

Livestock Improvement Corporation Limited (LIC) **Sustainability Report**

For the year ended 31 May 2023

The DNA of a
more profitable and
sustainable dairy
herd for New Zealand
farmers

There's always room for improvement



About this report

This report presents information about LIC's environmental, social and economic performance for the year ended 31 May 2023 and has been reviewed by LIC's Board of Directors. LIC has reported in accordance with the GRI Standards for the period 1 June 2022 to 31 May 2023.

This is our third sustainability report outlining the progress we have made over the past year as we continue on our sustainability journey.

We are a member of the Climate Leaders Coalition and the Sustainable Business Council (SBC).

This report is intended to meet our commitment to report on LIC's environmental, social and economic performance, but it's also an opportunity to demonstrate how we are responding to sustainability challenges facing our farmers and the New Zealand dairy sector.

At LIC we are passionate about New Zealand's primary sector and believe we can be world-leading in our management of impacts on the environment and create real value for our farmers as a result.

This report outlines how we are helping farmers understand and improve their emissions. It demonstrates that with a sharper focus on herd improvement NZ farmers can produce high quality milk products from sustainable, high performing cows.

We have received certification from Toitū's carbonreduce programme following the audit of our FY19 to FY23 GHG inventory report. Our external auditors KPMG have also performed procedures to ensure that financial data included in this Sustainability Report is consistent with LIC's Annual Report.

We are committed to open and transparent reporting on sustainability and will continue to further develop our reporting framework over time.

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Who we are

We exist to deliver superior genetics and technological innovation to help our shareholders sustainably farm profitable animals.

LIC is a New Zealand dairy farmer-owned co-operative and world leader in pasture-based dairy genetics and herd management.

LIC is headquartered in the Waikato, with over 25 sites across New Zealand, Australia, UK and Ireland. With origins dating back to 1909, LIC has a long history of delivering world-leading innovations for the dairy sector. This is even more relevant to farmers today given the rapid change the sector is undergoing and the growing climate challenges we're facing. Who we are and what we do has never been more important for Kiwi farmers, our sector and New Zealand.

As a farmer-owned co-operative, all of our profit is returned to our farmer shareholders in dividends or reinvested into new solutions and research and development (R&D).

LIC shares are listed on the NZX. To be a shareholder in LIC, you have to farm dairy cows in New Zealand, supply a New Zealand milk processor and buy a minimum amount of qualifying products and services from LIC in any one year.



Why sustainability matters to LIC

Kiwi farmers, our sector and the New Zealand Government are focused on a more sustainable approach to farming, so we must continue to improve our environmental credentials.

Sustainability is not only important to us as a business, but also because of the critical role we play in helping dairy farmers meet their own sustainability goals.

Our strategy focuses on building a strong, sustainable co-operative, leading the world in our field and delivering outstanding value for our shareholders and sector. As a co-op, we understand the role we must play in driving positive change through collective action on climate change in New Zealand and supporting our farmer shareholders on the journey. We are committed to driving sustainability improvements and reducing emissions on-farm, with projects and initiatives in both these areas well underway.

LIC's biogenic methane emissions will reduce over the long term, however, we have increased the number of trial animals significantly in recent years for critical research and

development initiatives and lower methane-emitting bulls will be bred to include in our bull team over time.

We support our 9,000+ shareholder farmers through genetics, genomics, milk testing and diagnostics to produce the most sustainable and efficient animals, and the highest value product.



Key Highlights

Environment

Supporting shareholders to produce the most sustainable and efficient animals and reducing emissions at LIC



Rolling 3 year average milk production

Up 0.4% from 388 kgMS prior rolling 3 year average



If we're milking fewer cows, we need to milk better ones.



Cows in national herd

1.3% decrease on previous year



Reduction in LIC's CO₂ Emissions

Change 2022/23 compared to 2018/19 (base year)



Increase in LIC's biogenic methane CO₂ Emissions



Average increase in genetic gain (genomic Breeding Worth)

Per annum for long-term user of LIC genetics (2018 - 2022)

Economic

Delivering value to our farmer shareholders by investing in initiatives to help them breed the most profitable and sustainable animal



Total revenue from continuing operations

Up 5.1% from \$263.2 million last year (excl. Automation*)



Full year dividend

or 16.38 cents per share



R&D and investment in business

Investment & capital spend
\$20.6m up 15% from last year

R&D investment
\$18.6m up 2.2% from last year

Social

Caring for our staff and our farmer shareholders



Organisational Health Index (OHI)

Up five points from last year - our highest ever result and putting us in the first quartile of all companies surveyed by McKinsey worldwide



Lost time injury frequency rate

(Per 100 full time equivalent employee)

Up from 1.81 last year



Full time equivalent employees

Plus close to 1,750 seasonal workers

Footnote - OHI is a McKinsey tool which measures the impact of our organisation practices and culture on performance against 768 other international organisations.

Letter from the Chair & Chief Executive

Welcome to LIC's third annual Sustainability Report. Over the last three years we have engaged with our stakeholders to get the feedback needed to ensure that this report stands up against our reporting commitments and the standards we have chosen to report under.

Our ongoing focus on sustainability is vital to achieving our goal of becoming carbon neutral by 2050, and we're pleased to report on the progress we've made in the last year.

This report is an important way for us to be transparent, hold ourselves accountable and measure the progress we are making on our sustainability journey as we deliver on our commitments to our farmer shareholders.

Sustainability is at the heart of everything we do for farmers today and in the future

The most significant impact we can make as a business is through reducing the environmental footprint of the national dairy herd.

While making meaningful contributions to New Zealand's emissions targets is a long-term game, now is the time to help our farmer shareholders breed more efficient and climate-friendly cows. We continue to roll up our sleeves and sharpen our focus on providing farmers with the tools they need to do just that.

While we are continuing to provide farmers with precision genetics and technology tools today, we are also keeping a watchful eye on what farmers need in the future. To this end, we continue to invest heavily in R&D to help farmers do what they do best, but for a changing world.

Partnering to breed a low methane cow

We are always looking at how we can innovate alongside our sector partners to provide our farmers with a range of products to help them solve climate change challenges. The successful programmes we have built with our partners, all of whom are at the leading edge of the global dairy sector, are enabling us to make significant progress towards achieving our commitment to help farmers reduce emissions on farm.

Our methane research programme, in partnership with CRV and Pāmu, and with funding from the NZ Agricultural Greenhouse Gas Research Centre (NZAGRC), is progressing well. We continue to investigate the link between methane emissions from bulls and their genetics with the intention of breeding more climate-friendly cows that produce less methane.

The programme is now in its third year, and we have found that a bull's genetics do play a role in how much methane they emit. The lowest bulls in the trial emitted around 15%-20% less methane than the average after accounting for food eaten.

In the last year, these bulls were mated with heifers from Pāmu farms with the calves born this spring. We are looking forward to testing the methane emissions from these offspring to ensure the genetic variation is representative of their fathers and will be reporting on these results.





We hope to produce a methane breeding value and give Kiwi dairy farmers the opportunity to access low methane elite genetics by 2026. This has the potential to make a real difference to farmers by helping to ensure emissions reductions don't come at the cost of reducing milk production.

Developing a genetic solution for heat tolerance

Another commitment we have made significant progress on within the last year is our heat tolerance research programme. The aim of the programme is to provide New Zealand farmers with high genetic merit dairy cows with improved heat tolerance.

Heat stress has significant welfare implications for animals. For dairy cows it can also impact feed intake, milk production, fertility and calf birth weight. Introducing the 'slick' gene into the country's dairy herd could allow for a significant improvement in dairy cow performance in hotter temperatures over the long term.

Over the last year, we invested \$18.6 million into our R&D efforts, which include both our methane and heat tolerance programmes. We are committed to these investments and constantly innovating to create a sustainable future for New Zealand's dairy sector and the farmers within it.

Today, our commitment remains to breed the best cows, faster

The dairy sector needs to continue to evolve - for climate change and because of it, and therefore the production efficiency of our national herd has never been more important.

Efficient cows produce more milksolids per kg of feed eaten, have a fertility advantage, and have a lower emissions footprint per kg of milksolids.

Farmers using our genetics are breeding genetically superior animals, and at a faster rate. In fact, long-term users of LIC genetics have almost doubled the rate of genetic gain in their herds over the last 10 years - these gains are cumulative and permanent, delivering long-term benefits into the future.

Throughout the last year we have worked hard to support both our team and farmers through managing cost pressures and increasing weather events. We would like to thank our team and farmer shareholders for their ongoing support and hard work.

As we transition to welcoming a new LIC Board Chair, we feel the co-op is in a strong position to navigate the unique challenges facing the dairy sector both now and into the future. We look forward to keeping you updated on LIC's sustainability journey and how we are continuing to push for more improvement that will support New Zealand farmers to reduce intensity of emissions and retain their position as the world's most efficient dairy milk producers.

Murray King
Chair

David Chin
Chief Executive

Our strategy

Creating value for our farmer shareholders is at the heart of everything we do.

Our strategy focuses on building a strong sustainable co-operative, leading the world in our field and delivering outstanding value for our customers, shareholders, and sector, next year, in five years and for another 100 years.

Doing what we are good at.
Playing to our strengths.



How we drive value for our farmers

Our three commitments.

Our strategy makes three commitments to our farmer shareholders.

1 Operational Excellence

We commit to getting the basics right and delivering for you, on time, every time.

2 Faster Genetic Improvement

We commit to having your back when it comes to helping you meet the environmental challenges you face, in particular animal efficiency, and nitrogen and methane mitigation.

3 Software Reliability and Performance

We commit to being better at delivering our software to you. We renew our commitment to continuous improvement and transparency around delivery of new features.



Our Farmers

Deepen our understanding of the current and future needs of all of our farmers.



Data & Digital

Modernising the animal data & digital capabilities.



Animal

Most sustainable & efficient animal. Highest value products.



Innovation

Research & development. Responsive innovation.



Measuring our three commitments

If we can measure it, we can manage it.

Our farmers rightly ask how they can hold us accountable for delivering on the commitments - this has been a priority for us this year. There are measures and targets in place for each commitment and progress is monitored throughout the year. The measurements provide our business with clear goals and expectations for what delivering on our commitments looks like.

The measurements and targets are not about perfection, they are the improvement we are aiming for. We report to farmer shareholders annually at events such as our Annual Meeting.

While these metrics have been recognised as important to farmers and these targets are where we believe we can improve and make a difference, we know that the needs of farmers can change. The measurements and targets are reviewed and updated as needed annually.

2022-23 Commitment Measurements

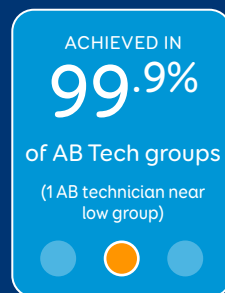
We're pleased to report that we have achieved the majority of our targets this year.

Operational excellence:

Key: ● Target met ● Some exceptions ● Target not met

Artificial Breeding

Deliver a **Non Return Rate (at an AB Tech group level) within +/- 9%** of the AB Supervisor average for the area



Artificial Breeding

98% of frozen semen straws on-farm at least one day prior to the required-on-farm date (for all orders placed 7 days in advance of the required-on-farm date)



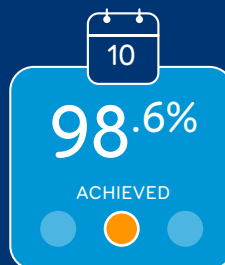
Herd Testing

Provide a result for 99.9% of all cows **within 72 hours**



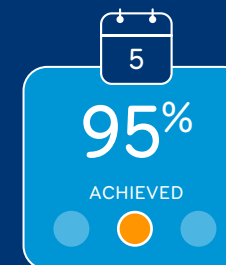
Johne's Disease Testing

10 working day turnaround time for test results (from the sample being collected on-farm)



GeneMark®

5-week turnaround time for test (from booking week)



Milk Pregnancy Testing

10 working day turnaround time for test results (from the sample being collected on-farm)



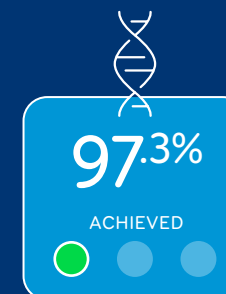
Customer Experience Centre

Answer 70% of calls **within 30 seconds**



GeneMark®

Provide results first time for 97% of all samples when wet tissue sampling units are used



Faster Genetic Improvement:

Key: ● Target met ● Some exceptions ● Target not met

Sire Proving Scheme Bull Team genetic gain




35gBW
ACHIEVED

16 gBW increase per annum




Premier Sires Bull Team genetic gain




22gBW
ACHIEVED

15 gBW increase per annum




Rate of genetic gain on farm




16gBW
ACHIEVED

15 gBW 10 year rolling average gain (for herds within >80% replacements sired by LIC bulls)




Rate of genetic gain on farm




18gBW
ACHIEVED

17 gBW 5 year rolling average gain (for herds within >80% replacements sired by LIC bulls)




Rate of genetic gain on farm




18gBW
ACHIEVED

17 gBW 3 year rolling average gain (for herds within >80% replacements sired by LIC bulls)




Nitrogen mitigation




6.31
ACHIEVED²

1.5g reduction in urinary nitrogen per kgMS produced (as per HoofPrint® index for the Premier Sires teams)




Methane mitigation



7.1
ACHIEVED¹

2g reduction in methane per kgMS produced (as per HoofPrint® index for the Premier Sires teams)



^{1,2}Indirect estimate based on genetic data correlation


Software Reliability:

Key: ● Target met ● Some exceptions ● Target not met

MINDA® availability

Available 99% of time



99.54%
ACHIEVED



MINDA® performance

95% of events are processed through the holding pen within 5 minutes



97.79%
ACHIEVED



MINDA® Roadmap

All features in MINDA® Roadmap released



100%
ACHIEVED



EZ Link® performance

<1% poor feedback on EZ Link performance

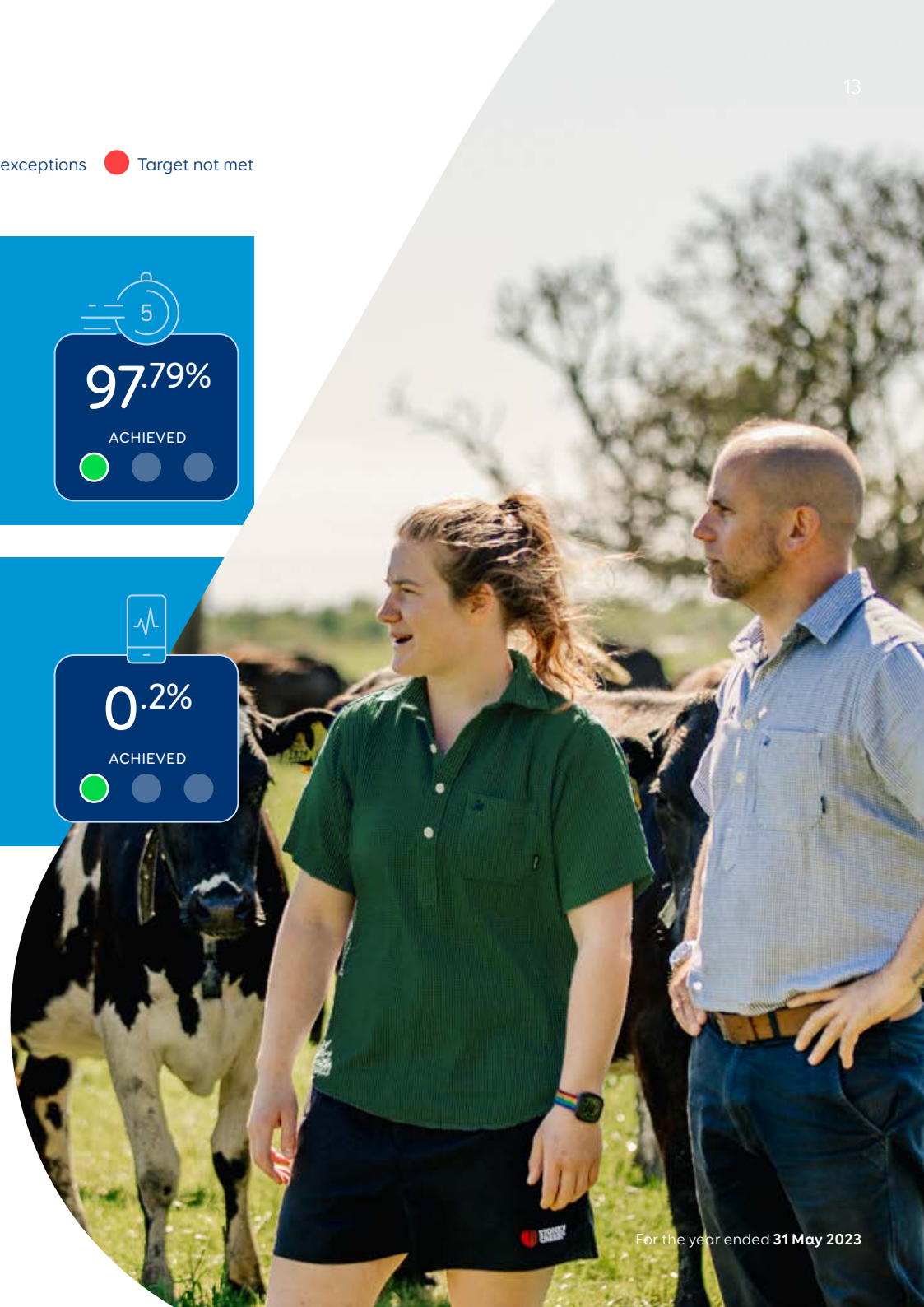

0.2%
ACHIEVED



Integrated software partners

LIC systems are available to receive information from integrated partners 99% of time

99.53%
ACHIEVED



Environmental Sustainability

The dairy sector needs to continue to evolve, for climate change and because of it. At LIC, we are committed to reducing the environmental footprint of our business with an aim of becoming carbon zero by 2050. We are constantly refining our practices in pursuit of that goal.

