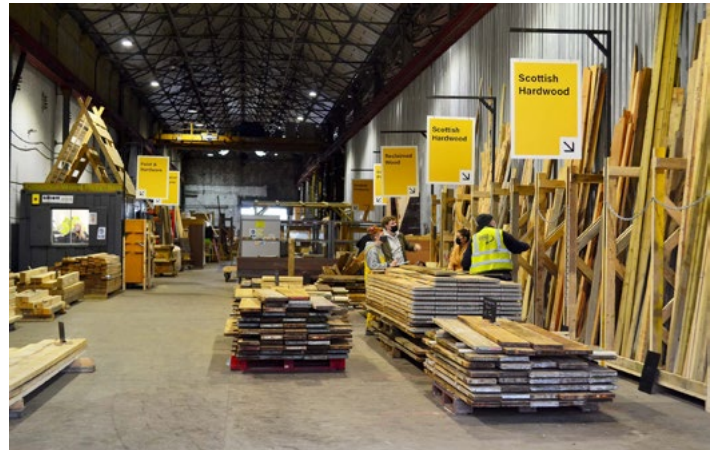
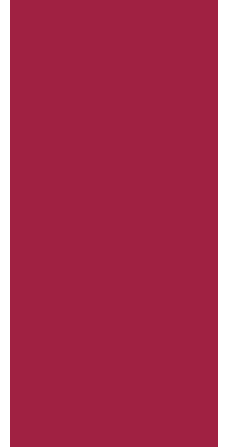


JUNE 2024



A charity and social enterprise on a mission to save resources and change lives

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1.1 Net Zero commitment

This is the first Carbon Reduction plan for Glasgow Wood and details the Net Zero Strategy until 2030. This uses the guidelines in the Greenhouse Gas Protocol (GHG)¹ which details how to create an inventory for measuring GHG emissions, in order that these can be reported to GHG protocol standard and managed. As a third sector organisation there is currently no standard or initiative that supports the Net Zero ambitions. As such, Glasgow Wood has based this strategy on the Sustainable Development Goals² (SDGs; figure 1) and aligned aims with supporting these (figure 2) including SDG 13, Climate Action.



Figure 1: Sustainable Development Goals logo Image³

Glasgow Wood aims to reduce the CO₂e emissions by 50% by 2030 and 90% by 2045 in line with Net Zero Goals. This Carbon Reduction Plan provides an outline to achieving this goal, including the areas to be targeted and actions, such as investigating switching to a fully electric delivery fleet for owned vehicles and developing and adopting a switch off policy for lights and IT equipment.

	Target 4.4: increase number of adults with relevant skills.	We provide volunteering and training opportunities for adults and take on adults on placements regardless of gender and tailored to their needs and abilities.
	Target 4.5: equal access to all levels of education and vocational training for the vulnerable.	
		
	Target 8.4: Improve global resource efficiency in consumption and production.	We promote the reuse of timber that could otherwise be sent to landfill and recycle wood that we cannot reuse.
		
	Target 9.4: Increased resource-use efficiency and greater adoption of clean and environmentally sound technologies industrial processes.	As a wood recycler and supplier of recycled and reclaimed wood we support increased resource efficiency.
		
	Target 10.1: progressively achieve and sustain income growth of the bottom 40% of the population at a higher rate than the national average.	We are a living wage employer. We provide volunteer opportunities for all adults of a range of abilities. Also provides social inclusion for many of our volunteers.
	Target 10.2: Empower and promote the social, economic inclusion of all.	
	Target 10.4: Adopt policies, and progressively achieve greater equality.	
	Target 11.4: strengthen efforts to protect the worlds natural heritage.	By selling reclaimed timber, and products made from this, we are reducing reliance on timber from logging ⁴ and reducing the volume of wood being sent directly to landfill by keeping it higher on the waste hierarchy.
	Target 11.6: reduce the adverse environmental impact of cities, including other waste management.	We provide reclaimed and recycled timber products, reducing reliance on less sustainable alternatives and diverting materials from landfill.
	Target 12.2: Sustainable management and efficient use of natural resources.	
	Target 12.5: sustainably reduce waste generation through prevention, reduction, recycling and reuse.	Conducted a carbon audit for our baseline figures. Measuring achievements towards Net Zero goals. Actions towards these will be integrated into this Strategy.
	Target 13.2: Integrate climate change measures.	
	Target 15.1 Ensure the conservation and sustainable use of terrestrial systems and their services.	We provide reclaimed and recycled timber and products, reducing reliance on less sustainable alternatives and diverting materials from landfill.
	Target 15.5: Reduce the degradation of natural habitats.	

