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As a large emitter, Silver Fern Farms prioritises transparency and rigour in the way we measure, report and reduce emissions across our value chain.

This is a 2024 data update to our full Greenhouse Gas (GHG) Inventory. It reports our 2024 GHG emissions* and performance against our emissions targets.

We intend to publish our next full inventory in 2026, previous emissions reports can be found in the Key Sustainability Documents section of our [website](#)

Introduction

* Throughout this document “emissions” means “GHG emissions”. Unless otherwise stated, emissions are reported as tonnes of carbon dioxide equivalent (tCO₂e).

2025 Spotlight



Silver Fern Farms is proud to be supplied by the farms the world needs.

Our farmers can be proud of our history, and we are optimistic about the role they can play to satisfy increasing global demand for sustainably produced protein. Continuing our farmers’ track record of efficiency gains and environmental progress will position them favourably in our markets.

Many of Silver Fern Farms’ large high value customers are either in the process of, or have already adopted, their own Scope 3 emissions reduction targets. We now estimate that 25% of our total supply volume is purchased by businesses with Scope 3 targets, and this is increasing month by month. These customers are required to demonstrate action towards emissions reduction within their full supply chain, which includes Silver Fern Farms and their suppliers.

We believe the increasing requirement from our customers onto suppliers to demonstrate continual progress towards a range of sustainability outcomes, including emissions reductions, creates an opportunity to position our Silver Fern Farms farmers as trusted Nature Positive food producers.

This market driver creates an exciting platform to position our farmers as climate innovators and leverage new commercial arrangements and value. However, the opportunities presented will not be realised without authenticity and a commitment to reduce emissions from all parts of our business.

The targets we have set are driven by the opportunities we see in the market to continue our leadership position and hold on to the privileged market and customer access position we have today. We are confident these targets are achievable if we can continue to

unlock market incentives, allowing our farmers to invest in emissions reduction technologies and solutions.

Importantly, these targets are organisational-level targets set for Silver Fern Farms, rather than something that translates to specific individual targets for each of the company’s farmer suppliers. This is not about imposing unrealistic expectations for our farmers to bear on their own, nor is it about an expectation of specific reductions occurring across each and every one of our suppliers.

This is about collaboration and continuing to position Silver Fern Farms and our suppliers to lead the world in profitable, Nature Positive

food production. Silver Fern Farms will continue working and investing to position our suppliers to succeed, and reward those aligned with market signals.

Our customers are willing to invest in new ways of achieving our collective targets, and we are in a unique window of time to capitalise on these opportunities. Through investments like Agrizero, the agribusiness sector has real skin-in-the-game for methane reduction technology and can help accelerate solutions into the hands of our farmers.

Ngā mihi,
Dan Boulton
Chief Executive



Silver Fern Farms’ emissions reduction targets

Silver Fern Farms’ is committed to transparent emissions reduction against evidence based targets. In 2020, we committed to an ambitious target of a 42% absolute reduction in Scope 1 and 2 emissions by 2030 from a 2020 baseline. We are proud to share that in 2025 we have renewed our Near-Term commitments with targets validated by the Science Based Targets initiative (SBTi) for Scope 1 and 2 emissions, Scope 1 Farm based (Forestry Land and Agriculture – FLAG) and Scope 3 Beef FLAG emissions and Scope 3 non-FLAG emissions. FLAG emissions represent 95.8% of emissions across all scopes in our 2021 base year and beef emissions represent 72.6% of FLAG emissions across all scopes in our 2021 base year.

The SBTi requirement for a consistent base year across FLAG and non-FLAG targets has necessitated updating our Scope 1 and 2 target year from 2020 to 2021 and an updated Scope 1 and 2 non-FLAG absolute reduction target from 42% to 42.7%, the target year of 2030 remains the same, and we are well on track to meet this target.

Our leaders are held accountable to meeting emissions reduction targets through internal performance KPIs linked to remuneration and through Sustainability Linked Loan targets.*

*We will update our performance against these new commitments in future Inventory reporting.

The SBTi provides two pathways for FLAG emissions target setting. A sector pathway (agriculture more broadly) and specific pathways for selected commodities based on setting intensity targets. Of our animals processed, only beef is provided a commodity pathway. There is no SBTi commodity pathway for sheep and deer. This has led us to splitting our Scope 3 targets between species and only adopting a Scope 3 science-based target for our beef production where mitigations are likely to be available earlier. We have also publicly committed to Scope 3 targets for sheep.



