



# VIRIDIAN

# ENVIRONMENTAL IMPACT REPORT 2023



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Viridian Nutrition have undertaken a full environmental impact assessment by a third party, Greenleaf TDG, in an effort to understand the business' holistic footprint in 2022/23 and plot a path to becoming a carbon zero organisation.

### SCOPE

The activities of Viridian Nutrition, company number 03750310. Embodied carbon assessments for properties were not included.

**Assessment:**  
Aug/Sep 2023  
**Activities Span:**  
Aug 23 - Sep 23

DATE

### OBJECTIVE

- Gather a full Greenhouse Gas (GHG) Inventory for the Store
- Assess other areas of environmental impact such as the volume of waste and land usage where appropriate.
- Form a roadmap to carbon zero the various stages of carbon zero.
- Assess practices and environmental policies of the Store with a view to creating defined best practices that limit environmental impact.
- Assess if the Viridian could be certified to the Greenleaf Standard of Environmental Sustainability.

Through the assessment, a full greenhouse gas inventory was compiled in line with government environmental reporting guidelines, using the 2022 government conversion factors and the GHG Protocol's Corporate Accounting and Reporting Framework. Other emission factors for materials published by the IPCC were also used in calculating the carbon debt of existing business assets.



# GHG & Energy Inventory

## 2022/23 Total Emission Footprint

208.6 tCO<sub>2</sub>e

Emission Scope	One	Two	Three	Total
Tonnes CO <sub>2</sub> e/year (tCO <sub>2</sub> e/yr)	10.12	9.4	189.06	208.6

Please note: Table totals throughout the report may not sum due to rounding

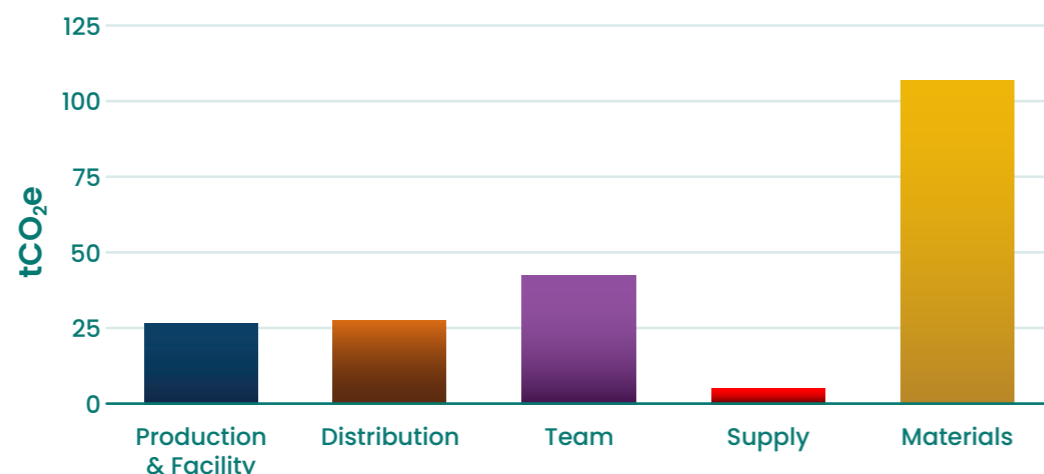
### A Quick Reminder...

**Scope 1** emissions are those that occur directly as a result of a company's activity or owned asset. For example, emissions from running company owned vans.

**Scope 2** are "energy indirect" emissions. These emissions come from company energy & heating usage but occur elsewhere. A typical scope 2 emission comes from the use of grid electricity.

**Scope 3** covers "indirect" emissions, meaning emissions that occur due to a company operating but are not directly from their activity or owned assets. Emissions from the team commuting in their own vehicles, or emissions from up and down the supply chain are classed as scope three.