Figure 2: SDGs, SDG targets and aims and goals towards these targets. Adapted from ^{3 5}

2.1 Background information

Glasgow Wood is a social enterprise that sells, and makes products from, recycled and reclaimed timber. The organisation operates from a rented property space that includes a retail area (Bay F), a warehouse space at the back of the retail area, outdoor storage spaces and a workshop. We are located at Unit 6 Barclay Curle Complex, 739 South Street, Glasgow, G14 0BX

Glasgow Wood was set up in 2006, to create social and environmental value.

Wood is collected from sites and products are delivered using two vans owned by the organisation as well as delivered to, and from, the premises by various logistics companies. Once onsite it is transported via forklift for processing. The processing of timber could involve pricing for sale or kiln drying through the onsite kiln, sanding, and building into products. The organisation employed 19 staff members in 2023. In total, there were 59 volunteers with Glasgow Wood in 2023, although this is a fluctuating population with fewer remaining as long-term volunteers. Of these volunteers, 22-38 were active on an average week throughout 2023. The figure used for reporting is the average of this, 30, giving a total of 49 employees/ volunteers for 2023. Combining the hours of both staff and volunteers gives 26 FTE employees in 2023. The annual turnover for January to December 2023 was £584,356.22.

Initiatives to increase resource efficiency have already been introduced, including reuse of white spirit, and sorting of wood offcuts by length for ease of reuse. Cloths and gloves are also reused where possible and supplies are bulk ordered where possible to reduce deliveries. Timber reuse and recycling emissions are included in the organisational carbon footprint, although these could be viewed as offsets due to being diverted from landfill for longer. This is to ensure full transparency in our carbon footprint emissions. Glasgow Wood also has a cycling champion to encourage cycling as a commute option for volunteers and staff.

As a social enterprise we also provide volunteering opportunities for adults that is tailored to their level of ability and needs with training provided. This provides social inclusion and meaningful work for many of our volunteers and is a key aspect of our overall aim as an organisation. We provided 11,090 volunteer hours during the reporting period and were able to organise social events for our volunteers to increase teambuilding and inclusion. We are also a living wage employer as of 2024.

2.2 Baseline Reporting Period

Our baseline reporting period is 01 January 2023 – 31 December 2023.

Table 1: Approaches to setting GHG boundaries¹

Approach	Description	Approach Selected
Financial Control	A company accounts for all the emissions for every operation it has financial control over	
Operational Control	A company accounts for all the emissions for every operation it has financial control over	✓
Equity Share Approach	A company accounts for all the emissions for every operation according to its equity share in the operation	✓

2.3 Current Reporting Year

Our current reporting year is 01 January 2023 – 31 December 2023

3.1 Carbon Emissions overview

Our Organisational Carbon Footprint Total is **103.55 tCO₂e** for reporting year 2023

4.1 Analysis by scope

In this section an analysis of Glasgow Woods organisational carbon footprint by scope will be provided.

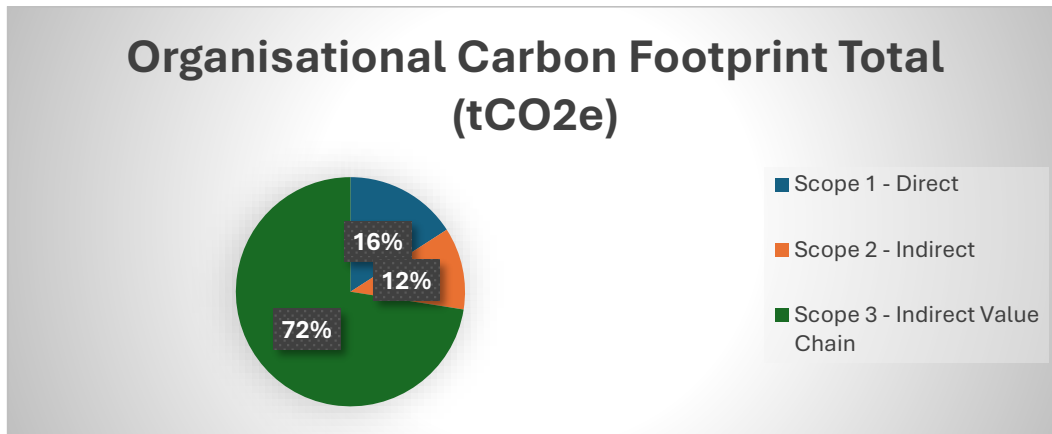


Figure 3: Organisational Carbon Footprint by scope

Figure 3 shows Glasgow Woods organisational footprint by scope. As can be seen the largest area of emissions is the scope 3 Indirect Value Chain.