Emissions Reduction Targets

- 1. The target includes FLAG emissions and removals.
- 2. The target boundary includes land-related emissions and removals from bioenergy feedstocks.

Emissions Type	Materiality (% of total emissions)	Target	Target Wording	Base Year	Target Year	SBTi Validated	Current Year reduction on baseline (%)
Scope 1 FLAG	0.03%	36.4%	Silver Fern Farms Limited commits to reduce absolute scope 1 FLAG GHG emissions by 36.4% from a 2021 base year ¹	2021	2032	✓	24%
Scope 1 and 2 Energy and Industrial (i.e. non-FLAG)	1.15%	42.7%	Silver Fern Farms Limited commits to reduce absolute scope 1 and 2 GHG emissions 42.7% by 2030 from a 2021 base year. ²	2021	2030	✓	31%
Scope 3 Energy and Industrial (i.e. non-FLAG)	2.23%	32.5%	Silver Fern Farms Limited also commits to reduce absolute scope 3 GHG emissions 32.5% by 2032 from a 2021 base year. ²	2021	2032	✓	To be reported after external verification of recalculated baseline in 2025
Scope 3 Beef Commodity FLAG	68.39%	16%	Silver Fern Farms commits to reduce scope 3 2021FLAG GHG emissions from purchased beef by 16% per tonne of fresh weight by 2032 from a 2021 base year. ¹	2021	2032	✓	To be reported after external verification of recalculated baseline in 2025
Scope 3 Sheep FLAG	25.22%	10%	Absolute reduction in sheep emissions by 10% by 2033 from a 2023 base year.	2023	2033	-	To be reported after external verification of recalculated baseline in 2025
Scope 3 Venison FLAG	2.97%	-	Supplier engagement target.	-	-	-	To be reported after external verification of recalculated baseline in 2025

2024 Emissions

Silver Fern Farms’ total GHG emissions for the FY24 reporting period are 4,932,666 tCO₂e.

In 2024 our On-Farm emissions have increased to 4,764,302 tCO₂e. This increase reflects ongoing reporting improvements, the volume of livestock processed has not significantly changed.

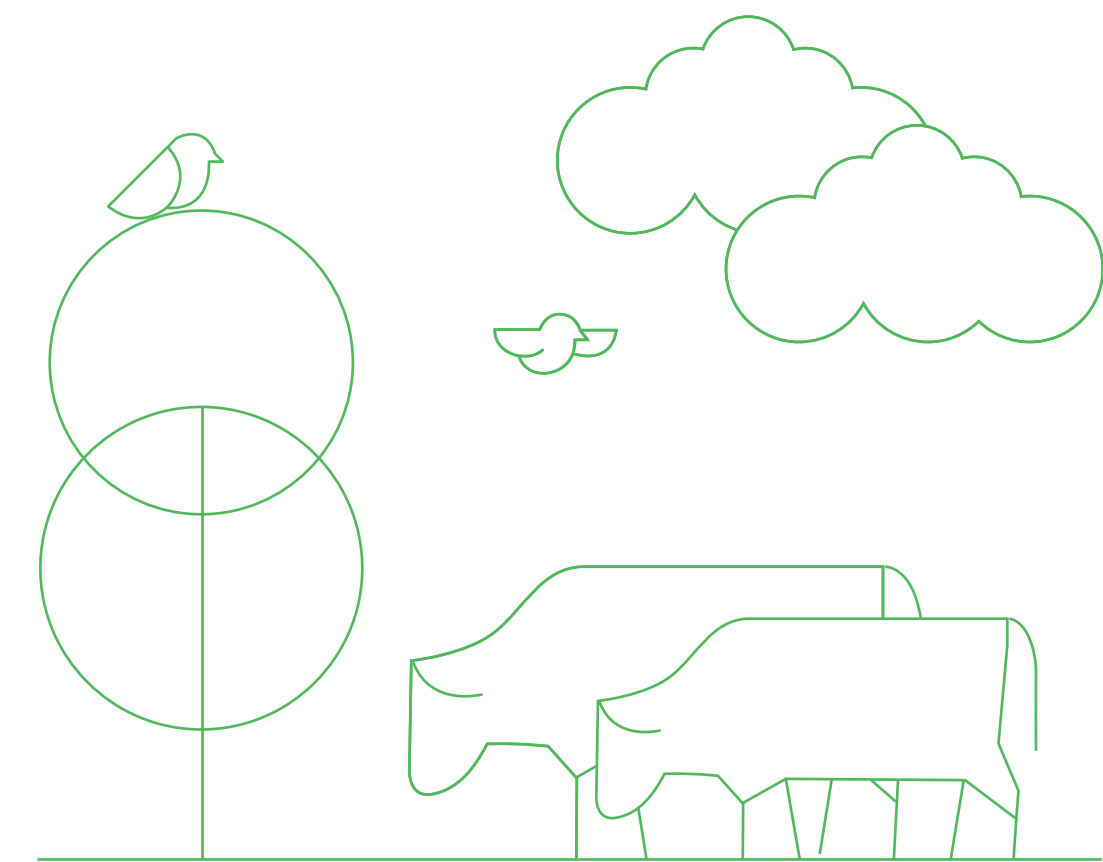
This large change to our emissions profile reflects that we have moved from reporting farm emissions using a Ministry for the Environment emissions factor, to using more specific and granular Life Cycle Analysis using real farm data and ISO standard methodology.