### Emissions by Company Area



### Full GHG Inventory (kgCO<sub>2</sub>e)

CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e*
70,877.4	64.86	741.76	208,587.2

\* This column accounts for activity where a full emission breakdown was not possible

The figures in this report are estimates based upon the data provided and gathered during the 2023 assessment of Viridian Nutrition.

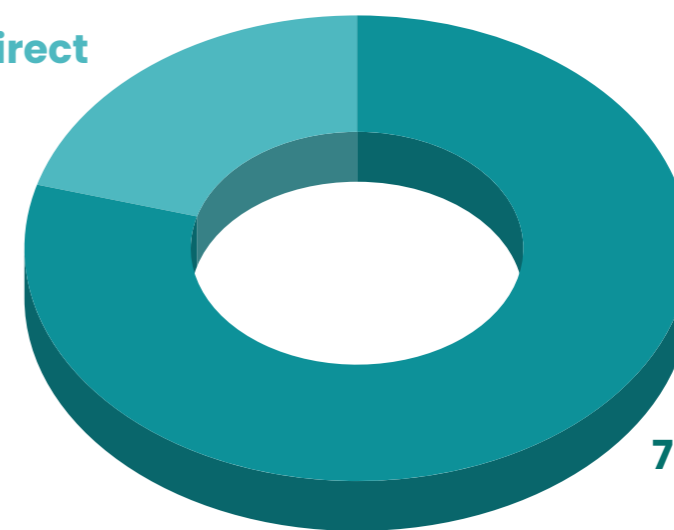
As this was the first assessment by the third party Greenleaf TDG, carbon debts from existing machinery and equipment purchased in the previous years have been accounted for in this assessment. Therefore, the totals on this page do not necessarily reflect the operating emissions of the company year on year.

Whilst indirect emissions are, to a large extent, beyond the control of Viridian, they have already taken a number of actions to limit impact directly under their control through general conscientiousness in regards to minimising their footprint. Viridian's roadmap to carbon zero sets out plans to address their direct emissions as the initial priority before turning focus to take what action they can to address emissions outside of their direct control.

TOTAL ENERGY  
98.65  
MWH USED

### Emissions by Control

20.6% Indirect



79.4% Direct

# Production & Facilities

## About this provider...

Ecotricity have consistently been recognised among the cleanest energy suppliers in the UK (Which, 2021) based upon transparency with supply, the volume produced from their own wind farms and how they deal with emissions they do generate.



Electricity Tariff

100% Renewable

## Energy Breakdown (kWh)

Electricity 48,631.9

Gas 45,746.3

## What does this mean?

Purchasing 100% renewable energy doesn't mean Viridian or any other company using such a tariff is powered 100% by renewable energy as long as they are using grid electricity - and Viridian acknowledge this.

The carbon intensity of grid electricity varies depending on locality and the "energy mix" being used by the power stations that are providing electricity to the region. The average carbon intensity of the national grid is 193 gCO<sub>2</sub>/kWh.

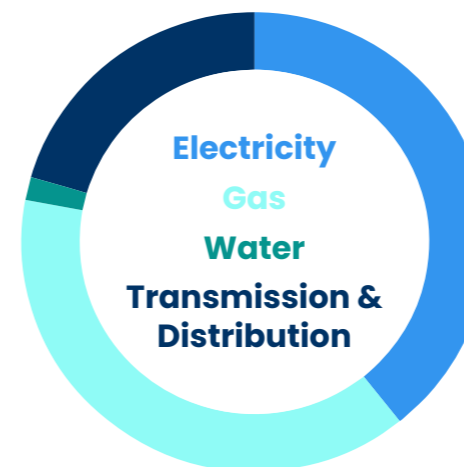
Using the right 100% renewable energy tariff, like Viridian, means the energy provider is only generating or purchasing 100% renewable energy and in some cases can be directly providing it to the grid. The purchase of this energy is helping shift the energy mix slowly more in favour of renewables and away from fossil fuel based energy.