The most significant impact we can make is through reducing the environmental footprint of the national dairy herd. Herd improvement is what we do - we provide farmers with the precision genetics and technology tools they need to improve their herds and be more sustainable, while remaining profitable and productive. We're amplifying this through genomic science to deliver results for farmers at a faster rate.

Farmers, the wider agricultural sector, and the New Zealand Government are aligned on the importance of improving the efficiency of the national dairy herd to achieve our environmental goals.

The results some farmers are achieving show that if we sharpen our focus on herd improvement, we can reduce intensity of emissions and continue to have the world's most efficient dairy herd. High producing, climate-friendly cows aren't just a hope for the future - they exist in the national herd today and are well within reach for every dairy farmer. We simply need more of them.



Key Metrics

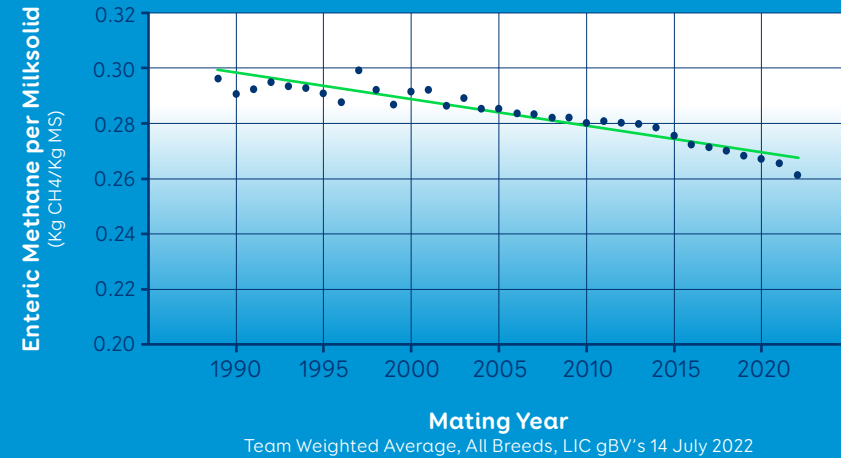
By assessing genetic data, we estimate that over the past 30 years the genetic improvement in our Premier Sires[®] semen delivered on-farm has resulted in a 11% reduction in enteric methane and 14% less urinary nitrogen emitted per kilogram of milk solid produced.

During the 2022/23 season, LIC has delivered more methane efficient genetics to farmers than any other year. The increased rate of genetic improvement in production and fertility traits without any increase in animal size, and the shorter generation interval that genomic selection enables has created a consistent trend of New Zealand farmers breeding more emissions efficient cows, and year-on-year they're doing it faster.

New Zealand dairy farmers continue to embrace a range of tools to improve herd sustainability and productivity. The latest New Zealand Dairy Statistics report (2021-22), produced by LIC and DairyNZ, shows the number of cows herd tested was the highest on record, and this is one of a number of tools that farmers are using to help improve milk quality and production. The number of cows artificially inseminated remained steady at 3.94 million. This reflects a continued trend of New Zealand farmers remaining focused on improving the production efficiency of their herds, and utilising data and insights to support on-farm decisions.

Furthermore, the trend of declining cow and herd numbers also continued but was accompanied by a 4.1% decrease in kilograms of milk solids processed compared to the previous season, although the rolling three year average production of milk solids per cow was still up 0.4% compared to the prior period.

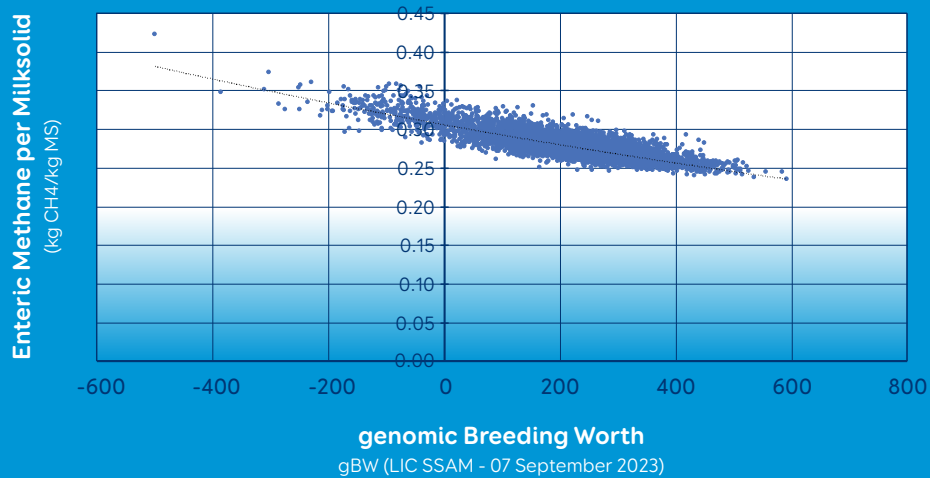
Enteric Methane - Premier Sires 1989 to 2022



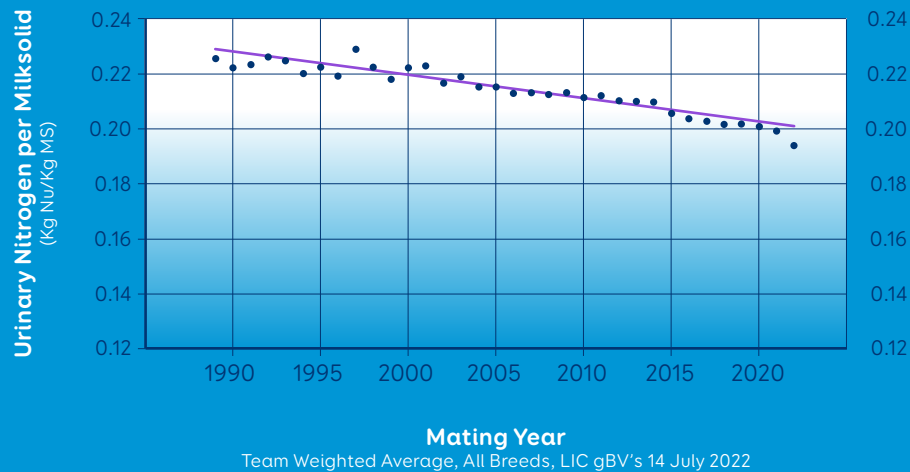
Enteric methane

Enteric methane is a key emission from ruminant livestock and the main greenhouse emission produced in pastoral dairy farming. Using our genetic data, LIC has been able to model the genetic potential enteric methane emissions relative to milk solids production. The consistent trend over the past eight years can be attributed to better genomic selection and uptake of the genomically selected Forward Pack products by farmers. Forward Pack and genomic selection results in shorter generation interval, which is now showing a consistent trend, greater than the 30 year average trend. The step change in the 2022/23 season is mostly driven by the improvements in the calculation of the fertility breeding value and selection of the mating teams based on these new values. Fertility is a key trait for driving environmental efficiency as cows which can consistently get in calf early will have more days in milk per season and more seasons of lifetime production.

Lifetime Enteric Methane per Milk-solid Production related to gBW



Nitrogen - Premier Sires 1989 to 2022



Urinary nitrogen

Urinary nitrogen deposited from cattle, particularly lactating cows, is a source of surplus nitrogen which is susceptible to be lost as a contaminant to its surrounding environment either as nitrous oxide, a potent greenhouse gas, or leached from the soil as nitrate. Similar to methane, the recent trends of improved efficiency are greater than the long-term trend and the step change for the 2022/23 season resulted from the improvements made to the fertility breeding value. Traits such as urination frequency and urinary nitrogen concentration may be heritable and have the potential to be used for genetic selection to lower nitrogen output per cow. LIC is currently investigating ways of measuring urination traits and whether there is sufficient variation between individuals to be able to generate a Breeding Value. This would allow farmers to select sires that produce daughters which have lower urinary nitrogen output to mitigate nitrogen loss to the environment.



Reducing the environmental footprint of our national herd

We're helping farmers breed better cows and get the best from them.

As part of our commitment to faster genetic gain, our team of scientists has investigated the full spectrum of MINDA® herds in search of the 'best cows' and whether a clear correlation existed between genomic Breeding Worth (gBW) and milk production efficiency.

All cows aren't created equal

The research reaffirms that the best cows (with high gBW) are more efficient at turning feed into milk - they produce more, have a fertility advantage and are more emissions efficient. If we're going to help our sector meet its environmental goals, New Zealand farmers must breed more of those highly efficient cows that sit at the top, and fewer of those who sit at the bottom.

We don't need more cows - we need the best cows

At an individual farm level there can be many variable factors, but it is conceivable that by 2030 a farmer's whole herd could be performing at the level of their top 25% cows today. The goal is to maintain total milk production from fewer cows - therefore reducing on-farm emissions intensity.



Breeding the best cows, faster, is the key to helping farmers solve the challenge of being profitable and sustainable. We've made good progress over the years, but to continue on this trajectory we need to sharpen our focus.

Long term users of LIC genetics are already doing this - they've almost doubled the speed of improvement in their herds over the last decade. They're breeding better cows faster, and genomics is the key contributor.

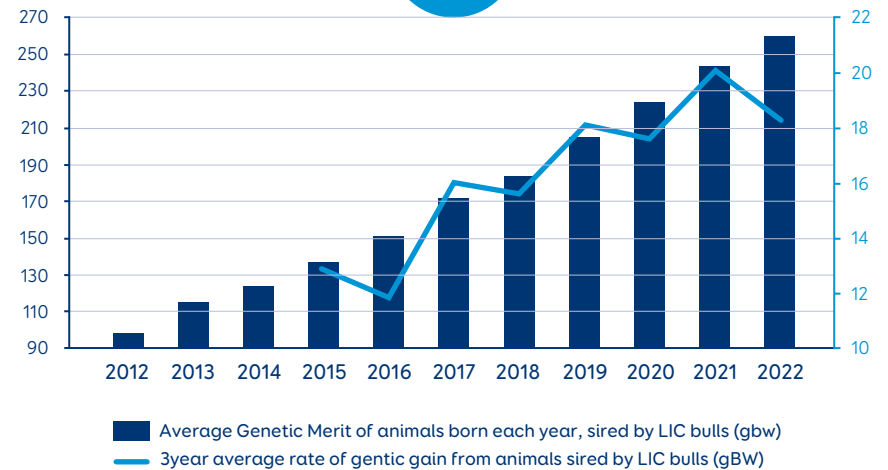
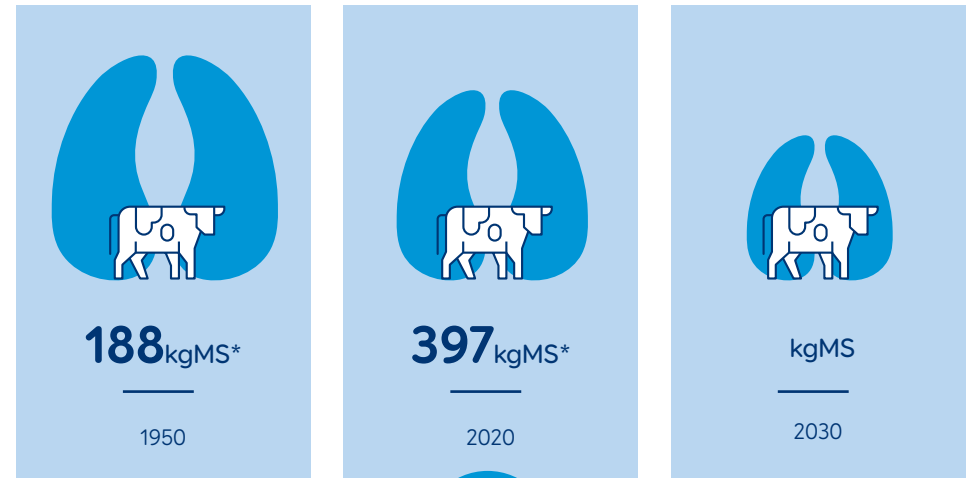
Over the past 30 years we have invested significantly in genomics and, alongside farmers' herd management decisions, it has played a key role in the faster rates of genetic improvement we've seen.

The increased utilisation of genomics in our breeding programme and increased farmer uptake of young genomically selected sires has gone hand-in-hand with higher rates of increased genetic gain in farmers' herds.

Genomic records, ancestry information and technology allow us to accurately identify elite bulls at a young age so we can start using those animals to breed the next generation of cows sooner. The use of genomics in our breeding programme means we can reduce the generation interval from five years to two.

Farmers are making the switch to high gBW genomic bulls for the value that they deliver on farm. Genomic sires feature in our premium artificial breeding offerings, including the Premier Sires Forward Pack, A2/A2, Alpha® and liquid sexed semen. During the 2022-23 year, 79% of fresh semen straws used for breeding replacements were from our premium bull teams (2.3 million straws), up from 71% the year prior (2.1 million straws).

Long-term users of LIC genetics are ahead of the pack and moving at pace to increase the speed of improvement in their herds.



Key updates and refinements to our herd improvement toolbox



1. Enhancing our GeneMark® DNA parentage service

Genomic evaluation for dairy cows

Our Genomic Evaluation service adds an animal's DNA information to their evaluation so farmers get a more reliable prediction of their performance before they start milking, allowing farmers to identify their herds' future potential superior performers when they are young calves as well as the top cows to breed from to increase the rate of genetic gain on farm.

The service uses the same technology we use to select elite young bulls for our breeding programme.

Traditionally, farmers have had to wait a few years until their heifers are milking and have had a couple of herd tests to get a reliable understanding of their performance. By drawing on information from an animal's DNA, we're able to fast-track that process and provide farmers with an early indication of their highest genetic merit animals so they can make a concerted effort to breed replacements from them. This service is available to farmers who use GeneMark® and we are continuing to look for ways to improve the timing of delivery of this service to our farmers.



Identify calves with genetic variants

During the course of a five-year research programme, LIC scientists discovered multiple genetic variants that impact animal health to the tune of up to \$10 million in lost production each year across the national dairy herd. Animals that are tested through GeneMark® are now automatically screened for six variants that have the most impact free of charge and farmers are informed of any affected animals in their herd. Identifying these animals via GeneMark® will help ensure that farmers rear only the healthiest, highest performing animals.