Taking this data led and transparency approach has increased our overall total inventory on paper, but we think this is much more representative of our total emissions within our value chain. The Life Cycle Analysis undertaken is much more capable of reflecting any changes that might occur within our operations and across our supply, within farming systems.

We have also reported, for the first time, Scope 3 emissions from the commuting of employees

to and from work, and upstream fuel and energy related emissions.

Silver Fern Farms continues to heavily invest in process heat decarbonisation to meet Scope 1 and 2 reduction targets, most materially in the installation of three industrial heat pumps at Belfast, Finegand and Pareora and a biomass boiler at Te Aroha. This inventory reflects this investment, Scope 1 and 2 emissions have reduced by 31% on our 2021 inventory from 84,250 tCO₂e to 58,446 tCO₂e.



Scope: Defines the operational boundaries in relation to indirect and direct GHG emissions.

Scope 1

An organisation’s direct GHG emissions

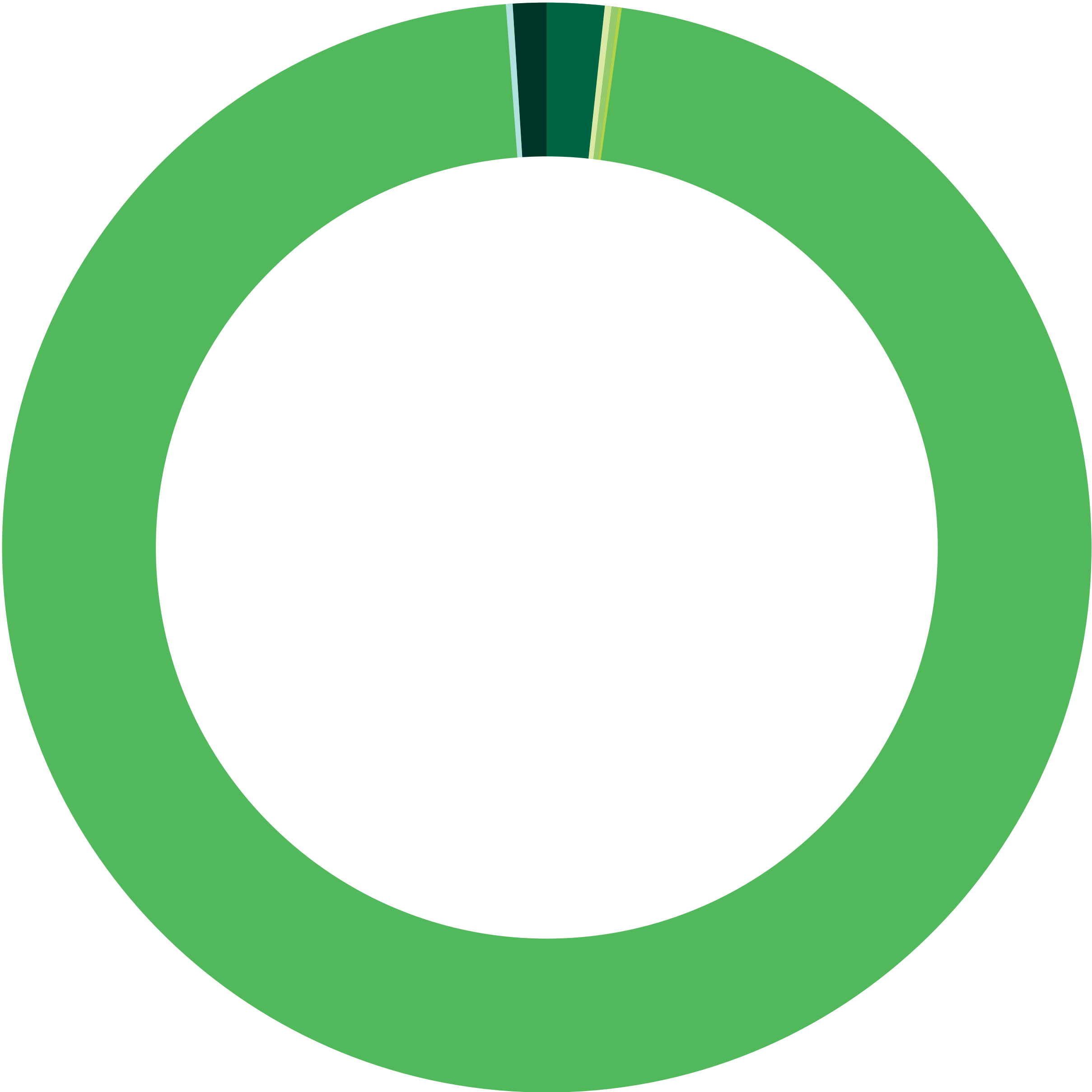
Scope 2

An organisation’s emissions associated with the generation of electricity, heating/cooling, or steam purchased for own consumption.

Scope 3

An organisation’s indirect emissions other than those covered in Scope 2

2024 Emissions

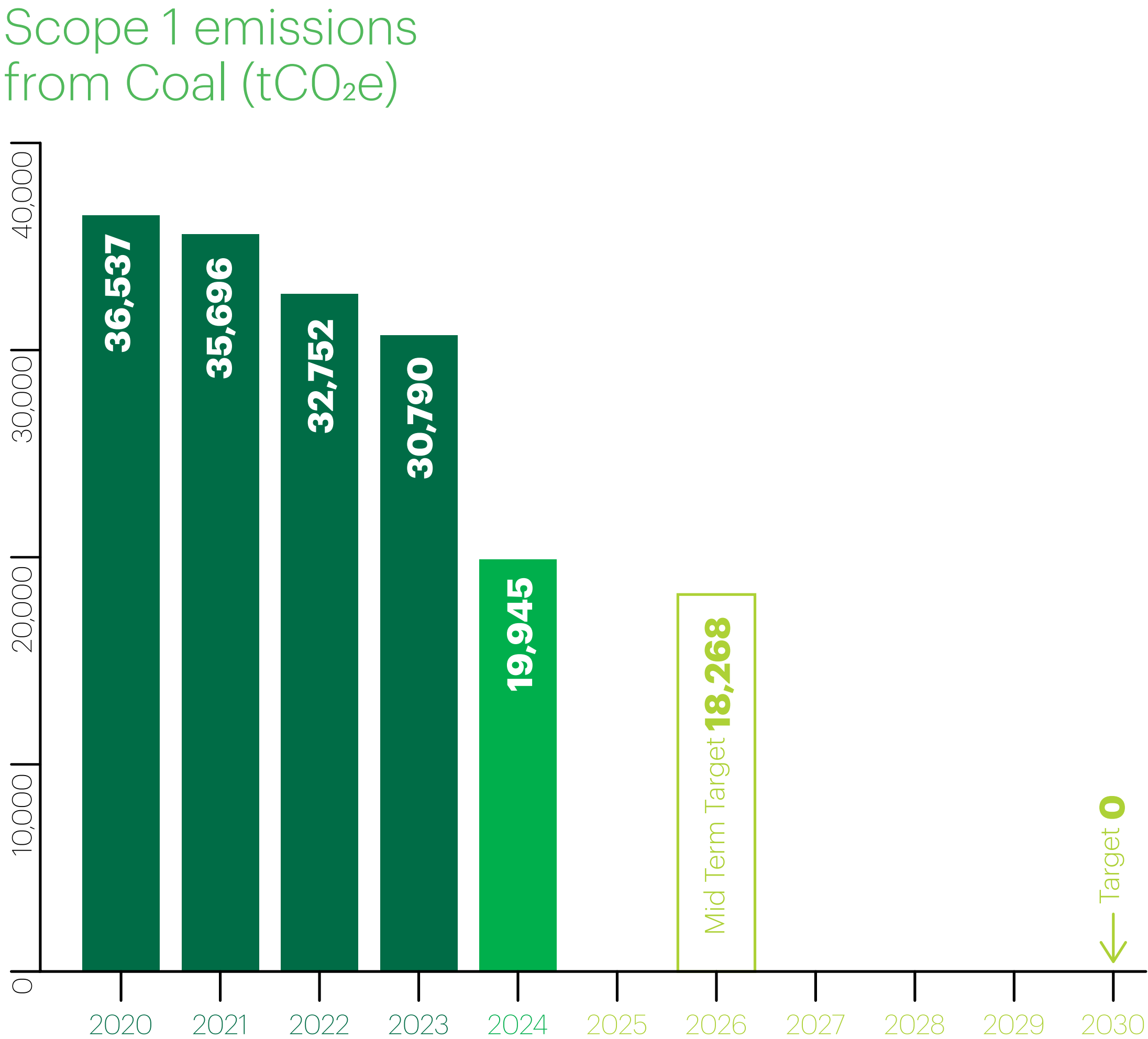


-  1.0% **Scope 1**
Organisations direct GHG emissions
-  0.2% **Scope 2**
Emissions associated with the generation of electricity, heating/cooling or steam purchased for own consumption
-  96.6% **Scope 3**
Indirect emissions on Supplier Farms (FLAG) (purchased goods and services)
-  1.7% **Scope 3**
Emissions from transportation of goods
-  0.2% **Scope 3**
Emissions from employee commuting
-  0.2% **Scope 3**
Upstream fuel and energy related emissions
-  0.1% **Scope 3**
Other

2024 Emissions

Scope 1
47,984 tCO₂-e,
1.0% of total emissions

Scope 1 emissions arise directly from our operations and include coal, and natural gas used for heating water at our processing sites. Coal is the major component of our controllable Scope 1 emissions and is a focus of Silver Fern Farms’ direct emissions reductions projects contained within our Sustainability Action Plan and Carbon Roadmap. We aim to halve coal emissions by 2026 (from a 2020 baseline) and have zero coal use by 2030 (if not before).



Scope 2

10,462 tCO₂-e,

0.2% of total emissions

Our Scope 2 GHG emissions are entirely made up of electricity used across our operations and corporate hubs. As we move away from coal to electric heat pumps to heat water for processing, our electricity use will rise and emissions within this scope may increase. Scope 2 electricity emissions are determined by the make up of the national grid supply, i.e. the proportion of renewable and non-renewable electricity (In a wet year emissions reduce as Aotearoa New Zealand electricity is provided by hydro dams. In a dry year more coal may be burned, which may cause fluctuations in our Scope 2 emissions). In a normal year, around 80-85% of New Zealand’s electricity is generated from renewable sources.

Scope 3

4,874,221 tCO₂-e,

98.8% of total emissions

Scope 3 GHG emissions include those associated with purchased goods and services, and other supply chain activities. These include travel, waste to landfill and upstream fuel and energy related activities (e.g. the generation of electricity, the extraction of fossil fuels), and losses when distributing electricity and gas. Like most red meat producers, Silver Fern Farms’ Scope 3 emissions profile is dominated by indirect on-farm CH₄ (methane) emissions derived from enteric fermentation (the methane that is produced when animals eat grass and turn it into digestible energy) occurring in ruminant livestock (sheep, cattle, and deer).

FLAG Emissions

This is the third year that we have included emissions from Supplier Farms in our GHG inventory, and although the total number of livestock processed in 2024 was similar to 2023, there was an increase in our reported scope 3 emissions from livestock. This year we have applied a more specific methodology that draws on the Life Cycle Analysis (LCA) completed under the Toitū Net Carbon Zero product certification program. Previously we applied a per head emission factor calculated at a national level and issued by the Ministry for the Environment. We are committed to being transparent in our reporting, by using our LCA data, we are representing emissions as calculated by the Crown Research Institute AgResearch and audited by Toitū Envirocare under the Net Carbon Zero product certification, using data collected from Silver Fern Farms Farmer Suppliers.

Non FLAG Emissions

Another reason our reported scope 3 emissions are larger in the 2024 year is our ongoing work to increase the completeness of our Inventory to include less material (the small %’s) emissions sources. We have added emissions from employees commuting to and from work (previously this was only reported if Silver Fern Farms fully or partially paid for this activity). We have also added upstream fuel and energy related emissions to our business travel and operations footprints, that is, the emissions from the extraction of fossil fuels, from the production of wood chips and wood pellets, and from the generation of electricity.

Scope 3, indirect emissions from the use of products from the organisation, and indirect emissions from other sources, have been excluded in 2024. These were excluded because they have only a minor impact on our total emissions profile and the methodology for calculating these in a transparent and meaningful way is still being developed. We are now working to accurately report the scope 3 emissions associated with capital goods and construction, purchased goods other than livestock, further processing of sold product, and emissions from investments and joint ventures and plan to add these to our 2025 reporting.

GHG Inventory on a Page

	Emissions (tCO ₂ e)				
	2020	2021	2022	2023	2024
Scope 1	64,530.88	65,204.69	62,190.93	64,002.28	47,983.60
Category 1: Direct emissions and removals	64,530.88 ²	65,204.69	62,190.93	64,002.28	47,983.60
Emissions from livestock held on company holding farms					
• Enteric Fermentation ⁴	2,096.02	2,276.68	Reported in Scope3	3,533.73	Methodology not used
• Addition of Livestock waste to soils ⁴	Not reported	Not reported	Reported in Scope3	340.73	Methodology not used
• LCA methodology ¹	Not reported	Not reported	Reported in Scope3	Methodology not used	1,720.73
Emissions - Industrial processes	388.47	420.95	57.97	45.10	38.13
Leakage of refrigerants	1,621.05	3,109.79	2,486.62	2,327.91	1,823.01
Mobile combustion of fuels (incl. company owned or leased vehicles)	1,489.47	1,594.32	2,299.54	2,458.89	2,308.59
Stationary combustion of fuels	49,326.86	48,039.24	47,606.72	44,802.70	32,292.57
Treatment of wastewater	9,570.49	9,763.71	9,740.09	10,493.21	9,800.57
Business travel - Transport (non-company owned vehicles)	38.53 ³	Reported in Scope 3	Reported in Scope 3	Reported in Scope 3	Reported in Scope 3
Scope 2	16,391.55	19,044.97	17,794.81	11,472.10	10,461.99
Category 2: Indirect emissions from imported energy	16,391.55	19,044.97	17,794.81	11,472.10	10,461.99
Imported electricity	14,561.12	17,358.68	17,794.81	11,472.10	10,461.99
Imported energy (hot water)	1,830.42	1,686.29	0.00	0.00	0.00
Scope 3	18,412.00	16,010.16	2,859,209.04	3,344,513.72	4,874,220.82
Category 3: Indirect emissions from transportation	10,955.17	10,182.70	87,217.92	85,105.55	96,255.76
Business travel - Accommodation	Not reported	Not reported	104.38	152.25	133.70
Business travel - Transport (non-company owned vehicles)	798.67 ²	884.52	2,960.41	4,723.47	2,172.26
Downstream freight					
• Paid by the customer/others	Not reported	Not reported	58,363.15	57,040.28	57,310.93
• Paid by the organisation	10,156.50	9,298.18	10,437.94	9,845.09	11,553.1
Employee commuting					
• Paid by the organisation	Not reported	Not reported	522.95	61.46	Included in total commuting
• Total employee commuting emissions	Not reported	Not reported	Not reported	Not reported	11,898.52
Upstream freight - Paid by suppliers/others	Not reported	Not reported	14,829.10	13,283.00	13,187.26
Category 4: Indirect emissions from products used by organisation	7,456.83	5,827.46	2,771,991.11	3,259,408.17	4,777,965.06
Disposal of solid waste - Landfilled	5,467.14	3,648.10	774.45	842.62	705.55
Disposal of solid waste - Not landfilled	Not reported	Not reported	Not reported	Not reported	5.60
Emissions from the use of services not included elsewhere (municipal water supply)	38.32	35.59	35.84	41.92	33.24
					2.9
Purchased fuel and energy related activities	Not reported	Not reported	Not reported	Not reported	10,613.16
Purchased goods and services (non-Farm emissions)	Not reported	Not reported	Not reported	Not reported	1,074.04 ³
Purchased goods and services; Emissions from Supplier Farms					
• Enteric Fermentation ⁴	Not reported	Not reported	2,768,739.00	2917637.84	Reported using LCA methodology
• Livestock waste ⁴	Not reported	Not reported	Not reported	339112.71	Reported using LCA methodology
• LCA methodology ¹	Not reported	Not reported	Not reported	Methodology not used	4,764,302.72
Transmission of energy (transmission and distribution losses)	1,951.37	2,143.77	2,441.82	1,760.30	1,230.74
Grand Total	99,334.42	100,259.82	2,939,194.78	3,419,988.10	4,932,666.41

1. LCA published by Toitū [Silver Fern Farms | Certification Overview](#). On-farm Life Cycle data was used to derive an emissions factor; this factor includes enteric fermentation and emissions from the application of livestock waste to soil.

2. 38.53 tCO₂e rental car emissions reported in Scope 1 in 2020 under previous programme requirements, rental car emissions are included in Scope 3 from 2021 onwards

3. Upstream Electricity and Upstream LPG emissions are reported in this category in 2025

4. [Ministry for the Environment per head emissions factor](#)

Exclusion Tables

Scope 1 Documented Exclusions in the 2024 Reporting Period

Source of excluded emissions:	Explanation why this source is excluded:
Enteric Fermentation of bobby calves when held for processing	De minimis No published emissions factors for bobby calves on a per head basis. However, bobby calves are processed prior to their metabolism maturing sufficiently for Enteric Fermentation to occur.

Scope 2 Documented Exclusions in the 2024 Reporting Period

Source of excluded emissions:	Explanation why this source is excluded:
Emissions from imported electricity to the Auckland and Christchurch office hubs	These are Rental offices without individual metered supply, de minimis.
Imported Electricity emissions from Ecotricity supply to Staff housing and some irrigation pivots	De minimis, Ecotricity supply is carbon neutral

Scope 3 Documented Exclusions in the 2024 Reporting Period

Source of excluded emissions:	Explanation why this source is excluded:
Upstream Electricity Emissions and T&D emissions from imported electricity to the Auckland and Christchurch office hubs	These are Rental offices without individual metered supply, de minimis.
Emissions from the transportation of incoming goods other than Livestock.	It is considered that transport emissions associated with incoming goods will be less than 5% of our total emissions. Accurately estimating emissions from transport of incoming goods is challenging from 14 sites and over 2500 vendors. Has been included in data improvement projects.
Emissions produced during offsite functions and conferences other than in business accommodation and transport	Excluded on the basis of materiality to overall emissions, estimated at 0.001% of scope 3 emissions.
Upstream Electricity Emissions and T&D emissions from Ecotricity supply to Staff housing and some irrigation pivots	De minimis
Enteric Fermentation of bobby calves on Supplier Farms	De minimis No published emissions factors for bobby calves on a per head basis. However, bobby calves are processed prior to their metabolism maturing sufficiently for Enteric Fermentation to occur.
Processing Plants with composting or application of paunch grass to land	Estimated to be 0.06% of scope 3 emissions
Emissions from Capital Goods	Estimated to be 0.8% of Scope 3 emissions
Farm emissions from the transfer of livestock to grazing farms	Transport of cattle between breeding farms and finishing farms (distances are unknown but will be short and therefore the contribution will be very minor).
Farm emissions from the production and use of anthelmintics for internal parasite treatment of young stock.	Emissions from the production and use of anthelmintics for internal parasite treatment of young stock (lack of data on anthelmintic forms used and recognition that amounts used are small and contribution would be very minor).
Upstream emissions from employee commuting	Estimated to be <1%, required emissions factors to be developed by Toitū Envirocare.

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Methodology

Methodology

Emissions reported have been certified by Toitū Envirocare in accordance with ISO 14064-1:2018 and the technical requirements of the Toitū carbon reduce Programme¹.

- Our Scope 1 and 2 emissions are reported with reasonable assurance, our scope 3 emissions are reported with limited assurance.
- The Organisational boundaries have been set using Operational Control (the organisation or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation). We do not currently report emissions for any subsidiaries but are working towards this.
- Scope 1 and 2 includes direct emissions from Silver Fern Farms Ltd, the Scope 3 boundaries extend to supplying farms and to the receiving port for international shipment of goods or the local sales delivery point for sale of goods within Aotearoa, New Zealand.

- In 2024, Scope 3 reporting was extended to include upstream fuel and energy related emissions, and emissions from employee commuting.
- The methodology for calculating farm based emissions was materially changed to use our more specific Life Cycle (LCA) product footprints.
- The LCA data is collected from a representative group of Silver Fern Farms Supplier Farms (and modelled by AgResearch).
- Future inventories will include additional Scope 3 reporting to meet the requirements of the Toitū Elevate programme and the requirements of SBTi and the GHG Protocol.
- Other Scope 3 emissions include emissions from Business travel (accomodation and transport), emissions from the disposal of solid waste, and a small quantity of emissions from municipal supplied water (normally we use bores or surface water).
- The calculation methodology applied takes the approach of Emissions activity data x emissions factor. Where, emissions factors are provided by the Toitū carbon reduce Programme (Carbon Management Toitū Envirocare (toitu.co.nz)) and apply Global Warming Potentials (GWP) from the IPCC fifth assessment report (AR5) as the preferred GWP conversion.

¹ The 2024 inventory includes emissions from additional biogenic sources (wood biomass fuel and burning of sludge. These have not been reported previously. We have not included removals in the inventory.



Methodology:
Explaining Scope 3 Emissions

Silver Fern Farms uses Life Cycle Analysis to screen for the materiality of Scope 3 emissions. Cradle-to-grave Product Carbon Footprint reports have been completed and verified for beef, sheep and deer.

Within Scope 3, emissions from purchased goods and services have been calculated for the most material emissions (livestock). Indirect emissions associated with capital goods have not been calculated. Emissions from upstream leased assets are nil. Emissions from processing of sold products, use and end of life treatment of sold products are not within the operational boundary of the organisational carbon footprint (these are also considered low materiality in the Life Cycle Analysis). Emissions from investments and joint ventures are outside of the organisation boundary. No fossil fuels are distributed by Silver Fern Farms Ltd. There are no franchises operated by Silver Fern Farms Ltd.



*Note that the boundaries of the emissions reported here from 2024 are for the organisation (from farm to receiving International port for international customers and to the customer for local sales deliveries within Aotearoa, New Zealand). The boundaries of emissions for our Net Carbon Zero product range extend to consumer use across the entire lifecycle of the product. For more information please visit:

[Net Carbon Zero Science | Silver Fern Farms](#)

Methodology

A note on base years

SBTi require a consistent base year across FLAG and non-FLAG targets. This has necessitated updating our non-FLAG Scope 1 and 2 absolute reduction target base year from 2020 to 2021. Our methodology and completeness, of scope 3, have developed significantly since 2021. We recalculated the Inventory to meet the requirements of SBTi target validation. These were validated by SBTi at 385,298 tCO₂e total Non-FLAG emissions, and 5,225,229 tCO₂e FLAG emissions. These will be subsequently audited by Toitu, and any changes will be incorporated into published Inventory data in 2026.

Silver Fern Farms Life Cycle Assessment:

Our product footprint is prepared by AgResearch Crown Research Institute, in accordance with the requirements of ISO 14067:2018 and Toitū’s Net Carbon Zero programme with Limited Assurance. Accurate quantification of the quantity of greenhouse gas (GHG) emissions requires the preparation of a product carbon footprint in accordance with international protocols and standards as well as meeting the Programme certification requirements. AgResearch calculate emissions for each Life Cycle stage (Farm, Production, Distribution, Retail, Use and End of Life) for beef, sheep and venison meat.

Farm emissions data is sourced from a selection of Silver Fern Farms Suppliers operating in our Aotearoa, NZ, grass fed systems. The emissions from this life cycle stage are used as an LCA derived emissions factor for our Organisation Carbon Footprint Reporting. The emission per kg of meat from the life cycle analysis are used to calculate our on farm emission for the organisation

Our full Life Cycle Assessment Product Footprint Reports are published by Toitū [here](#).

Across our Net Carbon Zero range of products the emissions from the full life cycle are inset by carbon sequestered by woody vegetation on our Suppliers Farms. For more information on Net Carbon Zero visit [here](#).

