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

Livestock Improvement Corporation Limited (LIC)

Sustainability Report
For the year ended 31 May 2022

LIC®

This report presents information about LIC's environmental, social and economic performance for the year ended 31 May 2022.

This is our second sustainability report, so it also outlines 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, The Aotearoa Circle and the Sustainable Business Council (SBC). When joining SBC, members are required to introduce annual reporting practices, which outline progress on environmental, social, governance and economic issues.

The SBC reviewed our first sustainability report and we have incorporated that feedback into this year's report where possible so that we continue to improve. This report is intended to meet SBC requirements from a business perspective, but it's also an opportunity to demonstrate how we are responding to sustainability challenges facing our farmers and the New Zealand dairy industry.

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 reduce 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 are proud to have received certification from Toitū's Carbonreduce programme following the audit of our FY19 base year GHG inventory report. In 2023 we aim to have the FY20, 21 and 22 data verified to ensure continued accuracy of the reporting data.

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

Contents

Who we are

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

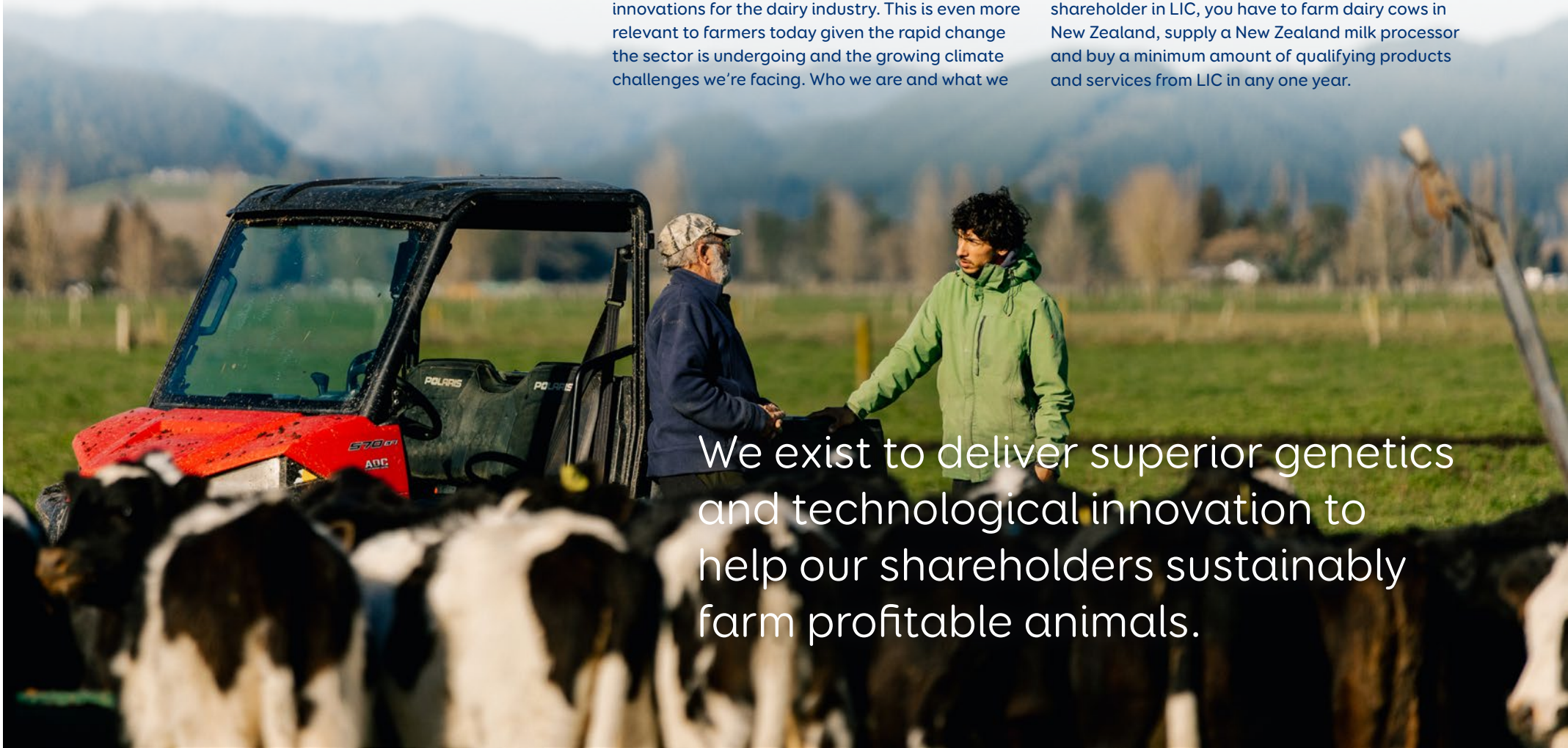
We exist to deliver superior genetics and technological innovation to help our shareholders sustainably farm profitable animals.

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 industry. 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 industry 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).

We are one of the largest private investors in R&D in New Zealand. Delivering value for our farmer shareholders is front and centre of every R&D project we invest in.

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.



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

Why sustainability matters to LIC

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.

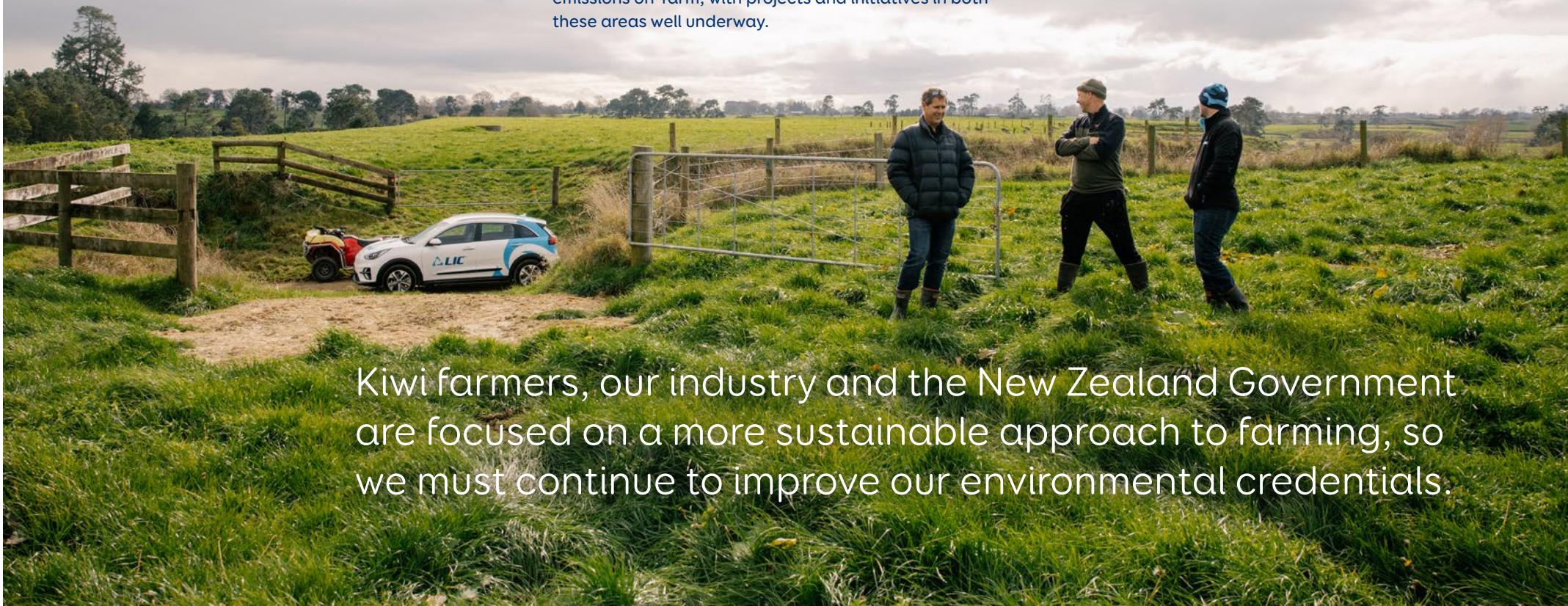
Kiwi farmers, our industry and the New Zealand Government are focused on a more sustainable approach to farming, so we must continue to improve our environmental credentials.

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

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.

Driving value for our farmer shareholders is at the heart of our strategy. We've got our farmers' backs when it comes to helping meet the environmental challenges they face, in particular methane efficiency and nitrogen and methane mitigation.

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.



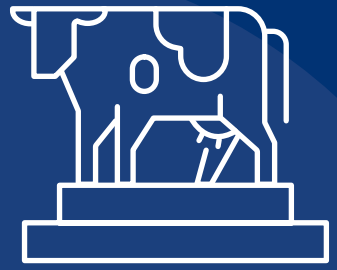
Kiwi farmers, our industry and the New Zealand Government are focused on a more sustainable approach to farming, so we must continue to improve our environmental credentials.

Key highlights

Environment

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

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



16.3% ↓

reduction in CO_2 Emissions

Change 2021/22 compared to 2018/19 (base year), excluding Biogenic Methane

397 kgMS[1]

average milk production

Up 3.1% from 385 kgMS last year

19 gBW

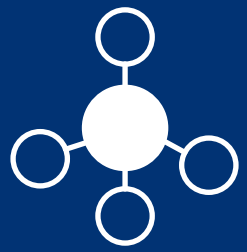
Average increase in genetic gain per annum ↑

(2017 - 2021)

4.9M[1]

cows in national herd

0.36% decrease ↓ on previous year

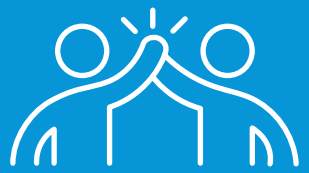


The first year results from our methane research programme found that **a bull's genetics do play a role in how much methane they emit**. The lowest bulls in the trial emitted around 15-20% less methane than the average after accounting for food eaten.

1 Source: New Zealand Dairy Statistics 2020-21

Key highlights

Social



Caring for our staff and our farmer shareholders

75 ⬆

Organisational Health Index (OHI)

Up five points from last year – our highest ever result.[1]

2.13 ⬇

Total reportable incident rate (Per 100 full time equivalent employees)

Down from 3.49 last year

850+

full time equivalent employees

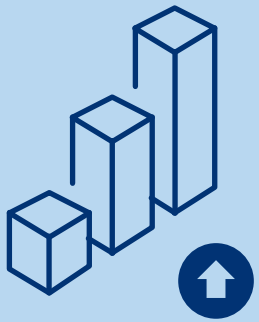
Plus **over 1,750** seasonal workers

1 OHI is a McKinsey tool which measures the impact of our organisation practices and culture on performance against international benchmarks. LIC was just one point off being in the first quartile of all tested companies by McKinsey worldwide.

Key highlights

Economic

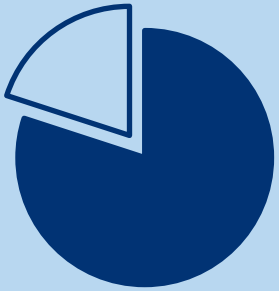
Delivering value to our farmer shareholders by investing in initiatives to help them breed the most profitable and sustainable animal



$263.2M

total revenue from continuing operations

Up 5.7% from $249.0 million last year (excl. Automation)



$26.2M

Full year dividend (18.43¢ per share)

Up 47% from $17.8 million last year

A Special Dividend of $14.3 million was also paid in January 2022 following divestment of Automation

$17.9M

investment in business

(investment & capital spend)
Up 11% from $16.1 million last year

$18.2M

R&D investment

Up 6% from the same period last year

Letter from the Chair and Chief Executive

Murray King

While our focus on sustainability is not new, sustainability reporting is an evolving area for LIC, as it is for many other businesses. This is our second year reporting on our sustainability journey and it's fantastic to see the progress we have made towards our goal of becoming carbon neutral by 2050.

