

Shred Station

# Historical 2008-2017 Greenhouse Gas Assessment

On behalf of Climate Impact Partners

3040001R01

OCTOBER 2023



# NATURE POSITIVE GENERAL NOTES

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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**

Organisation:		Shred Station											
CarbonNeutral® certification:		CarbonNeutral® Company											
Reporting period:		2008-2017 1 <sup>st</sup> January to 31 <sup>st</sup> December											
Consolidation approach:		Operational control											
Scope	Emissions source category	Required or recommended	Included?	tCO <sub>2</sub> e									
				2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
1	Direct emissions from owned, leased or directly controlled stationary sources that use fossil fuels or emit fugitive gases	Required	✓	0.0	0.0	0.0	0.0	0.0	0.0	3.9	3.9	3.9	3.9

Organisation:		Shred Station												
CarbonNeutral® certification:		CarbonNeutral® Company												
Reporting period:		2008-2017 1 <sup>st</sup> January to 31 <sup>st</sup> December												
Consolidation approach:		Operational control												
Scope	Emissions source category	Required or recommended		Included?	tCO <sub>2</sub> e									
					2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Direct emissions from owned, leased or directly controlled mobile sources	Required		✓	16.1	24.3	32.8	49.3	63.8	83.3	126.1	167.6	308.2	790.7
2	Emissions from the generation of purchased electricity, heat, steam, or cooling	Location-based	Required	✓	6.6	8.6	9.8	13.0	13.9	31.9	106.7	85.4	67.1	80.6
		Market-based			6.4	8.4	9.8	13.9	14.6	34.6	104.2	89.2	38.0	38.3
3 (Up-stream)	Purchased goods and services	Recommended		X	-	-	-	-	-	-	-	-	-	-



Organisation:		Shred Station												
CarbonNeutral® certification:		CarbonNeutral® Company												
Reporting period:		2008-2017 1 <sup>st</sup> January to 31 <sup>st</sup> December												
Consolidation approach:		Operational control												
Scope	Emissions source category	Required or recommended		Included?	tCO <sub>2</sub> e									
					2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	Capital goods	Printers, laptops, computers etc.	Recommended	X	-	-	-	-	-	-	-	-	-	-
	Fuel and energy related activities	Upstream emissions from purchased fuels	Recommended	X	-	-	-	-	-	-	-	-	-	-
		Upstream emissions from purchased electricity	Recommended	X	-	-	-	-	-	-	-	-	-	-
		Transmission and distribution (T&D) losses	Required	✓	0.5	0.7	0.8	1.1	1.1	2.7	9.3	7.1	6.1	7.5
		Upstream transportation and distribution	Outbound courier deliveries of packages	Recommended	X	-	-	-	-	-	-	-	-	-

Organisation:		Shred Station												
CarbonNeutral® certification:		CarbonNeutral® Company												
Reporting period:		2008-2017 1 <sup>st</sup> January to 31 <sup>st</sup> December												
Consolidation approach:		Operational control												
Scope	Emissions source category	Required or recommended		Included?	tCO <sub>2</sub> e									
					2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
		Third-party transportation and storage of inbound production-related goods	Recommended	N/A	-	-	-	-	-	-	-	-	-	-
	Waste generated in operations	Wastewater	Recommended	X	-	-	-	-	-	-	-	-	-	-
		Other waste	Required	✓	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Business travel	All transport by air, public transport, rented/leased vehicle, and taxi	Required	✓	1.1	1.8	3.1	4.8	7.6	9.2	11.3	13.0	14.5	15.7
		Emissions from hotel accommodation	Recommended	X	-	-	-	-	-	-	-	-	-	-
Employee commuting	Employee transport	Recommended	X	-	-	-	-	-	-	-	-	-	-	