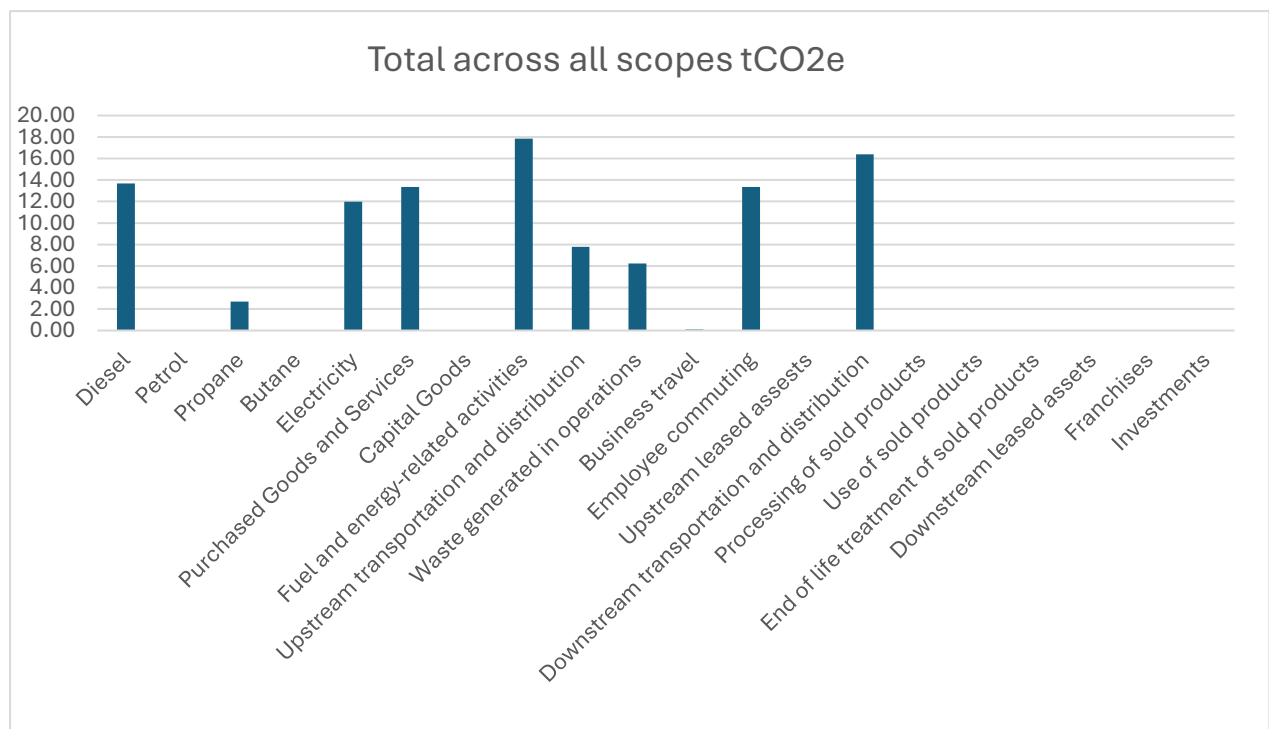


Figure 4: Total tCO₂e emissions by activity

Figure 4 shows the breakdown of emissions by activity. This enables identification of diesel from our delivery vans, fuel and energy related activities and employee commuting as among our greatest areas of emissions.

5.1 Emissions by activity

Table 2 shows all the included emissions sources by category, includes the total tCO₂e from each source and the source of the data used to calculate this. There is also an estimate of how accurate these figures are in section 11.1 for full transparency.