East Midlands Carbon Intensity (per kWh)

274.12 (gCO<sub>2</sub>e)

## Emission Breakdown

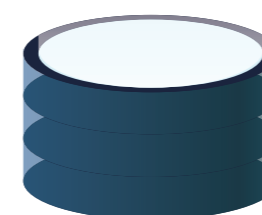
*\*Emission figures have been generated using the UK 2022 conversion rates.*



Facility Emission by Source (tCO <sub>2</sub> e)		Scope
Gas	9.25	One
Electricity	9.40	Two
Transmission & Distribution + Well to Tank	4.89	Three

Viridian have already begun the process of improving the efficiency of their facilities, work done includes the switch over of all lighting outlets to LED, increasing the quality of insulation and preparing for the installation of on-site renewables. Being in an urban area, Viridian's main capacity to self-generate electricity is through solar and this the primary action point in the companies roadmap.

2026  
Carbon Zero  
Scope 1 & 2



Viridian are currently renewing their facilities non-domestic EPC and this is the first step to further maximise the energy efficiency of their site. Whilst this assessment has been taking place, Viridian have been in the process of expanding their premises and an assessment of the new sites will be ideally included during the EPC.

Upon completion of the EPC, Viridian will review the best way to progress with heating solutions for their site. The key consideration from the EPC will be the viability of a ground/air source heat pump. Following the planned installation of on-site renewables, Viridian will focus on heating solutions to work with a planned excess of energy being provided by new solar array. These two steps will get the company to carbon zero across scope 1 & 2 by a target of 2026.

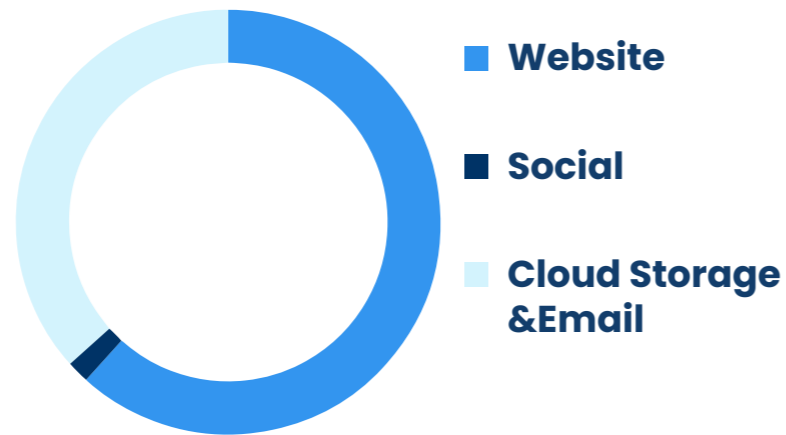
Production & Facilities (Physical)  
Footprint: 23.94 tCO<sub>2</sub>e/yr

### Total Digital Footprint:

**3.02**  
tCO<sub>2</sub>e

\*Numbers below assume website traffic of 10,000 visits per month.

### Digital Emissions by Source



How Viridian’s team get to site is a challenging area and one of limited control due to a number of factors. The first challenge for Viridian to overcome is that public transport is not widely accessible and does not provide a viable means to commute. The second factor is that most vehicles are personally owned by team members.

Viridian has multiple plans to encourage reduction and manage these emissions and have already switched all company owned vehicles to hybrid.

The team are located within an average of radius of 26km from the site and despite the shortages, some of the team already commute on foot or through public transport.

The majority commute in their own vehicles and this fleet produces an average of **138.33 gCO<sub>2</sub>e per km**, and has an average fuel efficiency of **50.4 miles per gallon**. Whilst the fuel efficiency is above the UK average and helps reduce Well-to-Tank emissions, combustion emissions are above the UK average.

“Well-to-Tank” (WTT) emissions are those that result from mining the raw fuel and getting it to a vehicle’s tank. It completes the picture of the true carbon costs of running any given vehicle. Including WTT, Viridian’s fleet emits **215.1 gCO<sub>2</sub>/Km**.