We're continuing to engage with stakeholders to get the feedback needed to ensure that this report not only stands up against the reporting commitments we have made and the standards we have chosen to report under, but is also a useful source of information for our shareholders and industry - and focused on the areas they want us to take action on.

The addition of the materiality assessment this year is an example of how we're continuing to refine this report. The assessment identifies the topics where LIC can have significant economic, environmental, and social impacts and helps to ensure we are reporting on the right areas for our stakeholders.

David Chin

LIC's Sustainability Report is an important way for us to be transparent, hold ourselves accountable and measure our progress on our sustainability journey.

In our first Sustainability Report, we introduced the precision genetics tools that New Zealand farmers are using to farm sustainably and breed more efficient and climate-friendly cows. This year, we report on how we are continuing to add to this toolbox, the results some farmers are achieving, and future-focused solutions in the pipeline.

This report shows that the goal of being both sustainable and profitable is well within reach for New Zealand dairy farmers, and those that have a sharpened focus on herd improvement are already making great strides.

LIC's Sustainability Report is an important way for us to be transparent, hold ourselves accountable and measure our progress on our sustainability journey.

Some areas we would like to draw your attention to in the report are:

Our three commitments

Our strategy makes three commitments to our farmer shareholders:

- Operational excellence
- Faster genetic improvement
- Software reliability and performance.

Delivering on our commitments has been a key focus across the business this year. For the first time, we present on our progress against the three commitments in this report. We're pleased to have achieved a number of the targets and remain focused on delivering on those we have yet to achieve.

Breeding the best cows, faster

The market demands that the dairy industry continues to evolve - for climate change and because of it. Breeding the best cows faster is key to helping farmers solve the challenge of being profitable and sustainable, and we're really pleased that farmers are making solid progress.

Farmers know that not all cows are created equal. The best cows are more efficient at turning feed into milk - they are more fertile, produce more and are more emissions-efficient.

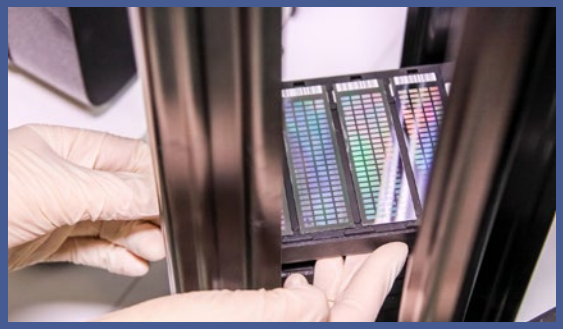
Long-term users of LIC genetics have almost doubled the speed of improvement in their herds over the last decade. They are not only breeding genetically superior cows which are more emissions-efficient, they're also breeding them at a much faster rate. The widespread use of genomics in our breeding programme and significant investment in genomics over the past 30 years is a key contributor to this.

We're focused on future solutions too

Results from year one of our methane research programme have found that a bull's genetics do play a role in the methane it emits. The results are a big win for the research. Although this is a long-term project, it has the potential to make a tangible difference to farmers in the future by providing another tool to reduce on-farm emissions.

Our scientists are also one step closer to enabling farmers to have high genetic merit dairy cows with improved heat tolerance after our 'slick' gene research and trial found that dairy cows with the 'slick' gene are less affected by heat stress compared to their non-slick counterparts.

During the year we have invested $18.2 million into R&D, maintaining our position as one of the largest private investors in R&D.



Throughout the year we have worked hard to keep both our team and farmers safe while providing continuity of service, however, the ongoing impacts of Covid-19 mean that we've continued to face significant resource and supply challenges. We would like to thank staff and shareholders for their ongoing hard work and support as we navigate these challenges together.

Ultimately, we will be judged on the meaningful action we are taking when it comes to sustainability. We look forward to keeping you updated on LIC's sustainability journey and continuing to push for more improvement that will support New Zealand farmers to retain their position as the world's most efficient dairy milk producers.

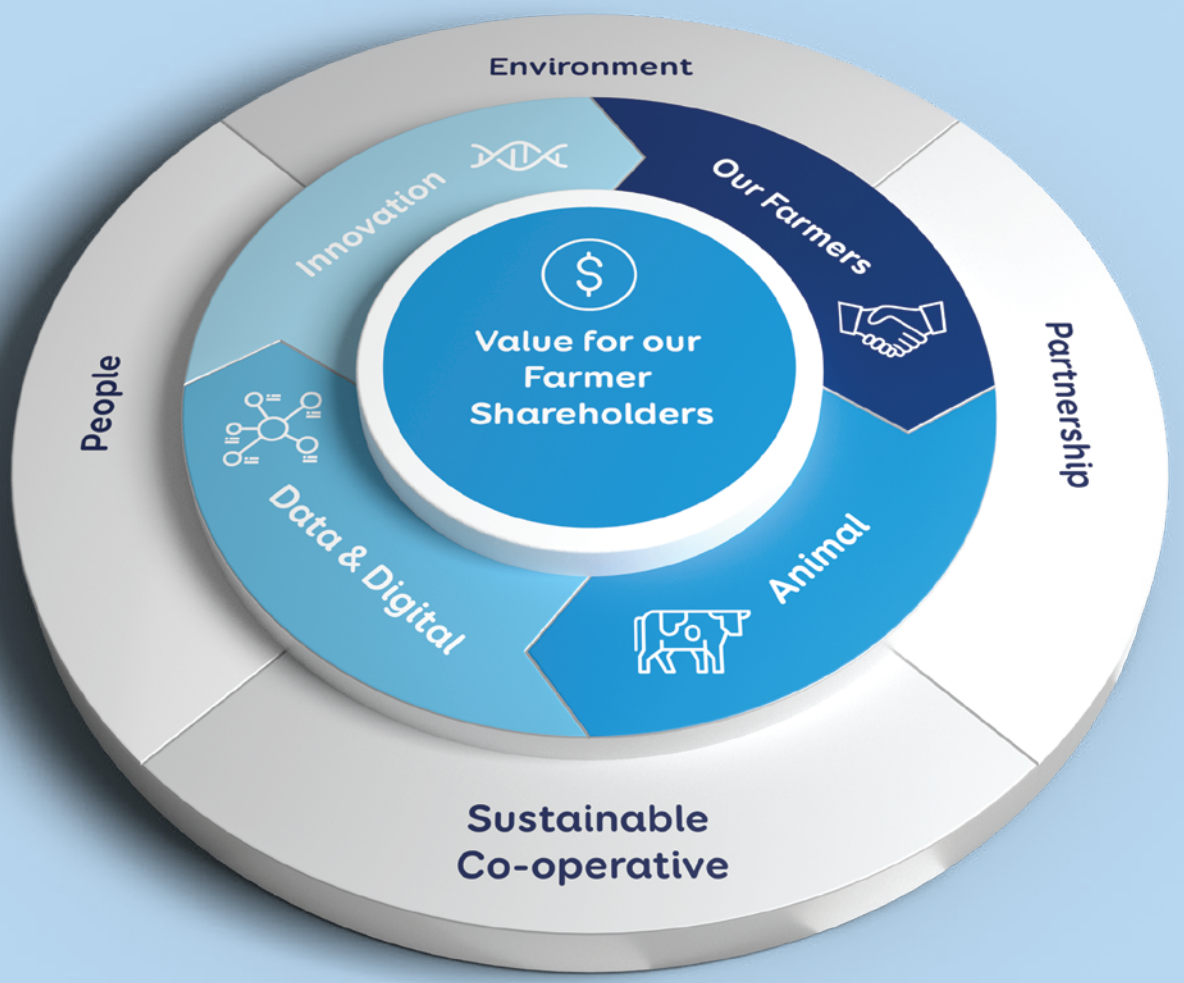
Murray King
Chairman

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 industry, next year, in five years and for another 100 years.



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

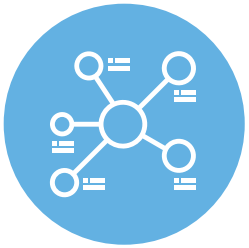
How we drive value for our farmers

Our Farmers

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

Animal

Most sustainable & efficient animal. Highest value products.



Data & Digital

Modernising the animal data & digital capabilities.

Innovation

Research & development. Responsive innovation.

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.

Measuring our three commitments

Our farmers rightly ask how they can hold us accountable for delivering on the commitments - this has been a priority for us this year.

Internal governance groups were formed to develop measures and targets for each commitment and monitor progress. 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 will report to farmer shareholders annually at events such as our Annual Meeting and we will publish progress and results on our website.

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.

Based on how we're tracking and the needs of our farmer shareholders, the measurements and targets will be reviewed and updated in the future.

If we can measure it, we can manage it.

2021-22 Commitment Measurements

We're pleased to report that we have achieved the majority of our targets this year. We remain focused on meeting the targets that we have not yet achieved and will continue to work towards achieving these in the coming year.

Key: Target met · Some exceptions · Target not met

Operational excellence:

HERD TESTING

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

99.9%

JOHNE'S DISEASE TESTING

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

10

98.8%

Key: Target met · Some exceptions · Target not met

MILK PREGNANCY TESTING

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

99.0%

ARTIFICIAL BREEDING

Frozen semen straws on-farm **at least one day prior** to the required-on-farm date (for all orders placed 30 days in advance of the required-on-farm date)

99.9%

CUSTOMER EXPERIENCE CENTRE

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

71.2%

GENEMARK

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

70%

ARTIFICIAL BREEDING

Deliver a **Non Return Rate (at an AB Tech group level) within +/- 10%** of the AB Supervisor average for the area

99.9%
of AB Tech groups
(1 AB technician low group)

GENEMARK

Provide results first time for 99% of all samples when wet tissue sampling units are used

97.9%

Faster genetic improvement:

Key: Target met · Some exceptions · Target not met

SIRE PROVING SCHEME BULL TEAM GENETIC GAIN

16 BW increase per annum

16 BW ●

METHANE MITIGATION

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

0.0022[1] ●

PREMIER SIRES BULL TEAM GENETIC GAIN

15 BW increase per annum

20 BW ●

NITROGEN MITIGATION

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

0.0016[2] ●

RATE OF GENETIC GAIN ON FARM

17 BW increase per annum (for herds with >80% replacements sired by LIC bulls)

16 BW ●

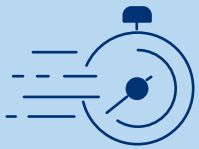
1 Indirect estimate based on genetic data correlation
2 Indirect estimate based on genetic data correlation

Software reliability & performance:

Key: Target met · Some exceptions · Target not met

MINDA AVAILABILITY

Available **99% of time**



99.98%

EZ LINK PERFORMANCE

<1% poor feedback on EZ Link performance

0.3%

MINDA PERFORMANCE

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

98.5%

INTEGRATED SOFTWARE PARTNERS

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

Working on measuring

MINDA ROADMAP

All features in MINDA Roadmap released

98%

Environmental sustainability

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.

However, 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, and we're amplifying this through genomic science to deliver results for farmers at a faster rate.

