



Greenhouse Gas Inventory Report

FY24 GHG Inventory

1. Introduction

Ballance Agri-Nutrients Limited (Ballance) is a co-operative supplying agri-nutrients to New Zealand farmers and growers.

This Greenhouse Gas (GHG) Inventory Report is for Ballance Agri-Nutrients Limited and the Ballance Group to the extent outlined in section 3.1. The GHG emissions presented are those of the Ballance Group as defined within Ballance's organisational boundary.

This is Ballance's first GHG Inventory Report which discloses the co-operative's Scope 1 and Scope 2 GHG emissions and outlines how they are quantified. The inventory accounts for Scope 1 and 2 emissions of the six Kyoto GHGs (CO₂, CH₄, N₂O, HFCs, PFCs, SF₆) and are expressed as tonnes of carbon dioxide equivalent (tCO₂e).

This document details the methodologies and accounting principles used to estimate Ballance's GHG emissions, the emission sources, and our organisational and operational boundaries.

This GHG Inventory Report has been subject to a limited assurance engagement by KPMG, [see Appendix 1](#) for its assurance opinion.

1.1 Statement of Intent

This report voluntarily discloses Ballance's Scope 1 and 2 emissions for interested stakeholders, including shareholders, customers, regulators, communities and suppliers.

GHG emissions have been measured in accordance with the Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (revised edition), with reference to the additional guidance provided in the GHG Protocol: Scope 2 Guidance (an amendment to the GHG Protocol Corporate Standard) as appropriate.

This report is publicly available at ballance.co.nz and is intended to be read alongside Ballance's FY24 Annual Report, which is also available on the website.

Ballance's FY24 GHG Inventory is limited to Scope 1 and 2 emissions as base year disclosures. Our intention is to meet GHG Protocol principles of relevance, completeness, consistency, transparency, and accuracy in our inaugural Scope 1 and 2 inventory reporting year. Scope 3 emissions are excluded from this GHG Inventory. We are working towards the inclusion of selected Scope 3 emissions by undertaking value chain analysis in FY25.

While we have taken all due care in preparing this report to ensure that assumptions and input data have a reasonable basis and are coherent and robust, assessment of emissions remains a developing field, with a degree of estimation uncertainty.

To the maximum extent permitted under New Zealand law, Ballance disclaims all liability that may arise in relation to this report. We recommend you seek independent advice before acting or relying on any information in this report.

This GHG Inventory Report contains forward-looking statements in relation to Ballance's approach to GHG accounting. This forward-looking information is based on judgements and assumptions that are uncertain and that may change over time, including as a result of factors that are outside of Ballance's control. Forward-looking statements should not be taken as guarantees of future performance.

1.2 Reporting Period

The FY24 GHG Inventory covers the financial year reporting period 1 June 2023 – 31 May 2024.

Ballance Agri-Nutrients Limited (Ballance) is a co-operative supplying agri-nutrients to New Zealand farmers and growers.

2. GHG Inventory

2.1 Summary for FY24

In FY24 Ballance's total Scope 1 and 2 GHG emissions were 179,454 tonnes of carbon dioxide equivalent (tCO_{2e})

TABLE 1: EMISSIONS BY SCOPE FROM FY24 IN tCO_{2e}

EMISSIONS CATEGORY	FY24
Scope 1 – direct emissions	176,317
Scope 2 – indirect emissions from electricity consumption	3,137
Total emissions	179,454

TABLE 2: SCOPE 1 AND 2 EMISSIONS IN FY24 BY GAS TYPE

SCOPE	CO ₂	CH ₄	N ₂ O	HFCs	PFCs	SF ₆	Total tCO _{2e}
1	175,279	397	165	476	0	0	176,317
2	3,022	112	3	0	0	0	3,137
Total emissions	178,300	509	168	476			179,454