#### Website Emissions

Emissions/Visit (gCO <sub>2</sub> e)	0.49
Total Website Pages	824
Total Energy Used (kWh)	153
Total Emissions (KgCO <sub>2</sub> e)	1862.27

Viridian’s website, cloud storage & email hosting are the main sources of the company digital footprint.

The website is green hosted (servers hosting the website are either using a 100% renewable electricity tariff or using on site renewables).

For a full online store, the website’s page count is low and already streamlined. However, as part of their roadmap, Viridian are going to review the site through a lens of green web design best practices, with a view to planning in any design changes that can further reduce impact.

Viridian are drafting additions to their environmental policy to limit cloud storage and email usage. The team will be encouraged to be mindful of these policies when interacting digitally and undertake periodic digital “cleaning” to manage digital emissions.

#### What is the commute ratio (CR)?

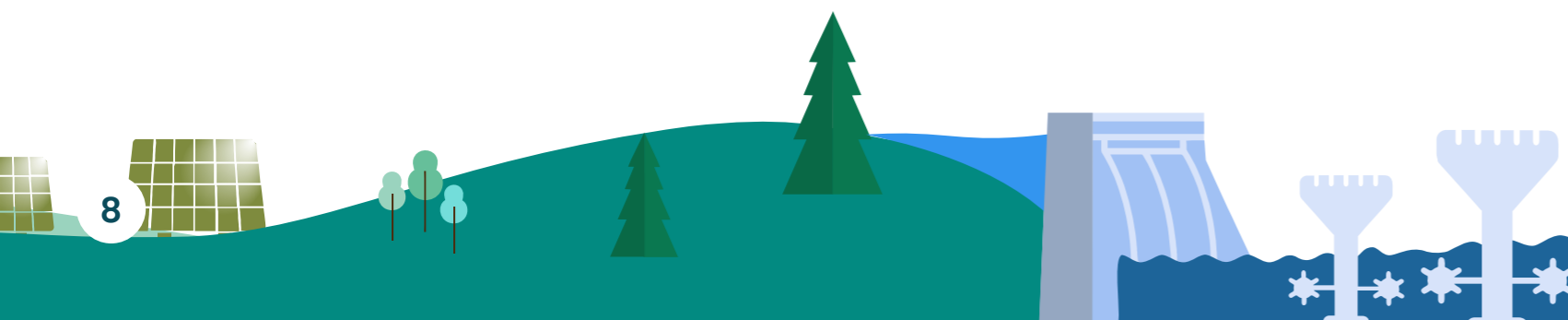
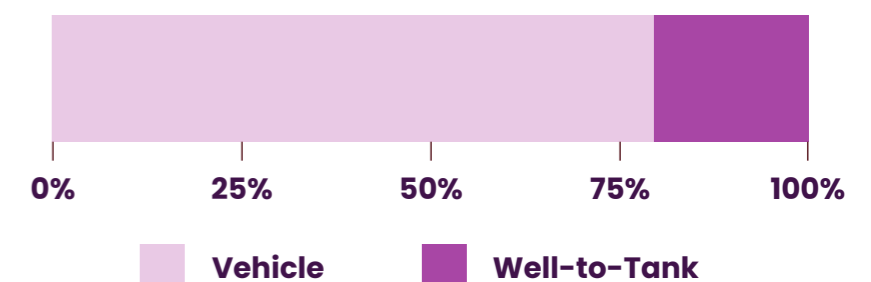
CR defines the accuracy of the mean commute.

A CR of 1 indicates the mean commute is a true reflection of the average distance a team member will travel each day to work.

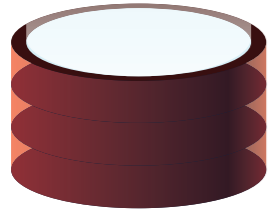
A CR of 0.5 means that generally staff travel half the mean commute, and the mean commute is being pushed up by occasional staff.

