



# Carbon Reduction Plan 2026-2030

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## Integrated Management System

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**Engineering a  
sustainable future**





# Document Quality Control

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## Document Revision Record

Rev.	Date	Author	Reviewed by	Approved by	Details of amendments
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# 1. Mackley commitment to achieving Net Zero

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## 1.1 Introduction

*This plan is structured to mirror the UK government's Policy Procurement Note (PPN) 06/21 template and will be published on the company website and updated annually.*

Climate change adaptation is Mackley's core business as we deliver infrastructure to improve the resilience of coastal and riverside communities and support regional growth and sustainable use of resources. We are also committed to helping reduce carbon emissions from our operations. Mackley's Carbon Reduction Plan is part of our sustainability management approach and implements our Sustainability Policy.

Mackley is part of the Van Oord Group who have made validated reduction commitments to meet the internationally recognised Science Based Target Initiative. Mackley's Scope 1 and 2 emissions are within Van Oord's corporate greenhouse gas (GHG) inventory and are included within this reduction commitment.

Mackley operates independently as a registered private limited company and has therefore also made its own reduction commitments, detailed below. These broadly align with those of Van Oord and the requirements of the Science Based Targets Initiative.

*PPN 06/21 requirement:* We make the following pledges compared to our 2021 baseline year:

### **Near-term targets:**

1. Reduce our absolute Scopes 1 and 2 emissions by 35% by 2030
2. Increase annual sourcing of renewable electricity to 100% by 2030
3. Reduce absolute Scope 3 emissions from business travel, staff commuting, waste,
4. Reduce the intensity of Scope 3 emissions from purchased goods and services and upstream transportation of goods by 7% year on year from 2021 – 2030 (equivalent to 52% reduction) using the physical intensity method – CO<sub>2</sub>e / tonnes procured & km transported

### **Long-term targets:**

5. Reach Net Zero across all scopes before 2050 – in line with the UK Government's target and Science Based Targets.

## 2. Baseline Emissions Footprint

### 2.1 Commentary on Mackley’s baseline year

Mackley’s greenhouse gas emissions are calculated following the Greenhouse Gas Protocol’s Corporate Accounting and Reporting Standard<sup>1</sup>. Further, Scope 1 and 2 emissions reporting meets the UK Government’s Environmental reporting guidelines: including Streamlined Energy and Carbon Reporting requirements<sup>2</sup>. Emissions data is based upon actual consumption of fuel (litres) / energy (kWh), actual business miles and materials (tonnes) from Mackley’s accounts. Conversion factors are from suppliers, the annual UK Government Conversion Factors For Company Reporting Of Greenhouse Gas Emissions and the Inventory of Carbon and Energy Product Database V4.1 (Oct 2025). Mackley’s baseline year is 2021, see values in Table 1 and Table 2. Mackley began measuring its carbon footprint in 2020 and established a 10-year Sustainability Plan to 2030. Reliable data for Scopes 1 and 2, and most Scope 3 emissions, exist from 2018. 2021 was selected as the baseline year because although 2020 was a typical year for Scope 1 and 2 emissions, it was atypical for Scope 3. This was due to large purchases of steel piles and rock armour in 2020 making the Scope 3.1 ‘Purchased goods’ figure unusually high. Further, the figure for Scope 3 upstream (u/s) transportation of goods was unusually high due to the large volume of rock delivered directly to construction sites from Norway by sea in 2020. Purchased goods are not included within the reporting and target requirement for PPN 06/21, but upstream transportation of goods is included. Both Scope 3 categories are included within the SBTi reporting and target requirements. Mackley therefore self-determined that a more representative baseline year would be 2021 although 2020 would have provided a softer basis for improvement, it was inconsistent with the aims of materially reducing carbon overall.