Table 2: Emissions by activity

Scope	Category	Total tCO ₂ e
1 - Direct	Diesel	13.69
	Petrol	0.05
	Propane	2.68
	Butane	0.04
	Sub Total	16.46
2 - Indirect	Electricity (Location Based)	12
	Sub Total	12
3 – Indirect Value Chain	Purchased Goods and Services	13.35
	Fuel and energy-related activities	17.87
	Upstream transportation and distribution	7.80
	Waste generated in operations	6.22
	Business travel	0.11
	Employee commuting	13.35
	Downstream transportation and distribution	16.39
	Sub Total	75.09
Total		103.55

6.1 Intensity Metric Analysis

<i>Carbon Intensity Metric</i>	<i>Emission per (tCO₂e)</i>
<i>Emissions per employee/volunteer (FTE)</i>	4.02
<i>Emissions per actual employee/volunteer</i>	2.11
<i>Emissions per £1000 of annual turnover for January – December 2023</i>	0.18

7.1 Emissions reductions targets

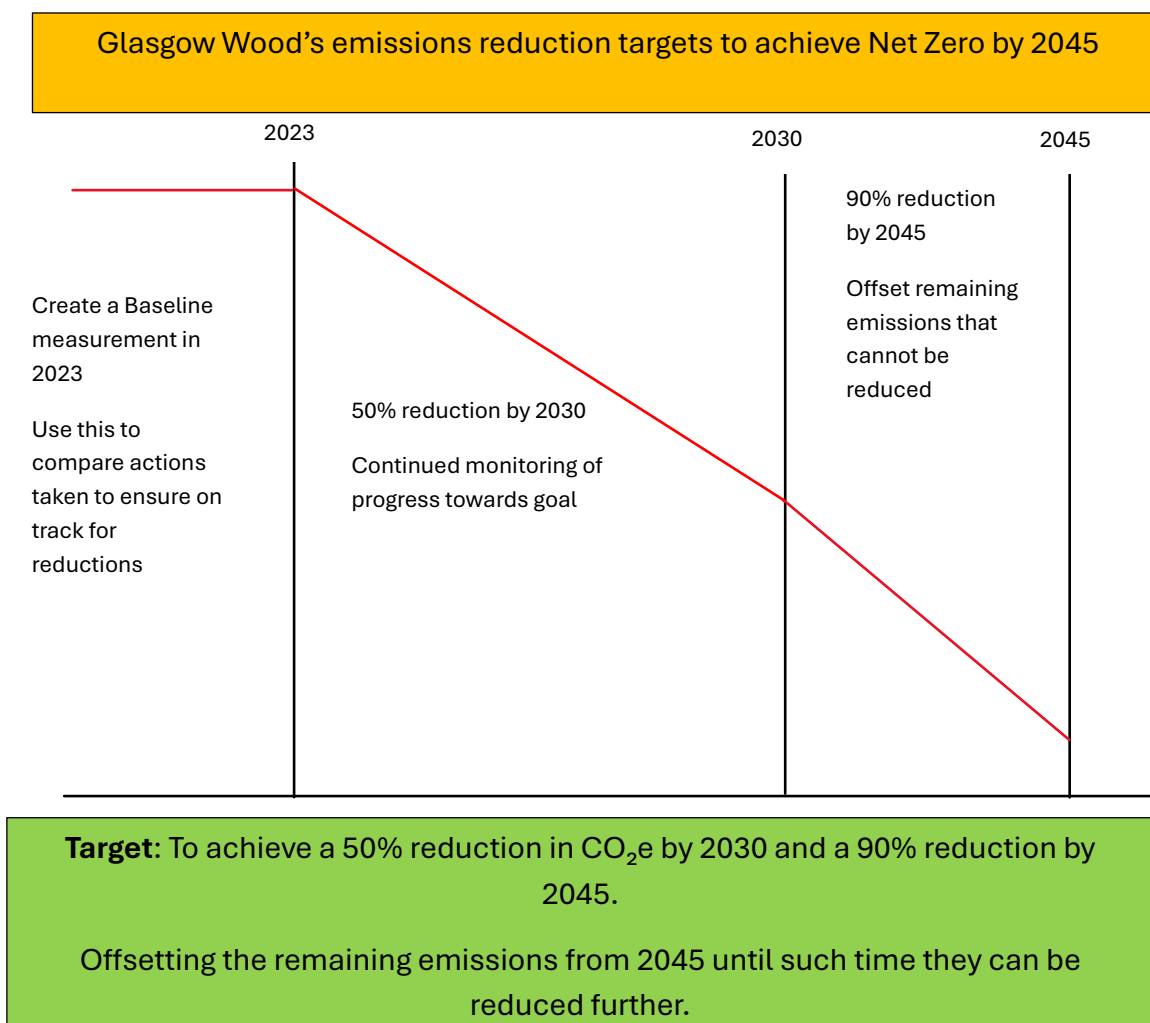


Figure 5: Glasgow Wood's emissions reduction targets

As a third sector organisation we are unable to commit to offsetting past emissions.