Commute Ratio	0.45
Mean Commute	26.21 km

#### Team Emission by Source



**97%**  
**UK BASED**  
**SUPPLIERS**



Viridian's network of suppliers are mostly UK based and are part of their competitive advantage, giving customers clear tracability.

Viridian are aiming to build on this by extending tracability to carbon footprinting also, providing both customers and suppliers with full transparency on the emission footprint of the range of products.

Of Viridian's 58 suppliers, 14 account for 83% of Viridian's deliveries and the weighted mean for the distance of those deliveries is 167.84km. All known suppliers have been included in the analysis.

An initial action on Viridian's roadmap will be to will be to conduct a carbon cost:value analysis of all suppliers. Following work on the site's energy and heating solutions, Viridian will then turn their attention to the goals of this analysis.

The aim will be to define which suppliers are accounting for the largest carbon costs and to communicate this up-chain, with a view to working with the supplier to reduce both their footprint and Viridians.

**4.97 tCO<sub>2</sub>e**

**1.98m**

<b>Supply Ratio</b>	<b>0.91</b>
<b>Mean Supplier Distance (km)</b>	<b>184.26</b>

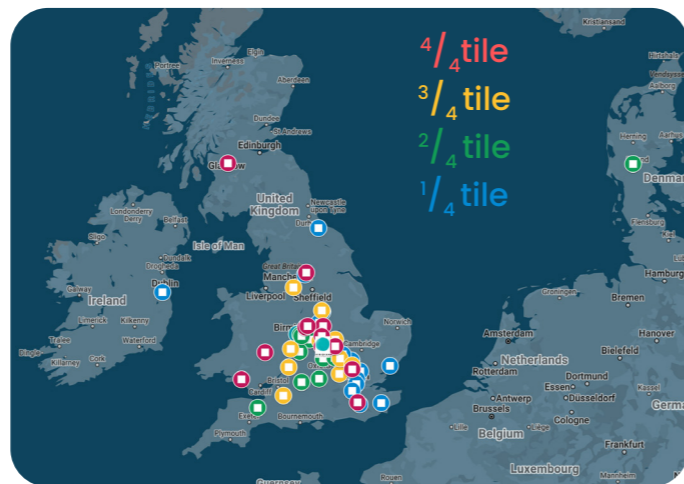
**Suppliers Ratio? Is that similar to the commute ratio?**

Yes, again its a measure of how true the mean suppliers distance is.

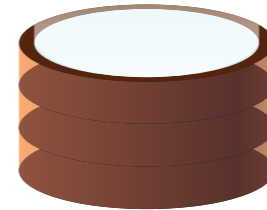
A supply ratio (SR) of less than one means that generally the company suppliers are based more locally than the mean, or the supply more frequently from more local supplier.

A SR of more than one means that suppliers are generally further than the mean and the mean is being brought down by occasional local suppliers.

**Supply Map by Frequency**



**13.86**  
**gCO<sub>2</sub>e**  
**PER PACKAGE**



Viridian's distribution falls under scope 3 as they use an external supplier, UPS, to provide the service.

At this point, distribution figures are an estimate, given that determining the amount of products that have gone out as part of a group order has not been possible during this years assessment. As part of Viridian's roadmap, this data will be tracked for future assessments.