TABLE 3: GHG EMISSIONS INVENTORY SUMMARY FOR BALLANCE AGRI-NUTRIENTS FY24 IN tCO_{2e}

EMISSIONS SOURCES	EMISSIONS CATEGORY	FY24
Scope 1 - Direct emissions		
Process emissions	Natural gas - urea manufacture	165,605
	CO ₂ release - single superphosphate (SSP) manufacture	1,640
Stationary combustion	Diesel - manufacturing start up*	370
Mobile combustion	Diesel - mobile plant	1,803
	Diesel - fleet vehicles	1,348
	Petrol - fleet vehicles	457
	Aviation fuel	4,618
Fugitive emissions	Fugitive emissions from air conditioning equipment	476
Total Scope 1		176,317
Scope 2 - Indirect emissions		
Electricity consumption	Ballance Group purchased electricity (location-based)**	3,137
	Ballance Group purchased electricity (market-based)**	3,355
Total Scope 2	Location-based	3,137
Total Emissions – Scope 1 and 2		179,454

* Ballance's Mount Maunganui SSP manufacturing plant generates electricity through the sulphuric acid manufacturing process, which reduces the amount of external electricity required. Where surplus electricity is generated, it is sold back to the grid. No surplus was generated in FY24 and emissions associated with the generation are recorded within stationary combustion total.

** As per GHG Protocol the location-based method reflects the average emissions intensity of grids on which energy consumption occurs (using grid-average emission factor data). The market-based method reflects emissions from electricity that companies have purposefully chosen (or their lack of choice) using a residual mix emission factor. The reporting of both location-based and market-based emissions is required under the GHG Protocol as Ballance operates in a market where product or supplier specific electricity and data is available.

3. Boundaries

Ballance is a 100 percent farmer and grower owned co-operative, with over 16,000 shareholders throughout New Zealand. It has a national footprint, with 741 staff located from the far north to the deep south. Ballance owns superphosphate manufacturing plants in Mount Maunganui and Invercargill and an ammonia-urea manufacturing plant in Kapuni. It operates 48 product distribution centres and has self-service silos at 12 locations. Ballance also owns Super Air, the largest fixed wing agricultural aviation company in New Zealand.

3.1 Organisational boundaries

Unless otherwise stated the reporting boundary includes legal entities in the Ballance group of companies over which Ballance has operational control. GHG emissions from operations in which Ballance owns an interest but does not have operational control, or is classified under International Financial Reporting Standards as a discontinued operation, are not included.

The key legal entities under this boundary include:

REPORTING ENTITY:	The Consolidated Group of Ballance Agri-Nutrients Limited
SUBSIDIARIES:	Super Air Limited Ballance Agri-Nutrients (Kapuni) Limited

NOTED EXCLUSIONS FROM BOUNDARY:	RATIONALE:
SealesWinslow Limited	100% divestment within the current reporting period
Summit Quinphos Limited	Non-trading
Ag Hub Limited	Non-trading
Southfert Limited	Non-trading
Altum Nutrition Limited	Non-trading
Ballance Limited	Non-trading
Bay of Plenty Fertiliser Company Limited	Non-trading
Te Ata Hydrogen Limited	Non-trading
EnCoate Holdings Limited	Non-trading
NZ Phosphate Company Limited	Non-trading
Back2Water Limited	Non-trading
Kapuni Green Hydrogen Hold GP Limited	Non-trading
Consignment store network	No operational control

3.2 Operational boundaries and consolidation approach

Ballance measures its emissions in accordance with the GHG Protocol. This splits emissions into three categories:

- **Scope 1** emissions are direct GHG emissions from continuing operations that are owned or controlled by Ballance, such as emissions from gas used in the manufacturing of urea.
- **Scope 2** emissions are indirect GHG emissions from the generation of purchased electricity consumed as part of the continuing operations that are controlled by Ballance.
- **Scope 3** emissions are all other indirect GHG emissions that occur in the upstream and downstream value chain of the Group (e.g. GHG emissions from our customers use of products we sell, the transport, processing and supplying of products by local and overseas suppliers and other business activities such as travel and waste) Scope 3 is excluded from the FY24 inventory.

Ballance has selected an operational control approach, as defined by the GHG Protocol standard, to account for GHG emissions from operations it fully controls.

Where Ballance's emission discovery work has concluded that data is not readily available and/or it is unfeasible to obtain accurate data, emissions were estimated and then excluded if the estimated balance was less than the established 1% materiality threshold.

