

**Shred Station Limited** 

# **2023 Greenhouse Gas Assessment**

On behalf of Climate Impact Partners

3040465-01(R01)





## NATURE POSITIVE GENERAL NOTES

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- Client: Climate Impact Partners
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## 1 CARBONNEUTRAL® CERTIFICATION SUMMARY

## 1.1 CarbonNeutral® Company

Table 1 displays the CarbonNeutral® certification scope and emissions to be offset.

#### Table 1: CarbonNeutral® Company certification summary

Organisat	tion:		Shred Station Limited			
CarbonNe	eutral® certificati	ion:	CarbonNeutral® Company			
Reporting	period:		1 January 2023 - 31 December 2023			
Consolida	ation approach:			Operational contr	ol	
Scope	Emissions source category			Required or recommended	Included ?	tCO <sub>2</sub> e
1		ns from owned, lea onary sources that ases		Required	~	5.6
		Direct emissions from owned, leased or directly controlled mobile sources			~	3,230*
2 Emissions from the generation of purchased electricity, heat, steam, or cooling Market-based		- Required	~	284 156		
	Purchased goods and services (water and paper only)			Recommended	~	1.4
	Capital goods	Printers, laptops, computers only		Recommended	x	-
	Fuel and energy related	Upstream emissions from purchased fuels		Recommended	x	-
am)		Upstream emission electricity	ons from purchased	Recommended	x	-
3 (Up-stream)	activities	Transmission and distribution (T&D) losses		Required	~	25
L)		Outbound courier packages	deliveries of	Recommended	x	-
	Upstream transportatio n and distribution	of inbound produce including internal	Third-party transportation and storage of inbound production-related goods, including internal movement of production-related goods		x	-
			Third-party transportation and storage of sold products to first customer		N/A	-



Organisat	ion:		Shred Station Lim	Shred Station Limited			
CarbonNe	eutral® certificat	ion:	CarbonNeutral® Company				
Reporting	period:		1 January 2023 - 31 December 2023				
Consolidation approach: Operational contra					rol		
Scope	Emissions so	ource category	Required or Included recommended ?		tCO <sub>2</sub> e		
	Waste generated in	Wastewater	Recommended	✓	0.2		
	operations	Other waste	Required	✓	0.5		
	Business	All transport by air, public transport, rented/leased vehicle, and taxi	Required	~	20		
	travel	Emissions from hotel accommodation	Recommended	x	-		
	Employee transport between home and places of work		Recommended	x	-		
	commuting	Emissions arising from employee homeworking and remote work	Required	~	1.2		
eam)	Downstream transport- ation and distribution	Third-party transportation and storage of sold products to first customer, not already included in upstream	Required	N/A	-		
3 (Down-stream)		Third-party transportation and storage of sold products beyond first customer, including retail and storage	Recommended	N/A	-		
	Use of sold pr	oducts	Recommended	x	-		
Outside of scopes	Combustion o	f biofuel	Recommended	~	2.4**		
Overall compliance: location-based scope 2					336		
Overall c	ompliance: ma	rket-based scope 2		✓	208		
Total for	offset (tCO <sub>2</sub> e)				209		

#### Notes:

- '√' denotes that the reporting organisation has opted to assess their emissions for that category.
   'X' denotes that the reporting organisation has opted out of assessing emissions for that source category.
   'N/A' denotes that the reporting organisation considered that the emissions source category was not relevant to their operations.
- 2. Emissions from the 'Purchased goods and services' category were assessed for paper and water consumption only.
- 3. 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.



\* Direct emissions from owned, leased or directly controlled mobile sources are included within the CarbonNeutral® Fleet certification, and therefore not included within the CarbonNeutral® Company certification for offset, to ensure the emissions are not double counted.

\*\* Scope 1 impact of the CO<sub>2</sub> 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 '0'. This is because the fuel source itself absorbs an equivalent amount of CO<sub>2</sub> during the growth phase as the CO<sub>2</sub> released through combustion.

## 1.2 CarbonNeutral® Fleet

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

Organisation:	Shred Station Limited				
CarbonNeutral® certification:	CarbonNeutral®	Fleet			
Reporting period:	1st January 2023 2023	8 to 31 <sup>st</sup> Decer	nber		
Consolidation approach:	Operational cont	rol			
Emissions Source Category	Required or Recommended	Included?	tCO <sub>2</sub> e		
All direct emissions from mobile sources used to deliver the activity	Required	~	3,230		
Emissions from consumption of purchased electricity (including transmission losses) and/or steam used to deliver the activity	Required	√	1.2		
Outside of scopes - combustion of biofuel	~	2.4*			
Overall compliance 🗸					
Total for offset (tCO₂e)					

#### Table 2: CarbonNeutral® Fleet Certification Summary

\* 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.