2. Animal health testing

Johne's disease is a contagious infection estimated to cost New Zealand more than \$40 million in lost production each year. It is caused by a bacterium which infects the gut of dairy cows and other ruminant animals. Common side effects include lower milk production, difficulty reproducing and rapid weight loss.

This disease is common in dairy cows, but it can be difficult to detect. LIC provides individual animal testing for Johne's disease; in the year ended 31 May 2023 testing increased by 16% to a record level of over 1.1 million tests.

LIC is developing and trialling a prototype dashboard that combines the Johne's test results with other animal data held in MINDA®. The purpose of the dashboard is to identify any trends in relation to Johne's disease. The dashboard will help farmers optimise value from their livestock by presenting information in an accessible way to assist vets and farmers to monitor and enhance their on-farm Johne's control strategies, creating the opportunity to drive down Johne's prevalence and improve animal health and production.



3. Sexed semen

LIC's fresh sexed semen orders have increased by 35% from the previous year with 272,264 sexed semen straws sold, up from 201,550 the previous year.

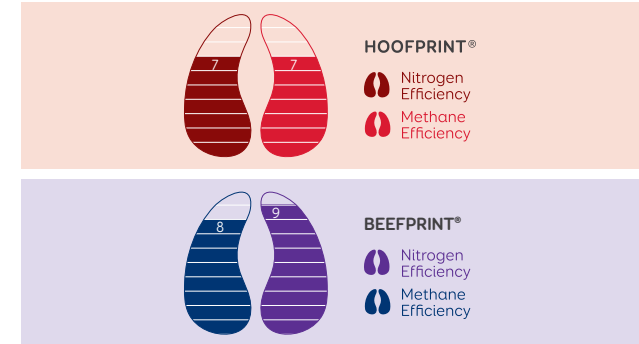
We have a state-of-the-art laboratory solely dedicated to the production of sexed semen, which sits alongside our bull farm and semen processing lab and is the world's biggest fresh sexed semen sorting facility.

Our fresh sexed semen is accelerating genetic gain within our dairy herds by enabling farmers to get more high-quality replacement heifer calves from top performing cows. We are the only provider of fresh sexed semen in New Zealand, which delivers a higher conception rate than frozen sexed semen options.



A resulting pregnancy has a 90% chance of producing a heifer, providing more high genetic merit heifer calves to enable the best to be selected and be part of the next generation of our national dairy herd.

While we expect to see some variation in conception rates year-on-year, this season the non-return rate for sexed semen was below what we usually expect. Several enhancements and changes to our processes have been made to increase potential for improved results going forward. We have continued to monitor sexed semen non-return rate performance throughout the subsequent winter mating period, and it's pleasing to see results have been within the expected range.



4. HoofPrint and BeefPrint

Our HoofPrint® and BeefPrint® indexes rank our artificial breeding bulls on their environmental efficiency. The 10-point ranking systems enable farmers to select bulls based on their predicted ability to generate offspring with a lower environmental impact - the higher the score, the more environmentally efficient they are.

HoofPrint® ranks and compares enteric methane and urinary nitrogen per kilogram of milk solids produced. BeefPrint® is based on the same methodology principles, although it ranks beef bulls for their lifetime enteric methane and urinary nitrogen per kilogram of meat produced.



5. FarmWise® consultants

Our FarmWise® consultants are increasingly focused on helping farmers adjust to changing seasons and weather patterns. They tailor solutions appropriate to the farm and region, including changes to calving and milking patterns, stocking rates, cropping and alternative pasture species. Anticipating and planning for change rather than relying on historical methods and thinking will be critical to navigating climate change.



Looking to the future

Our R&D investment and focus on innovation is helping Kiwi dairy farmers retain their position as the most efficient milk producers in the world, playing a critical role in helping the sector meet its climate targets.

We are one of the largest investors in R&D in the primary sector. In the reporting period we invested \$18.6 million, the equivalent of 6.7% of revenue.

We invest in the areas where we have unique capability to maximise the value our customers generate from their livestock and their product; taking innovations from lab to paddock to make farmers' lives easier.

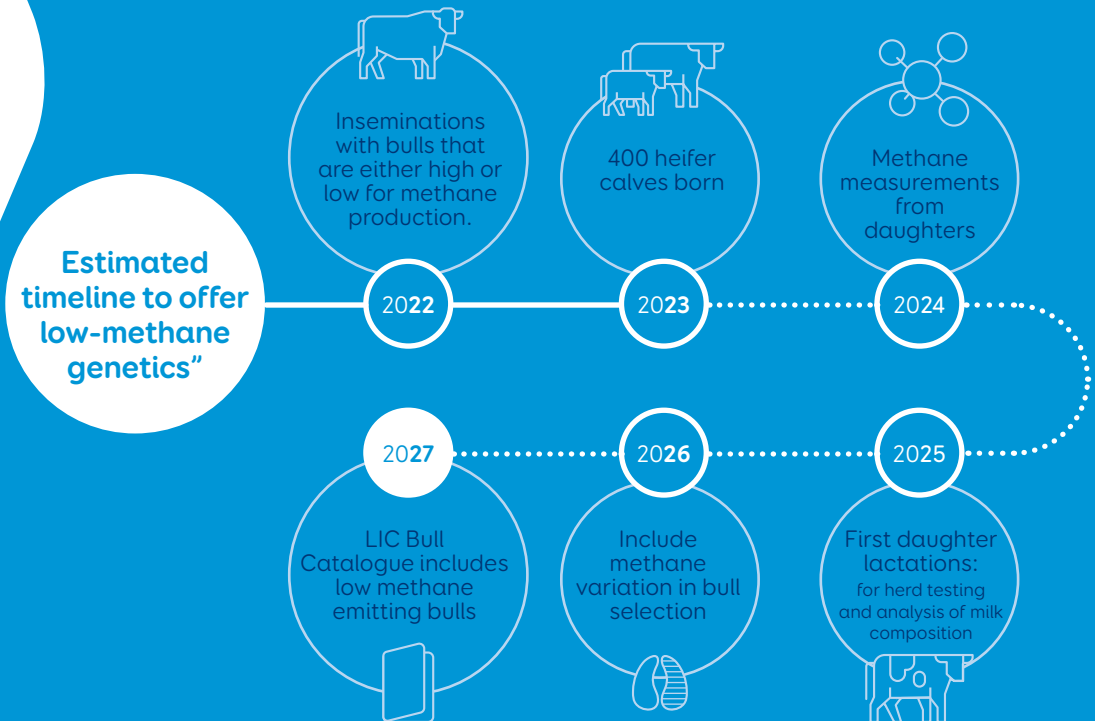
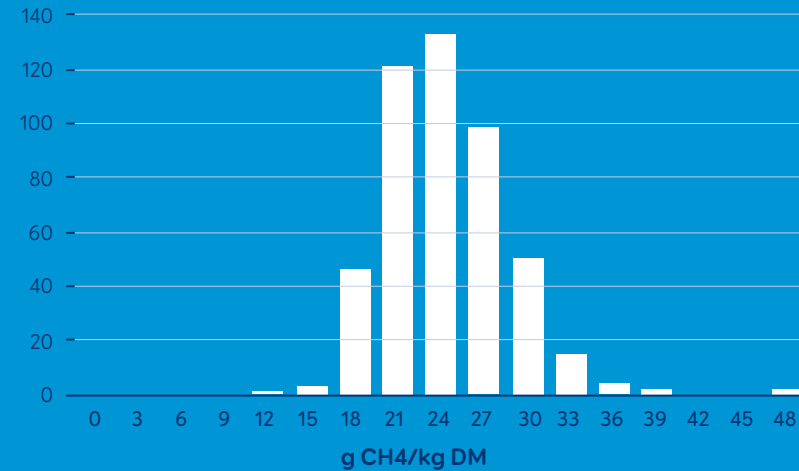
Methane Research Programme

Our methane research programme has confirmed that bulls' genetics play a role in how much methane they emit, highlighting the potential for farmers to breed low methane-emitting cows in the future.

In its first year, the programme, backed by the New Zealand Agricultural Greenhouse Gas Research Centre and partnering with CRV, measured the feed intake and methane emissions from 281 young bulls set to father the next generation of New Zealand's dairy cows. We found there is genetic variation in the amount of methane emitted after accounting for the feed eaten by the bulls, with the lowest bulls emitting around 15-20% less methane than the average. The second year of the research has measured methane emissions from approximately 300 young bulls from LIC's 2022 Sire Proving Scheme and CRV's 2022 Progeny Scheme.

In partnership with Pāmu, we are breeding from bulls that we have identified to be high or low methane emitters. Now that their daughters have been born, we will measure their emissions as growing yearlings and during their first milking season to ensure they are representative of their fathers. The target is to generate 200 daughters from 25 of the highest and 200 from 25 of the lowest methane sires from 1,050 pregnancies. We will track these animals from birth, eventually measuring their methane emissions as young animals and then measuring a portion of them as lactating animals. We will also be measuring standard measurements such as growth rates, reproductive performance and milk production.

Variation in methane emissions of trial bulls



Increasing heat tolerance in cows

LIC is conducting a seven-year breeding programme assessing the impact of the 'slick' gene in cattle, which produces a short hair coat and improves heat tolerance. Heat stress has significant welfare implications for animals. For dairy cows it also impacts feed intake, milk production, fertility and calf birthweight.

The pilot trial found cows with the 'slick' gene had lower rumen temperatures (0.5-1.0°C) compared to their non-slick counterparts when the Temperature Humidity Index (THI) exceeds 73 (around an ambient temperature of 26°C and a humidity of 60%).

The aim of the breeding programme is to provide New Zealand farmers the opportunity to have high genetic merit dairy cows with improved heat tolerance by 2029. Before we offer heat tolerant genetics to farmers, we want to make sure cows that have the 'slick' coat also have high genetic merit and milk production expected of New Zealand dairy cows. We are using genomic technology to speed up the breeding programme as they can screen an animal's DNA at birth to determine whether it possesses the slick gene. Additionally, artificial insemination and embryo transfer are part of the breeding programme strategy.

The current step in the breeding programme is to mate slick genetics with elite cows on selected commercial farms in New Zealand. This step will significantly increase the rate of genetic improvement of animals with slick genetics, while increasing the number of slick animals on the ground and the diversity in LIC's breeding programme.

The trial work remains ongoing to ensure that when these genetics are released to New Zealand

farmers LIC has a robust understanding of the performance of the slick gene, including performance in cooler temperatures. Preliminary results suggest that animals with the slick gene do not have compromised welfare in cold conditions.



Dairy-beef product

Farmers are proactively looking at ways to mitigate consumer, environmental and animal welfare concerns.

That's why over the past few years we have been running a breeding programme to develop an easily identifiable dairy-beef product with good calving ease and growth traits, targeting the crossbreed and Jersey markets. This programme could support an increase in value from calves but is reliant on the full supply chain being in place, including rearers, finishers and processors, as well as beef being a financially viable option.

The performance of animals being bred are being compared to other beef breeds each season.



Resilient Dairy: Innovative breeding for a sustainable future

We continue to lead the 'Resilient Dairy' research programme, with investment and support from MPI and DairyNZ. The seven-year Sustainable Food and Fibre Futures programme, launched in June 2019, seeks to enhance the health and wellbeing of the national dairy herd and drive a step-change in sustainable milk production by producing better cows.

This programme involves investing in new disease management technologies and advancements in genomic science to produce better cows with improved health, wellbeing and environmental resilience. We are using our genomics sequencing technology to find genetic strands and discover which cows have particular viruses or bacteria.

Milkomics™

The Milkomics™ workstream has identified and quantified a significant number of species in milk, including bacteria, viruses, protozoans and fungi. Our team is currently undertaking work to establish national baselines for the species present. Knowing what microbes and viruses are present within the herd and at what level means that pathogens can be dealt with in a timely and appropriate fashion. By comparing the qualitative and quantitative profile of targeted pathogens with profiles obtained from a national, regional and/or farm level it should be possible to identify potentially problematic microbes and viruses and establish a plan to eradicate these from the herd if appropriate.

Facial eczema

Facial eczema is a disease caused by the ingestion of toxic spores of a fungus that grows on pastures in New Zealand. The fungus prefers warm, moist conditions

and is seen mostly in the North Island, typically over the summer and autumn. The disease causes liver damage, in the worst cases affected animals die.

The challenge in collecting facial eczema phenotypes is the incidence varies from season to season. Herds can be impacted one year and not impacted again for several years. However, climate change is likely to increase the presence of the fungus.

A milk biomarker test previously developed was a breakthrough in the collection of phenotypes and is being further developed under this programme. The test has been validated and used to investigate the genetic susceptibility of facial eczema and the biomarker has been used to identify herds with liver damage to blood sample. Over 10,000 individual cows have been blood sampled over the past three years and testing has confirmed we can measure genetic variation in facial eczema, with around 23% estimated due to genetics. We have calculated breeding values for sires in the population we have sampled and are considering the best way to use this data to breed animals that are less susceptible to the fungus.

Future progress

Resilient Dairy is a long-term research programme and we look forward to updating shareholders as more findings from the programme become available.

Reducing the environmental footprint of our business

We have committed to becoming carbon neutral by 2050, in line with the New Zealand Government’s Climate Change Response (Zero Carbon) Amendment Act 2019 and in accordance with our pledge as a signatory to the Climate Leaders Coalition.

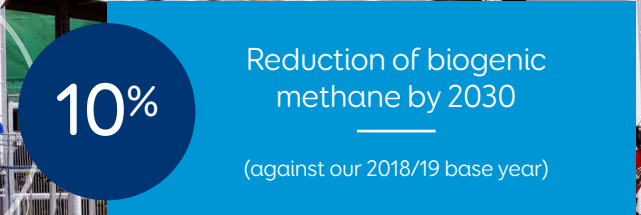
In October 2021, LIC pledged its support for Pathways to Dairy Net Zero, a new global initiative which aims to accelerate climate change action and reduce greenhouse gas (GHG) emissions across the dairy sector. A number of leading global organisations, including 11 of the 20 largest dairy companies in the world, have also declared their support for the effort.

The latest full report detailing our Greenhouse Gas (GHG) emissions, as required under our commitment to the Climate Leaders Coalition, is available on our [website](#).

We have a public, science-based, emissions reduction target, we are working with suppliers to reduce their emissions, and we consistently build sustainability into our purchasing decisions.

Science-based emissions targets

LIC has set emission reduction targets based on science using the SBTi (Science Based Target initiatives) methodologies and the NZ Government Climate Change Response (Zero Carbon) Amendment Act 2019, to reduce our greenhouse gas emissions and limit the temperature increase to 1.5°C of pre-industrial levels:



*Excluding biogenic methane



Our emissions

We first measured our emissions in the 2018/19 financial year (1 June 2018 – 31 May 2019). These measurements serve as our base year for all future emissions to be compared against.

From our base year 2018/19 to 2022/23 we've had an overall reduction in our total CO₂ emissions of 12.7%, the equivalent of 1,616 tCO₂. The largest emission reduction was from Scope 3, with a reduction of 1,541 tCO₂. However, when compared to the prior year, emissions increased by 4.32%, the equivalent of 460 tCO₂, primarily due to increased air travel following relaxation of Covid-19 travel restrictions.

Our 2022/23 biogenic methane emissions have increased by 9.0% from base year, the equivalent of 290 tCO₂. However, most of the increase was due to a significant increase in trial animals compared to base year, which will decrease again over time.

The table to the top right highlights the scope of our emissions profile and how we are tracking on the individual targets compared with the base year.

The table to the bottom right are LIC's top ten emissions sources showing the last five years.

