Carbon Reduction Plan

Bio Capital 1 Ltd
Date: 18 December 2024

Commitment to achieving Net Zero

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

2023 Emissions Summary

Total net emissions	Potential emissions avoided
14,589.75 tCO_2e	**360,036** tCO_2e

Baseline emissions footprint

Baseline year emissions footprint

Baseline year: 2022		
Emissions	TOTAL (tCO_2e)	
Scope 1	**Total** Biogas (non-CO_2) Liquid fuels: diesel Refrigerant Vehicle biomethane (non-CO_2)	**1,226.62** 27.59 1,172.25 25.49 1.29
Scope 2	**Total (net)** Electricity Scope 2 removals	**0.00** 573.60 (573.60)
Scope 3	**Total** Business Travel: Air Business Travel: Rail Business Travel: Road Chemicals Electricity (T&D and WTT) Employee Commuting: Road Food and Drink Freight: Upstream Gaseous fuels Hotel Stay Information Technology Liquid fuels (WTT) Waste construction Waste metal Waste plastic Waste: Refuse Water	**13,806.62** 17.17 0.42 153.27 694.80 202.20 198.18 1.70 10,634.75 540.71 4.48 108.35 286.84 1.30 1.17 278.77 664.90 17.61
Outside scopes	Biogas (CO_2) Vehicle biomethane (CO_2)	14,430.12 657.30
Total net emissions	**15,033.24**	

Remarks on baseline:

The availability of new MRIO spend-based emissions factors published by SWC prompted a recalculation of emissions from purchased chemicals in 2022 and provided an opportunity to make minor corrections to 2022 data, resulting in a rebaselining of emissions from 16,526.39 to 15,033.24 tCO_2e.

Current emissions footprint

Current year emissions footprint

Current year: 2023		
Emissions	TOTAL (tCO_2e)	
Scope 1	**Total** Biogas (non-CO_2) Liquid fuels: diesel Vehicle biomethane (non-CO_2)	**1,196.45** 30.50 1,165.13 0.83
Scope 2	**Total (net)** Electricity Scope 2 removals	**0.00** 697.49 (697.49)
Scope 3	**Total** Business Travel: Air Business Travel: Rail Business Travel: Road Chemicals Electricity (T&D and WTT) Employee Commuting: Rail Employee Commuting: Road Food and Drink Freight: Upstream Gaseous fuels Hotel Stay Information Technology Liquid fuels (WTT) Waste construction Waste metal Waste plastic Waste: Refuse Water	**13,393.30** 6.94 0.26 811.07 553.53 228.32 0.10 135.37 2.22 9,712.12 484.52 2.40 98.82 283.40 1.25 2.33 229.33 818.74 22.58
Outside scopes	Biogas (CO_2) Vehicle biomethane (CO_2)	15,950.70 431.22
Total net emissions	**14,589.75**	

Remarks on calculations:

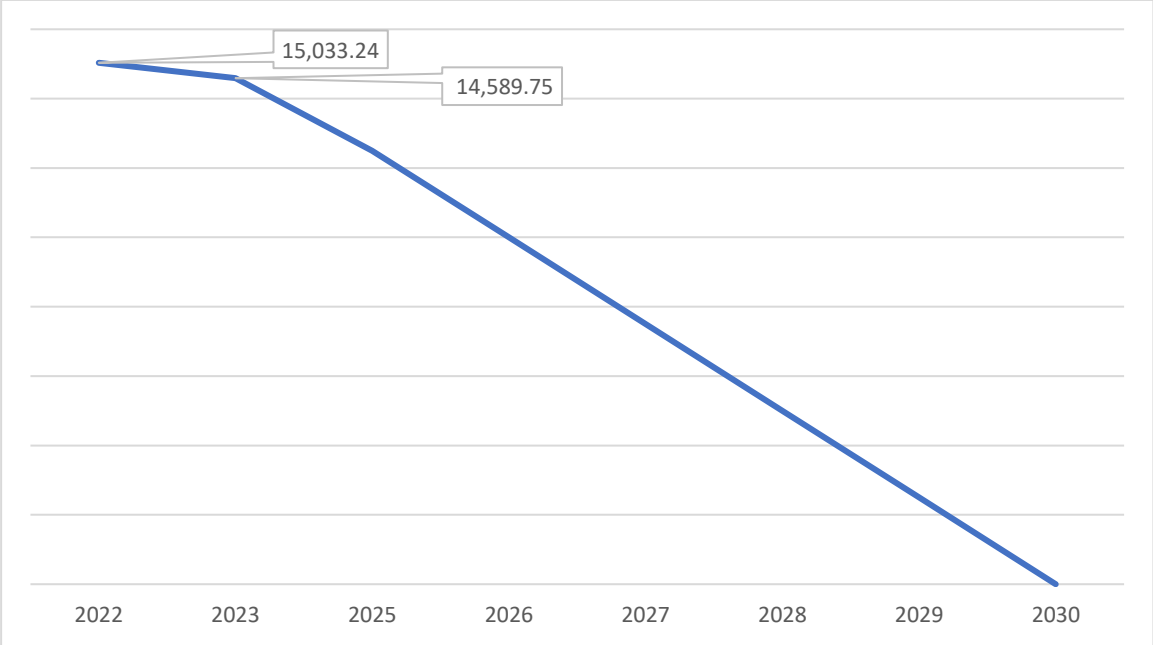
The data collection process aimed to identify and measure all scope 1 and 2 emissions sources and scope 3 categories relevant to the organisation's context and goals. All calculations are based on 2023 consumption using the Compare Your Footprint platform using the methodology detailed here.

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:



Despite an increase in overall activity and renewable energy output, we have seen a 2.95% drop in emissions this year.

Carbon reduction projects

Current planned carbon reduction initiatives

From our baseline year we initiated implementation of the following changes to our systems and processes in order to improve environmental management and reduce our carbon footprint:

Initiative	Update on progress	Achievement by
Water supply We will reduce the use of potable water in the anaerobic digestion process by 10% per tonnage of feedstock across the group.	Liquid digestate and/or rainwater harvesting and reuse ongoing across all sites. Achievement across the group 2022 to 2023: 13.39% reduction	2024

Emissions from waste solids We will move general waste disposal up the waste hierarchy from landfill to EfW (combustion).	Review of current waste practices and options for lower emissions disposal ongoing.	2024
Emissions from freight We will replace four lorries used to transport food waste with a fleet of biomethane powered lorries at Warrens Group.	Orders have been place for four articulated Cat C+E vehicles.	2025
Emissions from freight We will replace the lorries used to transport digestate off-site with a fleet of biomethane powered lorries at ELBL.	Logistical, technological, and infrastructure issues have delayed this change.	2026 (revised)
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.	Separated fibre to Solid Recovered Fuel (SRF) project underway at ELBL and in technology selection phase. This will move separated solids from landfill to recovery.	2026 (revised)

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_2e)**
Fossil-fuel derived electricity	25,493
Natural gas	50,591
Landfill disposal of food*	269,192
Displacement of chemical fertiliser*	14,760
Total	**360,036**

*Source: ADBA calculator

Carbon capture

These planned projects capture CO_2 emitted during the biogas upgrade process to biomethane. The captured CO_2 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 CO_2 will displace CO_2 that has been manufactured using fossil fuel energy.

Facility	tCO_2e captured	Target year
Granville Ecopark	8,704	2025
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:

Date:
13 March 2025