## 2 CONTEXT

## 2.1 Why measure greenhouse gas emissions?

Greenhouse gas (GHG) emissions assessments quantify the total GHGs produced directly and indirectly from a business' or organisation's activities. GHG assessments may also be conducted for products or services. Colloquially known as a "carbon footprint", a GHG assessment is a key tool in the process of monitoring and reducing an organisation's climate change impact as it allows reduction targets to be set and action plans formulated.

GHG assessment results can also allow organisations to be transparent about their climate change impacts through reporting of GHG emissions to customers, shareholders, employees, and other stakeholders. Regular assessments allow clients to track their progress in achieving reductions over time and provide evidence to support green claims in external marketing initiatives such as product labelling 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<sub>2</sub>) equivalence, or  $tCO_2e$ , where equivalence means having the same warming effect ('global warming potential', or GWP) as CO<sub>2</sub>, typically measured over 100 years (see Section 2.3).

The six original Kyoto Protocol gas groups are  $CO_2$ , methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF<sub>6</sub>) and perfluorocarbons (PFCs); nitrogen trifluoride (NF<sub>3</sub>), a chemical released in certain high-tech industries, was added in 2013. The global warming potential (GWP) of each is presented in Table 3.

Greenhouse gas/group	Chemical formula	GWP (CO <sub>2</sub> e)
Carbon dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	28
Nitrous oxide	N <sub>2</sub> O	265
Hydrofluorocarbons	HFCs	Depends on specific gas
Sulphur hexafluoride	SF <sub>6</sub>	23,500
Perfluorocarbons	PFCs	Depends on specific gas
Nitrogen Trifluoride	NF <sub>3</sub>	16,100

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



Notes: The global warming potentials are aligned with AR5 as per DESNZ methodology. Hotel stays, bioenergy, WTT bioenergy and material are still based on a AR4 basis.

### 2.3 Methane's GWP

Methane (CH<sub>4</sub>) is the most abundant GHG after CO<sub>2</sub>. It has a higher heat-trapping potential than CO<sub>2</sub> but remains in the atmosphere for a shorter period (typically ~12 years). This means that its GWP depends on the reporting timeframe and can lead to ambiguity. When reporting their GHG emissions, a reporting organisation can choose to use either the 20- or 100-year timeframe multiplier for methane; however, use of the 100-year timeframe – as stipulated by the Greenhouse Gas Protocol Corporate Standard – can underestimate the short-term warming potential considerably.

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 using official 100-year CO<sub>2</sub>e emissions factors.

## 2.4 Calculating emissions

GHG assessments require two types of data: activity data and emission factors. Activity data is typically supplied by the reporting organisation and represents a level of activity (such as kilowatt-hours of electricity consumed, or litres of fuel combusted) reflecting the organisation's climate impact. GHG emissions estimates are then quantified from the activity data by applying the most relevant emission factor(s) from reputable sources.

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 sources, such as the UK's Defra.

## 2.5 Reporting standards

GHG assessments are generally 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 of the World Business Council for Sustainable Development (WBCSD) and the World Resource Institute (WRI).



The International Organization for Standardization (ISO) also produced the *ISO14064*<sup>1</sup> specification series, detailing specification and guidance for the organisation and project levels, as well as for the validation and verification of emissions.

The CarbonNeutral® Protocol developed by Climate Impact Partners 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.).

### 2.6 Emissions scopes

Most standards break down emission sources into three categories, known as scopes.

#### 2.6.1 Scope 1

Scope 1 accounts for direct emissions released from sources that are owned or controlled by the reporting company and may include corporate car fleets, on-site power generation, fuel combustion for heating and power, and any process emissions such as refrigerant gas losses.

#### 2.6.2 Scope 2

Scope 2 accounts for indirect emissions associated with off-site generation of purchased energy, including electricity, heat, steam and cooling.

In 2015, the GHG Protocol published its Scope 2 Guidance, an amendment to the Corporate Standard (WRI and WBCSD, 2015). These guidelines state that any operations in markets providing product- or supplier-specific data in the form of contractual instruments shall report scope 2 emissions in two ways: based on the location-based method, and on the market-based method, with each result labelled accordingly. This is termed 'dual reporting'.

#### 2.6.2.1 Location-based reporting

The location-based method reflects the average emissions intensity of grids on which energy 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 uses. Markets differ as to what contractual instruments are available, but these can include Energy

<sup>&</sup>lt;sup>1</sup> 'ISO 14064 – Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.'