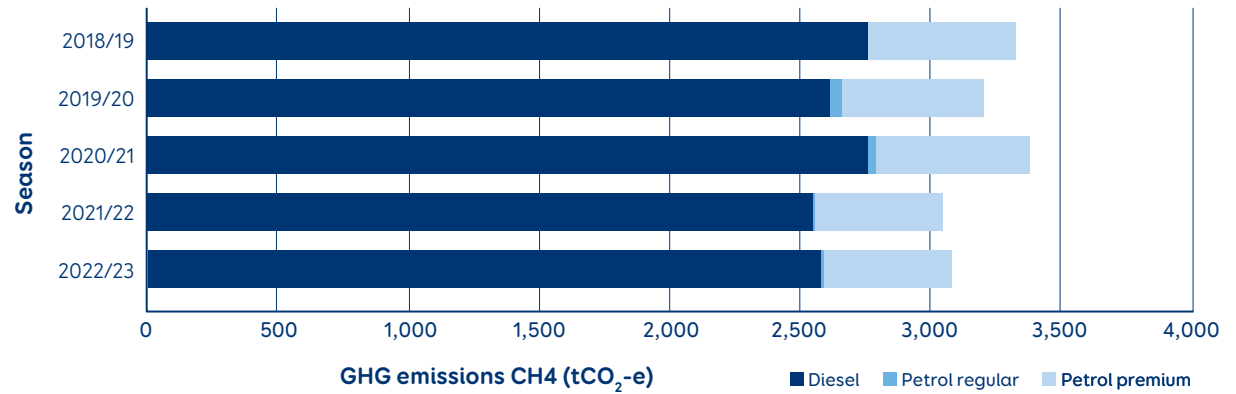
2018/19 Base year 2022/23 Year 4 Reductions/Increases

Scope 1 Direct emissions tCO ₂ -e	4452.0	4386.6	-1.5%
Scope 2 Indirect emissions tCO ₂ -e	377.1	363.5	-3.6%
Scope 3 Indirect emissions tCO ₂ -e	7914.7	6374.2	-19.5%
Scope 1 Biogenic methane - Direct emissions CH ₄ (tCO ₂ -e)	3231.1	3521.2	9.0%
Scope 3 Biogenic methane - Indirect emissions CH ₄ (tCO ₂ -e)	12.2	12.5	2.6%

Scope	Emission source	2018/19	2019/20	2020/21	2021/22	2022/23	2022/23*
Scope 1	Diesel	2756.0	2618.7	2762.6	2548.3	2578.1	-6.5%
	Petrol regular	568.1	542.0	581.9	487.6	488.7	-14.0%
	Excreta N ₂ O	689.3	728.5	711.9	729.7	802.4	16.4%
	Indirect N ₂ O emissions	140.5	146.2	151.7	152.1	150.7	7.3%
Scope 1 Biogenic methane	Enteric fermentation methane	3193.5	3246.8	3189.1	3369.7	3483.0	9.1%
Scope 2	Electricity	377.1	401.4	368.5	345.9	363.5	-3.6%
Scope 3	Air travel domestic (medium aircraft)	234.1	186.9	162.0	61.3	243.6	4.1%
	Air travel long haul (business)	791.8	617.0	No flights	No flights	262.2	-66.9%
	Employee commuting	4727.8	3841.9	4275.7	4440.0	4080.1	-13.7%
	AB & Field Assist travel	1417.8	1485.1	1339.2	1351.4	1329.4	-6.2%

*Change from base year

- Due to EVs/Hybrids, fuel emissions continue to decline with petrol emissions having a 14% reduction from base year and diesel reducing by 6.5% (as shown in diagram to the right). However, LIC diesel emissions increased by 1.17% from the previous reporting year and are likely to stagnate until viable vehicle alternatives are available to reduce our fleet diesel emissions. Petrol emissions increased from the previous year by 0.23% post-Covid-19 restrictions.
- Total Scope 1 agricultural biogenic methane emissions increased by 9.0% from base year in the 2022/23 reporting year due to increased stock numbers, including animals in LIC trials across NZ that are not on LIC farms. The number of beef and heat tolerant trial animals increased from 788 in the base year to 5,065 animals in 2022/23, equating to an additional 555 tCO₂ emissions. The volume of trial animals is expected to reduce in the future.
- Employee commuting emission source data was improved following a staff survey to determine travel distance, fuel type, vehicle size, and age. Based on 308 responses we improved data quality for those individuals. Data for all other staff members commuting was calculated using estimated data of 34.35 km round trip and average fuel emission factor.
- Following improvements to data capture for waste in the 2021/22 reporting year, LIC opted to assess biogenic methane derived from our landfilled waste using a 2019/20 base year. Biogenic methane emissions from waste were reduced by 88.3% from the new base year in the 2022/23 reporting year, however increased by 10.1% when compared to the 2021/22 reporting year.



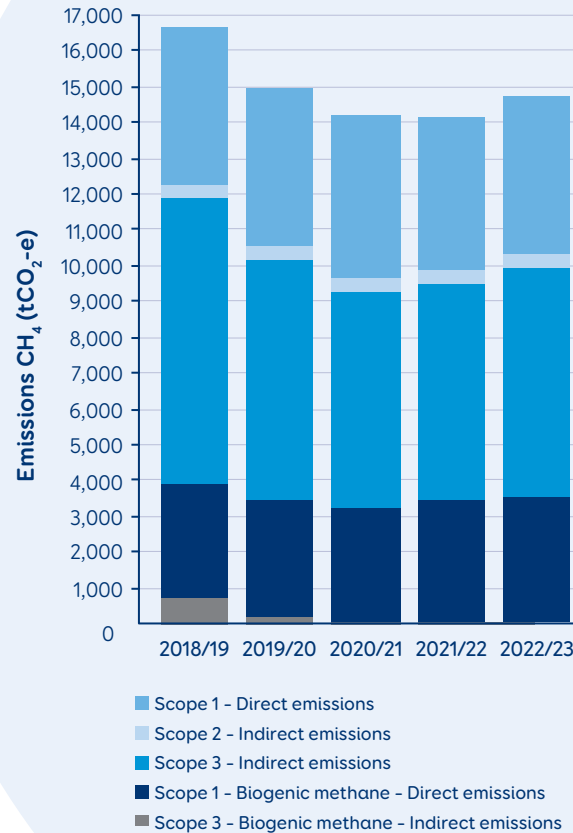
Further initiatives we have underway or planned for 2023/24 to help reduce our emissions are outlined below:

Objective	2018/19 Base year
Reduce fuel emissions - Scope 1 emissions	<ul style="list-style-type: none"> • Replacing fuel-based vehicles with EVs/Hybrids wherever practical - target of 50% of 30 vehicles to be replaced in 2023/24 • Install further EV charging stations at LIC locations and in employee homes for LIC EV vehicles • Purchase electric ATV for Awahuri bull farm
Reduce use of artificial fertilisers - Scope 1 emissions	<ul style="list-style-type: none"> • Whole farm soil testing to enable targeted fertiliser applications on paddock basis
Energy reduction plan - Scope 1 emissions	<ul style="list-style-type: none"> • Installation of a large-scale solar panel system at Newstead to assist in offsetting the increased consumption of charging EVs • Energy audit at Newstead • Finalise energy emission reduction pathway
Reduce biogenic methane emissions	<ul style="list-style-type: none"> • Methane reduction research programme to breed for lower methane emitting bulls in future • Install a Ravensdown Eco-pond at Innovation dairy Farm, an upgrade to the existing Cleartech system with a target 5-7% reduction in associated methane emissions
Improve Scope 3 data capture	<ul style="list-style-type: none"> • Survey staff on transport information to and from work
Staff engagement	<ul style="list-style-type: none"> • Organised events to engage with staff in reducing their carbon footprint including guest speakers

To ensure we are accurately reporting GHG data we use Toitū Envirocare’s external carbon calculator. Some data quality improvements have been made since our last report, particularly in relation to waste and recycling data. Our full GHG Inventory Report is reviewed by LIC’s Senior Leadership Team and published on the [LIC website](#).

LIC’s Board has endorsed seeking third party verification of our GHG data, particularly in preparation for LIC’s Climate Reporting Entity obligations for the year ended 31 May 2024. In April 2022 we had our FY19 base year GHG inventory report audited by Toitū and have received certification to Toitū’s ‘carbonreduce’ programme. Third party verification also supports our commitment to the Climate Leaders Coalition. In FY23 our FY20, 21, 22 and 23 data was also independently verified by Toitū to ensure continuing accuracy of reporting data. There were no major non-conformances found during the audits. Minor non-conformances have been amended. Toitū is independent to LIC and their assurance statements in relation to LIC’s GHG data are available on the [LIC website](#).

We are not currently utilising carbon credit offsetting. The Board will review our position on offsetting over time as our emission calculations continue to mature. LIC’s farms are also likely to be impacted in future by the agriculture farm-level proposed emissions pricing scheme.



Emission Scopes	LIC GHG inventory inclusions
Scope 1 Direct GHG emission sources	Diesel, petrol, reticulated natural gas and LPG, agricultural emissions from our farms excluding biogenic methane.
Scope 2 Indirect GHG emission sources	Purchased electricity
Scope 3 Other GHG indirect emission sources	Air travel - international and domestic, freight, electricity and natural gas distribution losses, staff commuting, business travel not in LIC owned vehicles, rental cars, water supply, waste and recycling of paper, card and glass.
Scope 1 Direct biogenic methane emissions	Methane from our livestock and the onsite wastewater treatment plant at our Newstead Head Office
Scope 3 Indirect biogenic methane emissions	Wastewater treatment, composting, and waste



What we're doing to improve business sustainability

Environmental Management System

We have an Environmental Management System as a framework to manage our environmental impacts. This includes an Environmental and Sustainability Management Committee, which has representatives from each business unit. The committee reviews the environmental aspects and the inherent and residual risk of all activities, products and services of our business and suppliers and contractors, and evaluates current/suggested controls to avoid, mitigate or remedy any adverse effects of each aspect. The members of the committee maintain LIC's Environmental Aspects Register for each area of the business.

Solar panels

LIC has committed to reducing its Scope 2 GHG (Greenhouse Gas) emissions from electrical power usage by 46.2% by 2030. Rooftop solar power panels have been installed at Innovation Farm and installation of rooftop solar power panels at the Newstead site will begin in 2023/24. Further to the environmental benefits, solar power provides added resilience to the organisation's power supply, with an additional power source to electricity through the grid.

Energy provider

In the 2022/23 year LIC ran a procurement process to select our primary electricity provider. A key part of the process was evaluating Scope 1 & 2 emissions of providers and we selected a provider using renewable energy sources and with minimal Scope 2 emissions.

Initiatives to support our staff and suppliers to reduce their greenhouse gas emissions include:

- Vehicle tracking to enable vehicle efficiency
- Allowing employees to charge their EVs while at work
- Soft plastics recycling, e-waste and battery collections on site



- Introduced Environmental Training Module - the course offers a brief overview of LIC's Environmental Management System and Environmental Policy
- Polystyrene recycling at Newstead and Riverlea - includes polystyrene from either work or personal activities

Vehicles

To help reach our targets, we're transitioning our fossil fuel company cars to include options of EV and hybrid models and we continue to grow the number of vehicles that are EV or hybrid, with the current fleet including 10% EVs and 13% hybrid vehicles.

We have 67 EV chargers installed, including 34 home chargers for employees with company vehicles and 1 super-fast (60kw/hour) charger at our head office in Waikato. Staff with personal EVs are able to charge their vehicles on site at no cost to them with the aim of encouraging staff to select an EV when purchasing a new car. We have upgraded the power infrastructure at head office, which will allow for an additional 26 chargers to be installed as demand increases. By the end of FY24, we aim to have 76 - 80 chargers at our sites throughout the country.

Travel

We encourage video conferencing for meetings involving our people and partners to reduce travel where possible and support flexible working with the benefit of reduced emissions from commuting.

Farms

We have an ongoing programme of investment to continue to upgrade our waste management infrastructure across our farms, as well as shade planting for animal welfare and riparian planting to lessen the impact of our farming activities on the environment. Each LIC farm has its own individual environmental management plan and staff are trained to ensure compliance.

We also use fencing to keep our animals away from waterways and sensitive areas on our farms.

Other improvements currently being considered or implemented include using an alternative slow-release fertiliser and upgrading tractors to lower environmental impact options.

As a result of a heavy rain event in June 2023, an effluent storage tank on one of our farms overflowed, with a small spill close to a main drain site. Immediate action was taken to stop the overflow and spread effluent and the Waikato Regional Council compliance team was promptly contacted and visited the site. Effluent spread records and effluent management procedure documents were in place, samples were taken and no further action was required by Council.

Water management

We have consents to discharge trade-waste from operations at Riverlea in the Waikato and in Christchurch and have a wastewater treatment plant at head office and a number of bore water tanks on farm.

The Christchurch City Council lowered the limit on oil and grease to be below 200 mg/L in April 2022, as part of their bylaw changes. The discharge from the Christchurch site has historically operated above this limit, and we have had recorded levels which exceed this new bylaw level in every month subsequent. We continue to work with council on corrective actions to the discharge process and treatment facilities to assess what is possible before a review is made of the consent limits to be applied to the site.

The other instances of measurements exceeding bylaws as part of the monthly monitoring programme, pertain to a biochemical oxygen demand high limit in April 2023 and a high pH limit in March 2023, both of which were one off events. Previous instances in 2022 of high pH were attributed to use of an alternative detergent (supply difficulties due to international supply chains post Covid-19), and detergent supply has now resumed back to the original supplier. Subsequent levels of the discharge pH have been within the target range except for one incursion which was subject to a measurement query. No formal breach notifications were received for either site.



Waste management

We recycle farm materials such as silage wrap and plastic drums and are seeking new ways to reduce water and energy use across all our sites.

E-waste, such as obsolete laptops and phones, is sold where possible or recycled.

Our animal health laboratories at Riverlea receive numerous polystyrene cool store boxes and we have a recycling process to manage this waste.

AB Operations has a very diverse range of activities to produce and deliver semen products to our customers. Each of these activities generates some sort of waste that can be reduced and/or recycled. Once the waste streams have been identified then future work can begin to identify alternative materials where appropriate

Our Australian subsidiary, Beacon Automation Pty Ltd, produces heat patches and is working on identifying options to recycle plastic waste from the production process and produce products that could be more environmentally-friendly.

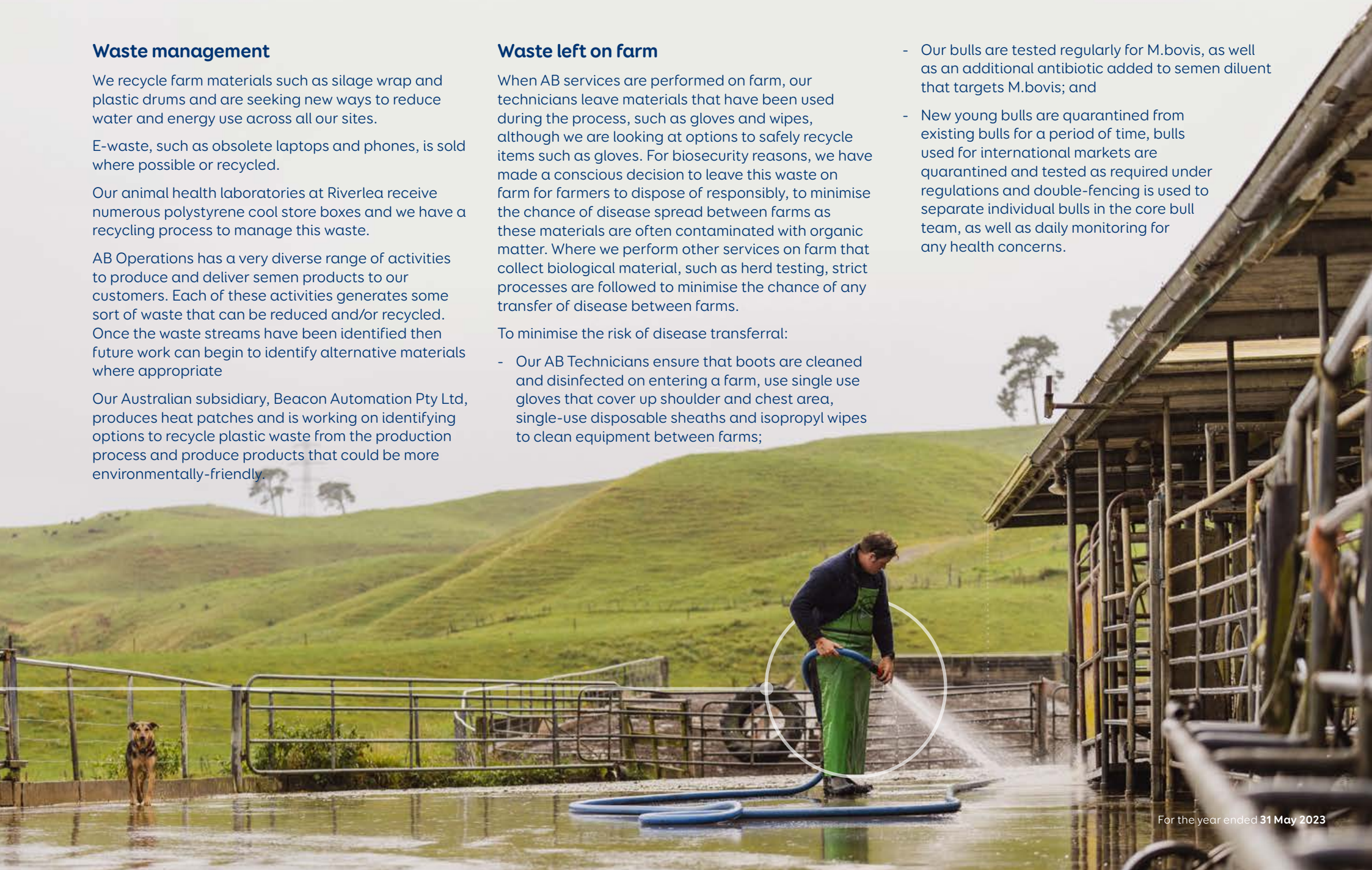
Waste left on farm

When AB services are performed on farm, our technicians leave materials that have been used during the process, such as gloves and wipes, although we are looking at options to safely recycle items such as gloves. For biosecurity reasons, we have made a conscious decision to leave this waste on farm for farmers to dispose of responsibly, to minimise the chance of disease spread between farms as these materials are often contaminated with organic matter. Where we perform other services on farm that collect biological material, such as herd testing, strict processes are followed to minimise the chance of any transfer of disease between farms.