8.1 Carbon Reduction Actions

As Glasgow Wood is a third sector organisation in tenanted premises, we are finding it difficult to reduce emissions. In combination, it is hoped that these proposed actions will reduce emissions by 50% by 2030, although as not all figures can be calculated for these changes, only 36.5% reduction can presently be demonstrated. It is hoped that with more accurate future recording this figure will be demonstrated to be above 50% with the below initiatives. This section details plans to reduce Glasgow Woods carbon emissions and is split into short term and long term actions.

8.1.1 Short term actions

These actions are the short-term actions to be completed in the next 12 months.

Table 3: Carbon reduction actions for next 12 months

Short Term Actions			
Category	Action	Person responsible	Estimated carbon reduction effect
Recording	Continued collection of carbon emission data and reporting of progress from baseline	Media	N/A
Waste reduction	Separately collect and recycle food waste	Workshop Manager	70% specifically of food waste emissions (not included in current report)
Energy reduction	Switch bulbs (currently fluorescent tubes) in office and workshop area	Managing Director	0.50%
	Incorporate a switch off policy to ensure that all computers are turned off at night and lights are only switched on where needed	Marketing	Unknown but small expected
	Investigate increasing efficiency of kiln	Operations Manager	Unknown but small expected
	Investigate heated vests for (workshop and warehouse) staff/ volunteers	Finance	Unknown but small expected
	Investigate possibility of lower ceilings with landlord	Managing Director	Unknown but small expected
	Investigate who electricity provider is	Managing Director	Unknown but small expected
	Investigate feasibility of installing solar panels with landlord	Managing Director	Unknown but medium expected
Fuel Reduction	Investigate funding potential for Electric Vans	Business Development Director	10.38%
	Discuss possibility for electric charging points installed onsite with landlord for customer and business use	Managing Director	Unknown but small expected

8.1.1.1 Recording

Continued collection of data and reporting of progress from baseline

Each year, continuing to collect, record and report emissions data to create an annual organisational Carbon Footprint and using this information to measure progress towards Net Zero targets.

8.1.1.2 Waste Reduction

Separately collect and recycle food waste

Food waste volume was not recorded for 2023 and is therefore not included in our baseline measure. An estimate for this, created by measuring food waste from separate days in May 2024 suggested that this could be as high as 0.30 tonnes. As food waste has currently been dealt with in ordinary mixed kitchen waste this has been sent to landfill. This could be responsible for as much as 0.21 tCO₂e. Food waste will be separately collected and sent for Anaerobic Digestion in Central Scotland⁶ resulting in 0.003 tCO₂e. This represents a potential reduction of 0.21 tCO₂e.

8.1.1.3 Energy Reduction

Switch bulbs in office area

The office area currently operates nine fluorescent tubes, and there are 12 currently operating in the workshop. These should be swapped over to LED lights providing a saving of £785.83 or 0.52 tCO₂e per year (please see appendix A for calculations).

Create a switch off policy

Incorporate a switch off policy to ensure that all computers are turned off at night and lights are only switched on where needed. This would be an ongoing project that would require monitoring, repeated promotion and training.

Investigate increasing efficiency of kiln

Our wood drying kiln is currently a big energy demand. Strategies we intend to adopt to reduce this include painting the outside a darker colour, this should increase heat absorption thereby reducing energy demand. Creating a regular maintenance check schedule, that includes fixing and resealing any gaps or cracks. This could eventually lead to insulating the roof as the roof is the largest source for heat loss⁷, although this would not take place within the year. We will also monitor electricity usage to measure progress towards our net zero goals.

Investigate heated vests for staff/ volunteers

The warehouse and workshop areas get very cold in winter and have large, high ceilings. The workshop is currently heated by a wood burning furnace during cold months and this will need to be phased out. The use of heated gilets for staff/ volunteers in these areas could keep staff/ volunteers warmer and still allow for full mobility while working.

Investigate possibility of lower ceilings with landlord

Lowering our ceilings in all areas could increase our efficiency for heating as there would be less area to heat, thereby reducing our footprint while increasing staff and volunteer wellbeing.