Organisation:		<b>Shred Station</b>													
CarbonNeutral® certification:		<b>CarbonNeutral® Company</b>													
Reporting period:		<b>2008-2017 1<sup>st</sup> January to 31<sup>st</sup> December</b>													
Consolidation approach:		<b>Operational control</b>													
Scope	Emissions source category	Required or recommended		Included?	tCO <sub>2</sub> e										
					2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
		Emissions arising from employee homeworking and remote work	Required	✓	0.0	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.3	0.9
3 (Down-stream)	Downstream transportation and distribution	Third-party transportation and storage of sold products	Required	N/A	-	-	-	-	-	-	-	-	-	-	-
	Use of sold products	Recommended		N/A	-	-	-	-	-	-	-	-	-	-	-
<b>Overall compliance: location-based scope 2</b>				✓	<b>24.4</b>	<b>35.7</b>	<b>46.8</b>	<b>68.2</b>	<b>86.8</b>	<b>127.6</b>	<b>257.7</b>	<b>277.3</b>	<b>400.1</b>	<b>899.4</b>	
<b>Overall compliance: market-based scope 2</b>				✓	<b>24.2</b>	<b>35.5</b>	<b>46.7</b>	<b>69.1</b>	<b>87.5</b>	<b>130.2</b>	<b>255.2</b>	<b>281.1</b>	<b>371.0</b>	<b>857.1</b>	
<b>Total for offset (tCO<sub>2</sub>e)</b>					<b>2,158</b>										

**Notes:**

1. '✓' 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.



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2. Emissions from the 'Purchased goods and services' category have been assessed for paper and water consumption only. Emissions from the 'Capital goods' category have been assessed for laptops and monitors only. In neither case should the emissions total stated above be taken to be representative of the reporting organisation's climate impact of that category as a whole.

## 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 an essential 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<sub>2</sub>e, 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<sub>2</sub>, 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 2.

**Table 2: Kyoto Protocol GHGs and their global warming potential (GWP)**

Greenhouse gas/group	Chemical formula	GWP (CO <sub>2</sub> e)
Carbon dioxide	CO <sub>2</sub>	1
Methane	CH <sub>4</sub>	25
Nitrous oxide	N <sub>2</sub> O	298
Hydrofluorocarbons	HFCs	Depends on specific gas
Sulphur hexafluoride	SF <sub>6</sub>	22,800
Perfluorocarbons	PFCs	Depends on specific gas
Nitrogen Trifluoride	NF <sub>3</sub>	17,200

## 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> series, detailing specification and guidance for the organisation and project levels, as well as for the validation and verification of emissions.

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<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.

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 vehicle fleets, on-site power generation, fuel combustion, 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 requires 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 grids.

#### 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 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 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 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 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 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**

It is a requirement of The CarbonNeutral® Protocol that clients consider the evidence regarding the overall effect of aviation on climate, aside from simply GHG emissions released during combustion of jet fuel including, but not limited to, soot particles and aviation induced clouds. Having considered the evidence, clients may choose to add a small uplift to account for the wider impacts of aviation (an Aviation Impact Factor or AIF of 1.6) or may choose to address the full effects of aviation by applying an AIF of 2 or higher.

## **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.



## 3 METHODOLOGY

### 3.1 Introduction

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 historical reporting period 2008-2017 1<sup>st</sup> January to 31<sup>st</sup> December.

Shred Station is a paper shredding and confidential waste disposal company. Their staff numbers have grown year on year, with their total FTEs in 2008 equating to 5, and rising to 77 FTEs in 2017. Their premises have also expanded. Initially, their floor area was 93m<sup>2</sup> in 2008 at their single site in Norwich. They expanded to a second site in Harlow in 2011, making their combined floor area 990m<sup>2</sup>. Their total combined floor area then grew to 2,198 m<sup>2</sup> in 2014.

Table 3 details the sites assessed in this report.

**Table 3: Office locations**

Year	Norwich		Harlow		No office location	Total floor area (m <sup>2</sup> )	Total FTEs
	Floor area (m <sup>2</sup> )	FTEs	Floor area (m <sup>2</sup> )	FTEs	FTEs		
2017	1,301	10	897	2	65	2,198	77
2016	1,301	7	897	2	60	2,198	69
2015	1,301	7	897	2	53	2,198	62
2014	1,301	7	897	1	45	2,198	53
2013	93	6	897	1	36	990	43
2012	93	6	897	1	28	990	35
2011	93	4	897	1	17	990	22
2010	93	4	0	0	10	93	14
2009	93	3	0	0	5	93	8
2008	93	2	0	0	3	93	5

### 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 were predominantly sourced from the Defra and BEIS *UK Government Conversion Factors for Company Greenhouse Gas Reporting*. Given that

this was a historical assessment, Defra emission factors were sourced from a range of years, spanning from 2008 to 2023.