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

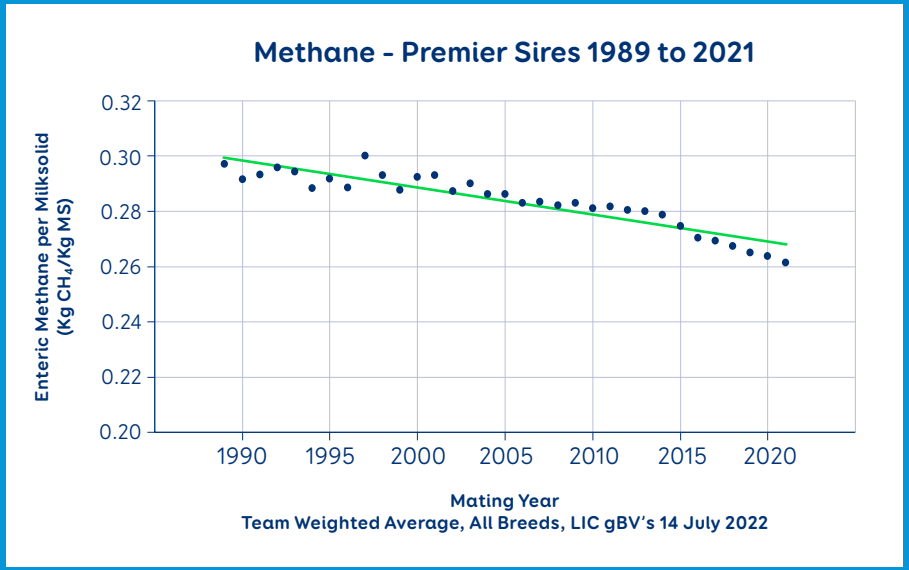
The results some farmers are achieving show that if we sharpen our focus on herd improvement, we can continue to have the world's most efficient dairy herd. High producing, climate-friendly cows aren't just a hope for the future - they exist in the national herd today and are well within reach for every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

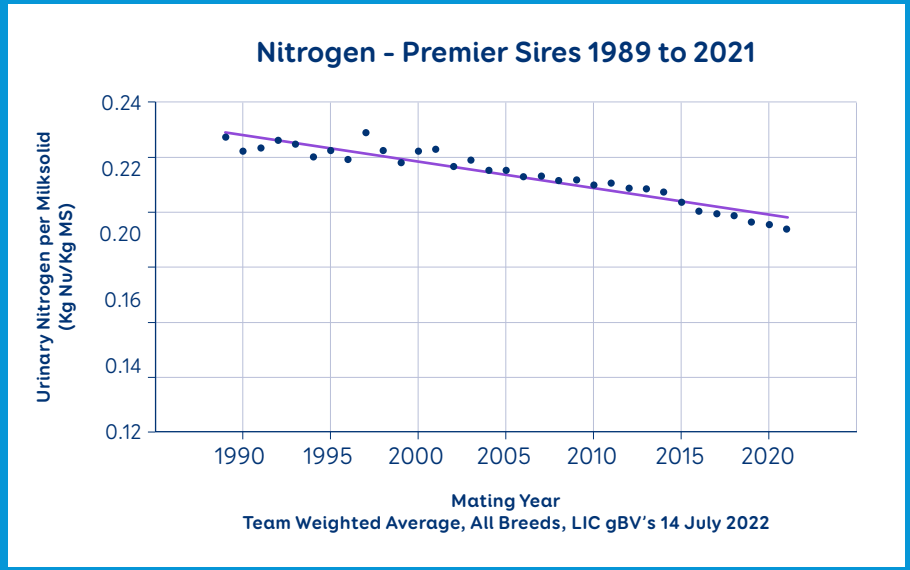
The most significant impact we can make is through reducing the environmental footprint of the national dairy herd.

Key Metrics

By assessing genetic data, we estimate that over the past 32 years (from 1990 to 2022) the genetic improvement in our Premier Sires semen delivered on-farm has resulted in a 12% reduction in enteric methane and 14.5% less urinary nitrogen emitted per kilogram of milksolid produced.

During the 2021/22 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 NZ farmers breeding more emissions efficient cows, and year-on-year they're doing it faster.





Enteric methane

Enteric methane is a key emission from ruminant livestock and the main greenhouse emission produced in pastoral dairy farming.

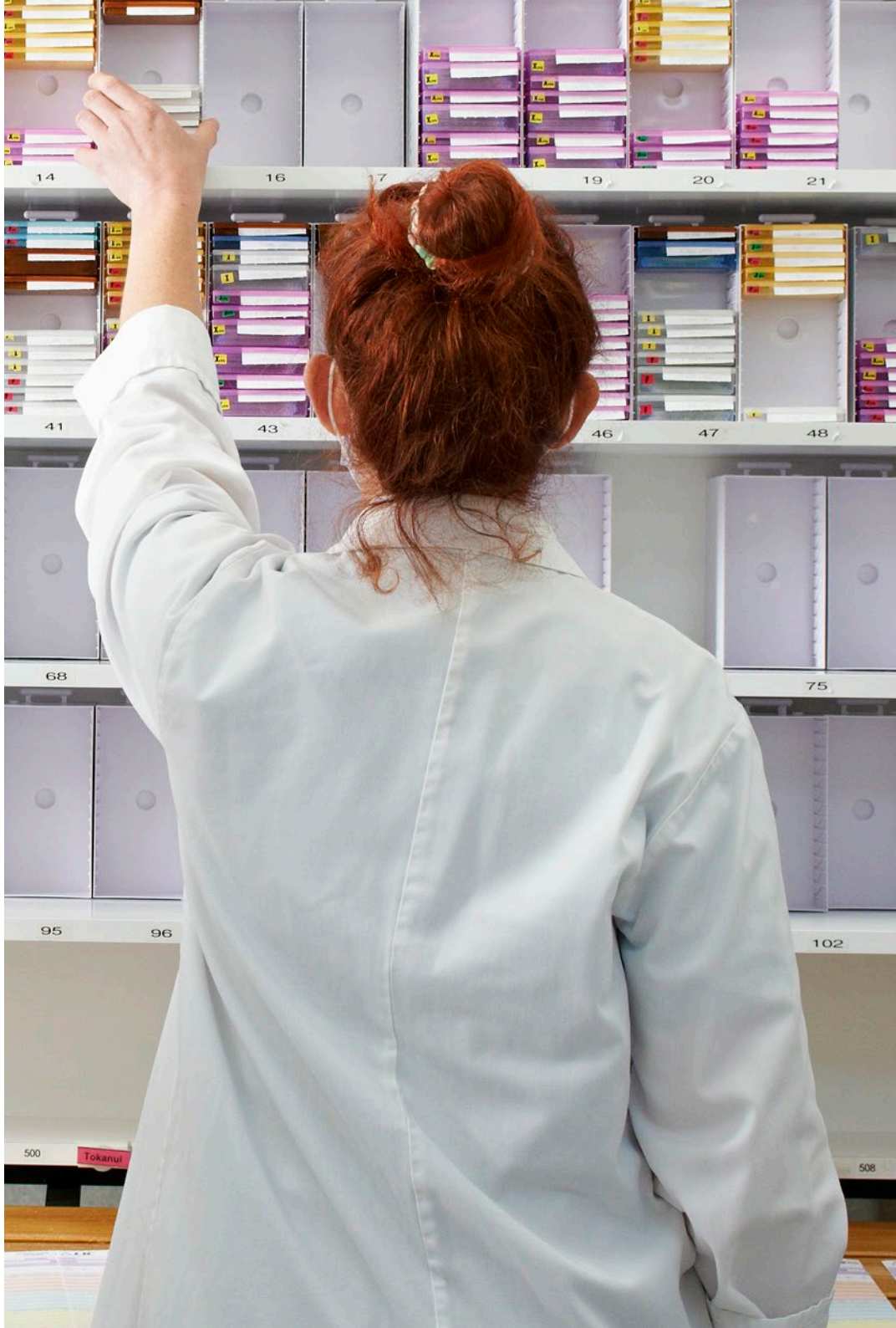
Urinary nitrogen

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.

The 2020-21 New Zealand Dairy Statistics, produced by LIC and DairyNZ, show the impact a heightened focus on breeding the best cows is having on milk production, as the industry reaches record milk production per cow and continues to reduce the cow population.

The 2020-21 report recorded a 2.6% increase in milk litres, a 2.7% increase in kilograms of milk solids processed and a 3.1% increase in average milk solid production per cow compared with the previous season, and a 0.36% reduction in cow population. We're proud of the role we play in supporting Kiwi farmers to achieve this shift.

The 2020-21 New Zealand Dairy Statistics, produced by LIC and DairyNZ, show the impact a heightened focus on breeding the best cows is having on milk production. We're proud of the role we play in supporting Kiwi farmers to achieve this shift.



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, this year our team of scientists investigated the full spectrum of MINDA herds in search of the 'best cows' and whether a clear correlation existed between breeding worth (BW) and milk production efficiency.

The research reaffirms that the best cows (with high BW) are more efficient at turning feed into milk - they produce more 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.

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.

All cows aren't created equal

Holstein Friesian

BW Quartile	Animal Count	Average BW	Average kgMS	Average LWGT BV	Average FERT BV
Q1	51,375	163	**518**	37	0.8
Q2	51,375	102	486	37	-0.2
Q3	51,375	60	467	37	-1
Q4	51,375	-0.8	**445**	38.6	-2.1

+73 kgMS (16.4%)
-1.6kg liveweight

Crossbreed (FxJ)

BW Quartile	Animal Count	Average BW	Average kgMS	Average LWGT BV	Average FERT BV
Q1	146,050	208	**505**	-4.1	1.3
Q2	146,050	152	478	0.7	0.5
Q3	146,050	110	464	5.2	-0.2
Q4	146,048	47	**442**	10.7	-1.2

+63 kgMS (14.2%)
-14.8kg liveweight

Jersey

BW Quartile	Animal Count	Average BW	Average kgMS	Average LWGT BV	Average FERT BV
Q1	18,988	252	**431**	-50.4	2.9
Q2	18,988	202	404	-50.9	2.2
Q3	18,988	166	387	-51.2	1.5
Q4	18,988	87	**382**	-51.7	0.1

+49 kgMS (12.8%)
+1.3kg liveweight

Source: Herds recording in MINDA with Herd Test results, 4-8 year old cows, 2020-2021 season.

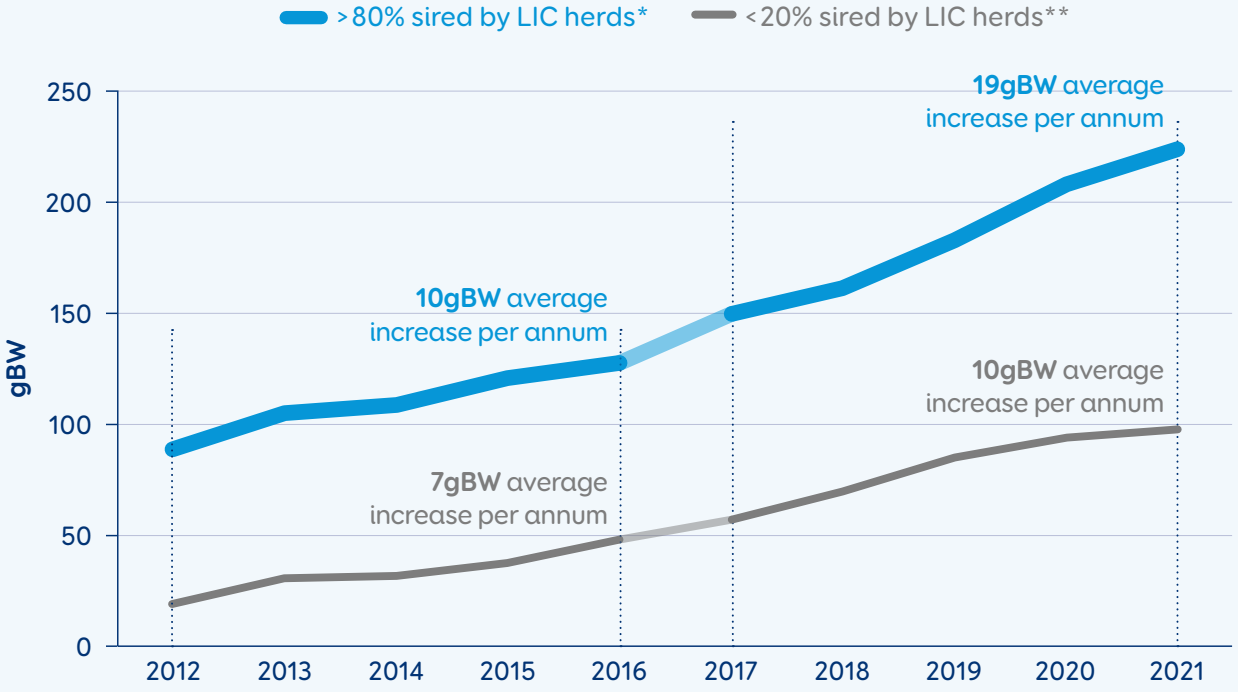
Breeding the best cows, faster, is key to helping farmers solve the challenge of being profitable and sustainable. We've made good progress over the years, but to continue on this trajectory we need to sharpen our focus.