3.3 Reported emissions

TABLE 4: BALLANCE EMISSIONS SOURCE INCLUSIONS

SCOPE	EMISSIONS CATEGORY	EMISSIONS ACTIVITY
1	Process emissions	Natural gas – urea manufacture
		CO ₂ release - single superphosphate (SSP) manufacture
	Stationary combustion	Diesel – manufacturing start-up
	Mobile combustion	Diesel – forklifts and loaders
		Diesel – fleet vehicles
		Petrol – fleet vehicles
	Aviation fuel	
	Fugitive emissions	Fugitive emissions from air conditioning equipment
2	Electricity consumption (market and location-based)	Ballance Group electricity consumption

TABLE 5: BALLANCE SCOPE 1 EMISSIONS SOURCE EXCLUSIONS

SCOPE	EMISSIONS CATEGORY	EMISSIONS ACTIVITY	REASON FOR EXCLUSION
1	Stationary combustion	Oils – combusted in manufacturing process	Lack of readily available, reliable data and estimated as immaterial. This will be reassessed in future periods.
	Mobile combustion	Oils – combusted in mobile plant and aircraft fleet	Lack of readily available, reliable data and estimated as immaterial. This will be reassessed in future periods.

4. Methodologies and Uncertainties

4.1 Overview

The operations within the scope of Ballance's operational boundary record consumption quantities by fuel type (e.g. diesel, natural gas) throughout the year, using sources such as supplier invoices, metering and other industry standard practices.

Ballance's most significant emission is sourced from the manufacturing of urea at its Kapuni plant. There are three sources of emissions associated with the manufacturing of urea including:

1. Natural gas used in manufacturing
2. Fugitive emissions released within the process
3. Carbon that is embedded within the urea which is subsequently released upon use of Ballance's products

The carbon embedded within urea is considered a Scope 3 emission source and has not been included within the current year's reporting.

To measure the emissions associated with natural gas – urea manufacture described in Table 3, Ballance has deducted the embedded urea product emissions (item 3 above) from the emissions of total natural gas used in the production process (items 1 to 3 above). Fugitive emissions have not been separately reported and are captured within the natural gas emissions amount.

4.2 Data quality and level of uncertainty

There is inherent uncertainty of GHG measurement as it also stems from incomplete scientific knowledge used to determine emission factors and the associated uncertainty of data used to calculate reported emissions.

Data is sourced directly from suppliers where activity-based data is available. Alternatively, or in addition, third-party expertise is sought for calculations requiring extensive chemical analysis expertise.

Ballance data quality and level of uncertainty is self-assessed based on the sources available.

4.3 Information management procedures

An internal Basis of Preparation for GHG inventory reporting was drafted in 2024 and is to be reviewed annually. The Basis of Preparation document defines the data reporting processes used to collate and calculate the information for the emissions inventory.

4.4 Emission factors

In the absence of any legislative requirements pertaining to prescribed emission factors, Ballance has applied the most recently available New Zealand publication of national GHG emission factors - Ministry for the Environment (MfE) 2024 emission factors. Emission factors are sourced and updated annually at Ballance's financial year end in readiness for GHG Inventory Report preparation.

Where MfE emission factors are not available, we have detailed the alternative source methodology in Table 6.

4.5 Base year and recalculation

Ballance has partially recorded data in previous years, however FY24 is noted as our first complete year of measuring and reporting our Scope 1 and 2 emissions, and therefore forms its base year.

Ballance will recalculate its base year emissions if the inventory is affected by activities or changes that have a cumulative impact of 5% or more on emissions. The types of changes that may have a significant impact on reported emissions and trigger the need for an emissions recalculation include structural changes in reporting or organisational boundaries, changes in calculation methodology, emissions factor changes, the discovery of a significant error, or a number of cumulative errors, that are collectively significant.

Any changes less than 5% will be assessed on a case-by-case basis and may be updated at Ballance's discretion for reasons such as consistency or clarity.