Attribute Certificates (RECs, GOs, I-RECs), Power Purchase Agreements (PPAs) and green electricity products purchased from energy suppliers.

As per The CarbonNeutral® Protocol, zero emissions may only be awarded when doublecounting is avoided. Organisations making a scope 2 reporting declaration in support of CarbonNeutral® certification must complete and sign a disclosure form provided by Climate Impact Partners, which outlines the contractual instrument(s) purchased, the total consumption covered (MWh), and the reporting period it applies to.

If an organisation either does not have any such contracts or its instruments do not meet the quality criteria, a residual mix factor is applied representing untracked or unclaimed energy and emissions for that region. If the residual mix is not available, the locationbased 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 scope 1 and 2. The sources applicable will depend on a reporting organisation's activities but could include business travel, commuting, goods and services purchased, waste disposal, emissions from use of company-derived products or materials, and outsourced activities such as deliveries.

The GHG Protocol 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 broader emissions.

The GHG Protocol describes the quantification of scope 1 and 2 as mandatory, whereas scope 3 emissions are optional. However, the CarbonNeutral® Protocol requires inclusion of certain scope 3 emissions (typically waste and business travel) depending on the certification targeted. Other scope 3 sources may be included at the discretion of the client.

Scope 3 activities can contribute a significant proportion of an organisation's overall emissions. To accurately reflect an organisation's holistic climate impact, it is thus advisable to assess and include all relevant sources.

### 2.7 Measuring climate impacts from aviation

To capture the overall aviation effects on climate – aside from the GHG emissions – the CarbonNeutral® Protocol strongly recommends clients to 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. Alternatively, clients may choose to exclude the effects of radiative forcing.

### 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 underquantification 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.



## 3 METHODOLOGY

## 3.1 Introduction

Shred Station Limited (Shred Station) provides secure confidential waste destruction and disposal services. They employ 174 full-time equivalent (FTE) staff and have three premises located in the UK in Norwich, Harlow and Manchester. This GHG assessment has been prepared by Nature Positive, on behalf of Climate Impact Partners, to estimate GHG emissions associated with the operations of Shred Station during the reporting period 1 January 2023 to 31 December 2023. Table 4 details the sites assessed in this report.

#### Table 4: Office locations

Office name, location	Floor area (m²)	Staff
Osborne House, Wendover Road, Rackheath. NR13 6LH.	1,301	42
Unit B River Way, Harlow. CM20 2DP.	1,858	15
Rok Court, Parkway, Denton. M34 3SG.	1,301	10
No office location	N/A	107
Total	4,460	174

## 3.2 Approach

On project commencement, Nature Positive completed a quality assurance form to review all activity data provided. Conservative benchmarks and assumptions were used where necessary in line with good practice.

GHG emissions were then quantified by applying the most relevant emission factors. GHG emission factors relating to the 2023 reporting year are predominantly sourced from the 2023 *UK Government GHG Conversion Factors for Company Reporting* (July 2023).

For air travel within this GHG assessment, Shred Station has chosen to account for radiative forcing (see section 2.7).

NB: 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.



## 3.3 Operational boundary and data quality

Table 5 shows the operational boundary applied for this assessment along with an overview of the quality of activity data provided. Total primary activity data used for this assessment was 99.8%.

GHG assessments tend to be an iterative process, where improvements can be made to data collection over reporting cycle; as the area of carbon management matures, there is increasing pressure on organisations to improve data collection to improve the robustness of the assessment. For these reasons, where possible it is preferential to collect primary data rather than relying on secondary data, estimations and benchmarking, as primary data will yield more accurate emissions for the assessed activities.

#### 3.3.1 Key data improvement recommendations

It is recommended to prioritise efforts to collect primary data for scopes 1 and 2 (typically this includes refrigerant gas losses, fuel consumption, and electricity consumption). Collation of primary data for scope 3 can be more challenging; however, efforts to obtain primary data, especially for significant scope 3 emissions sources, will increase the accuracy of the assessment. Further, it is advisable to expand scope 3 emission reporting to all relevant categories.

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

- Collect primary data for all company owned vehicles, specifically for petrol vehicles, in litres of fuel consumed.
- Expand scope 3 emission reporting for all relevant categories. This is particularly important for WTT (which requires no further data collection) given that scope 1 emissions from company-owned vehicles form the majority of Shred Station's emissions.