For air travel, Shred Station has chosen to apply an Aviation Impact Factor (AIF) of 1.6 (see section 2.7).

Note that 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 4 shows the operational boundary applied for this assessment along with an overview of the quality of data provided. Total primary data used for this assessment was approximately 54%.

**Table 4: Operational boundary and data quality**

Scope	Emissions source	Boundary	Data quality review
1	Refrigerant gas losses	Assessed	Air conditioning was used between 2014-2017 only. A benchmark was applied to estimate refrigerant losses from aircon during this period
	Stationary sources	Not applicable	N/A
	Mobile sources	Assessed	Primary data was provided in litres of diesel purchased for HGVs during 2016-2017. HGV fuel for the remaining historical years was estimated by Shred Station. Mileage was benchmarked for company-owned petrol and diesel cars based on data from previous assessments
2	Electricity consumption	Assessed	Primary data was provided in kWh for 2016-2017. Spend data was provided for the remaining years
3-1	Purchased goods and services	Not assessed	N/A
3-2	Capital goods	Not assessed	N/A
3-3	T&D losses <sup>2</sup>	Assessed	Derived from electricity consumption data

<sup>2</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).

Scope	Emissions source	Boundary	Data quality review
	Upstream electricity (WTT <sup>3</sup> )	Not assessed	N/A
	Upstream fuels (WTT <sup>3</sup> )	Not assessed	N/A
3-4	Outbound courier deliveries of packages	Not assessed	N/A
	Third party distribution and storage of inbound production-related goods	Not assessed	N/A
3-5	Waste	Assessed	Waste data was benchmarked using data from previous assessments
	Wastewater	Not assessed	N/A
3-6	Business travel	Assessed	Primary data was provided in km for flights (applicable to 2013 only). Distance travelled by National Rail was estimated by Shred Station. Car and taxi business travel was benchmarked based on data from previous assessments
	Hotel stays	Not assessed	N/A
3-7	Staff commuting	Not assessed	N/A
	Homeworking	Assessed	Primary data was provided in number of staff days working from home
3-9	Third party transportation and distribution	Not assessed	N/A
<b>Assessment emissions based on primary data:</b>			<b>54%</b>

### 3.4 Key assumptions

Upon completion of the quality assurance phase, the following assumptions were agreed:

- No data was available relating to refrigerant gas losses; therefore, data has been assumed based on the following: 1.25 tonne air conditioning (AC) unit per 1000f<sup>2</sup>, with a 2.27kg refrigerant gas charge per tonne AC weight and a 3% annual leakage, as per the Screening Method set out Defra's 2023 reporting guidelines.

<sup>3</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.

- Where electricity was provided in spend, non-domestic electricity spend conversions for the appropriate year were sourced from the Department for Energy Security and Net Zero (2023).
- For electricity, where no residual fuel mix factor was available, the relevant production fuel mix factor was applied.
- Due to a lack of data, total recycled, incinerated and composted waste has been extrapolated from previous assessments. This data has been used to determine the average tonnes of waste per GPB of revenue.
- Due to a lack of data, distance travelled in company owned cars by fuel type was extrapolated from previous assessments to determine average miles per FTE.
- Due to a lack of data, distance travelled in personal cars for business travel was extrapolated from 2019 data to determine miles/FTE. Data from 2019 was the only year with good primary data for this category.
- Due to a lack of detailed information, all business travel car journeys have been assumed to be 'average car size, unknown fuel'.
- Due to a lack of data, distance travelled by taxis for business travel was extrapolated from previous assessments to determine average miles per FTE.
- Shred Station provided the estimated distance travelled by rail during 2008-2017 (2,800 miles). To estimate the distance travelled per year, it was assumed that a total of 451 miles would be travelled per historical year.
- An Aviation Impact Factor of 1.6 was applied to business travel flights (applicable to 2013 only).

## 4 RESULTS

### 4.1 GHG emissions summary

Table 5 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<sub>2</sub>e by turnover, staff numbers, or occupied floor area.

