food & Rural Affairs. (2025). UK and England's carbon footprint to 2022: Annual greenhouse gas emissions relating to consumption.

International Organization for Standardization (2018), ISO 14064:18, Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals

U.S. Environmental Protection Agency. (n.d.). *Volume-to-weight conversion factors for solid waste* [PDF]. Retrieved July 21, 2025

World Business Council for Sustainable Development & World Resource Institute (2004) The Greenhouse Gas Protocol – Corporate Accounting and Reporting Standard

World Resource Council for Sustainable Development & World Resource Institute (2011), The Greenhouse Gas Protocol – Corporate Value Chain (Scope 3) Accounting and Reporting Standard

World Business Council for Sustainable Development & World Resource Institute (2015), The Greenhouse Gas Protocol – Scope 2 guidance, An amendment to the GHG Protocol Corporate Standard