Scope	Emissions source	Boundary	Data quality review	Suggested improvement actions	Priority
	Refrigerant gas losses	Not assessed	No refrigerant gas leaks were recorded during the reporting period	Not applicable	N/A
1	Stationary sources	Assessed	Primary data provided in m <sup>3</sup> of natural gas consumption	Not applicable	N/A
	Mobile sources	Assessed	Primary data provided in litres of fuel consumed for HVO and diesel vehicles. Primary	Record fuel type and consumption in litres or gallons for petrol vehicles	High

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



Scope	Emissions source	Boundary	Data quality review	Suggested improvement actions	Priority
			data provided for plug-in hybrid vehicles in distance travelled and vehicle size. Secondary data provided in distance travelled for petrol vehicles		
2	Electricity consumption	Assessed	Primary data provided in kWh	Not applicable	N/A
3-1	Purchased goods and services <sup>2</sup>	Assessed	Water: Primary data provided in m <sup>3</sup> for Norwich and Manchester. Estimate provided for Harlow	If possible, meter water consumption. However, this tends to be a minimal source, and this may not be practical, particularly if in a shared building	Low
		Assessed	Paper: Primary data provided in weight of paper consumed	Not applicable	N/A
3-2	Capital goods <sup>3</sup>	Not assessed	Not assessed	Recommend inclusion in future assessments	Medium
3-3	T&D losses⁴	Assessed	Derived from electricity consumption data	Refer to electricity consumption. N/A	N/A
	Upstream electricity (WTT⁵)	Not assessed	Not assessed	Suggest inclusion for future assessment.	Medium
3-4	Upstream fuels (WTT)	Not assessed	Not assessed	Suggest inclusion for future assessment.	High
	Outbound courier deliveries of packages	Not assessed	Not assessed	Possibly immaterial.	N/A

<sup>&</sup>lt;sup>2</sup> 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.

<sup>&</sup>lt;sup>3</sup> Capital goods may be a significant emissions source, where assessed this is limited to laptops, monitors and printers.

<sup>&</sup>lt;sup>4</sup> 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).

<sup>&</sup>lt;sup>5</sup> 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.



Scope	Emissions source	Boundary	Data quality review	Suggested improvement actions	Priority
	Third party distribution and storage of inbound production- related goods	Not assessed	Not applicable	Not applicable	N/A
3-5	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	Low
	Wastewater	Assessed	Derived from water consumption	Wastewater discharge volume derived from water consumption is a suitable proxy	N/A
3-6	Business travel	Assessed	Flight data with distance travelled and class (e.g. economy/business) provided as primary data. Primary data provided for taxi and some car journeys as distance travelled and fuel type. Secondary data provided in spend for rail travel and distance travelled (unknown fuel) for remaining car journeys	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	Recommended inclusion in future assessments	Medium
3-7	Staff commuting	Not assessed	Not assessed	Recommended inclusion in future assessments	Medium
	Homeworking	Assessed	Primary data provided in homeworking days	Not applicable	N/A
3-9	Third party transportation and distribution	Not assessed	Not assessed	Not applicable	N/A
Assess	ment emissions ba	ased on prima	ry data:		99.8%



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.

## 3.4 Key assumptions

Upon completion of the quality assurance phase, the following assumptions and other elements were agreed with the client:

- Well to tank emissions for scopes 1 and 2 were excluded from the assessment.
- 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 on an average of 5 kg per bin bag and 0.26kg per litre (depending on the unit provided).
- For air travel, radiative forcing was applied.
- A cost-to-distance conversion of £0.16/km for national rail journeys was applied based on transportation cost research.
- For car journeys in cars of unknown fuel and size, average car using unknown fuel emission factors were applied.



## 4 **RESULTS**

## 4.1 GHG emissions summary

Table 6 shows total GHG emissions estimated during the reporting year, together with emissions displayed using metrics related to company activities.

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, staff numbers, or occupied floor area.

#### Table 6: 2023 GHG emissions summary

Metric	GHG emissions (tCO₂e)		
metric	Market-based	Location-based	
Total GHG emissions	3,439	3,567	
GHG emissions per FTE (174)	20	21	
GHG emissions per floor area (4,459 m <sup>2</sup> )	0.8	0.8	

## 4.2 GHG emissions by scope

Table 7 and Figure 1 present GHG emissions by scope estimated for company activities.