**Table 5: Historic GHG emissions summary**

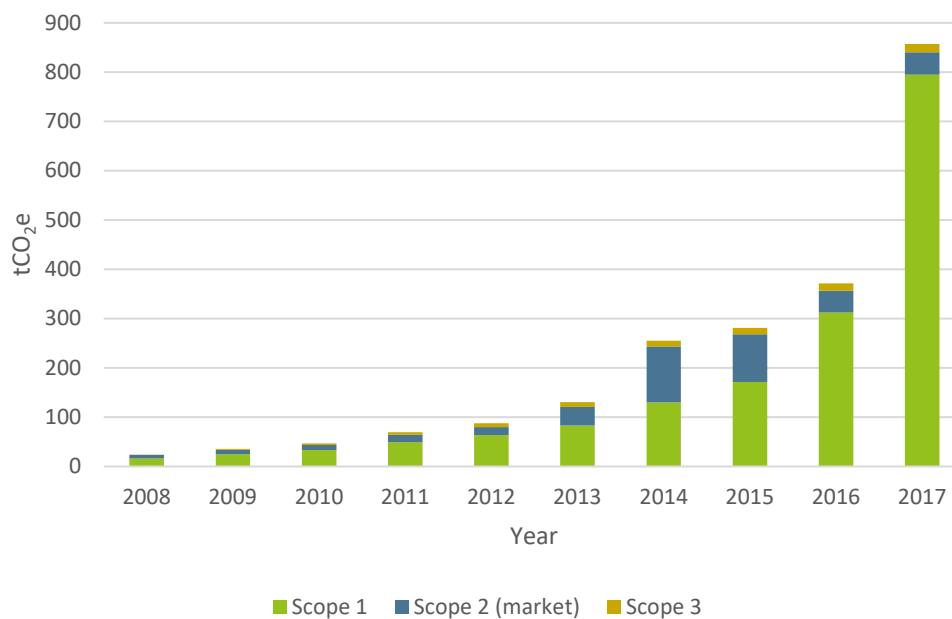
Year	Metric				Total FTEs	Total Area (m <sup>2</sup> )
	Total GHG emissions (market)	Total GHG emissions (location)	Total GHG emissions per FTE (market)	Total GHG emissions per m <sup>2</sup> (market)		
2017	857.1	899.4	11.1	0.39	77	2198
2016	371.0	400.1	5.4	0.17	69	2198
2015	281.1	277.3	4.5	0.13	62	2198
2014	255.2	257.7	4.8	0.12	53	2198
2013	130.2	127.6	3.0	0.13	43	990
2012	87.5	86.8	2.5	0.09	35	990
2011	69.1	68.2	3.1	0.07	22	990
2010	46.7	46.8	3.3	0.50	14	93
2009	35.5	35.7	4.4	0.38	8	93
2008	24.2	24.4	4.8	0.26	5	93

### 4.2 GHG emissions by scope

Table 6 and Figure 1 overleaf present GHG emissions by scope estimated for company activities under the market-based method:

**Table 6: Historic GHG market emissions by scope**

Year	Emissions scope			Total tCO <sub>2</sub> e
	Scope 1 – Direct emissions tCO <sub>2</sub> e	Scope 2 – Indirect electricity emissions tCO <sub>2</sub> e	Scope 3 – Other indirect emissions tCO <sub>2</sub> e	
2017	794.6	45.8	16.7	857.1
2016	312.1	44.1	14.8	371.0
2015	171.5	96.3	13.4	281.1
2014	130.0	113.5	11.7	255.2
2013	83.3	37.3	9.6	130.2
2012	63.8	15.7	8.0	87.5
2011	49.3	15.0	4.8	69.1
2010	32.8	10.6	3.4	46.7
2009	24.3	9.1	2.1	35.5
2008	16.1	7.0	1.1	24.2



**Figure 1. Market-based GHG emissions by scope (tCO<sub>2</sub>e)**

Of the categories assessed, scope 1 (direct fuel emissions) represents the largest emissions scope (on average, 70% across the historical years), predominantly from company owned vehicles. This is followed by scope 2 emissions from mains electricity consumption which on average, accounts for 24% across the historical years. Scope 3