To minimise the risk of disease transferral:

- Our AB Technicians ensure that boots are cleaned and disinfected on entering a farm, use single use gloves that cover up shoulder and chest area, single-use disposable sheaths and isopropyl wipes to clean equipment between farms;

- Our bulls are tested regularly for M.bovis, as well as an additional antibiotic added to semen diluent that targets M.bovis; and
- New young bulls are quarantined from existing bulls for a period of time, bulls used for international markets are quarantined and tested as required under regulations and double-fencing is used to separate individual bulls in the core bull team, as well as daily monitoring for any health concerns.



Social sustainability – caring for our people

For LIC, social sustainability is all about caring for our people, ensuring that they have the tools and support they need to continue to deliver value to our farmer shareholders.

We are focused on fostering a culture that embraces change, builds capabilities, encourages people and ultimately drives results to deliver greater customer value. We invest in our people to develop their talent and ensure they are in a positive and safe working environment.

Alongside our full-time employees, in peak season we also employ close to 1,350 seasonal employees

in the Artificial Breeding (AB) area and 400 other seasonal or casual workers throughout the year to help in other areas of the business, such as herd testing. Each year, our qualified AB technicians visit farms in their local area, artificially inseminating millions of cows, with the peak season being between September and January.

Key Metrics

900+

full-time equivalent employees of which 571 are women



9,000+

farmer shareholders



80*

Organisational Health Index (OHI) up five points from 75 last year and our highest ever result



3.79**

Total Reportable Incident Rate (per 100 full time equivalent employee) up from 2.13 last year



* Placing us in the top quartile of businesses surveyed globally.

** The prior year set a high benchmark as LIC was still affected by Covid-19 lockdowns during that period.

Governance Structure

Our governance structure includes a Board of Directors, Shareholder Reference Group, and Senior Leadership Team. These groups all contribute to driving value for our farmer shareholders.

Board of Directors

Our Board is responsible for the overall governance of LIC on behalf of our farmer shareholders to improve the prosperity and productivity of our customers. LIC Directors set the vision and long-term goals of the co-operative. This includes the strategy to achieve that vision, as well as the monitoring of its implementation. Information on sub-committees of the Board is available in the governance section of [LIC's annual report](#).

The Board must be comprised of at least six elected farmer directors, and up to four independent directors to allow specialist expertise to be added when needed, while balancing the number of Elected Directors between the North and South Island.

At the annual meeting in October 2022, Board Director Gray Baldwin retired from his role after 10 years serving the co-op. South Island shareholders elected Corrigan Sowman as their new Board Director.

In May 2023, Board Chair Murray King announced his intention to step down from the Board at the AGM in October 2023 and Corrigan Sowman has been appointed as Chair-designate. Murray King's retirement in October will conclude over 14 years' service after being elected to the Board of Directors in 2009 and appointed Chair in 2011.

Left to right: Candace Kinser, Ken Hames, Ben Dickie, Matt Ross, Murray King, Tim Gibson, Alison Watters, Corrigan Sowman, Sophie Haslem





From left to right: Richard Ridd, Mark Benns, Johan van Ras, Michelle Oldham-Smith, Mark Hooper, Phil Lowe, Nathan Keoghan, Ben Smith, Aleisha Broomfield, Jared Clarke, Melanie Tonkin, Andrew Wiffen. Absent: David Hands.

Shareholder Reference Group

Our Shareholder Reference Group is an independent body of shareholders who work collaboratively with our Board and management. The group serves to promote the interests of shareholders and help us deliver on our purpose and vision.

The Shareholder Reference Group is solely comprised of farmer shareholders. It is made up of 12 members across four territories. Eight members are elected by shareholders and four are appointed by the existing members of the Shareholder Reference Group to ensure diversity and a broad range of skills in the Group.



Left to right: Brent Mealings, Malcolm Ellis, Roz Urbahn, David Chin, Mark Julian, Emma Blott, Richard Spelman, Dhaya Sivakumar.

Senior Leadership Team

Our SLT is tasked with working alongside the Board to develop and implement our short and long-term strategy and to establish the key metrics that we will be measured against, so that we know we are delivering on the commitments made to shareholders.

Brent Mealings replaced David Hazlehurst as Chief Financial Officer (CFO) in August 2023.

Malcolm Ellis, GM NZ Markets, has resigned and Kellie Burbidge has been appointed to the role and will join LIC on 30 October 2023. The GM NZ Markets is responsible for the strategic direction of the farmer-owned co-op's sales, marketing, and customer relationships. This includes leading a nationwide team of sales managers and the National Accounts, Marketing & Products, and Customer Experience Centre portfolios.

Caring for our people

Wellness

Creating a supportive and sustainable internal culture across our business has been vital to achieving the successful results we've seen in recent years.

'Well Aware' is our centralised health and wellness strategy incorporating physical, mental and social wellbeing. A Well Aware Hub on the LIC intranet has enabled us to provide a one-stop shop for a well body, well mind, and a balanced life for our staff.

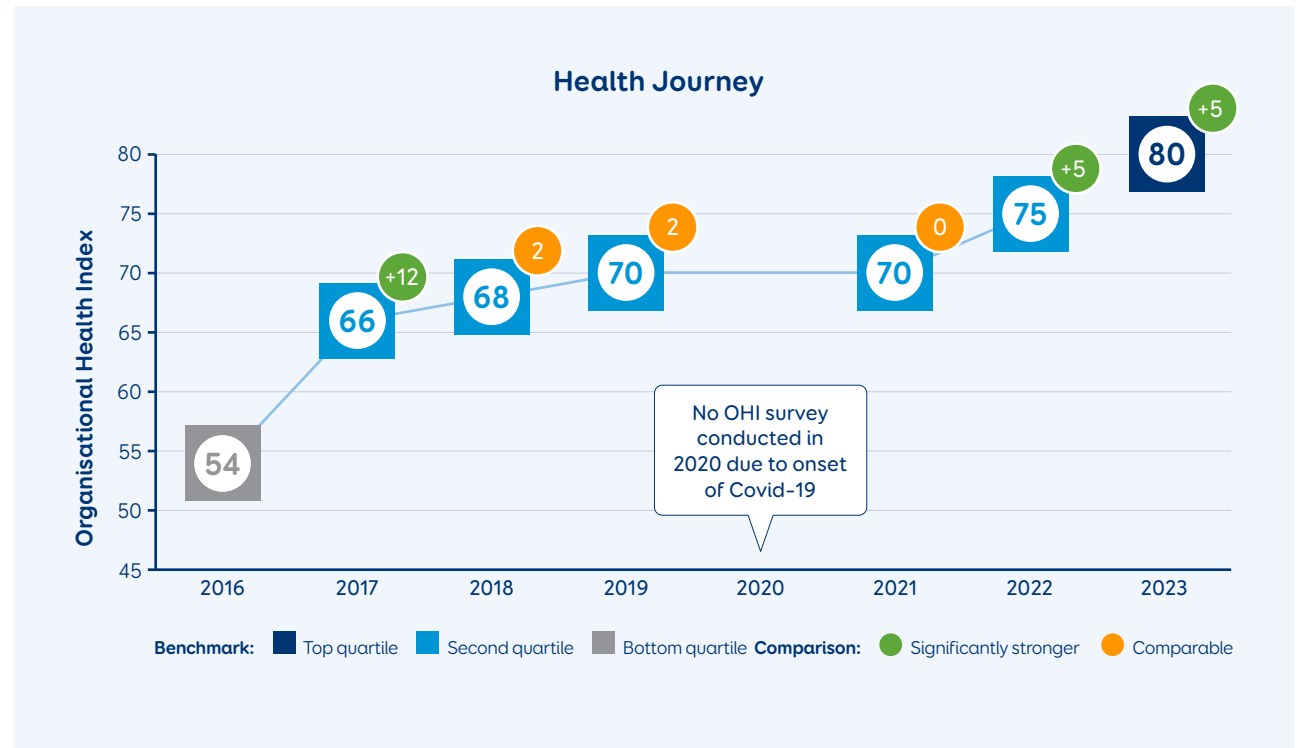
'Mental Wellbeing at Work' is the flagship programme of the 'Well Aware' strategy and is available to all permanent and fixed contract staff. It is designed to ensure our employees thrive within a work environment through our holistic approach to wellbeing and connection to support services we have available under each area (well body, well mind, well life). In addition, Well Aware also has a compulsory module called 'Supporting Mental Wellbeing at work' for all permanent and fixed contract people leaders. This module is led by a registered EAP psychologist and is designed to specifically upskill our people leaders on how to appropriately support employees experiencing an emotional/mental crisis. The 'Well Aware' strategy promotes health and wellbeing at every level, leading to an engaged, safe and sustainably high-performing workforce.

The programme also organises a series of guest speakers to provide staff with additional information to support mental, emotional and physical wellbeing at work. Examples of these include: how to claim back your energy; this changes everything: the menopause talk; the power of financial wellbeing; and from burnout to thriving.

Organisational Health

The focus is always on improving with the support of our employees. We use the McKinsey Organisational Health Index (OHI) methodology to survey employees on the impact of our organisation practices and culture on performance against international benchmarks. The survey results provide a rich source of data to identify key areas for improvement across the organisation.

At the time of the survey, there were 840 permanent employees invited to participate in the survey and 87% responded, which is our highest completion rate. There were over 2,000 individual comments, recommendations and opinions provided by employees at all levels. Top quartile was reached with a result of 80, which is an uplift of +5 on last year at 75. Eight out of nine outcomes were in the top quartile. 29 out of 37 practices were in the top quartile.



Diversity, Equity & Inclusion

Given the size and nature of our business we have a diverse workforce. To continue recognising diversity in the workplace and creating an inclusive environment, we have a staff-led Diversity, Equity and Inclusion (DEI) Committee to champion these concepts.

Regular communications are sent out to all of LIC on key events and topics of interest. The Diversity, Equity & Inclusion newsletter highlights cultural and international events and celebrations, and provides information on topics relating to diversity, equity and inclusion. An example of this is Diwali – information around the celebration was provided on the staff intranet (The Shed) and a special lunch was held at Newstead.

The Committee identified two main areas of focus for the year. These were:

- Implementation of a Te Ao Māori Strategy; and
- Establishment of a Women in Leadership Group

Te Ao Māori Strategy: LIC has partnered with Tutira Mai NZ, a leading cultural competency and Māori advisory consultancy organisation to design and implement a Te Ao Māori Strategy. Work has commenced on this and will be rolled out in the next 2-3 years.

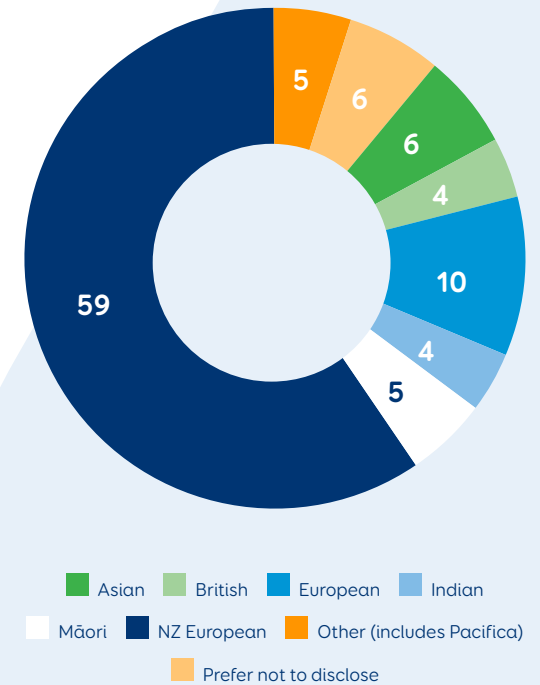
Women in Leadership Group: This group has been set up with the aim of fostering a community of women and empowering them to become leaders in their respective fields. The group seeks to build strong connections across various industries, and to provide mentorship and development advice from experts with diverse backgrounds and skill sets.

Other examples of diversity and inclusion focus during the year include:

- A Reflection Room designed for prayer and mediation is now available at Newstead for staff of all faiths to use
- Establishment of a dedicated Parent’s room at Newstead
- To celebrate World Day for Cultural Diversity, all our people leaders were asked to encourage staff to wear their own cultural dress to work and organise a shared lunch with food from their culture
- LIC hosted a Pink Ribbon Breakfast
- Support of International Women’s Day by having Best Dressed and Best Decorated Workspace competitions.

The latest OHI survey collected demographic statistics, which will be again used to identify areas where further objectives could be focused.

Ethnic Diversity %
Based on responses to the 2023 OHI survey



Engagement with Diversity Works NZ is ongoing and our membership of this organisation allows access to a wide range of resources.

Health & Safety

The health and safety of our staff, our customers, contractors, and anyone else we come in contact with, remains our highest priority. Our health and safety system provides the framework to keep workers healthy and safe, regardless of their location.

Our Health, Safety and Wellbeing policy sets out our commitments and reflects our intent to continue to develop our health and safety culture. The focus is on becoming more proactive - where we continue to take personal ownership, learning safety lessons from our safety events, and anticipate future safety risks and needs.

In order to test our health and safety framework, we conduct an annual effectiveness review.

The biennial ComplyWith survey highlighted three Health & Safety-related gaps, which will be a focus for the Health & Safety team in 2023/24:

- The lack of exposure monitoring processes for hazardous substances
- Our health monitoring processes are not well implemented; and
- Overlapping safety duties and the need to consult, co-operate and coordinate activities with our customer farmers with whom we share the same duty to keep our/their workers safe.

The annual ACC Accredited Employers Programme audit was completed over three days in February 2023. LIC successfully passed the audit, retaining its secondary level accreditation.

The auditor commended LIC on a notable increase in mid-managerial understanding of H&S processes and requirements when compared to previous audits, which is pleasing as it reflects the effort the Health & Safety team has put into developing the safety leadership of our managers. The auditor highlighted three areas for improvement: how emergency evacuations are managed at Newstead, how LIC manages its overlapping safety duty with our supplier and contractors, and how WellNZ apply weekly compensation indexation and interest payments. Plans are already underway to address these areas.