Table 7: 2023 GHG emissions by scope

Emissions scope	GHG emissions (tCO <sub>2</sub> e)		
	Market-based	Location-based	
Scope 1 – Direct emissions	3,235	3,235	
Scope 2 – Indirect electricity emissions	156	284	
Scope 3 – Other indirect emissions	48	48	
Total	3,439	3,567	



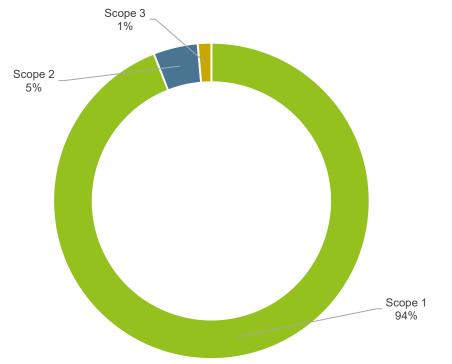


Figure 1. Market-based GHG emissions by scope (tCO2e)

Scope 1 (direct emissions) represents the largest emissions scope (approximately 94%), predominantly from diesel consumed in company owned vehicles, followed by scope 2 emissions (approximately 5%) from mains electricity consumption and electricity used in company owned vehicles. Scope 3 (other indirect) emissions account for the remaining 1% of the carbon footprint.

## 4.3 GHG emissions by source category

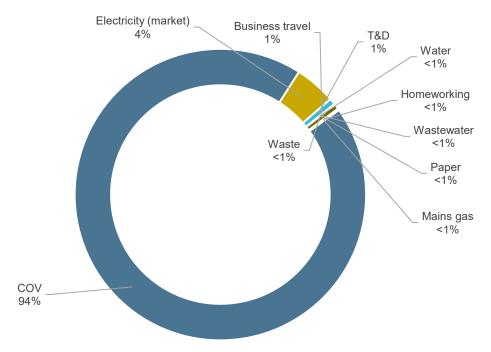
Table 8 and Figure 2 present GHG emissions by source relating to company activities. Total GHG emissions attributed to Shred Station's premises were 189 tCO<sub>2</sub>e, company owned vehicle emissions were 3,230 tCO<sub>2</sub>e, business travel emissions were 20 tCO<sub>2</sub>e, and homeworking emissions were 1.2 tCO<sub>2</sub>e.



Table 8: 2023 GHG market emissions	by source category
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Activity	GHG emissions (tCO₂e)	Subtotal (tCO <sub>2</sub> e)		
Premises				
Mains gas	5.6			
Electricity, incl. T&D	181	189		
Water and wastewater	0.4			
Paper	1.2			
Waste	0.5	1		
Company owned vehicles				
Diesel	3,225	3,230		
Petrol	0.2			
Hybrid	4.4			
HVO	0.04			
Business Travel				
Car	18	20		
National Rail	0.4			
Тахі	0.9			
Flights	0.8			
Other				
Homeworking	1.2	1.2		
Total		3,439		





#### Figure 2. CarbonNeutral® Company market-based GHG emissions by source (tCO<sub>2</sub>e)

Company owned vehicles are overwhelmingly Shred Station's largest emission source (approximately 94%) and should form the focus for any future decarbonisation efforts. These are followed by electricity use (4%), transmission and distribution losses (1%) and business travel (1%).

All other emissions each account for less than 1% of the overall footprint.



## 4.4 Comparison of 2022 & 2023 GHG emissions

A comparison of GHG emissions from Shred Station's current (2023) and previous (2022) GHG assessments is provided in Table 9.

	GHG emissions (tCO₂e)			
Emissions source category	2022	2023	Change tCO <sub>2</sub> e	Change %
Mains gas	2.3	5.6	3.3	142%
Company owned vehicles	2,624	3,230	606	23%
Electricity inc. T&D	228	181	-47	-21%
Water & wastewater	0.3	0.4	0.1	15%
Paper	0.8	1.2	0.4	52%
Waste	0.3	0.5	0.2	83%
Business travel	3.3	20	16	495%
Homeworking	1.8	1.2	-0.6	-32%
Total (market-based)	2,861	3,439	578	20%
Emissions per FTE staff (market)	19	20	1.3	7%
Emissions per sqm floor area (market)	0.6	0.8	0.1	20%

Table Q: Com	narican of 2022	8 2022 CUC	omicciono	(markat bacad)
Table 9. Com	parison or 2022	a 2025 GAG	ennissions	(market-based)

Overall, there has been an increase in total emissions between 2022 and 2023, mainly due to an increase in fuel consumed for company owned vehicles and an increase in business travel. However, emissions from electricity use have reduced.



## 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

Climate Impact Partners (2023), The CarbonNeutral® Protocol

Cundall (2013) CO<sub>2</sub>e Emissions Due to Office Waste, Information Paper – 6

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

Defra (2020), Environmental Reporting Guidelines, including streamlined energy and carbon reporting guidance

DESNZ and BEIS (2023): UK Government GHG Conversion Factors for UK Company Reporting

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

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