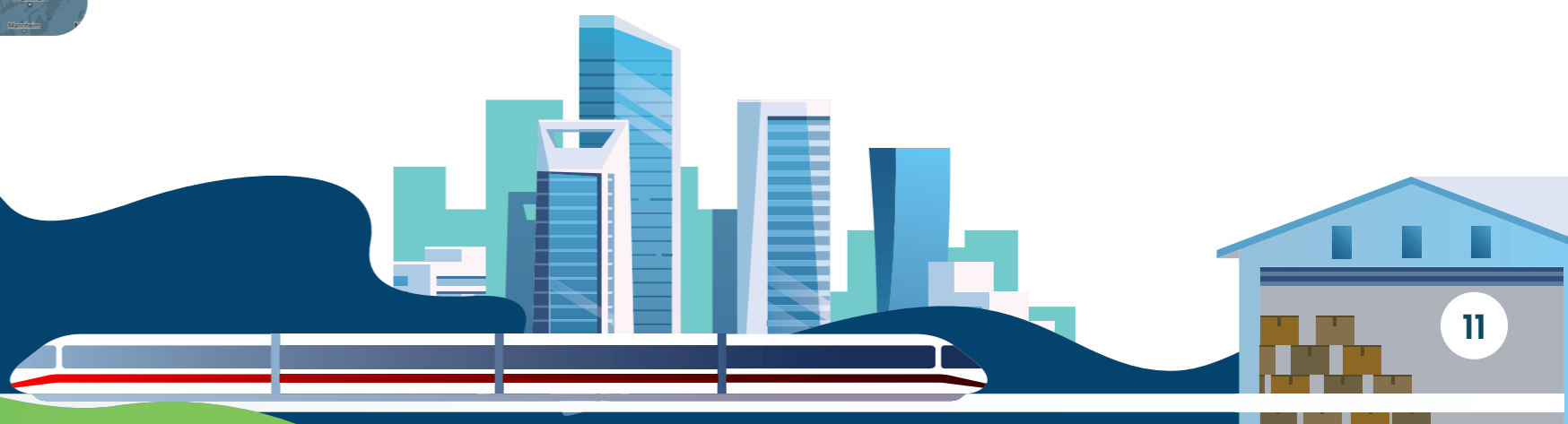
The 13.86 gCO<sub>2</sub>e per package is determined as an upper estimate as the average weight of items is low and therefore a bigger share of distribtuion emissions coming from extra weight from group orders is expected to draw less emissions than additional runs of orders going out.

A futher action Viridian is planning to take is to run a similar carbon cost: value analysis on forward logistics providers. As it is not possible to work with major logistics companies to manage their combined footprint, Viridian understands that the placement of their demand is the biggest action they can take to influence the industry.

With the high volume of sales being processed, Viridian recognise finding a logistics provider with the lowest feasible footprint is a significant part of managing their scope three emissions and managing the emission footprint of their products.

<b>Total Items Delivered</b>	<b>1.98m</b>
<b>Main Logistics Provider</b>	<b>UPS</b>
<b>Distance to Distribution Centre</b>	<b>24.1 km</b>

**Distribution Footprint: 27.52 tCO<sub>2</sub>e**



# Materials

Materials Footprint (tCO<sub>2</sub>e) **106.65**

Machinery and Equipment Carbon Debt (kgCO<sub>2</sub>e) **2,447.83**

Year on Year Material Consumption (KgCO<sub>2</sub>e) **104,202.78**

The material section of this report includes the waste created by the Viridian both from general operations and as part of a life cycle assessment of products.

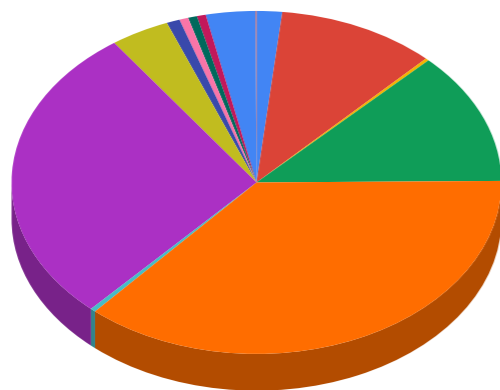
As Viridian's products are consumables, the life cycle assessment of the packaging used by Viridian forms the majority of the footprint in this area. At this point, a full, auditable trail of evidence is being gathered to certify all materials are coming from recycled sources. For this assessment, it has been assumed that the materials are primary product materials.

Viridian have invested to reduce their materials footprint and curated both their principal packaging and their postage packaging to minimise plastic. At this stage plastic used across all packaging only amounts to 7.54% of all materials used.

