

Carbon Reduction Plan

Bio Capital 1 Ltd

Date: 17 November 2023

Commitment to achieving Net Zero

Bio Capital is committed to achieving Net Zero emissions by 2030.

2022 Emissions Summary

Total Emissions	Emissions Avoided
16,526.39 tCO₂e	305,620 tCO₂e

Baseline emissions footprint

Baseline year / current year emissions footprint

Baseline year: 2022		
Emissions		TOTAL (tCO ₂ e)
Scope 1	Total	1,226.59
	Biogas (non-CO ₂)	27.59
	Liquid fuels: diesel	1,172.25
	Refrigerant	25.49
	Vehicle biomethane (non-CO ₂)	1.26
Scope 2	Total (net)	0.00
	Electricity	568.15
	Scope 2 removals	(568.15)
Scope 3	Total	15,299.80
	Business Travel: Air	17.17
	Business Travel: Rail	0.42
	Business Travel: Road	153.27
	Chemicals	2,354.81
	Electricity (T&D and WTT)	200.28
	Employee Commuting: Road	198.18
	Food and Drink	1.70
	Freight: Upstream	10,634.75
	Gaseous fuels	254.22
	Hotel Stay	4.48
	Information Technology	108.38
	Liquid fuels (WTT)	286.84
	Waste construction	1.30
	Waste metal	1.17
	Waste plastic	264.47
Waste: Refuse	810.88	
Water	7.49	
Outside scopes	Biogas (CO ₂)	14,430.12
	Vehicle biomethane (CO ₂)	655,905.41
Total emissions		16,526.39

Remarks on calculations:

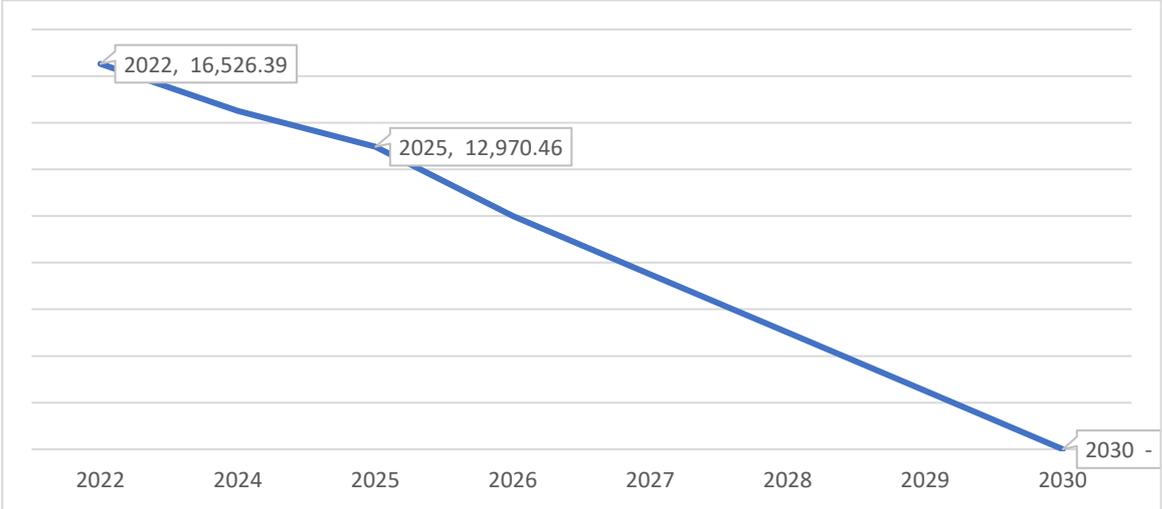
- The data collection process aimed to identify and measure all scope 1 and 2 emissions sources and scope 3 categories relevant to the organisation’s context and goals.
- All calculations are based on 2022 consumption and [2022 UK Gov GHG emissions factors](#) where available.
- The [Compare Your Footprint platform](#) was used to calculate relevant Scope 3 categories where only spend data was available.