#### PPN 06/21 Requirements

**Table 1: Headline CO<sub>2</sub>e figures for 2021 baseline year**

Direct Emissions Scope	Source of emissions	Tonnes CO <sub>2</sub> e
<b>Scope 1</b>	(fleet and plant fuel)	1,558.00
<b>Scope 2</b>	Purchased electricity <sup>3</sup>	0.00
<b>Scope 3</b>	Total PPN 06/21 categories	582.00
<b>Total</b>	<b>All PPN 06/21 emissions</b>	<b>2141.00</b>

Carbon Intensity (Scopes 1 & 2) – 1000 t CO <sub>2</sub> e / £million turnover	41.79
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<sup>1</sup> World Resources Institute, 2011 - <https://ghgprotocol.org/corporate-standard>

<sup>2</sup> Hm Government 2019 - <https://www.gov.uk/government/publications/environmental-reporting-guidelines-including-mandatory-greenhouse-gas-emissions-reporting-guidance>

<sup>3</sup> The zero emissions reflects Mackley’s sourcing of 100% renewable energy in 2021. This accords with the UK rules for reporting green tariffs. Mackley’s electricity usage equates to approximately 40 tCO<sub>2</sub>e if a standard tariff were used.

**Table 2: Breakdown of Scope 3 CO<sub>2</sub>e figures for 2021 baseline year**

<b>Direct Emissions Scope</b>	<b>Source of emissions</b>	<b>Tonnes CO<sub>2</sub>e</b>
<b>PPN 06/21 Scope 3 categories</b>	Business Travel	1.17
	Employee commuting	18.75
	Waste	40.60
	u/s transportation of goods	522.42
	d/s transportation and distribution <sup>4</sup>	0.00
<b>Additional Scope 3 – not required by PPN 06/21</b>	<b>Water use and treatment</b>	<b>0.41</b>
	<b>Purchased goods and services</b>	<b>4609.56</b>

<sup>4</sup> The zero emissions for downstream transportation reflect the nature of Mackley’s operations in that our ‘product’ are fixed civil engineering structures which have no onward delivery.

### 3. Current year emissions

#### 3.1 Commentary on latest GHG emission figures

The tables below detail the most recent year’s emissions data. Figures for all Scopes for the period 2020 to 2030 are detailed in Appendix A along with graphs detailing progress on reduction.

*PPN 06/21 Requirements*

**Table 3: Headline CO<sub>2</sub>e figures for 2025 emissions – most recent year**

Direct Emissions Scope	Source of emissions	Tonnes CO <sub>2</sub> e
Scope 1	(fleet and plant fuel)	1,550.17
Scope 2	Purchased electricity <sup>5</sup>	15.09
Scope 3	Total PPN 06/21 categories	441.29
<b>Total</b>	<b>All PPN 06/21 emissions</b>	<b>2006.55</b>

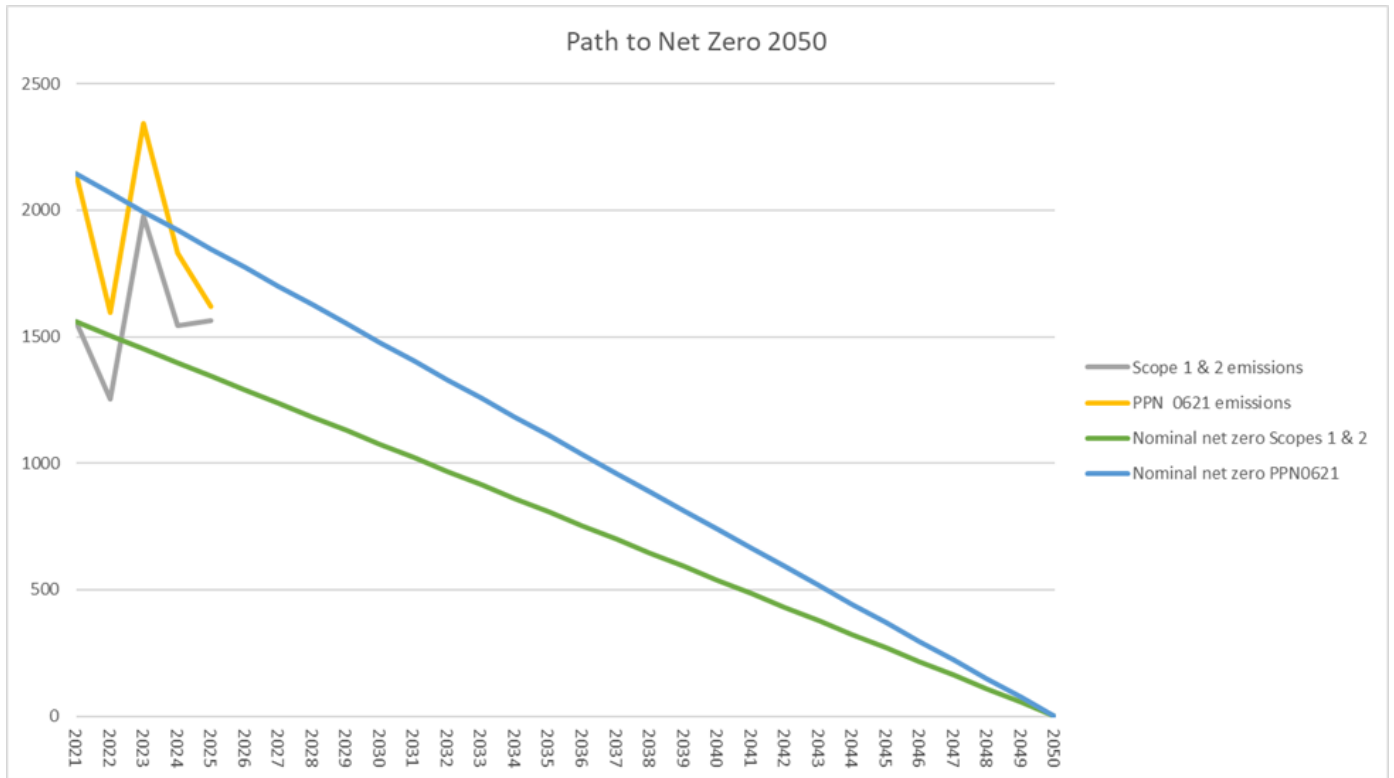
<b>Carbon Intensity</b> (Scopes 1 & 2) – 1000 t CO <sub>2</sub> e / £million turnover	30.10
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**Table 4: Breakdown of Scope 3 CO<sub>2</sub>e figures for 2025 – most recent year**