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 a 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.

Rates of genetic gain



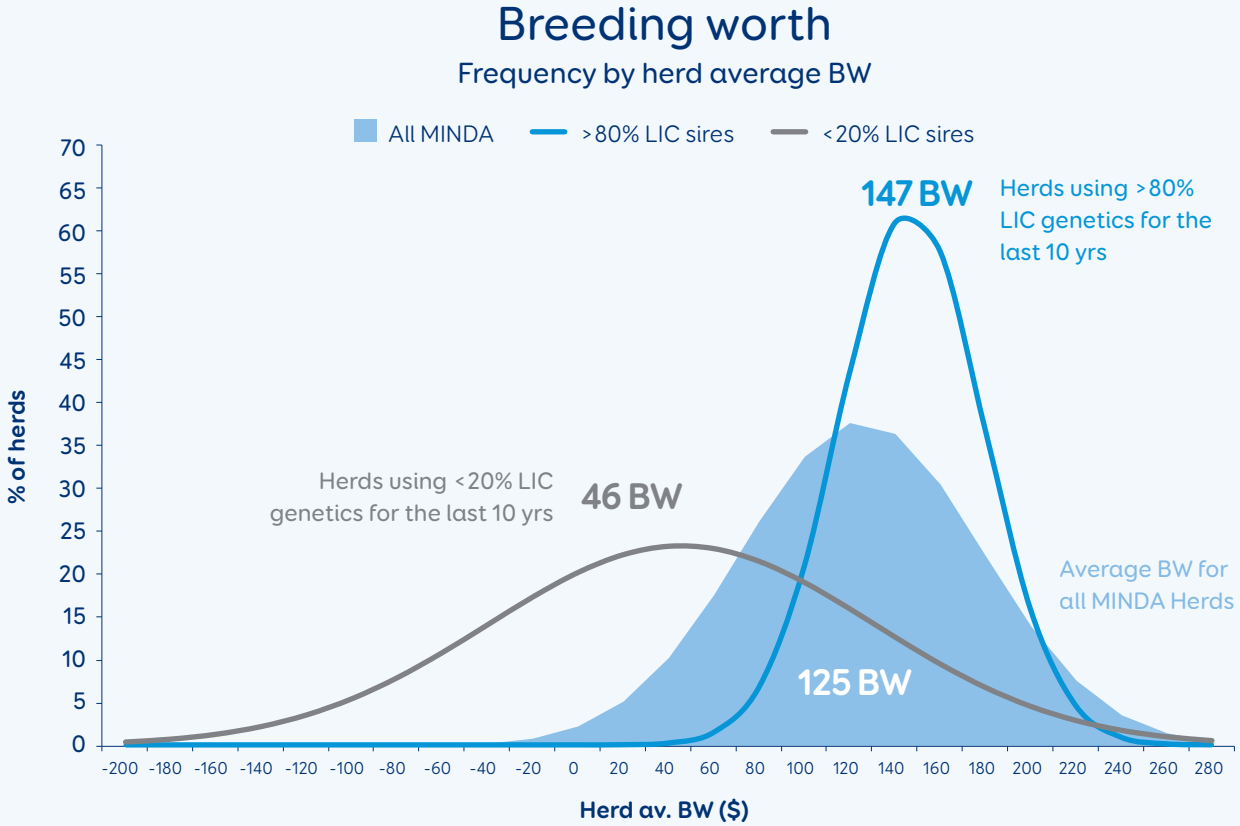
*>80% of progeny sired by LIC bulls (10 years) - Sample size of 2,900 herds
**<20% of progeny sired by LIC bulls (10 years) - Sample size of 474 herds
Source: Herds recording in MINDA with Herd Test results. January 2022.

Long term users of LIC genetics have almost doubled the speed of improvement in their herds over the last decade. They're breeding better cows faster, and genomics is a key contributor.

Genomic records, ancestry information and technology allows 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 BW 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 2021-22 year, 71% of fresh semen straws used for breeding replacements were from our premium bull teams (2.1 million straws), up from 60% the year prior (1.8 million straws).

Our scientists were recognised as finalists at the 2022 Primary Industries New Zealand Awards for developing our genomics process. This recognition is validation of the impact genomics is having on the speed of improvement and our ongoing investment and dedication to helping farmers breed the best cows, faster.



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. Herd Improvement Tool

Our Agri Managers play an important role in helping farmers improve their herds and breed the best cows. Over the past year, we have been developing a genetic merit and environmental efficiency projection tool that allows Agri Managers to predict gain in any farmer's herd through to 2030 based on making different breeding decisions.

The outputs of the model are displayed in graphical format and show the estimated genetic merit of the herd and replacement cattle, expressed in gBW. Milk solid production and stocking rate trends are estimated out to 2030, as well as urinary nitrogen and enteric methane per kg of milk solid.

This is the first iteration of the tool and we will continue to develop it and expand on its features.

2. Enhancing our GeneMark DNA parentage service

Genomic evaluation for dairy cows

Our Genomic Evaluation service launched this year adds an animals' 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 potential cows to breed from and increase the rate of genetic gain on farm as a result.

The service uses the same technology we use to select elite young bulls for our breeding programme and is another tool to help farmers produce more milk from less cows and identify their herds' superior cows when they are young calves.

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.

On behalf of our farmer shareholders we have invested heavily in genomics; that investment enables us to develop world class technology that delivers value on farm - we are really pleased to share this with our farmers. This service is available to farmers who use GeneMark.

Identify calves with genetic variants

In 2021, LIC scientists discovered six 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 the variants 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.

3. 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.

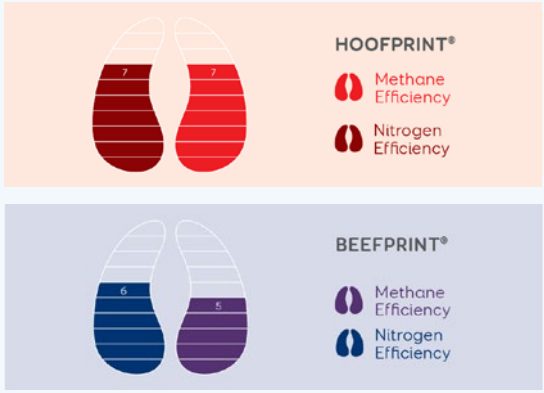
This disease is common in dairy cows, but it can be difficult to detect. LIC provides individual animal testing for Johne's disease; in the year ended 31 May 2022 testing increased by 28% to a record level of just under one million tests.

4. Sexed Semen

LIC's fresh sexed semen orders have almost doubled from the previous year with 201,550 sexed semen straws sold, up from 110,125 the previous year.

To meet increasing demand, this year we repurposed and refurbished an area within our Waikato headquarters to accommodate a new laboratory facility solely for the production of sexed semen. The state-of-the-art lab 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 their 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.



5. 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.

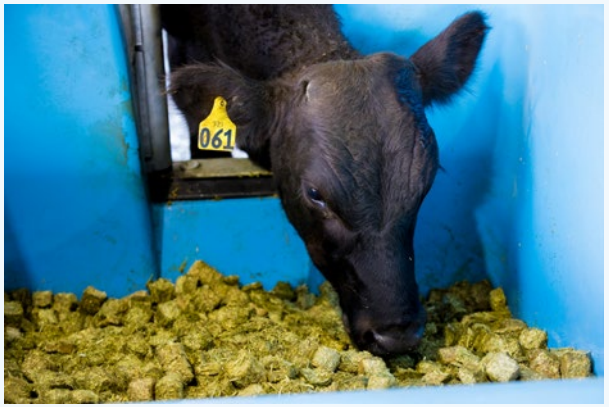
HoofPrint® ranks and compares enteric methane and urinary nitrogen per kilogram of milksolids produced. Changes to HoofPrint® in the last year reflect improvements in the underlying calculation of fertility and survival breeding values. BeefPrint® is based on the same methodology principles, although it ranks beef bulls for their lifetime enteric methane and urinary nitrogen per kilogram of meat produced.

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 $18.2 million, the equivalent of 6.9% of revenue - up from 6.2% the year prior.

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 next step in the research is to see if the genetic variation responsible for methane emissions in growing young bulls is replicated in their daughters. In partnership with Pāmu, we are breeding from bulls that we have identified to be high or low methane emitters. After their daughters are born, we will measure their emissions as growing yearlings and during their first milking season to ensure they are representative of their fathers.

The second year of the research is now underway with methane emissions being measured from approximately 300 young bulls from LIC and CRV's 2022 Sire Proving Scheme.

The next step in the research is to see if the genetic variation responsible for methane emissions in growing young bulls is replicated in their daughters.

Increasing heat tolerance in cows

A seven-year breeding programme assessing the impact of the 'slick' gene in cattle, which produces a short hair coat and improves heat tolerance, has this year confirmed that dairy cows with the 'slick' gene are less affected by heat stress compared to their non-slick counterparts. The pilot trial was conducted at our dairy farm.

Heat stress has significant welfare implications for animals. For dairy cows it can also impact feed intake, milk production, fertility and calf birthweight.

The 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. 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.

The trial findings are a step in the right direction but increasing the 'slick' animals' genetic merit and milk production will take time; the trial showed 'slick' heifers (which are 87.5% dairy) produced around 18% less milk than high genetic merit dairy heifers without the 'slick' variation.

If the breeding programme continues to progress as expected, Kiwi farmers will be able to breed heat tolerant cows by 2029.

Richard Spelman with cows from the slick gene research programme

New Zealand's coolest cows - Our scientists are a step closer to enabling farmers to breed more heat tolerant cows.

Dairy-beef product

Farmers are proactively looking at ways to mitigate consumer, environmental and animal welfare concerns. That's why over the past three 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 will support a reduction in bobby 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.

Over the past three years we have been running a breeding programme to develop an easily identifiable dairy-beef product with good calving ease and growth traits.

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.

This year, the **Milkomics™** workstream has identified and quantified a significant number of species in milk, including bacteria, viruses, protozoans and fungi. Our team are currently undertaking work to establish national baselines for the species present.

Facial eczema is a disease that impacts the liver of animals. This year we have developed a milk-based test that can identify moderate to high levels of liver damage. Through further development we hope to make this test available to farmers in the near future.

Analysis of herd test samples using Mid infra-red (MIR) spectra is used to calculate the fat, protein and Somatic Cell Count measurements that are routinely reported to farmers. MIR analysis generates more spectral data than needed to provide this information and the large volume of spectral data has potential for screening for health and wellness traits. LIC is collecting and storing all spectral data generated at each herd test analysis. Machine learning and artificial intelligence tools will be used to assess the potential for screening for health traits such as mastitis and Johne's disease.

This is a long-term 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

We have defined the following science-based climate change targets to reduce our greenhouse gas emissions and limit the temperature increase to 1.5°C of pre-industrial levels:

46.2%
Reduction of Scope 1 and 2 emissions* by 2030 (against our 2018/19 base year)

28.9%
Reduction of Scope 3 emissions* by 2030 (against our 2018/19 base year)

10.0%
Reduction of biogenic methane by 2030 (against 2017 emissions)

*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.