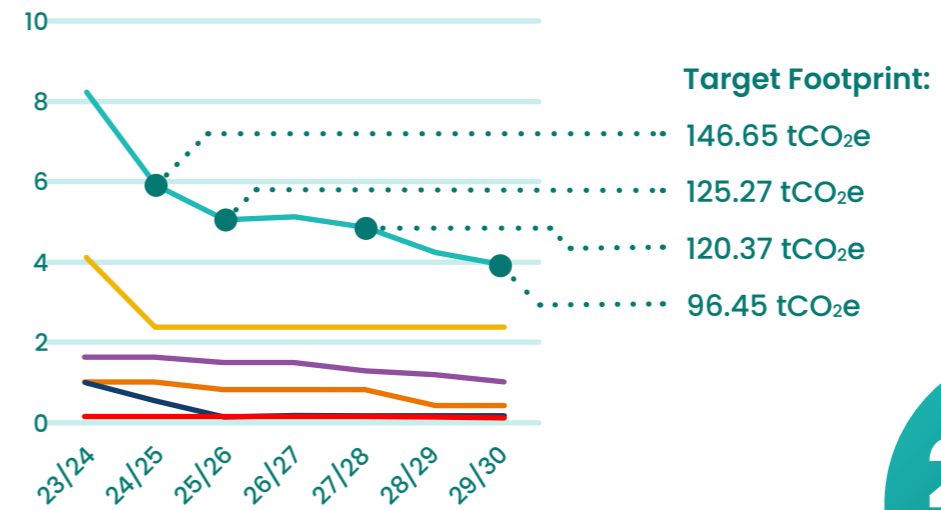
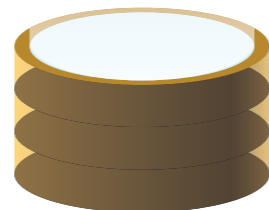
Once the supply chain and facilities have been address, Viridian's roadmap sees them turning their attention back to their materials to see if plastic usage can be reduced further. The immediate action Viridian will undertake is to complete work around ensuring all materials are coming from a recycled source and making any switches where necessary.

Viridian are accurately tracking their waste already and will continue to monitor waste and review any means to further reduce waste going to landfill. Currently they are recycling wherever possible, recycling approximately 0.89kgs of waste for every 1kg going to landfill.

- Solidboard Tube
- Paper Labels
- Paper Boxes
- Plastic Lids
- Alum. Lids
- Alum. Lids (Tube)
- Paper shipping cartons
- Tissue Paper
- Shipping Carton Strapping
- Plastic shrink Film
- Jiffy Bags Paper
- Jiffy Bag Plastic
- Glass Bottles
- Heat Shrink Sleeves



**92.5% PLASTIC FREE PRODUCTION**



Viridian have laid out a 5 year plan to reach their operational carbon zero (Scope 1 & 2).