Indirect Emissions Scope	Source of emissions	Tonnes CO <sub>2</sub> e
PPN 06/21 Scope 3 categories	Business Travel	7.04
	Employee commuting	31.92
	Waste	14.59
	u/s transportation of goods	387.74
	d/s transportation and distribution <sup>5</sup>	0.00
<b>Additional Scope 3 – not required by PPN 06/21</b>	<b>Water use and treatment</b>	<b>0.43</b>
	<b>Purchased goods and services</b>	<b>3960.05</b>

<sup>5</sup> No fuel mix disclosure provided by Pozitive Energy, so UK Gov reporting standard electricity figure used

**Figure 1: Carbon Reduction: Projected vs Actual**



## 4. Carbon Reduction Projects

Mackley’s emission reduction initiatives have been agreed following identification of our sources of emissions and their relative contributions to our overall GHG emission footprint. They apply the carbon hierarchy, with avoidance and reduction preferred before consideration of off-setting. The initiatives also take account of technological developments in the construction sector for plant, fleet vehicles, electricity supply and materials. The reduction initiatives are reviewed annually and updated / improved if required. The initiatives below reflect a thorough re-evaluation carried out in 2026, looking forward to 2030.

### 4.1 Typical sources of emissions from Mackley’s operations

Analysing data from 2018 – 2024, Table 5 details the sources of Mackley’s Scope 1 and 2 (direct) emissions and their average proportion of the total direct emissions. This identifies that there are 3 main categories of emissions: fuel for construction equipment, staff transportation to sites and head office electricity. Of these, fuel used for construction equipment is by far the largest proportion of emissions, equating to c.70% of emissions, with staff travel the second largest component, equating to c.30% of emissions. Head office electricity was a very small proportion, equating to just 1% of emissions.

From our industry knowledge, we believe that these figures are representative of our direct emissions.

**Table 5: Average proportion of Mackley’s direct GHG emissions by source**

Scope 1 and 2 emission sources	Average proportion of total emissions
Fuel Site – DIESEL (machine fuel)	61
Fuel Site Forecourt Diesel (machine fuel + vans)	7
Fuel Site/yard HVO (machine fuel)	0
Fuel Yard – Diesel (machine fuel)	7
Fuel Cards Cars and Vans Diesel	17
Fuel Cards Cars and Vans Petrol	4
Fuel Employee Claimed Mileage - Diesel	2
Fuel Employee Claimed Mileage - Petrol	2
Fuel Employee Claimed Mileage - Petrol/Hybrid	0
Head Office Electricity	1
Green tariff electricity	-1
Site Electricity	0

### 4.2 Carbon Reduction Initiatives

#### PPN 06/21 Requirements

Using the information above and emerging industry best practice, we have identified the emission reduction initiatives below. These have been selected by considering the quantity of emissions from each activity, Mackley’s ability to influence the emissions from these activities and the technology available 2026 – 2030 that will reduce emissions.