Some of the specific focus areas for the Health & Safety team this year included:

1. Leadership development

- Additional training for managers has been implemented on both health and safety and supporting workers facing mental health challenges.
- The HSE Manager facilitated a risk management training session with the AB leadership team.
- The HSE team supported the Hub project leaders to ensure LIC adheres to good practice contractor management practices and meets its 'overlapping

duties' requirement. External Permit Issuer training for project leaders was also completed.

2. Working together

As part of our focus on improving our staff engagement, we have invested in improving our workers' voice in health and safety and wellbeing. LIC has one elected H&S representative for every 19 permanent workers. Our Health & Safety Governance Forum, chaired by our Chief Executive Officer and attended by a range of managers and employee representatives from business units, allows workers and senior leaders to collaborate on health and safety matters. The forum specifically reviews critical risks reporting from each business unit and tracks improvement against the 48-hour event reports and seven day event investigation timeframes.

3. Critical risk management

Senior leaders and board members are spending time with workers to understand our critical risk profiles, and gain assurance that the controls are effective. During the year, 15 senior leader and 9 board member site visits were carried out, reviewing all critical risks in a range of locations. The improved understanding of our risk profiles allows us to ensure adequate resources are made available. A number of health and safety site visits, including 11 H&S audits, by the team provides another layer of assurance that critical risks are identified and controlled.

Business unit health and safety plans now include consideration of our identified critical risks.

4. Asking the right questions

We have set specific health and safety objectives designed to focus our attention on improving our systems and practices. Our progress against these objectives is reviewed on a quarterly basis by the Health & Safety Governance Forum. The objectives for 2023/24 have been refreshed and health and safety reporting to senior leaders and board members continues to be reviewed and improved.

5. Supporting our injured and ill workers

As a member of the ACC Accredited Employers Programme we are responsible for the vocational, medical and social rehabilitation of our workers. There has been a steady improvement in rehabilitation and return to work rates for our injured employees over the last three years. In the last year both the number of claims and the associated rehabilitation costs have decreased. For the last three years, we have attained secondary level accreditation against ACC audit standards.

6. Improving the safety of our AB technicians

Providing secure, appropriate Artificial Breeding (AB) facilities is not only critical to creating a safe working environment, but it also gives our AB technicians the best opportunity to get cows in-calf. To help our farmers get the best results from our AB service and ensure the safety of our AB technicians, we have developed a national standard which details the minimum requirements that an AB facility must meet for us to provide our AB technician service.

We are working with farmers to further remove the risk of working from heights, which we consider to be a critical risk, in relation to herringbone sheds. The first step is to cease the AB service from the pit of a herringbone shed on a trolley from May 2023, and subsequently move away from working from the pit of the herringbone shed altogether by May 2025.

LIC has also signed the [Farm Without Harm](#) pledge by Safer Farms, reinforcing our dedication to creating safer conditions across our farms and protecting our people from preventable harm.



Employee Data

This employee data relates to the total LIC group and is sourced from our Human Resource (HR) system. The data for permanent and fixed-term employees is reported on a full-time equivalent (FTE) basis.

We employed a total of 1,747 seasonal workers throughout the year ended 31 May 2023 (1,774 for prior year), particularly during peak season for a relatively short period of time, primarily as artificial insemination technicians, with 1,355 technicians and assists in this area and 392 other seasonal or casual workers throughout the year to help in other areas of the business, such as herd testing.

The reporting period is for the financial year ended 31 May 2023 (FY23), with final permanent and fixed-term employees reported as at 31 May and comparatives for the prior period. Our only significant location is New Zealand, with less than 5% of employees employed in any other individual country.

FTEs by employment contract by gender

	Permanent		Fixed term/Casual		Total	
	FY22	FY23	FY22	FY23	FY22	FY23
Female	461.2	487.2	63.7	83.5	529.6	570.7
Male	299.3	323.0	22.5	13.8	320.8	336.8
Total	760.5	810.2	86.3	97.3	850.4	907.5

FTEs by employment contract by region

	Number of FTEs (Permanent and fixed-term/casual)	
	FY22	FY23
New Zealand	810.6	882.4
Australia	22.0	16.3
UK & Ireland	17.8	8.8
Total	850.4	907.5

FTEs by employment type by gender

	Full-time		Part-time		Total	
	FY22	FY23	FY22	FY23	FY22	FY23
Female	490.5	533.7	39.1	37.0	529.6	570.7
Male	307.8	326.8	13.0	10.0	320.8	336.8
Total	798.3	860.5	52.1	47.0	850.4	907.5

New permanent employee headcount hires, by gender and age group for primary region

	<30 yrs age	30-50 yrs age	>50 yrs age	Age not disclosed	NZ region FY23	%
Female	50	59	3	3	115	63%
Male	14	33	20	1	68	37%
Total	64	92	23	4	183	100%
%	35%	50%	13%	2%		

Employee headcount turnover, by gender and age group for primary region

	<30 yrs age	30-50 yrs age	>50 yrs age	Age not disclosed	NZ region FY23	%
Female	29	38	19	2	88	63%
Male	9	26	16	0	51	37%
Total	38	64	35	2	139	100%
%	27%	46%	25%	2%		

Our HR system does not currently capture gender options alternative to male/female. Some age data is not available as employees are not obliged to disclose date of birth.

There were 14 permanent employees (1.5%) covered by a collective bargaining agreement at 31 May 2023, and a further 26 (1.5%) seasonal workers during the period. For employees not covered by collective bargaining agreements, individual contracts are entered into at the time of employment.

During the year, there were 28 females (no males) on parental leave and 14 females returned from parental leave.

If significant operational changes are proposed within the organisation, LIC will consult with potentially impacted employees for a two week period on the proposed changes, with a minimum of six weeks in total from notice of proposed change until implementation of any final changes. For any employees covered by collective bargaining agreements, notice period and provisions for consultation and negotiation are specified in those agreements.

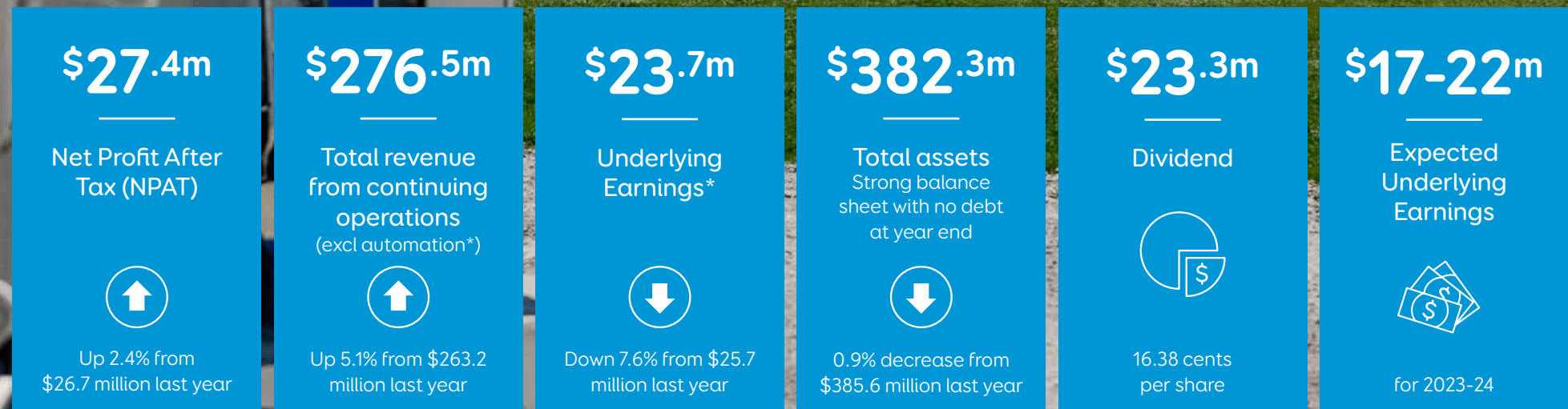
LIC engages with suppliers to provide workers, such as IT contractors, recruitment firms and directly with independent contractors. This number is not material compared to the number of LIC employees.

The ratio of the annual total compensation for the organisations highest-paid individual to the median annual total compensation for all permanent employees (excluding the highest-paid individual) for the year ended 31 May 2023 was 6.34 : 1.

Economic Sustainability

Delivering value for our farmer shareholders is at the centre of everything we do, and strong financial performance enables us to do just that - through our herd improvement products and services, a solid dividend and, importantly, the right R&D investment to keep their herds profitable and sustainable into the future.

Key Metrics from 2022/23 full year results



* For notes to the financial information please reference our [FY23 Annual Report](#).

Delivering a strong result for our farmers

On 19 July 2023 the LIC Board announced its financial result for the 2022-23 year, fuelled by an increased farmer uptake in premium genetics and herd improvement services to breed highly efficient cows, with a lower emissions footprint.

It was also announced that LIC would return \$23.3 million in dividend to its co-operative shareholders, equating to 16.38 cents per share, paid on 18 August 2023.

Reporting increased revenue (up 5.1%) but a drop in underlying earnings (down 7.6%) compared to the same period last year, the Board believes the co-op has delivered a solid financial performance, considering the challenging economic conditions.

The Board were pleased to present another strong result to our farmer shareholders for the sixth successive year, despite facing rising costs due to increased inflation.

This result is a credit to our farmers for their continued support of their co-op, who like us have been faced with a challenging economic landscape. It enables LIC to deliver a solid dividend to shareholders at a time when increased cost pressures are being felt on-farm and ensures we can continue to invest in critical R&D and technology to support a more profitable and sustainable dairy sector for Kiwi farmers.

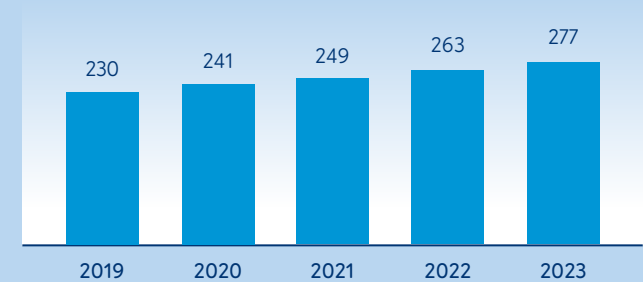
Tax

LIC's Audit, Finance and Risk board sub-committee oversees tax compliance, including LIC's Tax Policy and annual Tax Management Plan, which identifies areas of tax change. LIC seeks to comply with all aspects of the New Zealand and international tax acts for jurisdictions that our subsidiaries reside in. Management has responsibility to ensure that it has a broad understanding of all major tax issues that arise from the ordinary business, major transactions, business structures or strategies undertaken by LIC. LIC uses external tax experts and tools to ensure appropriate tax compliance governance and controls are in place.

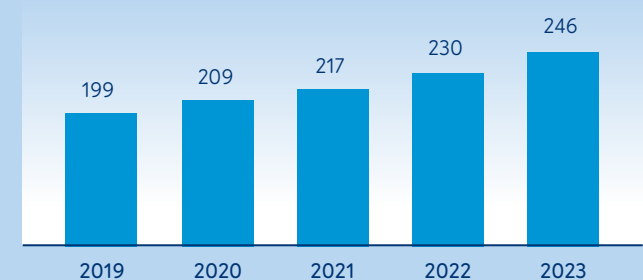
Financial Metrics

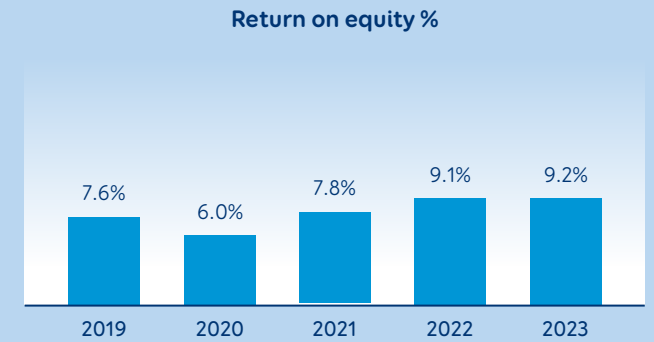
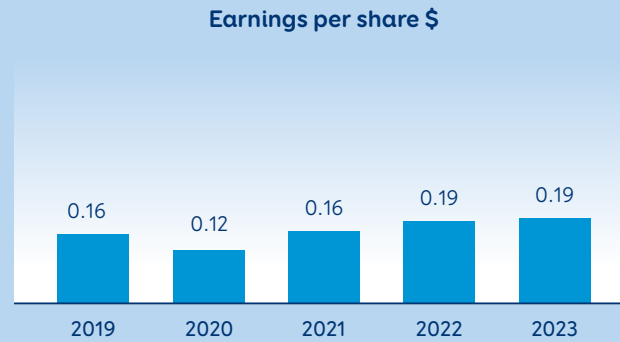
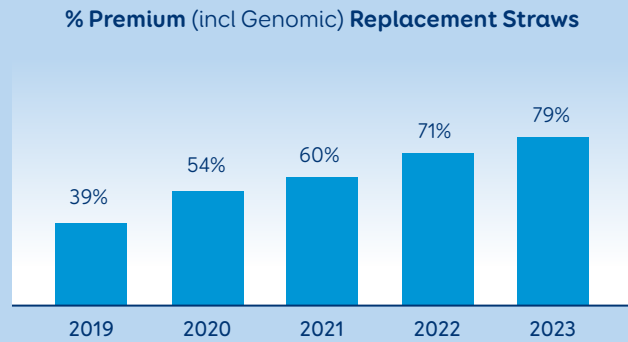
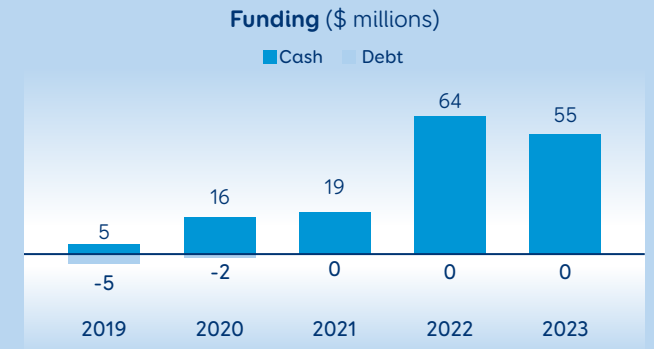
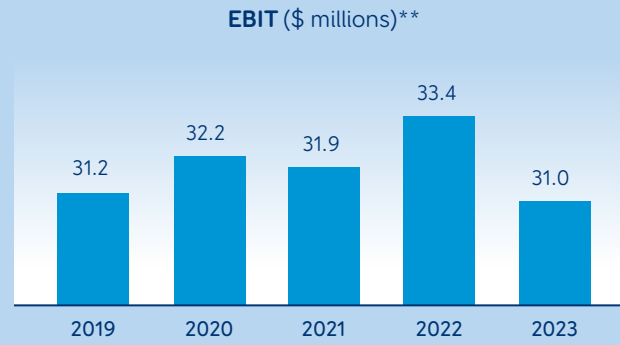
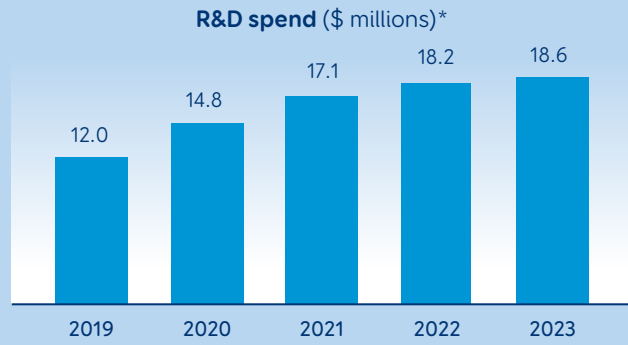
These charts represent our key financial metrics to provide a historical summary of our performance.