Investigate feasibility of installing solar panels with landlord

Installing solar panels could enable us to reduce our reliance on non-renewable energy sources, reducing both the financial and environmental cost of our operations, over time.

Investigate who electricity supplier is

As we are tenants our electricity is supplied onsite through the landlord's supplier. If this is not a renewable energy provider, we could discuss this with the landlord.

8.1.4 Fuel reduction

Investigate funding potential for Electric Vans

Diesel vans used in deliveries are one of the larger sources of emissions. If these could be replaced with electric delivery vans this could reduce overall carbon emissions by 10.75 tCO₂e (please see Appendix B for calculations).

Electric Charging points onsite

Discuss possibility for electric charging points installed onsite with landlord for customer and business use. This could enable a change to electric vans for business use, encourage staff and volunteers to switch to electric for commuting, another large emissions source, and enable customers to charge while they browse.

8.1.2 Long term actions

Further ahead towards 2030, Glasgow Wood hopes to take advantage in the growth of renewable energy in the national grid and investigate moving premises to a more energy efficient and central site that enables staff and volunteers to cycle to work more easily.

Table 4: Long term actions for before 2030

Long Term Actions		
Category	Action	Estimated Carbon Reduction Effect
Energy Reduction	Emissions created from electricity use will reduce over time	12.72%
Fuel Reduction	100% uptake in Cycling due to relocation	12.89%
	Investigating a low emission freighting option	Unknown but medium expected

Electricity use emissions reduction

The emissions from electricity use, are expected to decrease over time as the grid switches over to more renewable sources⁸. This alone represents an anticipated 13.17 tCO₂e reduction in our annual organisational carbon footprint by 2030 (please see Appendix C for calculations). This is based on emissions factor projections⁹ and this figure could change before 2030.

Full uptake in commuting via bicycle.

This is in an ideal scenario in which Glasgow Wood can relocate to a more central location with greater accessibility via bicycle. If all staff/volunteer converted to commuting via bicycle this could represent a reduction of our commuting emissions to 0, a 13.35 tCO₂e saving in our carbon footprint.

Investigating a low emission freighting option

As the push for Net Zero intensifies, we hope to take advantage of lower emission freighting options for longer distance journeys.

9.1 Social Impact

We will continue to be a Living Wage Employer, giving our staff a fair pay for their skills. As a social enterprise we will also continue to provide adult volunteering opportunities to support people in their skill development and social needs.

Glasgow Woods social goals are:

- To provide an inclusive and welcoming environment, accessible to all
- Remove or reduce barriers to participation
- Be a safe haven for people to learn, develop and share skills
- Help people into positive and sustained destinations

10.1 Standard and Methodology used

Glasgow Woods carbon emissions have been recorded and reported in accordance with the WRI and WBCSD Greenhouse Gas Protocol published Corporate Accounting and Reporting Standards¹. The appropriate emission conversion factors from the Department for Energy Security and Net Zero Greenhouse Gas Reporting conversion factors 2023 have been applied¹⁰.

An operational control approach has been taken for all areas except electricity, where an equity share approach has been used. This is due to our electricity being controlled by our landlord who estimates our share of the site total.

11.1 Data Quality / Confidence

Most of the data has been gathered using invoices (Table 5), which generally enables high confidence, but some of this data has not included unit usage and this has lowered the confidence levels in some cases.

Table 5: Source and estimated accuracy for Scope emissions

Scope	Category	Data source	Expected accuracy
1 - Direct	Diesel	Invoices	High
	Petrol	Invoices	High
	Propane	Invoices	High
	Butane	Invoices	High
2 - Indirect	Electricity (Location Based)	Invoices	Low
3 – Indirect Value Chain	Purchased Goods and Services	Invoices and monthly data collection	Low
	Fuel and energy-related activities	Invoices	Medium
	Upstream transportation and distribution	Invoices	Medium
	Waste generated in operations	Monthly Report	Low
	Business travel	Invoices	High
	Employee commuting	Survey	Medium
	Downstream transportation and distribution	Invoices	Medium

One low confidence example has been in our electricity emissions as these are based on estimates by the landlord for half of the reporting period. The confidence for this data will increase in future reporting as we are now getting a measure of our electricity usage in kWh. Our commuting data was gathered via survey which gained a 69% response rate and can be considered as robust; however, this data was also used to estimate the remaining 31%. Overall, the confidence in this data is reasonable.