## 4.3 Completed Carbon Reduction Initiatives 2021 - 2025

The following environmental management measures and projects have been completed or implemented since the 2021 baseline. The carbon emission reduction achieved by these schemes equate to 137 tCO<sub>2</sub>e reduction in total PPN 0621 scoped emissions. They have also resulted in a 25% reduction in carbon intensity against the 2021 baseline, with Mackley's turnover increasing from £37m in 2021 to £52m in 2025. The measures below will be in effect when performing contracts from 2025 onwards.

Mackley has maintained its certification of ISO14001, leading to environmental consideration on all projects

- The proportion of Electric vehicles in Mackley's fleet (cars and vans) has increased from 0% in 2021 to 20% in 2025.
- The proportion of plug-in hybrid cars in Mackley's fleet has increased from 15% in 2021 to 18% in 2025
- The proportion of sustainably sourced HVO fuel used on Mackley projects was 17% in 2021, up from 0% in 2020, but fell to 15% in 2025 due to a reduction in its use by the Environment Agency.
- From 2021 – 2024, Mackley sourced green tariff electricity for its head office. The head office was refurbished in 2025 under a temporary electricity contract that is not from renewable sources. The head office is now fitted with solar panels and future energy use will be reduced by these panels.

## 4.4 Future Carbon Reduction Initiatives 2026 - 2030

### 4.4.1 Towards net zero construction sites

**Target: 2030: Improve electrification on construction sites to reduce reliance on fossil fuel use Quantified targets to be determined 2026 – 2028 as technology develops)**

Reducing emissions from construction equipment – low emission technology plant (e.g. electric plant) + more fuel efficient plant

Reducing emissions from site offices / compounds – low emission technology welfare (e.g. solar welfare) + connecting to mains power

### 4.4.2 Electric fleet vehicles

**Target 2030: 75% of fleet vehicles to be EVs by 2030**

90% of EV fleet cars – EVs and hybrid EVs

50% of EV fleet vans + supporting charging on sites

### 4.4.3 Towards 100% renewable energy for head office

**Target 2030: 100% electric supply for Small Dole from certified renewable sources**

New head office power supply to be green tariff from 2026 onwards

### 4.4.4 Reducing embodied carbon from construction materials

**Target 2030: 50% Reduction in carbon intensity of purchased materials - plastics, concrete, steel, aggregates, rock, timber**

Mackley design contracts to prioritise low carbon materials and less material use

Mackley's ECI advice / Value engineering to prioritise low carbon materials and less material use

Mackley Estimating/tenders to prioritise low carbon materials and less material use

Develop supply chain for low carbon materials - FSC/PEFC timber, concrete, steel and rock

#### 4.4.5 Improving staff carbon literacy

##### **Target 2030: 100% training for Mackley staff in construction carbon**

Training for design, estimating and ECI staff – low carbon materials / designs

Training for site management teams

Training for site operatives – fuel efficient plant operation + vehicle driving

Potential for all staff - how to reduce carbon at home

#### 4.4.6 Improving carbon accounting

##### **Target 2030: Consistently meeting SBTi accounting standards – verified externally/VO?**

Improve consistency of data capture and analysis – review Mackley Greenhouse Gas Emissions Reporting Procedure

Improve emissions data from staff commuting to differentiate EVs

Coordinate data handling with Van Oord reporting

## 5. Declaration and Sign Off

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This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans. The CRP is published on the organisation's website and will be updated annually.

Emissions have been reported and recorded in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Reporting Protocol corporate standard and uses the appropriate Government emission conversion factors for greenhouse gas company reporting.

Scope 1 and Scope 2 emissions have been reported in accordance with Greenhouse Gas (GHG) Protocol requirements, and the required subset of Scope 3 emissions have been reported in accordance with the published reporting standard for Carbon Reduction Plans and the GHG Protocol Corporate Value Chain (Scope 3) Standard.