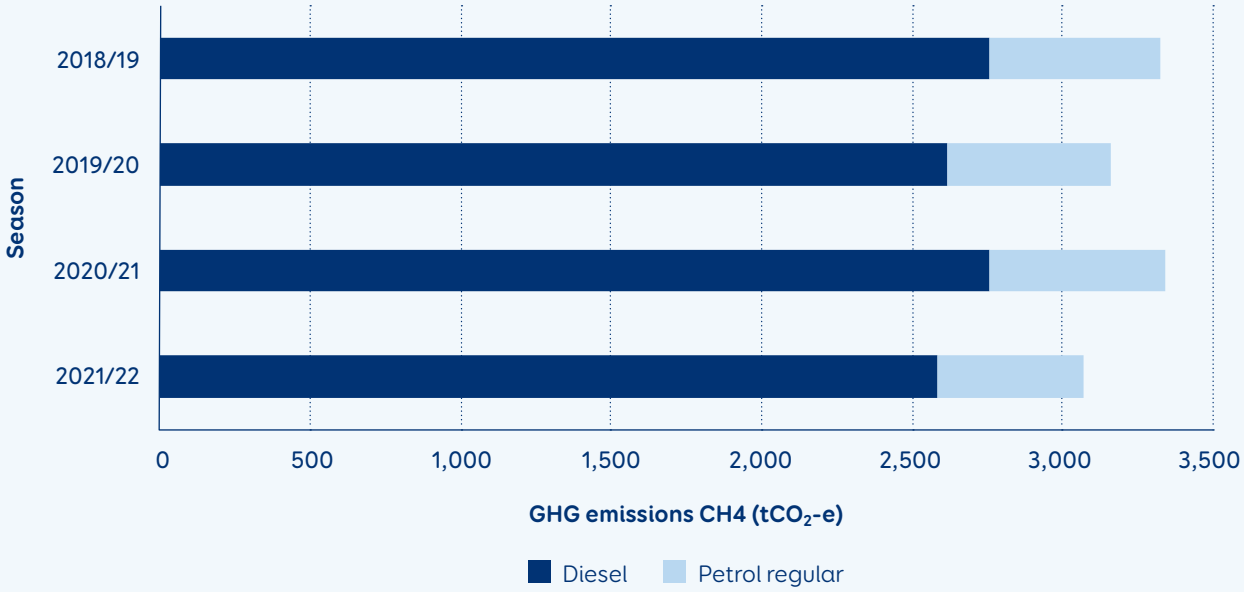
From our base year 2018/19 to 2021/22 we've had an overall reduction in our total CO_2 emissions of 16.3%. Our 2021/22 biogenic methane has decreased by 11.93% from base year.

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

Some of the decreases are likely attributed to the ongoing Covid-19 pandemic and limitations set on New Zealand in regard to travel and working from home. However, improvements in data gathering have also allowed us to recalculate our waste emissions more accurately dating back to 2019 which saw a significant reduction in our Scope 3 Biogenic methane emissions from Years 1 - 3 compared to base year estimations.

Initiatives such as the transition of our fleet vehicles to EVs is beginning to show effect with an emission reduction of 6.3% in Year 3 against base year for diesel usage and 13.4% for regular petrol usage.

	2018/19 Base year	2021/22 Year 3	Reductions/ Increases
Scope 1 **Direct emissions tCO_2-e**	4,452.0	4,278.8	-3.9% ↓
Scope 2 **Indirect emissions tCO_2-e**	379.4	308.1	-18.8% ↓
Scope 3 **Indirect emissions tCO_2-e**	7,800.8	5,990.6	-23.2% ↓
Scope 1 **Biogenic methane - Direct emissions CH_4 (tCO_2-e)**	3,231.1	3,426.1	6.0% ↑
Scope 3 **Biogenic methane - Indirect emissions CH_4 (tCO_2-e)**	701.7	37.4	-94.7% ↓



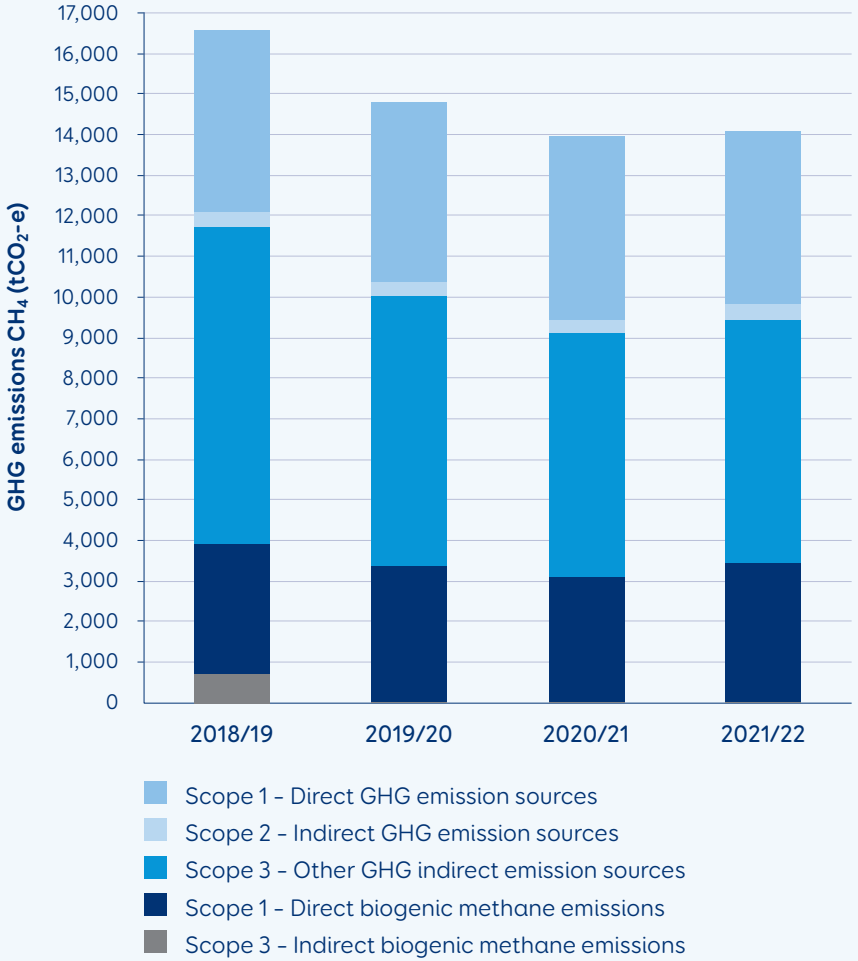
Further initiatives we have underway to help reduce our emissions are outlined in the table below:

Objective	Actions
Reduce fuel emissions	Replacing fuel-based vehicles with EVs wherever practical. Approximately 10 vehicles to be replaced each year.
Reduce water treatment emissions and supply	Upgrade the waste water treatment system and reinstate water reuse system for non-potable use.
	Install rainwater capture system at Newstead for potable water sources.
Waste minimisation	Upgrade of the recycling systems at Newstead and Riverlea to improve waste visibility and reduction tactics.
Reduce energy use on Innovation farm	Investigate installation of solar panels on the dairy shed.
Energy reduction plan	Energy audit planned for year three of our three yearly planning cycle. Investigation into the installation of a large-scale solar panel system at Newstead to assist in offsetting the increased consumption of charging EVs.
Staff engagement	Implementation of our Environment and Sustainability Management Committee
	Development of an environmental training module
	Organised events to engage with staff in reducing their carbon footprint including guest speakers, project uplift, and clothe our kids drive.

To ensure we are accurately reporting GHG data, we have adopted the use of an external carbon calculator which has resulted in a recalculation of our base year with the inclusion of freight in our Scope 3 Indirect emissions along with data quality improvements being made since our first report.

In April 2022 we had our FY19 base year GHG inventory report audited by Toitū Envirocare and have received certification to Toitū's 'carbonreduce' programme. Third party verification also supports our commitment to the Climate Leaders Coalition. In FY23 we aim to have the FY20, 21, and 22 data also independently verified to ensure continuing accuracy of reporting data.

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 and as part of our adoption of Toitū's carbon calculator.



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

In April 2022 we had our FY19 base year GHG inventory report audited by Toitū Envirocare and have received certification to Toitū's 'carbonreduce' programme.

TOITŪ CARBON REDUCE ISO 14064-1 ORGANISATION

What we're doing to improve business sustainability

Environmental Management System

We have introduced an Environmental Management System as a framework to manage our environmental impacts. This has included the establishment of 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 have prepared and maintain LIC's Environmental Aspects Register for each area of the business.

Energy audit planned

An energy audit will be undertaken with the Energy Efficiency and Conservation Authority in the 2022/23 year.

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

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

We have completed an upgrade of our animal handling facilities on our bull farms. The new yards incorporate effluent management into their designs, going beyond our resource consent obligations to protect local waterways.

Vehicles

To help reach our targets, we're transitioning our fossil fuel company cars to include options of Electric Vehicles (EV), Plug-in hybrid (PHEV) and hybrid models.

Currently, approximately 26% of our vehicle fleet is either hybrid or full EV with another 21% being rolled out in the next few months, an increase of 16 vehicles or 8% since last year. By the end of our financial year, approximately 70% (146 of the 210 vehicles) will be transitioned to EV or hybrid vehicles.

We have installed 16 EV Charging Stations at our Head Office in the Waikato.

Travel

We encourage video conferencing for meetings involving our people and partners to reduce travel where possible.

LIC Farms

This year we have completed an upgrade of our animal handling facilities on our bull farms. The new yards incorporate effluent management into their designs, going beyond our resource consent obligations to protect local waterways.

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 installing solar panels on farm sheds, using an alternative slow-release fertiliser and upgrading tractors to lower environmental impact options.

Trade waste consents

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

The wastewater that is being discharged at Riverlea comes from a wash line that cleans and sterilises testing equipment, which contains a small amount of milk residue. Our current Riverlea consent is based on an annualised target and there have been no breaches against any of the consent limits, with the exception of a reading in May 2022 that had an unexpectedly high pH level. This was attributed to a change in detergent used in the wash line resulting from a forced change in supplier due to Covid related supply chain issues. We are working with the new supplier on formulation and concentration requirements to ensure we stay under the pH limit. The Hamilton City Council receive monthly monitoring results and agree with our corrective plans.

In June 2021 our Christchurch operation had an overflow from the trade waste holding tank due to a tap accidentally being opened, including a spill into the stormwater drain. In May 2022 there was also a spill due to a hose detaching while the tank was being emptied. In both cases an industrial cleaning process was quickly activated to contain and clean up the spills, the incidents were notified to Christchurch City Council and there were no resulting infringements.

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.

Our animal health laboratories at Riverlea receive numerous polystyrene cool store boxes. Polystyrene is a bulky, hard to recycle material so previously these boxes would end up in landfill. We have introduced a process where these boxes are placed into an on-site skip bin and collected by a third party recycling firm on a weekly basis.

Following a move to digital records in our Artificial Breeding (AB) distribution process, we had a surplus of 1,900 plastic bins that previously held paperwork and enclosed our Liquid Nitrogen Banks. Rather than sending them to landfill, our teams worked together to sell them to staff and the wider community. Over $3,500 was raised and donated to Waikato Hauraki Coromandel Rural Support Trust who support the wellbeing of our rural communities.

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.

Upgrade to wastewater plant planned at Newstead

A third party will be contracted to complete an upgrade to allow water reuse to be re-introduced at our wastewater treatment plant at Newstead. The plant is a wetland system designed to recycle wastewater into non-potable water for reuse in irrigation systems on site as well as in toilets.

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. 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.

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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 focussed 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 over 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 employee metrics

850+
full-time equivalent employees, of which **530 are women**

9,000+
farmer shareholders

75
Organisational Health Index (OHI) up five points from 70 last year and **our highest ever result**

2.13
Total Reportable Incident Rate (per 100 full time equivalent employee) **down from 3.49 last year**

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.

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.

Back row: Sophie Haslem, Ben Dickie, Gray Baldwin, Alison Watters
Front row: Tim Gibson, Matt Ross, Murray King, Ken Hames, Candace Kinser

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.

Back row left to right: David Beuth, Phil Lowe, Wayne Reynolds, Bruce Murphy (deputy chair), David Hands, Michelle Oldham-Smith, Mark Hooper
Front row left to right: Lyna Beehre, Mark Benns, Nathan Keoghan (chair), Christine Macbeth, Melanie Tonkin (SRG secretary)
Absent: Richard Ridd

Senior Leadership Team

Our Senior Leadership Team (SLT) consists of a talented group of men and women with a wealth of industry and management experience. 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.

During the period, David Chin was appointed Chief Executive. David is a highly regarded leader at LIC who has extensive experience in the business. He has held various other leaderships roles since starting in 2006, including General Manager Operations and Service, Chief Transformation Officer, Key Account Manager and Marketing Manager.

It is great for the co-op that we have the depth of talent to appoint from within LIC to provide continuity for the wider team and our farmers.

Left to right: Malcolm Ellis, David Hazlehurst, Roz Urbahn, David Chin, Mark Julian, Emma Blott, Richard Spelman

David has a natural empathy for people, knows our farmers well and knows the business having led several key strategic initiatives including overseeing the recent transformation programme. Importantly, David was heavily involved in the refinement of LIC's strategy last year. The implementation of our strategy will continue to be a key focus for the co-op under David's leadership, as well as the continued strength of LIC's financial performance.

David's appointment followed the departure of Wayne McNee on 30 November 2021 after eight years in the role.

In September 2022, Mark Julian joined LIC and the SLT as General Manager Operations and Service. This role is responsible for our laboratories, farms and the field teams that deliver services on-farm including artificial breeding, herd testing and FarmWise consultancy.

Dhaya Sivakumar has been appointed to the role of Chief Information Officer (CIO), and will join LIC in December 2022. The CIO is part of the SLT and is responsible for leading the Technology group, driving technology strategy and execution, and ensuring performance management and enhancement of systems. David Hazlehurst (CFO) was appointed acting CIO in the interim period.

It is great for the co-op that we have the depth of talent to appoint from within LIC to provide continuity for the wider team and our farmers.

Top: Chief Executive, David Chin
Bottom: GM Operations & Service, Mark Julian

Caring for our people

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 and has been in place for around three years. The creation of the 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 compulsory for all permanent and fixed contract staff. It is designed to specifically ensure our employees thrive within a work environment that holistically supports and promotes their health and wellbeing, leading to an engaged, safe and sustainably high-performing workforce.

'Mental Wellbeing at Work' is the flagship programme of the 'Well Aware' strategy and is compulsory for all permanent and fixed contract staff.

Organisational Health

The focus is always on improving with the support of our approximately 850 staff and over 1,750 seasonal workers. 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.

We're pleased to report that our latest survey showed that our OHI score increased 5 points to 75 from the previous result of 70. This is our highest ever result and is only 1 point off the top quartile of all surveyed companies.

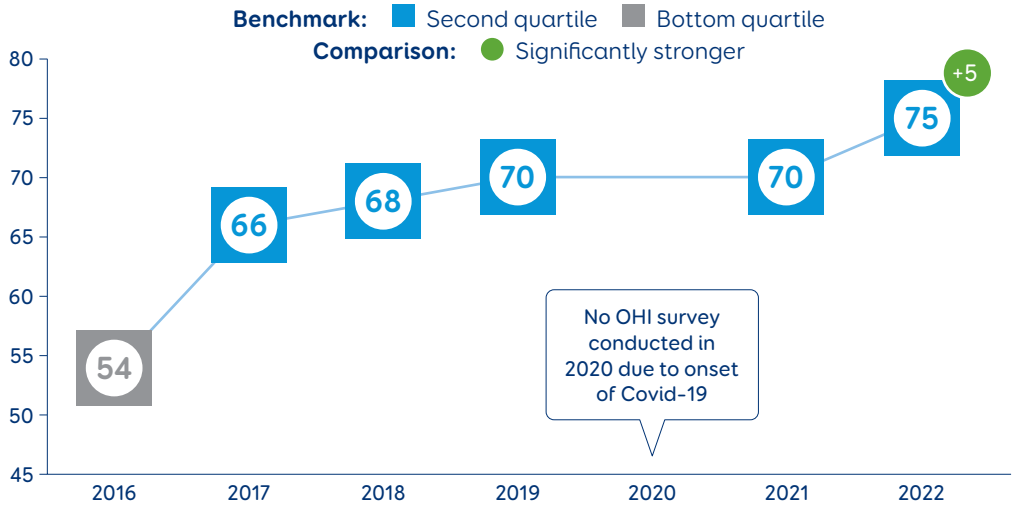
Diversity & Inclusion

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 and Inclusion Committee to champion these concepts.

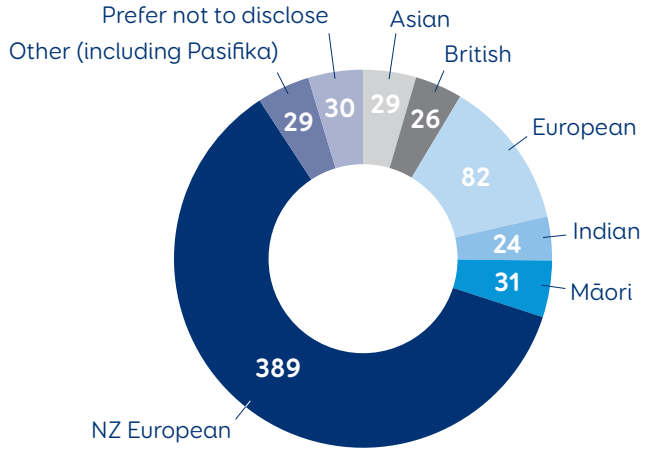
Throughout the year focus groups have been conducted to highlight the types of initiatives that staff would like to see. Key themes from these groups included creating more awareness of events and facts of importance to different cultures or diverse groups, remembering key historical events that have shaped New Zealand, building appreciation of our differences, sharing ways to support minorities or disadvantaged, and building a cultural focus on Te Reo Māori. The Diversity and Inclusion Committee has been leading these initiatives, communicating information about upcoming events that celebrate diversity, and has presented to staff on topics relating to diversity and inclusion, including Matariki and the committee's activities.

Health Journey

LIC's overall health is now 75 - a 5-point improvement since last year and sitting close to top quartile



Ethnic diversity based on responses to the 2022 OHI survey



Our inaugural Diversity & Inclusion newsletter was launched in 2021. The newsletter highlights cultural and international events and celebrations, and provides information on topics relating to diversity and inclusion.

The latest OHI survey collected demographic statistics, which will be used to identify areas where further objectives could be focussed. We have a number of staff from different ethnicities, and more women than men. A voluntary survey specifically on diversity was also completed in August 2021 by 279 employees. The survey captured a wider range of demographic information. Feedback included a desire for an increased focus on Māori culture and potential use of Te Reo Māori at work and an interest in learning about other cultures and festivals. Engagement with Diversity Works NZ is ongoing and our membership of this organisation allows access to a wide range of resources.

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.

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 the creation of a mature 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 conducted an internal audit review during the year. This identified areas for improvement, including:

- A refresh of the framework to confirm we are tracking the right critical risks, ensure good controls are in place and documented against each risk, additional manager training, improve ability to extract data from the tracking system and refresh audit methodology;
- Critical risk methodology to be documented and train health and safety advisors and
- Review of health and safety objectives.

We also engaged Chemsafety across relevant sites to perform a hazardous substances audit in early 2022. The audit resulted in a number of recommendations for improvements in relation to compliance gaps and best practice suggestions. These are now in the process of being implemented. Areas with compliance gaps included: training records, identifying location of certain emergency response equipment, site plans for Location Compliance Certification (LCC), a LCC that may be required for a new location, and stationary container compliance records.

Some of the specific focus areas 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.

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. 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. In 2021/22, 20 site visits by senior leaders and board members 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 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 2022/23 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 two years, and the associated rehabilitation costs have decreased by 47% in the last year. 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.

Supporting our People through Covid-19

Covid-19 has continued to dramatically impact both our business and our farmers in the past year. Amid global uncertainty, the primary sector has played an important role in continuing to feed New Zealand and to keep the economy going.

Our people have had to overcome significant challenges to ensure business continuity and uninterrupted service for LIC's 10,000+ New Zealand and International customers and their dedication, resilience and effort is very much appreciated.

To ensure business security and continuity, the majority of employees at LIC's Newstead campus worked remotely between August and December 2021. Initially this was due to Covid-19 lockdowns, however, remote working requirements were extended to protect the business during peak season. Our farm, laboratory and scientific team members worked at Newstead, Riverlea Road (both located in the Waikato) and Christchurch throughout this period under heightened protocols wearing PPE equipment, and our essential workers adhered to strict health and safety guidelines on farm.

This was done to protect our essential artificial breeding, herd testing and animal health testing services. For the second year in a row, farmers and our people were well equipped to do this, even in a rapidly changing environment. We had a heightened focus on hygiene, mask use, physical distancing wherever possible, implemented rapid antigen testing where needed, and enhanced the use of remote working and technology, while remaining mindful of on-farm needs.

Our People & Performance and Strategic Procurement & Properties teams continued to do an exceptional job during this challenging time. Between the teams, they were tasked with supporting a distributed workforce, ensuring adequate PPE supplies, running rapid antigen testing, helping look after employee well-being and finding innovative ways to engage all employees. Technology played a key role in continuing to help keep our people connected, with regular online sessions available to all employees which resulted in a higher level of engagement than previous 'in person' meetings.

As many businesses have dramatically changed their ways of working over the past two years, we have engaged Ernst & Young to help us work through how to get the best out of our working environment and culture in future. We also have a new building project starting in 2022/23 to remodel the hub of our Newstead building to provide modern collaboration spaces.

LIC's semen processing laboratory in the Waikato.

Our people have had to overcome significant challenges to ensure business continuity and uninterrupted service for LIC's 10,000+ New Zealand and International customers. Their dedication, resilience and effort is very much appreciated.

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 employ a significant number of seasonal workers during peak season for a relatively short period of time, primarily as artificial insemination technicians. This data does not include detail of seasonal workers employed during the period.

The reporting period is for the financial year ended 31 May 2022 (FY22), 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.

Our HR system does not currently capture gender options alternative to male/female.

There was one permanent employee (0.1%) covered by a collective bargaining agreement at 31 May 2022, and a further 27 (1.4%) seasonal workers during the period.

There have been no serious incidents of discrimination to report.

FTEs by employment contract by gender

	Permanent		Fixed term/Casual		Total	
	FY21	**FY22**	**FY21**	**FY22**	**FY21**	**FY22**
Female	421.4	467.9	78.7	63.7	500.1	531.7
Male	325.1	297.3	23.0	22.5	348.1	319.8
Total	**746.5**	**765.2**	**101.7**	**86.3**	**848.2**	**851.5**

FTEs by employment contract by region

	Number of FTEs (Permanent and fixed-term/casual)	
	FY21	**FY22**
New Zealand	805.5	810.8
Australia	23.7	23.7
UK & Ireland	19.0	17.0
Total	848.2	851.5

FTEs by employment type by gender

	Full-time		Part-time		Total	
	FY21	**FY22**	**FY21**	**FY22**	**FY21**	**FY22**
Female	463.0	503.0	37.1	28.7	500.1	531.7
Male	333.2	307.8	14.9	12	348.1	319.8
Total	**796.2**	**810.8**	**52**	**40.7**	**848.2**	**851.5**

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 2021/22 full year results

$26.7m

Net Profit After Tax (NPAT). **Up 16.5%** from $22.9 million last year

$263.2m

Total revenue from continuing operations (excl. automation). **Up 5.7%** from $249.0 million last year

$25.7m

Underlying Earnings. **Up 15.3%** from $22.3 million last year

$385.6m

Total assets. Strong balance sheet with no debt at year end. **1.2% increase** from $382.0 million last year

$26.2m

Dividend 18.43c per share

$20-26m

Expected Underlying Earnings for 2022/23 (assuming no significant climate event or milk price change takes place between now and then, nor any major impacts from M. bovis or Covid-19)

Delivering a strong result for our farmers

Our financial performance for the 2021/22 year was driven by increased farmer spend on premium genetics and herd improvement services to breed more efficient cows with a lighter environmental footprint.

Reporting Underlying Earnings of $25.7 million, a 15.3% increase on the same period last year, returning $26.2 million in dividend[1] to shareholders. This equates to 18.43 cents per share with a 16.5% gross yield on the current share price.

Financial performance was driven by more farmers opting for our premium bull teams to breed high genetic merit cows which produce more milk, more efficiently - resulting in a lower environmental footprint per kilogram of milk solid produced.

During the 2021/22 year, 71% of fresh semen straws used for breeding dairy replacements were from our premium bull teams (2.1 million straws), up from 60% the year prior (1.8 million straws). These teams utilise younger bulls, selected using genomic DNA technology so they can be made available to farmers earlier and fast track the rate of genetic gain on-farm.

Orders for sexed semen almost doubled from the previous year, exceeding 200,000 straws for the first time. International exports also saw an increased demand for sexed semen, while overall straw numbers sent offshore remained steady on the year prior.

DNA verification tests increased (up 15%), as did our range of animal health tests (up 21%), with a notable increase in Johne's disease testing with close to one million samples tested (up 28%). The number of animals recorded in MINDA, our herd management system, also remained steady, as did herd testing with a modest increase in total samples processed, however more farmers are using the co-op's EZ Link devices to help simplify and speed up the herd testing process (up 4%).

During the year we invested $18.2 million into R&D, up from $17.1 million the year prior, maintaining our position as one of the largest private investors in R&D at 6.9% of revenue.

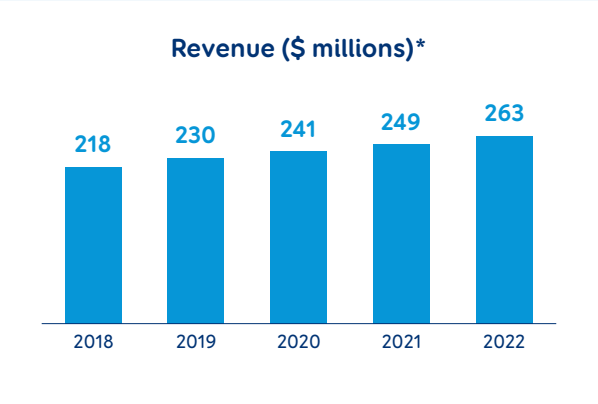
The sale of the Automation business to MSD Animal Health was also completed during the period, which resulted in our first special dividend payment to partially distribute the sale funds.

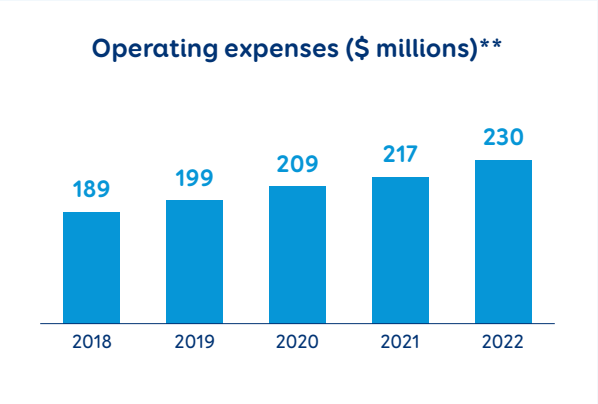
Orders for sexed semen almost doubled from the previous year, exceeding 200,000 straws for the first time.

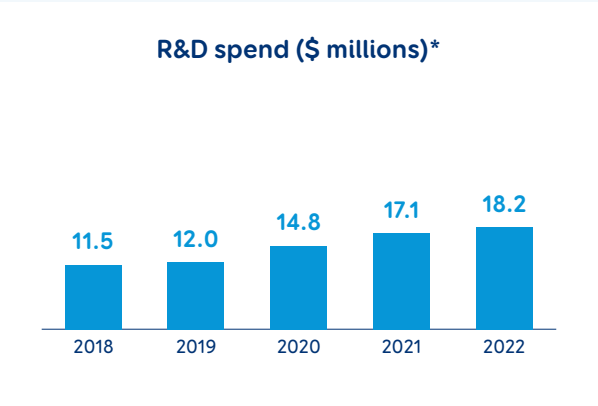
1. For notes to the financial information please reference our FY22 Annual Report.

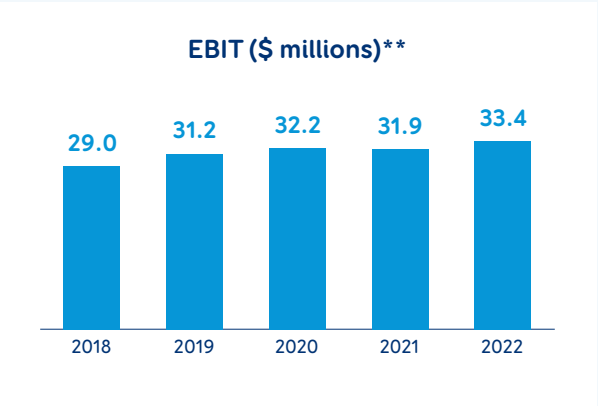
Financial metrics

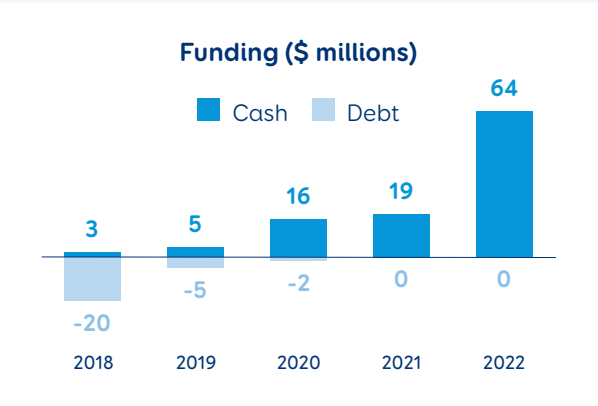
These charts represent our key financial metrics to provide a historical summary of our performance.

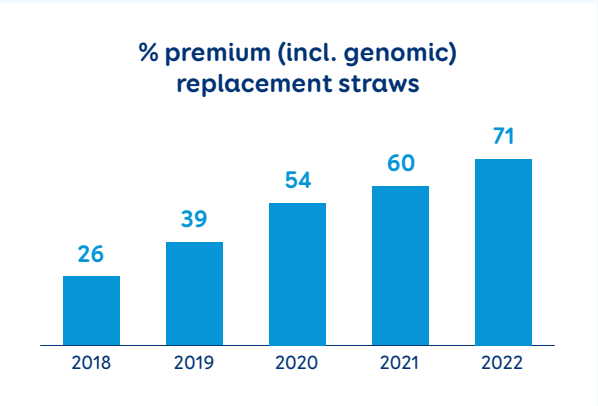






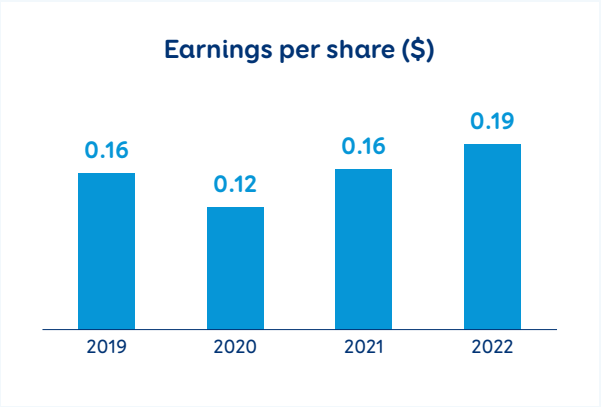


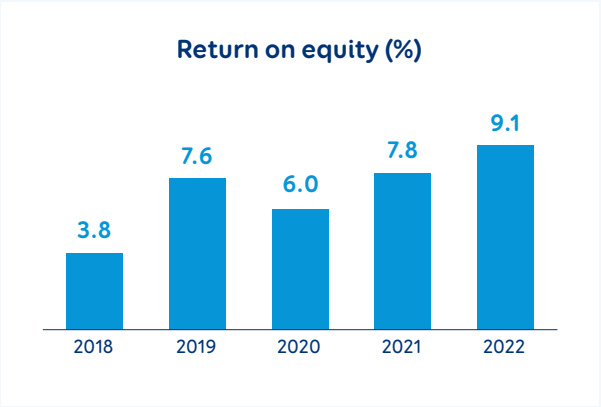


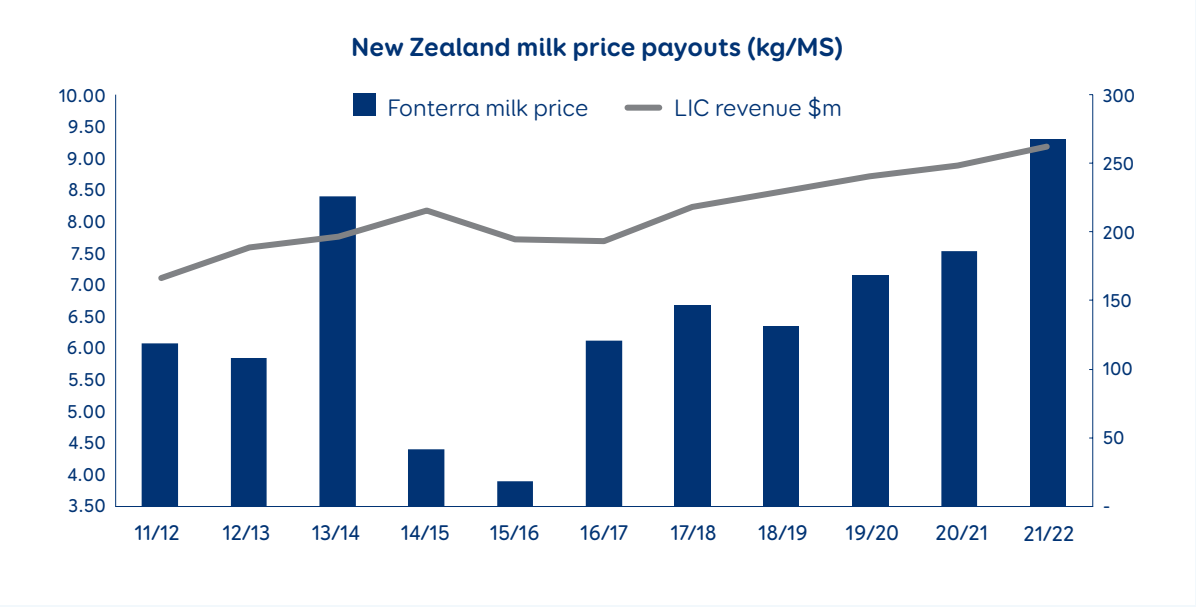


* Data excludes Discontinued Business operations - the Automation business was divested in June 2021

** Excludes 2017 & 2018 transformation expenses, bull team & nil paid share revaluations and Discontinued Operations







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** Excludes 2017 & 2018 transformation expenses, bull team & nil paid share revaluations and Discontinued Operations

Trends

		2018	2019	2020	2021	2022
Revenue *	NZ$000	218,296	229,763	240,932	249,013	263,182
R&D spend	NZ$000	(11,464)	(11,985)	(14,844)	(17,124)	(18,184)
Net profit after tax	NZ$000	9,265	22,170	17,487	22,944	26,723
EBIT **	NZ$000	28,980	31,205	32,224	31,904	33,372
Underlying earnings	NZ$000	3,049	19,530	22,685	22,261	25,677
Dividend declared***	NZ$m	2.4	15.6	18.1	17.8	26.2
	Cents per share	1.71	10.98	12.75	12.51	18.43
	Gross yield %	3.2	16.9	23.0	14.7	16.5
Operating cashflow	NZ$000	37,830	55,167	52,018	40,456	57,130
Net capital & investment spend	NZ$000	(18,418)	(36,810)	(21,401)	(16,115)	(17,889)
Total Assets	NZ$000	341,725	380,735	379,940	382,005	385,610
Total Equity/Net Assets	NZ$000	242,101	291,437	290,242	294,123	293,057
Sales data:						
Premium (incl Genomic) straws		851,994	1,291,315	1,666,564	1,792,648	2,071,321
Other replacement straws		2,439,854	2,020,991	1,397,386	1,206,049	864,709
Total straws (NZ)		4,624,366	4,664,542	4,438,732	4,343,830	4,322,316
International straws		1,031,833	1,013,564	857,427	1,059,777	1,055,168
Herd testing samples		10,914,106	10,955,997	10,407,918	11,170,134	11,199,277
Genemark testing		613,775	671,892	768,943	629,166	728,876
Animal health testing		651,179	873,389	1,045,487	1,294,996	1,571,509
MINDA animals		6,963,224	7,005,405	6,998,649	7,006,900	6,912,997

For our full financial results please refer to our FY22 Annual Report

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

** Excludes 2018 transformation expenses, 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 2021 following the Automation divestment. The 2022 dividend includes an additional amount of $5.7 million to return cash retained from dividends paid in 2021 to repay nil paid shares

Our business

We are the DNA of the New Zealand dairy industry, breeding up to 75% of cows in the national dairy herd.