TABLE 6: EMISSIONS SOURCES BY GHG PROTOCOL STANDARD CATEGORIES, CALCULATION METHODS AND DATA SOURCES FOR FY24

INVENTORY CATEGORY	EMISSIONS ACTIVITY	CALCULATION METHOD	DATA SOURCE	EMISSION FACTOR SOURCE	DATA QUALITY AND UNCERTAINTY
SCOPE 1					
Process Emissions: Natural gas	Natural gas used as fuel in urea manufacture at Kapuni	Fuel-based	Invoices	MfE 2024 Urea – IPCC Guidelines for National Greenhouse Gas Inventories (2006)	Moderate uncertainty Due to the estimation in the calculation of Scope 1 and Scope 3 emission split. Usage and volume data sourced from supplier invoices and production records. Fugitive emissions are reflected in total natural gas emissions.
Process Emissions: SSP manufacture reaction	CO ₂ release through reaction in SSP manufacture	Hybrid-data	Invoices Eurofins lab report and finance manufacturing report volumes	Eurofins (analysed by rock type)	Moderate uncertainty Due to the selection of emission factor. Emission factors are based on composition of product and calculated by a specialist third-party. Multiple factors are obtained and an average taken as a more consistent and accurate approach. Fugitive emissions are reflected in total SSP emissions.
Stationary Combustion: Diesel	Diesel used in manufacture start-up	Fuel-based	Invoices Flow meters	MfE 2024	Low uncertainty
Mobile Consumption: Diesel	Diesel used to fuel mobile plant (forklifts and loaders)	Fuel-based	Invoices Fuel cards Flow meters	MfE 2024	Moderate uncertainty Records on diesel sourced from fuel card data. A level of data inaccuracy expected due to data uncertainty and coding inaccuracy.

INVENTORY CATEGORY	EMISSIONS ACTIVITY	CALCULATION METHOD	DATA SOURCE	EMISSION FACTOR SOURCE	DATA QUALITY AND UNCERTAINTY
	Diesel used in vehicle fleet	Fuel-based	Invoices Fuel cards	MfE 2024	Moderate uncertainty Records on diesel sourced from fuel card data. A level of data inaccuracy expected due to data uncertainty and coding inaccuracy.
Mobile Consumption: Petrol	Petrol used within fleet of vehicles	Fuel-based	Invoices	MfE 2024	Moderate uncertainty Records on petrol sourced from fuel card data. A low level of data inaccuracy expected due to data uncertainty and coding inaccuracy.
Mobile Consumption: Avgas and jet fuel	Aviation fuel used within aircraft fleet (Super Air)	Fuel-based	Invoices	MfE 2024	Low uncertainty Supplier invoices.
Fugitive Emissions: Air-conditioning	Fugitive gas losses from Ballance office and mobile plant air-conditioning equipment	Top-up	Invoices Supplier records	MfE 2024	Moderate uncertainty Accurate maintenance records for the three main offices and three high volume distribution sites, supplemented with national estimates based on representative samples.
SCOPE 2					
Electricity consumption from Grid	Electricity consumption	Location-based	Invoices	MfE 2024	Low uncertainty Consumption data in kWh provided by retailers.
		Market-based	Invoices	NZ ECS Residual Supply Factor (RSF) 2023/24, noting that Ballance does not hold Renewable Electricity Certificates (RECs)	Low uncertainty Consumption data in kWh provided by retailers.

Appendix 1: Assurance Statement



Independent Limited Assurance Report to Ballance Agri-Nutrients Limited

CONCLUSION

Our limited assurance conclusion has been formed on the basis of the matters outlined in this report.

Based on our limited assurance engagement, which is not a reasonable assurance engagement or an audit, nothing has come to our attention that would lead us to believe that the Greenhouse Gas Inventory Report, comprising the Emissions Inventory and the explanatory notes on pages 1 to 6 (**GHG Inventory Report**) has not, in all material respects, been prepared in accordance the *Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (revised edition)*, with reference to the additional guidance provided in the *GHG Protocol: Scope 2 Guidance (an amendment to the GHG Protocol Corporate Standard)* (collectively, the **GHG Protocol**) for the period 1 June 2023 to 31 May 2024.

INFORMATION SUBJECT TO ASSURANCE

We have performed an engagement to provide limited assurance in relation to Ballance Agri-Nutrients Limited's GHG Inventory Report for the period 1 June 2023 to 31 May 2024.

CRITERIA

The criteria used as the basis of reporting include the GHG Protocol: A Corporate Accounting and Reporting Standard (revised edition) and the GHG Protocol: Scope 2 Guidance (an amendment to the GHG Protocol Corporate Standard). As a result, this report may not be suitable for another purpose.