12.1 Declaration and Sign off

This Carbon Reduction Plan has been reviewed and signed off by our Managing Director.

Cameron Brown, Managing Director 11 July 2024

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Appendices

Appendix A Replacing Fluorescent lights with LED

Currently between the office and the workshop there are 21 halogen light bulbs in operation, with an option for 31. These are F70W/ 865 daylight bulbs of the T8 variety, estimated to be 70W¹¹. In one week of operation these consume $0.070\text{W} \times 10\text{h} \times 5\text{d} = 3.5\text{kWh}$. Over one year this would create $3.5 \times 50\text{ weeks} = 175\text{ kWh}$ per bulb, costing (with an estimate of 31.25p/kWh based on 2023 prices¹² $175\text{kWh} \times \text{£}0.3125 = \text{£}54.69$ per bulb and generating $175\text{kWh} \times 0.207074 = 36.24\text{ kgCO}_2\text{e}$. Over 21 bulbs that is $21 \times 36.24\text{ kgCO}_2\text{e} = 761\text{ kgCO}_2\text{e}$ or $\text{£}54.69 \times 21 = \text{£}1,148.50$. If all 31 bulbs were operational this would account for $31 \times 36.24\text{ kgCO}_2\text{e} = 1,123.44\text{ kgCO}_2\text{e}$ or $\text{£}54.69 \times 32 = \text{£}1,695.39$.

If the halogen bulbs were replaced with LED tubes¹³ for one week this would result in $0.0221\text{W} \times 10\text{h} \times 5\text{d} = 1.105\text{kWh}$. Over one year this would be $1.105\text{kWh} \times 50\text{ weeks} = 55.25\text{kWh}$, costing (with an estimate of 31.25p/kWh based on 2023 prices ref) $55.25\text{kWh} \times \text{£}0.3125 = \text{£}17.27$ per bulb per year and generating $55.25\text{kWh} \times 0.207074 = 11.44\text{ kgCO}_2\text{e}$. Over 21 bulbs that is $\text{£}17.27 \times 21 = \text{£}362.67$ or $11.44\text{ kgCO}_2\text{e} \times 21 = 240.24\text{ kgCO}_2\text{e}$. Over 31 bulbs this is $\text{£}17.27 \times 31 = \text{£}535.37$ or $11.44\text{ kgCO}_2\text{e} \times 31 = 354.64\text{kgCO}_2\text{e}$.

Switching to LED bulbs could provide a saving of $\text{£}1148.5 - \text{£}362.67 = \text{£}785.83$ or $761\text{ kgCO}_2\text{e} - 240.24\text{ kgCO}_2\text{e} = 520.76\text{ kgCO}_2\text{e}$ over 21 bulbs. If the full 31 bulbs were used, then the saving would be $\text{£}1,695.39 - \text{£}535.37 = \text{£}1160.02$ or $1,123.44\text{ kgCO}_2\text{e} - 354.64\text{ kgCO}_2\text{e} = 768.8\text{ kgCO}_2\text{e}$

Appendix B Switching to electric vans

We purchased 5,447.99 litres of diesel during reporting year. This was converted to UK gallons using the formula $5447.99/4.546^{14} = 1198.414$. The Miles Per Gallon was taken from Van Ninja¹⁵ for a Ford Transit 350 2.0 Eco Blue, which is one of our vehicles and the appropriate GHG conversion factor applied¹⁰. This was then compared to the diesel emissions using litres and the GHG conversions factors¹⁰ to check for accuracy and was roughly equivalent to the total including the Well to Tank (WTT) emissions. This figure was then used to obtain the estimated mileage for 2023 to calculate the emissions from doing the same distance using an electric van, again applying the appropriate GHG conversion factors¹⁰ and totalling the Transmission and Distribution (T&D) emissions and WTT emissions in tCO₂e. The difference between the two total was then calculated.

Appendix C Projection of future electricity emissions

We used an estimated total 57,943.69 kWh of electricity during the reporting year. The appropriate conversion factor was applied using the Data from table 1 of Department for Energy Security & Net Zero., (2023)⁹ projected 2030 conversion factors. This factor includes the T&D emissions. This gave a total of a predicted 2759.45 kgCO₂e emissions, which was subtracted from the current all scope emissions produced by electricity (15926.37 kgCO₂e) and then converted to tonnes for comparison ($13166.92/100=13.17$).