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 industry, 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.

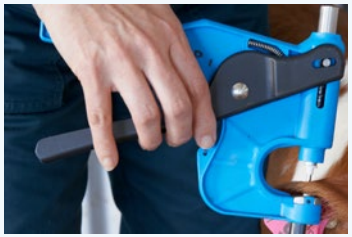
Our primary sector is the New Zealand Dairy sector. Our core customers are New Zealand dairy farmers. Other customers include international customers, veterinarians who support farmers, users of dairy herd data and beef producers.

Keeping NZ farmers profitable and sustainable is critical. We are 100% owned by New Zealand dairy farmers and therefore have a profit motive which is different to that of a corporate. We 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.

Our products and brands include:

Artificial Breeding (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

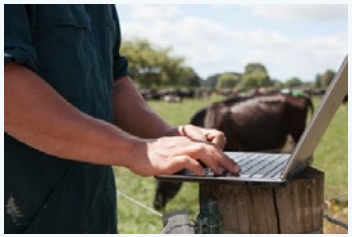
Heat detection products, such as LIC heat patch, LIC Bulls-i®, Kamar® Heatmount detectors



DNA testing of dairy cows and calves and dairy goats, A2/A2 genotyping

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

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



MINDA® herd management software

Field assist and weighing service

Farm accessories, such as electronic plate meters, EID readers and wands

Herd testing of milk samples, including EZ Link® scanning and herd test assist service

SPACE™ satellite and pasture cover evaluation reporting

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

Operations & Service
Artificial breeding collection & insemination, herd milk testing, genetic diagnostics, animal health testing, LIC bull and dairy farms, FarmWise consultants; farm assistance

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

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

Technology
Development and support of customer facing systems such as MINDA® herd management 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

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

Our Supply Chain

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.

We are working with suppliers to establish reporting on their business practices in relation to sustainability measures. The Strategic Procurement team has developed a survey to determine a vendor's environmental credentials which will provide us with an understanding of where our vendors sit on the sustainability journey. We are currently in the process of sending this survey out to approximately 90 of our larger NZ based suppliers - those in the top 20% of LIC's annual spend. Survey results will enable us to form a plan around any actions that may need to be taken to engage with vendors who may require some guidance or assistance over the next two to three years.

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 industry 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 recently 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 don't 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.

We are working with suppliers to establish reporting on their business practices in relation to sustainability measures.

LIC supports the industry, rural communities and our farmers by sponsoring a variety of initiatives, events, programmes and organisations. This provides opportunities within the dairy industry 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 employees are given time off to do a variety of volunteer activities in the community.

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

Refer to our website for further details.

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

CLIMATE LEADERS COALITION
ON A MISSION TO REDUCE EMISSIONS IN NEW ZEALAND

Sustainable Business Council
wbcsd Global Network Partner

TOITŪ CARBON REDUCE
ISO 14064-1 ORGANISATION

How we create value

We will drive value, innovate, and deliver a positive impact for our customers and shareholders by focussing 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.

Our contribution to value on farm

STRATEGIC THEMES

Extend genetic advantage

Empower farmers with enriched solutions through data insights

Provide solutions to enable customers to farm sustainably

VALUE STREAMS	VALUE ON FARM 2021/22
Genetic Merit	$350m
Reproductive performance	$35m
Health (Johne's, BVD, Mastitis)	$55m
Production (Culling & SGL)	$60m
SPACE	$15m

We estimate that LIC delivers at least $515 million of value on farm from the products that farmers purchase from us:

- Genetic merit improvement of the dairy herd generates the majority of the value, based on the increase in Breeding Worth (BW) 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.
- 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.

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

Industry 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

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

The resources we rely on

Relationships

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

Intellectual capital

Our collective know-how, trade secrets, 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, industry 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

Bovine and human diseases, such as M. bovis and Covid-19, have meant changes to the way we engage with farmers and other stakeholders in the last three years.

To protect our team, farmers and livestock, we have implemented different processes and ways of working, which has required continued and ongoing engagement with our many stakeholders. Some examples include:

- Employees follow Covid-19 protocols, including high quality mask use;
- Herd Testing routes can be designed to minimise risk of disease transfer;
- 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 and every semen collection is tested prior to straws being distributed, 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.

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 Net Promoter Score (NPS) decreased to -18.9 from -7.5 last year. NPS is a measure of customer experience that ranges between -100 and +100. While this decrease was disappointing, we recognise that we must continue to engage effectively with our customers.

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 industry	
HOW WE ENGAGE				
• In person with tailored advice • Customer call centre • Net Promoter Score and other surveys • Fieldays, events and training • Feedback groups • Annual meeting, Shareholder Reference Group, Roadshows • Publications (such as The Bulletin) • Digital channels	• Organisational Health Index annual survey • Employee events and in-person/online updates • Wide range of training & development • Internal communication, including Chief Executive email updates	• Strategic procurement team • Supplier evaluations • Partnership relationships • Collaboration with innovators & researchers • R&D investment	• Direct engagement with government and agencies by CE and relevant employees • Submissions on proposed law and regulation	• Support of industry groups • Scholarships and internships • Social media channels
NEEDS & EXPECTATIONS				
• 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	• Positive culture • Safe, diverse and inclusive environment, where wellbeing is important • Investment through training and development • Market-comparable remuneration and benefits • Innovative working tools	• Reliable and sustainable supply chain, providing quality inputs • Strong, productive partnership relationships • Robust science-based R&D projects	• 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	• 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 LIC Board and management team 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 industry 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 industry, 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. We expect that some topics will be further developed as more data is able to be captured, as well as to reflect the newly released GRI 13, Agriculture, Aquaculture and Fishing Sectors.

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.

LIC regularly holds farmer engagement meetings in different regions to continue to gather feedback in reviewing these topics.

Topic	Report reference	GRI Standard
Climate change Supporting shareholders to produce the most sustainable and efficient animals. Reducing our emissions at LIC.	• 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.	• 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.	• 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.	• Social sustainability - caring for our people	403-2
Human rights Protecting the employment rights and working conditions of our people, including diversity and inclusion.	• Social sustainability - caring for our people	406-1
Water Using water responsibly, including water quality, availability and disposal.	• Reducing the environmental footprint of our business	303-2
Waste Improvement of waste management and disposal practices.	• Reducing the environmental footprint of our business	306-3
Responsible procurement Influence our key suppliers in relation to sustainable business practices.	• Our business - our supply chain	

GRI content index

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
Organisation profile		
102-1	Name of the organisation	Livestock Improvement Corporation Limited (LIC)
102-2	Activities, brands, products and services	Business model - pg 58
102-3	Location of headquarters	Who we are - pg 4
102-4	Location of operations	Who we are - pg 4
102-5	Ownership and legal form	Who we are - pg 4
102-6	Markets served	Who we are - pg 4 Annual Report, Financial Statements note1 , page 9
102-7	Scale of the organisation	Trends - pg 55
102-8	Information on employees and other workers	Employee data - pg 50
102-9	Supply Chain	Business model - pg 59
102-10	Significant changes to the organisation and its supply chain	The Automation business was divested in June 2021. Otherwise there have been no significant changes during the period to the organisation, ownership or supply chain.
102-11	Precautionary Principle or approach	LIC applies the precautionary approach through its day-to-day decision-making

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
102-12	External initiatives	Environment - pgs 28-30 Partnerships - pg 59
102-13	Membership of associations	Partnerships - pg 60
Strategy		
102-14	Statement from senior decision-maker	Letter from the Chair & Chief Executive - pgs 9-11
Ethics & integrity		
102-16	Values, principles, standards and norms of behaviour	Annual report, corporate governance report Principle 1, pg 27, Code of Conduct & Ethics on LIC website
Governance		
102-18	Governance and structure	Governance and structure - pgs 40-44 Annual report, corporate governance report Principle 2, pg 28
Stakeholder engagement		
102-40	List of stakeholder groups	Business model - pg 62
102-41	Collective bargaining agreements	Caring for people - pg 50
102-42	Identifying and selecting stakeholders	Business model - pg 63
102-43	Approach to stakeholder engagement	Business model - pg 64
102-44	Key topics and concerns raised	Business model - pg 64 Materiality assessment - pg 65
Reporting practice		
102-45	Entities included in the consolidated financial statements	Annual report, Financial statements note 1, pg 10 and corporate governance report pg 46
102-46	Defining report content and topic Boundaries	About this report pg 2, Materiality assessment pg 65
102-47	List of material topics	Refer below
102-48	Restatements of information	GHG data has been recalculated using the Toitū Envirocare calculator. Otherwise none in this period

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
102-49	Changes in reporting	This is the second Sustainability Report under GRI Standards - there have been no changes in material topics
102-50	Reporting period	Cover page - pg 1
102-51	Date of most recent report	The first Sustainability Report under GRI Standards was published for the year ended 31 May 2021
102-52	Reporting cycle	Annual
102-53	Contact point for questions regarding the report	communications@lic.co.nz
102-54	Claims of reporting in accordance with the GRI Standards	About this report - pg 2 GRI content index - pg 67
102-55	GRI content index	GRI content index - pgs 67-70
102-56	External assurance	GHG emissions 2018/19 base year inventory report audited by Toitū Envirocare
Material topics		
Economic topic disclosures		
201-1	Direct economic value generated and distributed	Trend data - pg 55 Annual Report, Financial statements pgs 4-19
Environmental topic disclosures		
302-1	Energy consumption within the organisation	Our emissions - pgs 33-35 GHG Inventory report
302-3	Energy intensity	Our emissions - pgs 33-35
302-4	Reduction of energy consumption	Our emissions - pgs 33-35
303-4	Water discharge	Our emissions - pgs 33-35
305-1	Direct (Scope 1) GHG emissions	Our emissions - pgs 33-35
305-2	Energy indirect (Scope 2) GHG emissions	Our emissions - pgs 33-35
305-3	Other indirect (Scope 3) GHG emissions	Our emissions - pgs 33-35
305-4	GHG emissions intensity	Our emissions - pgs 33-35

GRI	Disclosure title	Location or reference - in Annual report or links to materials on LIC website
305-5	Reduction of GHG emissions	Our emissions - pgs 33-35
305-6	Emissions of ozone-depleting substances (ODS)	Our emissions - pgs 33-35
306-3	Waste generated	Our emissions - pgs 33-38
Social topic disclosures		
403-2	Hazard identification, risk assessment, and incident investigation	Critical Risks management - pg 47
406-1	Incidents of discrimination and corrective actions taken	Employee data - pg 50
415-1	Political contributions	Annual Report, corporate governance report - donations pg 50