Revenue (\$ millions)*



Operating Expenses (\$ millions)**

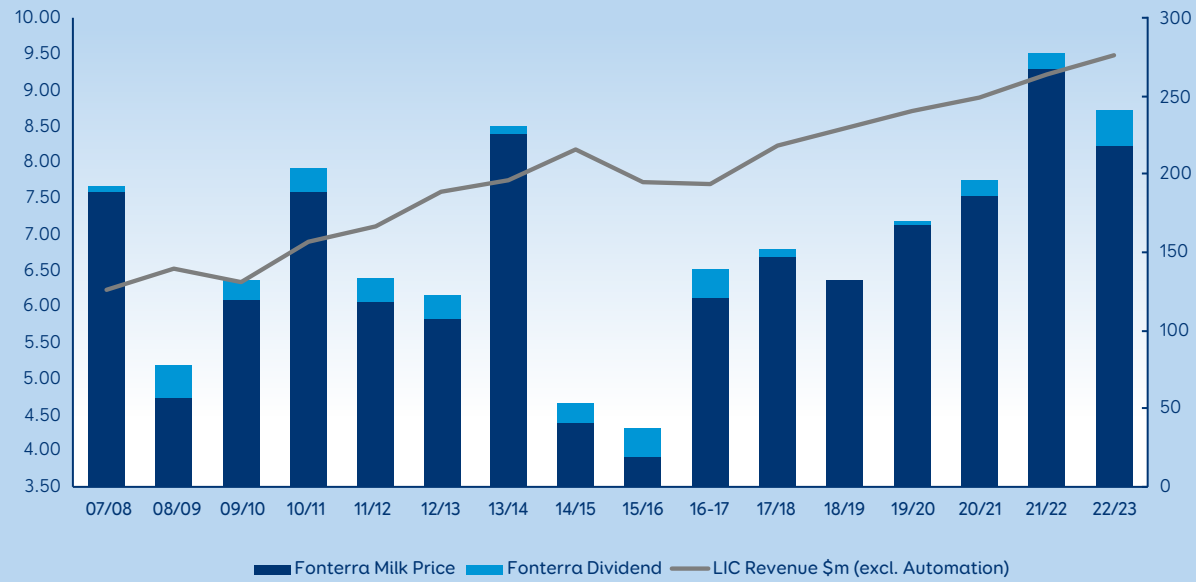




* Data excludes Discontinued Business operations - the Automation business was divested in June 2021

** Excludes bull team & nil paid share revaluations and Discontinued Operations

New Zealand Milk Price Payouts kg/MS



Trends

		2019	2020	2021	2022	2023
Revenue *	NZ\$000	229,763	240,932	249,013	263,182	276,506
R&D spend	NZ\$000	(11,985)	(14,844)	(17,124)	(18,184)	(18,577)
Net profit after tax	NZ\$000	22,170	17,487	22,944	26,723	27,352
EBIT **	NZ\$000	31,205	32,224	31,904	33,372	30,955
Underlying earnings	NZ\$000	19,530	22,685	22,261	25,677	23,732
Dividend declared***	NZ\$m	15.6	18.1	17.8	26.2	23.3
	Cents per share	10.98	12.75	12.51	18.43	16.38
	Gross yield %	16.9	23.0	14.7	16.5	22.8
Operating cashflow	NZ\$000	55,167	52,018	40,456	57,130	36,791
Net capital & investment spend	NZ\$000	(36,810)	(21,401)	(16,115)	(17,889)	(20,581)
Total Assets	NZ\$000	380,735	379,940	382,005	385,610	382,291
Total Equity/Net Assets	NZ\$000	291,437	290,242	294,123	293,057	297,494

Sales data

Premium (incl Genomic) straws	1,291,315	1,666,564	1,792,648	2,071,321	2,303,537
Other replacement straws	2,020,991	1,397,386	1,206,049	864,709	616,923
Total straws (NZ)	4,664,542	4,438,732	4,343,830	4,322,316	4,418,263
International straws	1,013,564	857,427	1,059,777	1,055,168	1,035,888
Herd testing samples	10,955,997	10,407,918	11,170,134	11,199,277	11,274,641
GeneMark® testing	671,892	768,943	629,166	728,876	757,851
Animal health testing	873,389	1,045,487	1,294,996	1,571,509	1,723,489
MINDA® animals	7,005,405	6,998,649	7,006,900	6,912,997	6,807,164

For our full financial results please refer to our [FY23 Annual Report](#)

* Excludes Discontinued Business operations – the Automation business was agreed to be divested in June 2021

** Excludes bull team & nil paid share revaluations and Discontinued Operations

*** There was an additional Special Dividend of \$14.2 million, or 10 cents per share, paid in January 2022 following the Automation divestment. The 2023 dividend includes an additional amount of \$4.3 million to return cash retained from dividends paid in 2022 to repay nil paid shares (2022 included a similar additional amount of \$5.7 million). Gross yield % is calculated using the share price on the dividend record date.

Our Business

LIC exists to deliver superior genetics and technological innovation to help our shareholders sustainably farm profitable animals.

We are the DNA of the New Zealand dairy sector, breeding up to 75% of cows in the national dairy herd. We take our role seriously as an important player in the team supporting farmers with the right herd improvement tools to breed more efficient and climate resilient cows.

Our primary sector is the New Zealand dairy sector. Our core customers are New Zealand dairy farmers. Other customers include veterinarians who support farmers, users of dairy herd data and beef producers.

Keeping New Zealand farmers profitable and sustainable is critical. We are 100% owned by New Zealand dairy farmers and therefore invest to fund research and technology which will benefit not only this generation of farmer shareholders and their herds, but successive generations and their herds. This long-term improvement and sustained return on investment is the pure essence of what it means to be a co-operative.



Artificial Breeding (AB)

AB dairy and beef genetics and technician services, with products such as Premier Sires®, Sexed Semen, Short Gestation Length, Alpha®, Customate, training of AB and DIY technicians, Deep Freeze storage



Heat detection products

LIC heat patch, LIC Bulls-i®, Kamar® Heatmount detectors



DNA Testing

Helping farmers take the guesswork out of matching calves to parents, reduce stress at calving time and identify their best calves



Animal Health Testing

Bovine Viral Diarrhoea (BVD), Johne's disease, milk pregnancy testing, Staph aureus



MINDA®

Herd management software





Farm Accessories

Electronic plate meters, EID readers and wands



Field Assist

Increase efficiency of farm operations, including assisting with herd records, herd testing, weighing and DNA sampling



SPACE™

Satellite and pasture cover evaluation reporting



Tags

Full range of NAIT approved electronic (EID) tags and management tags from Allflex, Z Tags and Flexa



Herd Testing

Milk samples, including EZ Link® scanning and herd test assist service



FarmWise®

Consulting service for farm visits and project work

How we work

LIC is structured to best support farmers and our operational teams to effectively supply products and services to customers, as well as to leverage opportunities to deliver genetic improvements to farmers and better returns to shareholders.



NZ Markets

Sales operations, contact centre, customer training, marketing, communications, pricing and market research, oversight of product development, including MINDA® herd management



Operations & Service

Artificial breeding collection & insemination, herd milk testing, genetic diagnostics, animal health testing, LIC bull and dairy farms, FarmWise® consultants



Research & Development

Genetic, genomic and reproduction research and development and analytics; both inhouse and in collaboration with university and sector partners; animal evaluation, bull selection



Commercial

International genetics sales, business development, new ventures, investments and partnerships, leverage of beef opportunities, farm assistance



Technology

Development and support of customer facing systems such as MINDA® and LIC internal systems and IT infrastructure



Support Services

Payroll, finance & accounting, procurement, legal, intellectual property, governance, shareholder services, risk management, property management, Business Information Unit, transformation, enterprise project management office



People & Performance

People & Performance partners; employee experience, organisational development, health, safety and environment

Our Supply Chain

Key categories of goods and services we procure

- ✓ Labour hire
- ✓ Professional consulting services
- ✓ IT software and hardware
- ✓ Laboratory supplies
- ✓ Building materials and products
- ✓ Farm supplies
- ✓ Recruitment services

The most critical component of LIC's supply chain is our permanent and seasonal employees, as well as our bull team. For our external suppliers our Strategic Procurement team has policies and processes in place to identify and manage critical risks that could impact our supply chain. An example is our New Zealand and international air freight and technology services. Where there is a higher risk to our products and services, particularly during peak season or where components are sourced internationally, at least one year of input components are held in advance of need, such as consumables used for artificial insemination and diagnostics testing.

The Procurement Policy requires that all procurement decisions should also take into consideration the potential impact to the environment, sustainability, health and safety and compliance with any other relevant legislative obligations and we continue to work with suppliers in relation to sustainability measures. For example, during the year a procurement process was run for LIC's printer lease and environmental impact of the suppliers was a key consideration. Canon New Zealand was selected, who are Toitū carbonzero certified, have demonstrated

emission reductions, have plans to further reduce and are committed to recycling of e-waste.

The Strategic Procurement team sent a survey during the period to approximately 90 of our larger NZ based suppliers, those in the top 20% of LIC's annual spend. Despite repeated reminders, the response rate was disappointingly only 16%.

Partnerships

Partnerships are critical to our work and are a strategic priority to develop. We work with others to deliver to farmer needs, partnering with other organisations to deliver a seamless service to farmers. We already work closely with other sector participants, including:

- DairyNZ and NZ Animal Evaluation Ltd (subsidiary of DairyNZ)
- Government ministries and agencies on joint funding of R&D, such as MPI, MBIE and Callaghan Innovation
- Milk processors
- Specialist beef operations
- Sexing Technologies, providing the critical technology for our sexed semen product
- Rural professionals, such as vets
- Animal wearable device companies
- Research specialists, such as at Auckland University and Massey University
- Gates Foundation and Alliance Biodiversity International & CIAT, project on herd management in Ethiopia

We are focused on building relationships with other sector companies such as processors, fertiliser companies and device companies.

New and ongoing initiatives with partners of note include:

Farmlands, Silver Fern Farms and LIC - Leadership and Governance Development training

We have partnered with Farmlands and Silver Fern Farms to offer shareholders of all three companies the opportunity to learn more about governance in co-operatives and develop skills needed to operate at board level through a unique leadership and governance development programme called "To the Core".

Fonterra's Governance Development Programme

We also partner with Fonterra who offer one LIC shareholder a place in its Governance Development Programme to build their governance capabilities and leadership skills. Running for approximately one year, the content is provided by Fonterra and Massey University's College of Business.

NZ Post

We have partnered with NZ Post to facilitate recycling of soft plastics for sites that do not have a drop-off centre. Staff can purchase a courier bag (made of 80% recycled plastic), which NZ Post will pick up and send for recycling.

Rural Support Trust

We have partnered with Rural Support Trust to provide farmer facing staff with a resource that offers guidance on providing mental health support to farmers.

Womens Refuge

LIC have joined a host of other leading brands, businesses and government departments across New Zealand in facilitating access to this important charitable organisation.

House of Science Central Waikato (HSCW)

The House of Science Central Waikato (HSCW) is committed to bringing scientific literacy tools to schools across the Waikato region. Their vision is to raise science literacy which will have huge economic and social benefits to New Zealand. We are proud to continue our collaboration that started in 2021 with HSCW and support them in a variety of ways. This includes providing HSCW with a LIC vehicle to deliver science kits to rural schools in the Waikato. Some of our fantastic R&D staff also volunteer their time each week to put together the science kits.

LIC supports the dairy sector, rural communities and our farmers by sponsoring a variety of initiatives, events, programmes and organisations. This provides opportunities and promotes excellence within the sector. Examples include:

- New Zealand Dairy Industry Awards
- Lincoln University
- Southern Dairy Hub
- South Island Dairying Development Centre
- South Island Dairy Event
- Owl Farm at St Peter's School, Waikato
- Dairy Women's Network
- Kellogg Rural Leadership Programme

- Massey University Dairy #1 Farm
- Ayrshire NZ Conference
- Jersey NZ Conference
- Smaller Milk and Supply Herds Conference
- Once a Day Conference
- Distributing computer equipment no longer needed to rural schools
- Support of calf club and pet days in schools

Our vet Dr Tracey Reynolds is a member of the 2023 Kellogg Rural Leadership Programme and has published a study paper Know your why – motivations for a sustainable future. The report aims to understand the motivations behind the adoption of new innovations by dairy farmers and learn how to accelerate the uptake of practices that reduce greenhouse gas emissions, thereby ensuring the long-term sustainability of farming in New Zealand.

Our employees are given one day off annually to do a variety of volunteer activities in the community.

We are also members of Cooperative New Zealand, the Sustainable Business Council, Toitū, and the Climate Leaders Coalition.

Refer to our [website](#) for further details.



How we create value

Value for our farmer shareholders is at the heart of our strategy.

We drive value, innovate, and deliver a positive impact for our customers and shareholders by focusing on helping our farmers optimise value from their livestock by helping them to produce the most sustainable and efficient animals and the highest value product.

We estimate that LIC delivers at least \$525 million of value on farm from the products that farmers purchase from us:

- Genetic improvement of the dairy herd generates the majority of the value, based on the increase in gBW over time.

- Increasing the six-week in-calf rate improves reproductive performance through more days in milk, decreased number of empty cows culled and increased value from more calves bred from artificial insemination. Prior improvements in LIC's bull semen have also increased conception rates over time.
- Health data provided to identify mastitis reduces the costs of treatment and reduces the number of cows culled due to this issue. Other disease testing identifies cows for farmer culling decision-making and reduces further spread of disease within a herd.
- Production Worth data is used to identify lower performing cows, enabling informed farmer decision making. Short Gestation Length (SGL) beef inseminations provide an additional 8 days of milk on average.
- SPACE™ provides reporting on accurate pasture cover data.
- We are working towards being able to calculate the value of environmental improvements through genetic improvements reducing enteric methane and nitrogen impacts.

LIC contribution to value on Farm



Value created for our stakeholders



Shareholders / Customers

Delivering quality products and services, advancing genetic improvement of herds, re-investing profits in further R&D or returning to shareholders through dividends



Employees

Providing a safe workplace with development opportunities and strong engagement



Sector Partners

Collaborating on research and development, providing quality data inputs



Government & Regulators

Complying with regulatory and financial reporting requirements, reducing our own environmental footprint and that of the national herd, responsible taxpayer



Community

Providing employment, lowering our environmental footprint, support through sponsorship and scholarships

The resources we rely on:



Relationships

Positive relationships with shareholders, farmers, vets, government and regulators, sector and research partners, employees and the farming community



Intellectual capital

Our collective know-how, systems and intellectual property that more than 50 years of R&D has generated



Financial capital

Our farmers and shareholders create a strong financial base to operate and invest for the future, as well as our banking partner debt facilities



Assets & infrastructure

Our property, equipment and animals allow us to run our business and distribute products and provide services



People

We rely on our talented employees, sector partners and suppliers to help deliver our products and services



Natural environment

New Zealand's natural environment is a key factor, particularly rain, sun and quality soil supporting grass growth for animals

Engaging with our stakeholders

The Board and Senior Leadership Team regularly consider different stakeholders and mechanisms to engage with them, as well as making decisions on when not to engage. This is commonly discussed at regular management and Board meetings, with recommendations made to Board, or requests from the Board.

Over the period our 12 month rolling average Net Promoter Score (NPS) improved to -3.5 from the prior year rolling average of -10. NPS is a measure of customer experience that ranges between -100 and +100.