STANDARDS WE FOLLOWED

We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements (New Zealand) 3000 (Revised) *Assurance Engagements other than audits or reviews of historical financial information* and International Standard on Assurance Engagements (New Zealand) 3410 *Assurance Engagements on Greenhouse Gas*

Inventory Reports issued by the New Zealand Auditing and Assurance Standards Board (**Standards**). We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion. In accordance with the Standards we have:

- assessed the suitability of the circumstances of Ballance Agri-Nutrients Limited's use of the criteria as the basis for preparation of the GHG Inventory Report;
- used our professional judgement to assess the risks of material misstatement and plan and perform the engagement to obtain limited assurance that the GHG Inventory Report is free from material misstatement, whether due to fraud or error;
- considered relevant internal controls when designing our assurance procedures, however we do not express a conclusion on the effectiveness of these controls;
- evaluated the appropriateness of reporting policies, quantification methods and models used in the preparation of the GHG Inventory Report and the reasonableness of estimates made by Ballance Agri-Nutrients Limited;
- evaluated the overall presentation of the GHG Inventory Report; and
- ensured that the engagement team possess the appropriate knowledge, skills and professional competencies.

HOW TO INTERPRET LIMITED ASSURANCE AND MATERIAL MISSTATEMENT

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures we performed were based on our professional judgement and included enquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Misstatements, including omissions, within the GHG Inventory Report, are considered material if, individually or in the aggregate, they could be reasonably expected to influence the relevant decisions of the intended users taken on the basis of the GHG Inventory Report.

Independent Limited Assurance Report to Ballance Agri-Nutrients Limited Cont.

INHERENT LIMITATIONS

As noted in the GHG Inventory Report page 5, GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emission factors and the values needed to combine emissions of different gases.

USE OF THIS ASSURANCE REPORT

Our report is made solely for Ballance Agri-Nutrients Limited. Our assurance work has been undertaken so that we might state to Ballance Agri-Nutrients Limited those matters we are required to state to them in the assurance report and for no other purpose.

Our report is released to Ballance Agri-Nutrients Limited on the basis that it shall not be copied, referred to or disclosed, in whole or in part, without our prior written consent.

Our report should not be regarded as suitable to be used or relied on by anyone other than Ballance Agri-Nutrients Limited and its Shareholders for any purpose or in any context. Any other party who obtains access to our report or a copy thereof and chooses to rely on our report (or any part thereof) will do so at its own risk.

To the fullest extent permitted by law, none of KPMG, any entities directly or indirectly controlled by KPMG, or any of their respective members or employees accept or assume any responsibility and deny all liability to anyone other than Ballance Agri-Nutrients Limited for our work, for this independent limited assurance report, and/or for the conclusions we have reached.

MANAGEMENT'S RESPONSIBILITY FOR THE GHG INVENTORY REPORT

Management of Ballance Agri-Nutrients Limited are responsible for the preparation of the GHG Inventory Report in accordance with the criteria. This responsibility includes the design, implementation and maintenance of such internal control as Ballance Agri-Nutrients Limited's management determine is relevant to enable the preparation of the GHG Inventory Report that is free from material misstatement whether due to fraud or error.

OUR RESPONSIBILITY

Our responsibility is to express a limited assurance conclusion to Ballance Agri-Nutrients Limited on whether anything has come to our attention that the GHG Inventory Report has not, in all material respects, been prepared in accordance with the criteria for the period 1 June 2023 to 31 May 2024.

OUR INDEPENDENCE AND QUALITY CONTROL

We have complied with the independence and other ethical requirements of Professional and Ethical Standard 1 International Code of Ethics for Assurance Practitioners (including International Independence Standards) (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Professional and Ethical Standard 3, which requires the firm to design, implement and operate a system of quality control including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our firm has also provided financial audit services and tax compliance services to Ballance Agri-Nutrients Limited. Subject to certain restrictions, partners and employees of our firm may also deal with Ballance Agri-Nutrients Limited on normal terms within the ordinary course of trading activities of the business of Ballance Agri-Nutrients Limited. These matters have not impaired our independence as assurance providers of Ballance Agri-Nutrients Limited for this engagement. The firm has no other relationship with, or interest in, Ballance Agri-Nutrients Limited.



KPMG

Auckland
05/08/2024



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