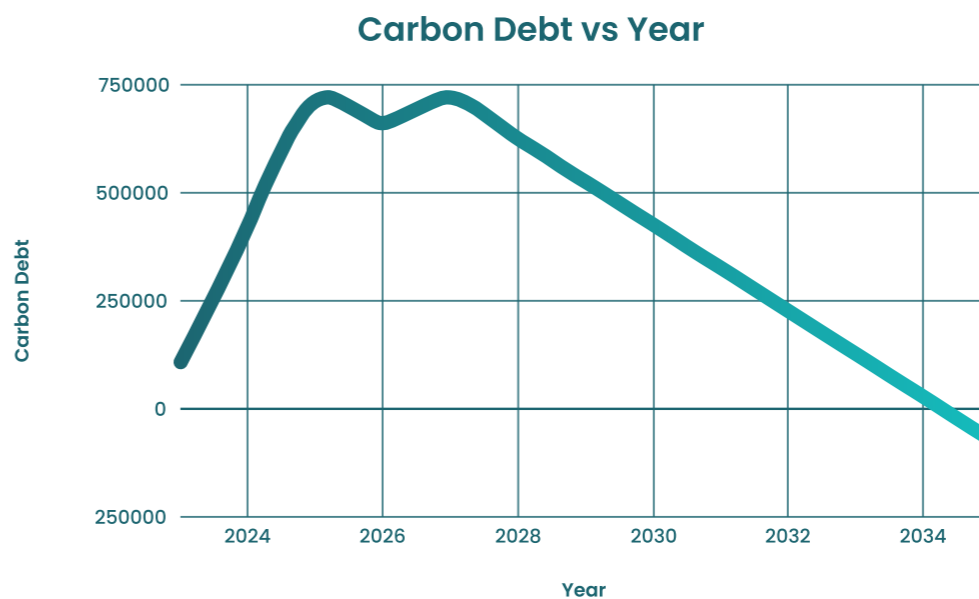
From there, Viridian will be focusing sustainability efforts on reducing Scope 3 emissions and offsetting historical emissions, whilst awaiting external infrastructure developments to reach carbon gross zero.

From 2027/28, Viridian are aiming to be operational zero and start offsetting historical emissions to be all-time net zero by 2035.

**2026**  
Scope 2 Carbon Zero

**2027**  
Scope 1 Carbon Zero

**2035**  
All Time Net Zero



Goals



# Roadmap

**BEGIN MEASURING COMPANY CARBON FOOTPRINT IN REAL-TIME, TRACKING PROGRESS WITH ALL INITIATIVES & MAKING EMISSION FOOTPRINT A KEY BUSINESS PERFORMANCE METRIC**

**CARRY OUT SUPPLY CHAIN CARBON COST-VALUE ANALYSIS & START WORKING WITH HIGH COST SUPPLIERS TO DECARBONISE THE CO-OPERATIVE FOOTPRINT**

**UPDATE FACILITIES NON-DOMESTIC EPC AND ASSESS WHERE ENERGY EFFICIENCY CAN BE IMPROVED**

**UPDATE PRACTICES AND POLICIES TO EMBED SIMPLE CHANGES INTO CULTURE AROUND CONSUMABLES ON SITE TO REDUCE MATERIAL FOOTPRINT**

**FORMAL TEAM WIDE CARBON LITERACY TRAINING**

**UPDATE PRACTICES AND POLICIES ON USE OF DIGITAL AND EMAIL STORAGE**

**COMMENCE THE FIRST WAVE OF ON-SITE RENEWABLES INSTALLATION AS PART OF PLANS TO BECOME SELF SUFFICIENT FROM GRID**

**CARRY OUT CARBON COST-VALUE ANALYSIS OF LOGISTIC PROVIDERS AND SWITCH TO THE FIRST FEASIBLE PROVIDER WITH THE LOWEST CARBON INTENSITY**

**INTRODUCE EMPLOYEE INCENTIVE SCHEME TO ENCOURAGE GREEN COMMUTING HABITS**

**COMPLETE AUDITABLE TRAIL EVIDENCING ALL MATERIALS COMING FROM RECYCLED SOURCES & MAKE ANY SWITCHES REQUIRED TO MAXIMISE USE OF RECYCLED MATERIALS**

**SWITCH GAS BOILER TO AN ELECTRIC ALTERNATIVE AND GO SCOPE 1 ZERO**

**COMPLETE SECOND WAVE OF ON-SITE RENEWABLES INSTALLATION TO BECOME SCOPE 2 ZERO**

**INSTALL FINAL WAVE OF ON SITE RENEWABLES TO COPE WITH ADDITIONAL POWER DEMANDS FROM NEW HEATING SOURCES**

**CALCULATE AND COMMENCE OFFSETTING HISTORICAL EMISSION FOOTPRINT**

**REDUCE DIGITAL STORAGE BEING USED IN CLOUD SOLUTIONS AND EMAILS BY 60%**