This Carbon Reduction Plan has been reviewed and signed off by the JT Mackley Board of Directors

Signed:



Ben Hamer, Managing Director

21/04/26

## Appendix A Greenhouse Gas Emissions Data 2020 - 2030

**Table 6: Carbon emissions for PPN 06/21 sources**

			Baseline year				Most recent (current) year					
Sources of GHG emissions		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
<b>Scope 1</b>	(fleet and plant fuel)	1,688.00	1,558.00	1251.00	1974.00	1537.00	1550.17					
<b>Scope 2</b>	Purchased electricity	0.00 <sup>6</sup>	0.00 <sup>4</sup>	0.00 <sup>4</sup>	4.70 <sup>7</sup>	5.31 <sup>5</sup>	15.10 <sup>8</sup>					
<b>Scope 3</b>	Total PPN 06/21 categories	3054	582.00	355.00	362.00	273.00	441.00					
<b>Total</b>	<b>All PPN 06/21 emissions</b>	<b>4742.00</b>	<b>2141.00</b>	<b>1630.00</b>	<b>2341.00</b>	<b>1816.00</b>	<b>2006.55</b>					
	<b>Carbon Intensity</b> (Scopes 1 & 2) – 1000 t CO <sub>2</sub> e / £million turnover	37.52	41.79	35.72	39.41	25.71	30.10					

<sup>6</sup> The zero emissions for Scope 2 electricity reflect the UK rules for reporting green tariffs. Mackley's electricity usage equates to approximately 40 t of CO<sub>2</sub>e if a standard tariff were used.

<sup>7</sup> calculated from Opus Energy's Fuel Mix Disclosure, 92% renewables, 3.6g / kWh

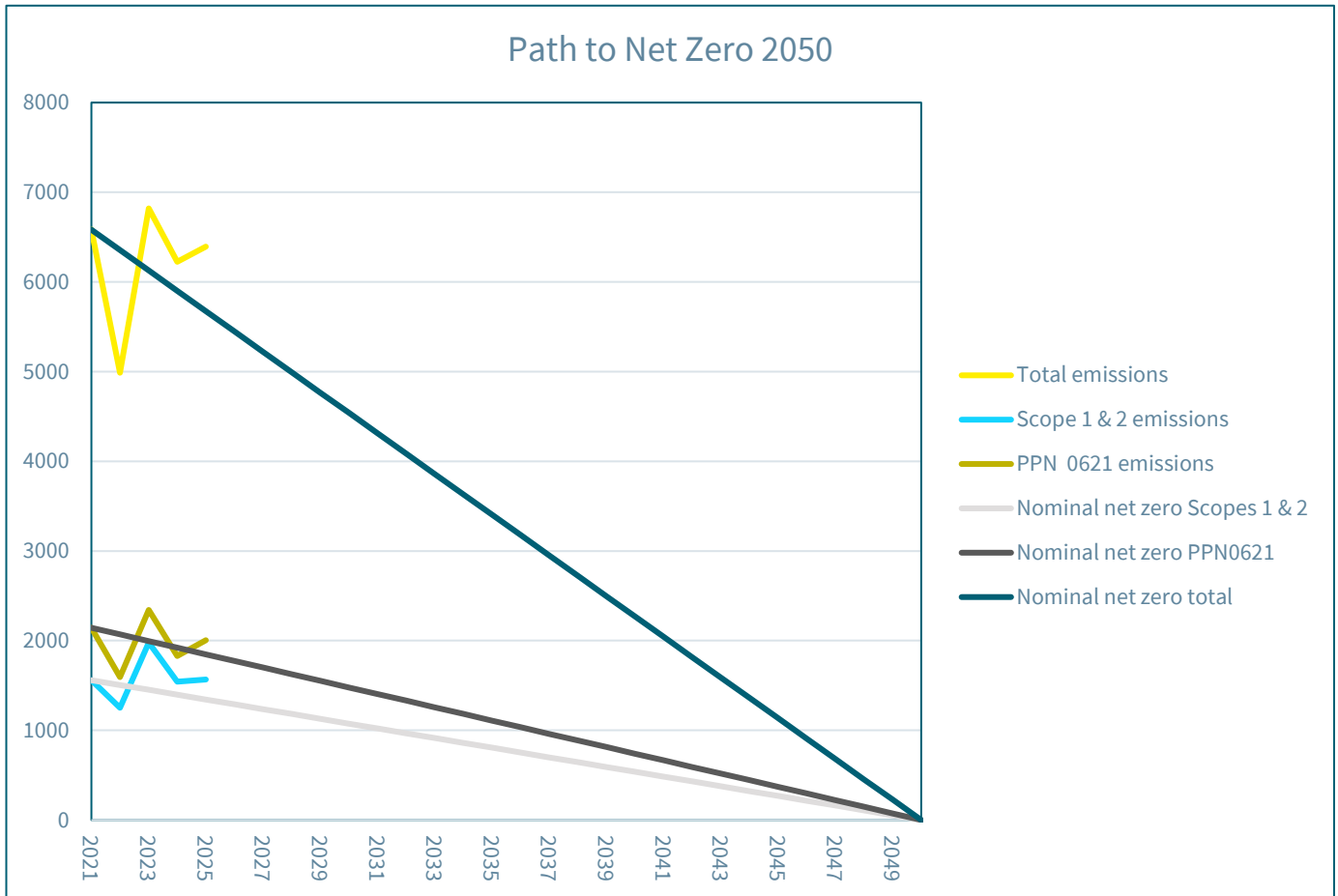
<sup>8</sup> This figure assumes standard UK grid mix as the temporary energy supplier during Mackley's 2025 head office refurbishment had not provided a fuel mix disclosure by the time of writing this report