Our farmer shareholders & customers	Our People	Suppliers & Partners	Regulators & other agencies	Communities
Goal				
Deepen our understanding of the current and future needs of all our farmers	Develop talent and foster a culture that embraces change, builds capability and drives better results	Work with others to deliver farmers' needs, including partnering to deliver a seamless service	Ensure long-term sustainability of our co-operative, farmers, environment and the NZ dairy sector	
How we engage				
<ul style="list-style-type: none"> • In person with tailored advice • Customer call centre • Net Promoter Score and other surveys • Fielddays, events and training • Feedback groups • Annual meeting, Shareholder Reference Group, Roadshows • Publications (such as The Bulletin) • Digital channels 	<ul style="list-style-type: none"> • Organisational Health Index annual survey • Employee events and in-person/online updates • Wide range of training & development • Internal communication, including Chief Executive email updates 	<ul style="list-style-type: none"> • Strategic procurement team • Supplier evaluations • Partnership relationships • Collaboration with innovators & researchers • R&D investment 	<ul style="list-style-type: none"> • Direct engagement with government and agencies by CE and relevant employees • Submissions on proposed law and regulation 	<ul style="list-style-type: none"> • Support of sector groups • Scholarships and internships • Social media channels
Needs & expectations				
<ul style="list-style-type: none"> • Deep customer relationships • Quality products and services, on time consistently • Reliable MINDA® software that is easy to use • Ongoing genetic improvement • Innovation • Prompt issue resolution 	<ul style="list-style-type: none"> • Positive culture • Safe, diverse and inclusive environment, where wellbeing is important • Investment through training and development • Market-comparable remuneration and benefits • Innovative working tools 	<ul style="list-style-type: none"> • Reliable and sustainable supply chain, providing quality inputs • Strong, productive partnership relationships • Robust science-based R&D projects 	<ul style="list-style-type: none"> • Strong governance and management of legal requirements • Insightful input on issues and proposed change • Appropriate and prompt response to incidents • Positive, proactive relationships • High quality external reporting 	<ul style="list-style-type: none"> • Positive employment and growth opportunities • Responsible organisation (e.g. as a taxpayer, purchaser) • Respond appropriately to issues raised • Transparent reporting • Key partner to farming community • Respect for diversity
Response				
Our primary focus is delivering value for our farmer shareholders and we commit to operational excellence, faster genetic improvement and software reliability and performance	We live our corporate values: "Integrity, Innovation, Spirit of Co-operation, In tune and Passion"; we work on providing a safe and positive environment where our people can thrive	We work with others to build long-term trusted relationships, and will have increasing focus on relationships with other organisations in the agri sector	Collaborative interactions with Government and agencies, respect for our licence to operate, strong focus on compliance	We help farmers to meet the current and future challenges, in particular water quality and methane, through research, investment and tools

Materiality Assessment

In 2021 the Board and management partnered with an external firm to refine our strategy. The strategy was informed by feedback from farmer shareholders, other stakeholders and local and global trends.

The strategy is to do what we're good at and play to our strengths. It is built on four solid foundations, Environment, Sustainable Co-operative, People and Partnership, and at its core is about delivering value for farmer shareholders.

When refining our strategy we also made three commitments to our farmer shareholders. The second commitment, faster genetic improvement, commits to having farmers' backs when it comes to helping them meet the environmental challenges they face, in particular animal efficiency, and nitrogen and methane mitigation. The strategy and commitments drive a focus on improving sustainability within LIC as well as helping the dairy sector to reduce its impact on the environment.

Management and the Board also worked together to carry out a materiality assessment on topics where the company may have significant economic, environmental and social impacts. We identified potential topics of importance based on our strategy foundations, reports and guidance from the dairy sector, farmer feedback and issues identified by risk assessments. Materiality was determined by considering the significance of our impact, the importance of the issue to stakeholders and our ability to control and/or influence the issue. Farmer elected directors provided important input in relation to

importance of issues for stakeholders and LIC regularly holds farmer engagement meetings in different regions to continue to gather feedback in reviewing the below

topics. The business is currently running a series of workshops with farmers on key drivers for 'breeding the herd for your farming future'.

Topic	Impact	Report reference	GRI Standard
Climate change Supporting shareholders to produce the most sustainable and efficient animals. Reducing our emissions at LIC.	Reduce negative impacts from direct and indirect GHG emissions	Reducing the environmental impact of our national herd Reducing the environmental footprint of our business	302-1, 302-3, 302-4, 305-1 to 6
Animal health & biosecurity Providing animal health products and information services to identify diseases and health conditions. Working with farmers to minimise risk on farm of disease spread.	Increase/continue positive impact on animal welfare	Reducing the environmental impact of our national herd	
Employment and sustainable income creation Caring for our staff and our farmer shareholders through meaningful employment and sustainable income creation.	Increase/continue positive impact on staff and farmer shareholders	Social sustainability - caring for our people Delivering a strong result for our famers	201-1
Health, safety & wellbeing Protecting the health and safety of people at work, including their wellbeing.	Increase/continue positive impact on staff	Social sustainability - caring for our people	403-2
Human rights Protecting the employment rights and working conditions of our people, including diversity and inclusion.	Increase/continue positive impact on staff	Social sustainability - caring for our people	406-1
Water Using water responsibly, including water quality, availability and disposal.	Reduce negative impacts on environment	Reducing the environmental footprint of our business	303-2
Waste Improvement of waste management and disposal practices.	Reduce negative impacts on environment	Reducing the environmental footprint of our business	306-3
Responsible procurement Influence our key suppliers in relation to sustainable business practices.	Reduce negative impacts on environment and increase/continue positive social impacts	Our business - our supply chain	

GRI content index

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
2-1	Organisational details	Who we are - pg 1
2-2	Entities included in the organisation's sustainability reporting	The report includes the full LIC consolidated group of entities. A list is available in the Annual report, corporate governance report
2-3	Reporting period, frequency and contact point	About this report - pg 2, for enquiries contact Communications@lic.co.nz
2-4	Restatements of information	There have been some restatements of historical GHG data as improvements have been made to data collection
2-5	External assurance	About this report - pg 2, Reducing the environmental footprint of our business - pg 25, LIC website
Activities and workers		
2-6	Activities, value chain and other business relationships	Our Business - pg 46
2-7	Employees	Employee data - pg 39
2-8	Workers who are not employees	Information unavailable/incomplete: description included in Employee data - pg 40. Data currently gathered has insufficient detail to correctly identify workers who are not employees
Governance		
2-9	Governance structure and composition	Governance and structure - pg 33. There is limited disclosure on under-represented social groups (due to the nature of our business farmer representation is the most critical representation) and only general information provided on competencies.
2-10	Nomination and selection of the highest governance body	Annual report, corporate governance report

The report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards - core option.

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
2-11	Chair of the highest governance body	Annual report, corporate governance report
2-12	Role of the highest governance body in overseeing the management of impacts	Annual report, corporate governance report, Governance structure - pg 33
2-13	Delegation of responsibility for managing impacts	Annual report, corporate governance report
2-14	Role of the highest governance body in sustainability reporting	Governance and structure - pg 33, Annual report, corporate governance report
2-15	Conflicts of interest	Annual report, corporate governance report
2-16	Communication of critical concerns	Annual report, corporate governance report, there is no specific disclosure on the number and nature of critical concerns communicated due to confidentiality constraints - material matters related to this report are disclosed
2-17	Collective knowledge of the highest governance body	Annual report, corporate governance report
2-18	Evaluation of the performance of the highest governance body	Annual report, corporate governance report
2-19	Remuneration policies	Annual report, corporate governance report
2-20	Process to determine remuneration	Annual report, corporate governance report, Annual Meeting
2-21	Annual total compensation ratio	Information unavailable/incomplete: due to a change in Chief Executive, comparisons to the prior year are not available, Employee data - pg 40
2-22	Statement on sustainable development strategy	Letter from the Chair and Chief Executive - pg 7

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Strategy, policies and practices		
2-23	Policy commitments	Annual report, corporate governance report; Code of conduct & ethics
2-24	Embedding policy commitments	
2-25	Processes to remediate negative impacts	
2-26	Mechanisms for seeking advice and raising concerns	
2-27	Compliance with laws and regulations	Not applicable: there have been no significant instances of non-compliance, fines or non-monetary sanctions; minor breaches reported under Reducing the environmental footprint of our business - pg 30
2-28	Membership associations	About this report - pg 49
Stakeholder engagement		
2-29	Approach to stakeholder engagement	Materiality assessment - pg 55
2-30	Collective bargaining agreements	Employee data - pg 40
Material topics		
Economic topic disclosures		
201-1	Direct economic value generated and distributed	Trend data, pgs 42 - 45, Annual Report, Financial statements
201-4	Financial assistance received from government	NEW MATERIAL TOPIC. Annual Report discloses R&D grants and tax incentives received from NZ Government in Note 1 to the financial statements, no government ownership of LIC
207-1	Approach to tax	NEW MATERIAL TOPIC. Economic Sustainability - Tax pg 42
207-2	Tax governance, control; and risk management	NEW MATERIAL TOPIC. Economic Sustainability - Tax pg 42, Annual Report external audit report includes audit of tax disclosures

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Environmental topic disclosures		
302-1	Energy consumption within the organisation	Reducing the environmental footprint of our business - pg 25, GHG Inventory Report
302-2	Energy consumption outside of the organisation	
302-3	Energy intensity	
302-4	Reduction of energy consumption	
305-1	Direct (Scope 1) GHG emissions	
305-2	Energy indirect (Scope 2) GHG emissions	
305-3	Other indirect (Scope 3) GHG emissions	
305-4	GHG emissions intensity	
305-5	Reduction of GHG emissions	
305-6	Emissions of ozone-depleting substances (ODS)	
306-3	Waste generated	
Social topic disclosures		
401-1	New employee hires and employee turnover	NEW MATERIAL TOPIC. Employee data - pg 40
401-3	Parental leave	NEW MATERIAL TOPIC. Information unavailable/incomplete: not all data tracked currently. Employee data - pg 40
402-1	Minimum notice periods regarding operational changes	NEW MATERIAL TOPIC. Employee data - pg 40
403-2	Hazard identification, risk assessment, and incident investigation	Critical Risks management - pg 37
415-1	Political contributions	Annual Report, corporate governance report - donations

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Topics determined to be not material		
Economic topic disclosures		Explanation
201-2	Financial implications and other risks and opportunities due to climate change	Information unavailable/incomplete: In 2024 LIC will report on this topic as part of Climate Statement reporting requirements
201-3	Defined benefit plan obligations and other retirement plans	Not applicable: LIC does not operate a defined benefit or retirement plan
Market Presence		Explanation
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	Information unavailable/incomplete: NZ is only material market - not considered a material issue
202-2	Proportion of senior management hired from the local community	Not applicable: all senior management employed in NZ (most significant market) are local
Indirect Economic Impacts		Explanation
203-1	Infrastructure investments and services supported	Not applicable: no significant infrastructure investments, no impact on communities and local economies
203-2	Significant indirect economic impacts	Not applicable: no significant indirect economic impacts identified
Procurement practices		Explanation
204-1	Proportion of spending on local suppliers	Not applicable: majority of spending is with local suppliers
Anti-corruption		Explanation
205-1	Operations assessed for risks related to corruption	Not applicable: corruption not considered an issue in NZ, which is only material market
205-2	Communication and training about anti-corruption policies and procedures	Not applicable: corruption not considered an issue in NZ
205-3	Confirmed incidents of corruption and actions taken	Not applicable: no incidents
Anti-competitive behaviour		Explanation
206-1	Legal actions for anti-competitive behaviour, anti-trust and monopoly practices	Not applicable: no legal actions

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Tax		Explanation
207-3	Stakeholder engagement and management of concerns related to tax	Not applicable - NZ is only material market
207-4	Country-by-country reporting	Not applicable: NZ is only material market
Materials		Explanation
301-1	Materials used by weight or volume	Not applicable: as mostly services provided (ie not manufacturing goods)
301-2	Recycled input materials used	
301-3	Reclaimed products and their packaging materials	
Energy		Explanation
302-5	Reductions in energy requirements of products and services	Not applicable: GHG reporting is not considered material by product/service
Water and effluents		Explanation
303-1	Interactions with water as a shared resource	Information unavailable/incomplete: not considered to have material water-related impact. This report does note consents to discharge tradewaste
303-2	Management of water discharge-related impacts	Information unavailable/incomplete: not considered to have material water-related impact. This report does note any breaches
303-3	Water withdrawal	Information unavailable/incomplete: not considered to have material water-related impact.
303-4	Water discharge	MATERIAL TOPIC IN PRIOR YEAR. Information unavailable/incomplete: not considered to have significant water-related impact.
303-5	Water consumption	Information unavailable/incomplete: not considered to have significant water-related impact.
Biodiversity		Explanation
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Not applicable: LIC does not have sites that are adjacent to a protected area or areas of high biodiversity.

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Biodiversity		Explanation
304-2	Significant impacts of activities, products, and services in biodiversity	Not applicable: no material impacts.
304-3	Habitats protected or restored	Not applicable: no such habitats. The report notes riparian planting carried out on farms.
304.4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	Not applicable: operations do not affect any such areas. NZ has 67 species currently on the Red List. LIC does not believe our operations affect the habitats of species on the Red List.
Emissions		Explanation
305-7	Nitrogen oxides (NOx), sulfur oxides (Sox), and other significant air emissions	Not applicable: LIC does not have material air emissions
Waste		Explanation
306-1	Waste generation and significant waste-related impacts	Information unavailable/incomplete: data is included in GHG emission calculations to the extent available and the report notes action being taken to reduce waste.
306-2	Management of significant waste-related impacts	
306-4	Waste diverted from disposal	
306-5	Waste directed to disposal	
Supplier Environmental Assessment		Explanation
308-1	New suppliers that were screened using environmental criteria	Information unavailable/incomplete: the report notes that consideration of sustainability factors is part of the Procurement policy and practices for strategic procurement processes.
308-2	Negative environmental impacts in the supply chain and action taken	Information unavailable/incomplete: no material impacts identified
Employment		Explanation
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Not applicable: not considered to be material differences

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Occupational Health and Safety		Explanation
403-1	Occupational health and safety management system	Information unavailable/incomplete: key information considered material is provided in Health and Safety section of the report, but not to the detail specified of these disclosures.
403-3	Occupational health services	
403-4	Worker participation, consultation and communication on occupational health and safety	
403-5	Worker training on occupational health and safety	
403-6	Promotion of worker health	
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	
403-8	Workers covered by an occupational health and safety management system	
403-9	Work-related injuries	
403-10	Work-related ill health	
Training and Education		
404-1	Average hours of training per year per employee	Information unavailable/incomplete: not considered a material issue.
404-2	Programmes for upgrading employee skills and transition assistance programmes	
404-3	Percentage of employees receiving regular performance and career development reviews	Information unavailable/incomplete: not considered a material issue - LIC has a specific tool for completing and overseeing reviews and development plans.
Diversity and Equal Opportunity		Explanation
405-1	Diversity of governance bodies and employees	Information unavailable/incomplete: gender information is provided in report (annual report for governance body) but other diversity factors are not considered a material disclosure.
405-2	Ratio of basic salary and remuneration of women to men	Information unavailable/incomplete: not considered a material issue.

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Non-discrimination		
406-1	Incidents of discrimination and corrective actions taken	MATERIAL TOPIC IN PRIOR YEAR Not applicable: none identified
Freedom of Association and Collective Bargaining		Explanation
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk.	Not applicable: none identified
Child Labour		Explanation
408-1	Operations and suppliers at significant risk for incidents of child labour	Not applicable: primary market in NZ, none identified
Forced or Compulsory Labour		Explanation
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	Not applicable: primary market in NZ, none identified
Security Practices		Explanation
410-1	Security personnel trained in human rights policies or procedures	Not applicable: LIC does not employ security personnel.
Rights of Indigenous Peoples		Explanation
411-1	Incidents of violations involving rights of indigenous peoples	Not applicable: No incidents reported
Local Communities		Explanation
413-1	Operations with local community engagement, impact assessments and development programmes	Not applicable: no such operations
413-2	Operations with significant actual and potential negative impacts on local communities	

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
Supplier Social Assessment		Explanation
414-1	New suppliers that were screened using social criteria	Information unavailable/incomplete: due to the sources of supplies, not considered a material issue. This report includes general content on suppliers.
414-2	Negative social impacts in the supply chain and actions taken	
Customer Health and Safety		Explanation
416-1	Assessment of the health and safety impacts of product and service categories	Not applicable: not considered material issue. H&S changes in relation to delivery of AB services on farm in Herringbone sheds is included in the report.
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	Not applicable: no incidents reported.
Marketing and Labelling		Explanation
417-1	Requirements for product and service information and labelling	Not applicable: products and services relate to animals so not considered material issue.
417-2	Incidents of non-compliance concerning product and service information and labelling	Not applicable: no incidents reported
417-3	Incidents of non-compliance concerning marketing communications	
Customer Privacy		Explanation
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Not applicable: no complaints received

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