(other indirect) emissions accounts for the remaining 6%. **Note that this does not represent a comprehensive scope 3 assessment.**

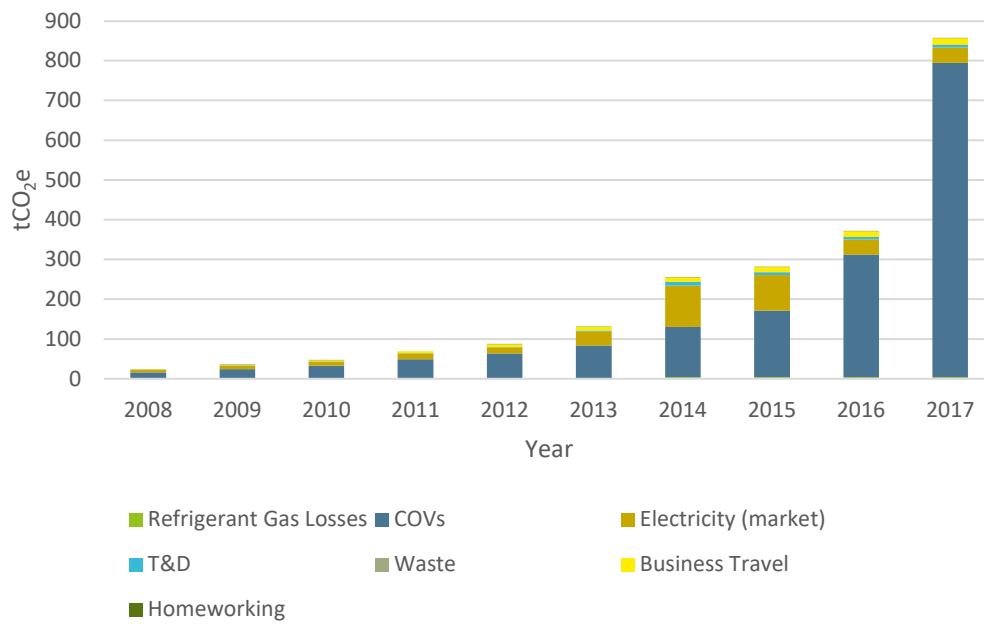
### 4.3 GHG emissions by source category

Table 7 and Figure 2 present GHG emissions by source relating to company activities.

In 2017, total GHG emissions attributed to Shred Station’s premises were 50 tCO<sub>2</sub>e, company owned vehicles were 791 tCO<sub>2</sub>e, business travel was 16 tCO<sub>2</sub>e and homeworking was 1 tCO<sub>2</sub>e. The years which displayed the largest percentage change in emissions was between 2016-2017 (57% increase in emissions from 2016-2017) and 2013-2014 (49% increase in emissions from 2013-2014).

**Table 7: Historic GHG market emissions by source category**

GHG emissions (tCO <sub>2</sub> e)	Emissions source category							Year on year change tCO <sub>2</sub> e	Year on year change %
	F-gas Losses	COVs	Electricity incl. T&D (market)	Waste	Business Travel	Home working			
2017	3.9	790.7	45.8	0.1	15.7	0.9	486.1	57%	
2016	3.9	308.2	44.1	0.1	14.5	0.3	89.9	24%	
2015	3.9	167.6	96.3	0.0	13.0	0.3	25.9	9%	
2014	3.9	126.1	113.5	0.0	11.3	0.3	125.0	49%	
2013	0.0	83.3	37.3	0.0	9.2	0.3	42.7	33%	
2012	0.0	63.8	15.7	0.0	7.6	0.3	18.4	21%	
2011	0.0	49.3	15.0	0.0	4.8	0.0	22.3	32%	
2010	0.0	32.8	10.6	0.0	3.1	0.3	11.3	24%	
2009	0.0	24.3	9.1	0.0	1.8	0.3	11.3	32%	
2008	0.0	16.1	7.0	0.0	1.1	0.0	N/A	N/A	



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

Of the sources assessed, company-owned vehicles are Shred Station’s largest emission source (70% on average across the historical years), followed by electricity (22%), business travel (5%) and transmission and distribution losses (2%).

Emissions from waste, homeworking and refrigerant gas losses each account for less than 1% on average across the historical years.

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