**Table 7: Mackley Scope 3 emissions broken down by categories**

			Baseline year				Most recent (current) year					
<b>Sources of GHG emissions</b>		<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>	<b>2029</b>	<b>2030</b>
PPN 06/21 Scope 3 categories	Business Travel	1.12	1.17	3.34	5.12	3.08	7.04					
	Employee commuting	15.00	18.75	37.38	35.47	31.92	31.92					
	Waste	45.66	40.60	23.09	9.37	23.87	14.59					
	u/s transportation of goods	2,992.35	522.42	291.89	313.01	214.65	387.74					
	d/s transportation and distribution <sup>9</sup>	0.00	0.00	0.00	0.00	0.00	0.00					
Additional Scope 3 (not required by PPN 06/21)	Water use and treatment	0.29	0.41	0.18	0.21	0.37	0.43					
	Purchased goods and services	12577.64	4609.56	3515.33	4023.88	3928.51	3960.05					

<sup>9</sup> The zero emissions for downstream transportation reflect the nature of our business in that we have no product deliveries separate from our construction.

### A.1 Carbon reduction trajectory 2021 - 2050



The figures in Tables 6 and 7, and graph above, show a decrease in carbon emissions between 2021 (baseline year) and 2025 (most recent year). However, the emissions vary each year and the overall reduction is marginal. There was a significant reduction in 2022, but since then emissions across Mackley’s total (all sources) direct emissions and PPN 06/21 sources have fluctuated annually. Mackley’s carbon reduction initiatives from 2026 – 2023 should reduce overall emissions, but the business plan is for continued growth, so the overall emissions may in fact increase by 2030. We will apply the carbon hierarchy, prioritising avoidance and reduction, but it is possible that Mackley may need to rely on off-setting emissions to meet its reduction targets, even when the initiatives in Section 4 are implemented. The likelihood of this, and scale of off-setting required will become clearer in coming years.

However, the emissions do reflect a significant reduction in carbon intensity – tonnes CO<sub>2</sub>e vs annual turnover. This has decreased since 2021 from 41.79 tCO<sub>2</sub>e per £1million turnover to 30.10 tCO<sub>2</sub>e per £1million turnover. The reduction in intensity reflects a marginal decrease in emissions over a time period of considerable growth in turnover for Mackley. This may be due to an increased proportion of sustainably sourced HVO in our site fuel in this period, increased use of EVs in our fleet, more modern and fuel efficient plant, and the projects using less carbon intensive materials.

However, Mackley’s Scope 3 emissions are highly variable year on year, and we are largely reliant upon industry wide emissions reductions to tackle this aspect of our operational carbon emissions.



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