Emissions reduction targets

In order to continue our progress to achieving Net Zero, we have adopted the following carbon reduction targets.

- 22% by 2025
- 100% by 2030

Progress against these targets can be seen in the graph below:



Carbon reduction projects

Current planned carbon reduction initiatives

From the current baseline year we plan to implement the following changes to our systems and processes in order to improve environmental management and reduce our carbon footprint:

Initiative	Achievement by
Water supply We will reduce the use of potable water in the anaerobic digestion process by 10% on average across the group by using delivered waste water.	2024

Emissions from waste solids We will move general waste disposal up the waste hierarchy from landfill to EfW (combustion).	
Emissions from waste plastics The installation of new depackaging equipment at GECO and ELBL will lead to a reduction of 10% by weight of plastics disposal at those two sites.	
Emissions from freight We will replace the lorries used to transport digestate off-site with a fleet of biomethane powered lorries at ELBL.	2024
Emissions from freight We will replace four lorries used to transport food waste with a fleet of biomethane powered lorries at Warrens Group.	2025

The estimated carbon emissions reduction achieved by these initiatives are as follows:

Initiative	Current	Reduction	% reduction
Water supply	7.49 tCO ₂ e	0.75 tCO ₂ e	10.0%
Emissions from landfilled waste solids	792.12 tCO ₂ e	756.03 tCO ₂ e	95.4%
Emissions from waste plastics	264.47 tCO ₂ e	18.80 tCO ₂ e	7.1%
Emissions from freight	10,634.75 tCO ₂ e	2,780.36 tCO ₂ e	26.1%

Total reductions by 2025	% current Scope 3	% current total emissions
3,555.93 tCO ₂ e	23.2%	21.5%

All reduction calculations based on current year consumption and 2022 UK Gov GHG emissions factors and guidelines with no projected changes.

Further measures

Current measures

Bio Capital 1 has a number of measures currently in place to help ensure carbon reduction targets are achieved. These include:

- ISO 14001:2015 - Environmental management systems certification to ensure we identify, manage, monitor and control our environmental impacts in a holistic manner.
- Company vehicle EV salary sacrifice scheme.
- Company cycle to work scheme.

Valuation approach to removals

We anticipate further development of government guidelines on valuing removals and/or other approaches to account for the role of anaerobic digestion in avoiding GHG emissions burdens.

We calculate current potential avoided emissions as follows.

Emissions source	Potential emissions avoided (tCO ₂ e)
Fossil-fuel derived electricity	15,552
Natural gas	32,030
Landfill disposal of food	244,625*
Displacement of chemical fertiliser	13,413*
Total	305,620

*Source: ADBA calculator

Carbon capture

These planned projects capture CO₂ emitted during the biogas upgrade process to biomethane. The captured CO₂ will then be used in industries such as food and beverage manufacturing.

Although these emissions are from a biogenic source and outside of scope, the use of this CO₂ will displace CO₂ that has been manufactured using fossil fuel energy.

Facility	tCO ₂ e captured	Target year
Granville Ecopark	8,704	2024
ELBL	5,676	2026

Carbon sequestration

As an additional benefit, several research papers have shown that the application of biofertiliser to agricultural soils improves its carbon sequestration potential and assists in climate change mitigation. However, exact quantification is difficult at present.

Other measures

Other potential areas for carbon reduction to net zero by 2030 include:

- Installation of additional CHPs to reduce the need to import electricity.
- Investigating options for electric loading shovels and other mobile plant (e.g screeners) to replace diesel versions.
- Investigate options for solar panels on facility roof.
- Investigate options for low energy technology on sites.

Declaration

This Carbon Reduction Plan has been completed in accordance with PPN 06/21 and associated guidance and reporting standard for Carbon Reduction Plans.

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 SECR 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 Corporate Value Chain (Scope 3) Standard.

This Carbon Reduction Plan has been reviewed and signed off by the board of directors.

Signed on behalf of Bio Capital:

Peter Sharpe, CEO

Date:
