COLD ENERGY TECHNOLOGY

Investment Memorandum

July 2021

Empowering people to engineer innovative cooling technologies for a better world

The Eco2Dairy product, by Cold Energy Technology, is a revolution in on-farm milk cooling systems for dairy farmers. We have created a world first: an on-farm milk cooling system, which uses natural refrigerants to cool milk and heat water.

Join us, by investing in our leading edge technology: we're innovating cooling for a better world.

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EXPERTS IN THE FIELD

SCALABLE GLOBALLY

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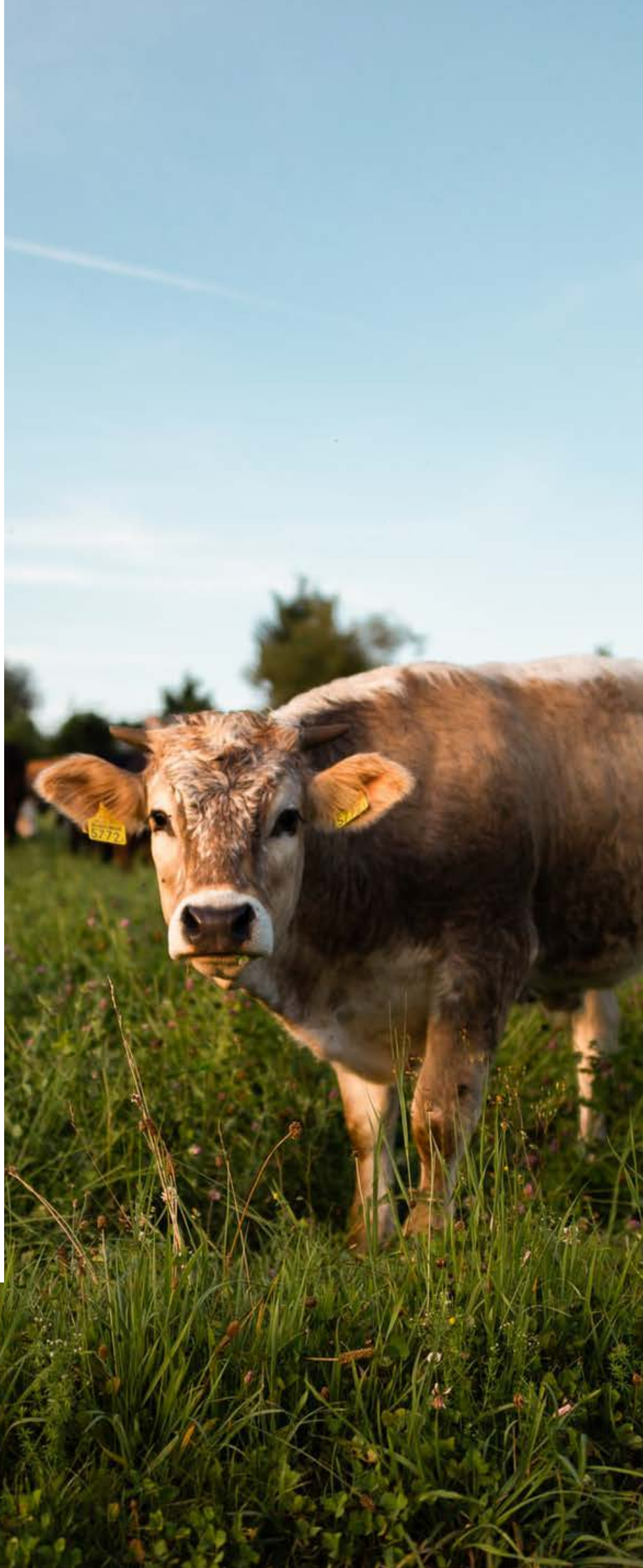


Better milk, better for farmers, better for the planet.

Cold Energy Technology is a revolution in on-farm milk cooling systems for dairy farmers. We have created a world first: an on-farm milk cooling system, which uses natural refrigerants to cool milk and heat water.

It reduces operational costs, exceeds all compliance requirements, is more sustainable than any other option and ensures that the milk is kept at optimal conditions.

This means better milk quality for consumers, better compliance and operational efficiency for farmers and reduced carbon emissions, which is better for the planet.

We are raising capital to accelerate sales, build upon Cold Energy Technology's patented designs and scale globally.

Buy shares in Cold Energy Technology Ltd and join us, as we innovate cooling for a better world.

Minimum investment:

$5K

Maximum investment:

$1.65M

Up to 42% of the company on offer (if maximum raised)

Minimum raise:

$497.5K

Maximum raise:

$1.65M

Letter from the Founders

Cooling is critical to our modern way of living. It is everywhere, enabling us to be healthy and safe.

It supports us to eat, to drink - it is a part of the manufacturing process for products as varied as home appliances, cars and even soap. It cools our data centres, homes, cars and offices.

It protects us from the weather and is used in the manufacturing and storage of medicines and vaccines. It's in the hospital room from the moment we are born to when we leave for the final time.

A nation's ability to access reliable cooling is as critical as water and power. It is a bedrock for prosperity and nowhere is that more evident than in New Zealand where we have the longest refrigerated supply chain in the world*.

Starting out on the tools as an apprentice I built a career based on understanding how to get it right for the customer. I have used that to build a national, family-owned business providing design, installation and maintenance services who's innovative, values-based approach has achieved remarkable results for our customers.

As we have grown, I could see that the technology had to change. Something as important to our lives and our economy as refrigeration has a huge responsibility to find a way to reduce its impact on the planet.

Our vision is to engineer innovative cooling technology for a better world. We have been doing that since 2000 with our business, EcoChill, and we're experts in the use of temperature control solutions that deliver high performance at a low cost to the planet. We've worked especially hard to become a leader in the design and delivery of New Zealand's first natural refrigerant-based systems.

It hasn't been easy - our industry is entrenched in old mindsets, delivering the same products and approaches in the same way, despite the very real innovation that has been happening around us.

This journey - and determination to see us do better - has led us to our next venture: revolutionising how we do on-farm milk cooling.

Introducing Eco2Dairy.

Eco2Dairy is an evolution in on-farm milk cooling systems for dairy farmers. It delivers consistent milk quality for the customer with better compliance and operational efficiency, while reducing carbon footprints.

I remember the first time I really understood why dairy farmers expect such a low proposition from our industry. I was on a mate's farm and he was having problems (again) with his on-farm refrigeration.

Looking at that equipment was like going back in time to the early days of my apprenticeship - low-tech, low-engineering; such a critical function, yet it couldn't get the milk cold enough, let alone do it in a way that could bring value.

I didn't know it then but taking up that challenge to help out a mate was to become the start of a new business designing and manufacturing engineered packaged units – Cold Energy Technology.

Fast-forward to today and the seventh generation Eco2Dairy system costs less to operate, exceeds all compliance requirements, delivers a better-quality product and is more sustainable than any other option, nationally or internationally. We have created a product that is better for the milk quality, better for farmers, and better for the environment: and it is the first in the world.

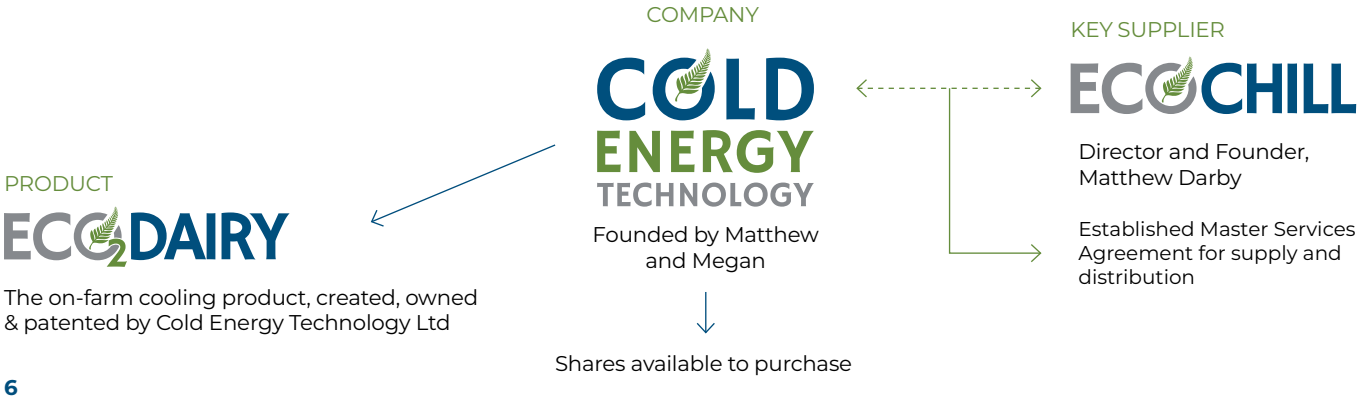
We have worked hard to bring cooling into the 21st Century for our farming communities and we are excited to present this share offer to you to become a part of this journey. We are now ready to scale Cold Energy Technology Ltd and to take this innovative technology global.

Matthew Darby
Founder Cold Energy Technology

Megan Darby
Co-Founder

Source:

James K. Carson, Andrew R. East, The cold chain in New Zealand – A review, International Journal of Refrigeration (2017)



Cold Energy Technology is playing a critical role in this space. With our innovative cooling products, we are both saving energy and reducing carbon emissions through the use of natural refrigerants over synthetic gases.

Stock Image

Problem Statement

New Zealand is committed to net zero emissions by 2050. We have declared a climate emergency.

But, one element that is critical to achieving this has been almost entirely ignored: **cooling.**

1.

Current on-farm cooling solutions are low-tech, inefficient and haven't responded to the global risks of supply shortages and high costs of the synthetic refrigerants that on farm cooling solutions use.

2.

On farm milk cooling needs to be reliable and cost-effective. Dairy farmers need milk cooled fast, efficiently and with the lowest possible carbon footprint.

3.

On farm cooling needs to enter the 21st Century; to be fit for purpose, fit for the planet and fit for the future.

The problem with refrigerants in on-farm cooling.

Current on farm cooling solutions use synthetic refrigerants known as Hydrofluorocarbons (HFCs). These are being phased down globally as part of the Kigali Amendment under the Montreal Protocol. 113 countries, including New Zealand and the European Union have ratified this into law, with the US currently in the process of joining.

This is because HFCs are known culprits of global warming. Phasing HFCs out is estimated to reduce our future global warming by 0.5 degrees.

New Zealand relies on global suppliers of HFCs and 99.9% of our dairy farmers have on farm cooling solutions that use HFC refrigerants. This means HFC refrigerant is leaking into the environment causing global warming right now.

As global suppliers adjust to the phase down, supplies of well-known HFC refrigerants have been harder to get. Some refrigerants such as R407 and R507 are no longer being manufactured as legislation makes it cost-prohibitive.

In New Zealand, we are also seeing tools such as the Emissions Trading Scheme - which is being used to reduce the demand for HFCs - make alternative refrigerants very expensive. For example, R404A (a very commonly used HFC) has experienced an increase in price of over 1,000% in the last 8 years (yes – 1,000%), and is expected to continue to rise. For dairy farmers there has not been a natural refrigerant alternative to HFC refrigerant based systems until Eco2Dairy.

The problem with new generation synthetic refrigerants.

Global chemical companies have been working on a new generation of synthetic refrigerants to replace HFCs. These are called Hydofluroolefins (HFO's) and have low global warming impacts. However, these have challenges:

- They are more expensive than natural refrigerants.
- They rely on a manufacturing process that uses HFC's and HFCFC's, so don't take away the original issue of removing HFC's from our environment.
- They are relatively unproven and not in wide use.
- They are classified as flammable, which by itself is controllable; however, they are also toxic on combustion – something that has not had to be managed in refrigerants used in the on-farm sector before.

The biggest problem with HFOs is their unknown impact on the environment at high adoption rates.

Reports from government agencies in European countries have been released showing that when HFO's breakdown in the environment they produce Trifluoroacetic Acid (TFA). TFA has been shown to create other environmental issues, such as the acidification of water, and to build up in human bodies - affecting our biology. The UN has reported that more research must be done on HFO's to understand their impacts.

HFC's were designed to replace the original synthetic refrigerants (CFC's) and their replacement (HCFC's) – these were globally banned when the world understood these were responsible for destroying the ozone layer. We don't want to replace yet another refrigerant to find out - too late - that huge negative environmental impacts have been introduced.

There may be cases where HFO's need to be used, such as in industries and applications that have no other alternatives. Eco2Dairy uses a natural refrigerant whose impacts are well-understood and is being used in a wide range of industries and applications today. This is proven technology that we know has limited environmental impacts and is available right now.

Sources Regarding the Problem Statement & Supporting Information:

Cooling for Sustainable Development (2021)

NDC Support Facility for Efficient, Climate-Friendly Cooling

Phasing Down the Use of Hydrofluorocarbons (HFCs)

Phasing Out Harmful HFCs

Net Zero Cold Chains for Food

Clean Cold and Global Goals

Cold Energy Technology & EcoChill Team

The Company

Matthew Darby

Founder/Managing Director

With over 25 years of experience in refrigeration innovation and delivery, Matthew has established and grown several companies including TechniCool Refrigeration Services (NZ) Limited, EcoChill Limited (previously Arneg New Zealand), and Cold Energy Technology itself. Previous Chair of the industry Climate Controls Companies Association, Matthew has represented the sector in government technical advisory groups and industry forums shaping the future on topics such as sustainability, health and safety and industry regulation. Trade qualified Matthew has been a driving force in delivering natural refrigerant technology into New Zealand.

Megan Darby

Co-Founder/Director

Chief Disruption Office at Cold Energy Technology Group and a member of the Advisory Board, Megan developed her career at ANZ Banking in several senior leadership roles prior to working with EcoChill and developing Cold Energy Technology Group. She has been a part of industry and government consultation initiatives on clean cooling and the development of youth and diversity programs.

Key Supplier for Cold Energy Technology

The business of cooling has been a part of the team at EcoChill for most of their lives - especially as it's a family business. Since 2000, Matthew has been leading refrigeration cooling innovation in New Zealand. Working with our customers, EcoChill has pioneered the design and installation of some of New Zealand's first natural refrigeration systems.

Dan Poff - National Engineering Manager - EcoChill

One of the most respected HVAC&R design engineers in New Zealand, Dan has created some of New Zealand's leading natural refrigeration solutions. Dan started "on the tools" as a service engineer before earning an Honours Degree in Engineering and starting his career in Design.

Steve Miller - National Commercial Manager - EcoChill

Joining EcoChill from Bitzer, Steve was NZ Business Manager for 10 years, setting up the global refrigeration manufacturing giants' NZ operation. A qualified engineer, Steve's technical skill and experience is well-respected. He has held HVAC&R sales and leadership roles in manufacturing, contracting and service.

Mark Patrick - System Performance and Quality Auditor - EcoChill

Trade-qualified, Mark has over 25 years of experience developing refrigeration systems as a commissioning engineer. He is one of the few industry experts in in the field of refrigeration controls technology and technical performance delivery.

To date, our customers have prevented over 60 million kilograms of CO2 emissions from entering the atmosphere, thanks to systems that we have designed, installed and maintained.

Stock Image

The Eco2Dairy Solution

In 2010, a friend who was a dairy farmer asked me if I would come out to his farm to give him a hand. He was having issues with his unit which had lost gas. This wasn't the first time, and he couldn't understand why it kept breaking. On farm cooling is essential and the problems he was having didn't just create costs to fix the system - he had to dump milk and his whole process was being held up - all of which was wasted cash. We jumped in the car and went out to have a look for ourselves.

I could see his frustration, and as he talked about how cooling worked in his operations, it was the first time I really understood just how basic on-farm dairy cooling was. There were major gaps with the technology and the way his system was operating was so inefficient, affecting energy use and costs.

When I asked about what the plan was for the HFC phase-down so we could understand the best way to approach a fix, he looked at me blankly. As I explained what was happening with the phase-down and the cost and supply risks for the future, his frustration really showed. "Why hasn't anyone told me about this?"

It was a phrase we would become used to hearing.

Typically, cooling systems for dairy farmers have been pretty straightforward (even basic) with little system consideration for efficiency or energy recovery. The current systems also use synthetic refrigerants - HFCs that have high Global Warming Potential (which is the way the heat absorbed by any greenhouse gas in the atmosphere is measured).

Talking to other farmers we realised he wasn't alone. Many struggled with milk cooling systems that couldn't get the milk cold enough, fast enough. The faster milk is cooled, the less chance bacteria can grow ensuring compliance requirements can be met (and the product performs better in its final application, such as in milk, cheese and protein products).

Some standalone systems we saw were marginal (or, in some cases, not-compliant) with MPI & Fonterra regulations due to the time it was taking for the milk to be cooled. In some cases, longer pulldown times were putting milk at risk of higher bacteria counts and even rejection at pickup.

We saw a chance to change this.

Looking back, it seems crazy I didn't realise how hard it was actually going to be. There was a reason that we couldn't seem to find what should be a straightforward solution for him – there wasn't one.

So, we set out to design a new generation of on farm cooling units, applying the skills and knowledge we had gained in developing solutions in other industries. We knew it could be done – we just had to figure the best way to do it.

Critical was creating a solution that could address the future – at its heart on farm dairy cooling needed a natural refrigerant solution that would reduce farms' emissions footprint and protect farmers from future cost and supply issues. Trial and error led us to carbon dioxide (CO2) as the best fit for the application.

Image provided by Cold Energy Technology

Image provided by Cold Energy Technologies

Highly efficient, the design has been adapted to allow us to bring milk to 2°C almost instantly, preventing bacteria from growing. A lower bacteria count meant meeting compliance requirements, less penalties and consistent milk quality.

CO2 is so efficient that you can reuse the heat generated for cooling the milk and apply it for other uses. It was pretty clear that needed to be to heat water. Current systems have standard hot water cylinders using electric heaters, so the hot water needed for cleaning is available – adding additional energy use and cost.

By utilising the CO2 process, we could heat water for free using the energy that was already there. We thought we were being clever having it available at wash-down times. but were once again brought to Earth by what farmers actually needed. A chance conversation with a farmer who had the vet out who needed hot water at 2am in the morning and it was back to the drawing board. Now hot water is available all the time.

We also looked for opportunities to improve efficiencies using technology that has become standard in other industries – electronics, more data inputs and system management through programmable controls plus wifi connections for real-time viewing.

This was also important; although the engineering had to be more sophisticated, the system itself had to be simple to operate and install.

Fast-forward to today and the 7th generation Eco2Dairy system costs less to operate, exceeds all compliance requirements, delivers a better quality product and is more sustainable than any other alternative available in New Zealand or internationally.

We had to design a stand-alone unit that is quick to install, reliable and connects to existing vats without any consequences to the on-going operations of the dairy farm.

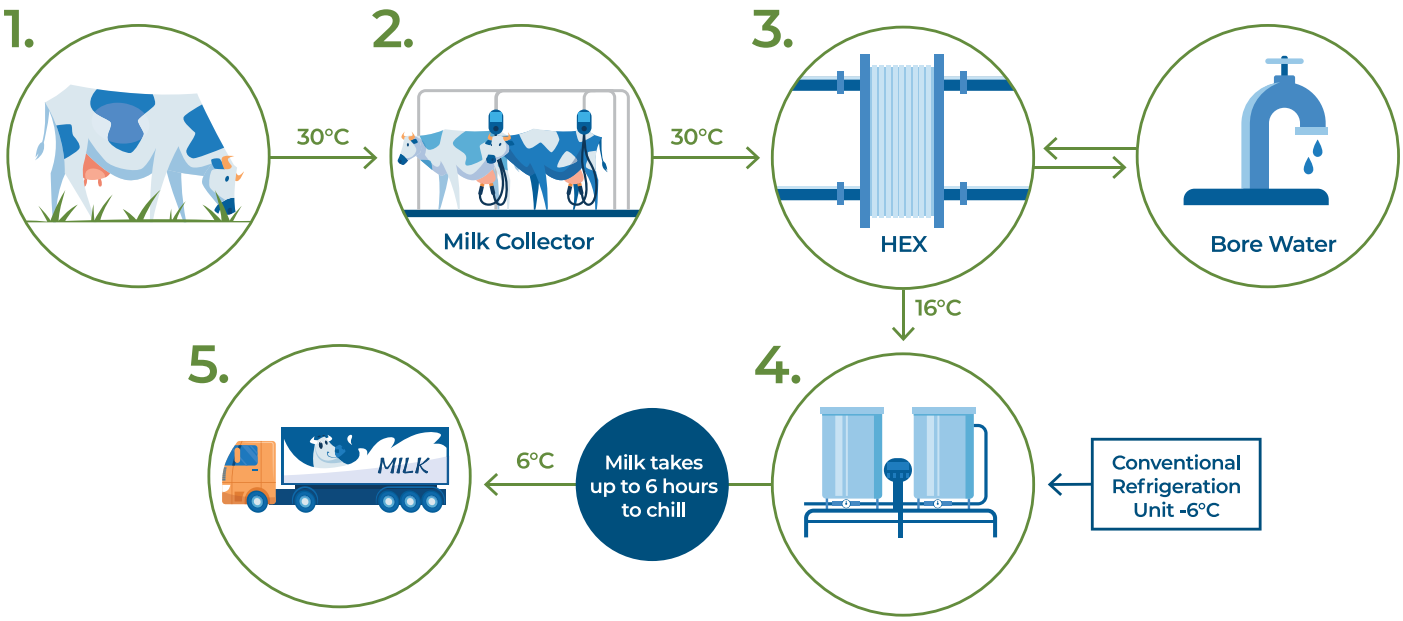
Data controls were another important point. Milk cooling systems like so many engineering systems are now, more than ever, data systems. Not only for understanding the technical performance of the system itself to monitor that is is doing its job, but the increasing requirement to supply data for reporting and compliance. It's also an opportunity for farmers to work with logistics providers in an integrated way – so that milk pick-ups can be timed for maximum value and efficiency.

Fast-forward to today and the 7th generation Eco2Dairy system costs less to operate, exceeds all compliance requirements, delivers a better quality product and is more sustainable than any other option.

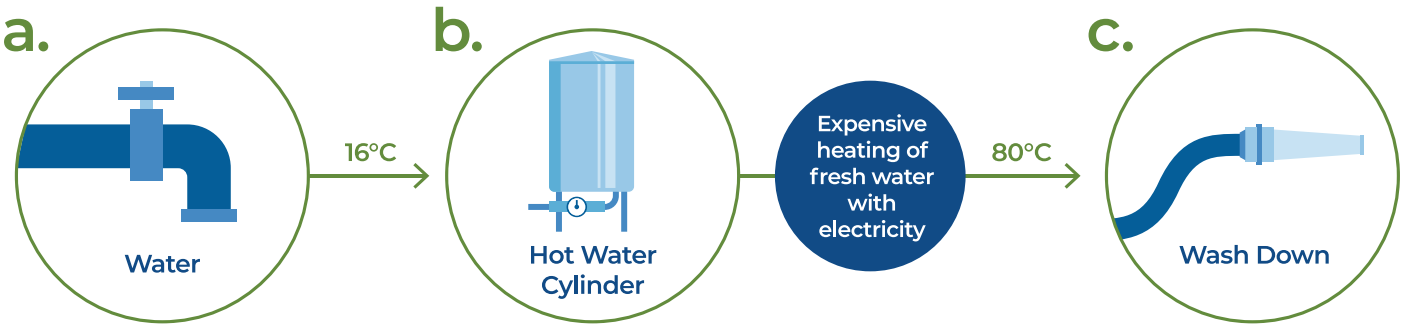
We've created a product that ensures that the milk is kept at optimal conditions, in a way that is better for farmers and for the environment.

Conventional cooling/heating system

System One Milk Cooling

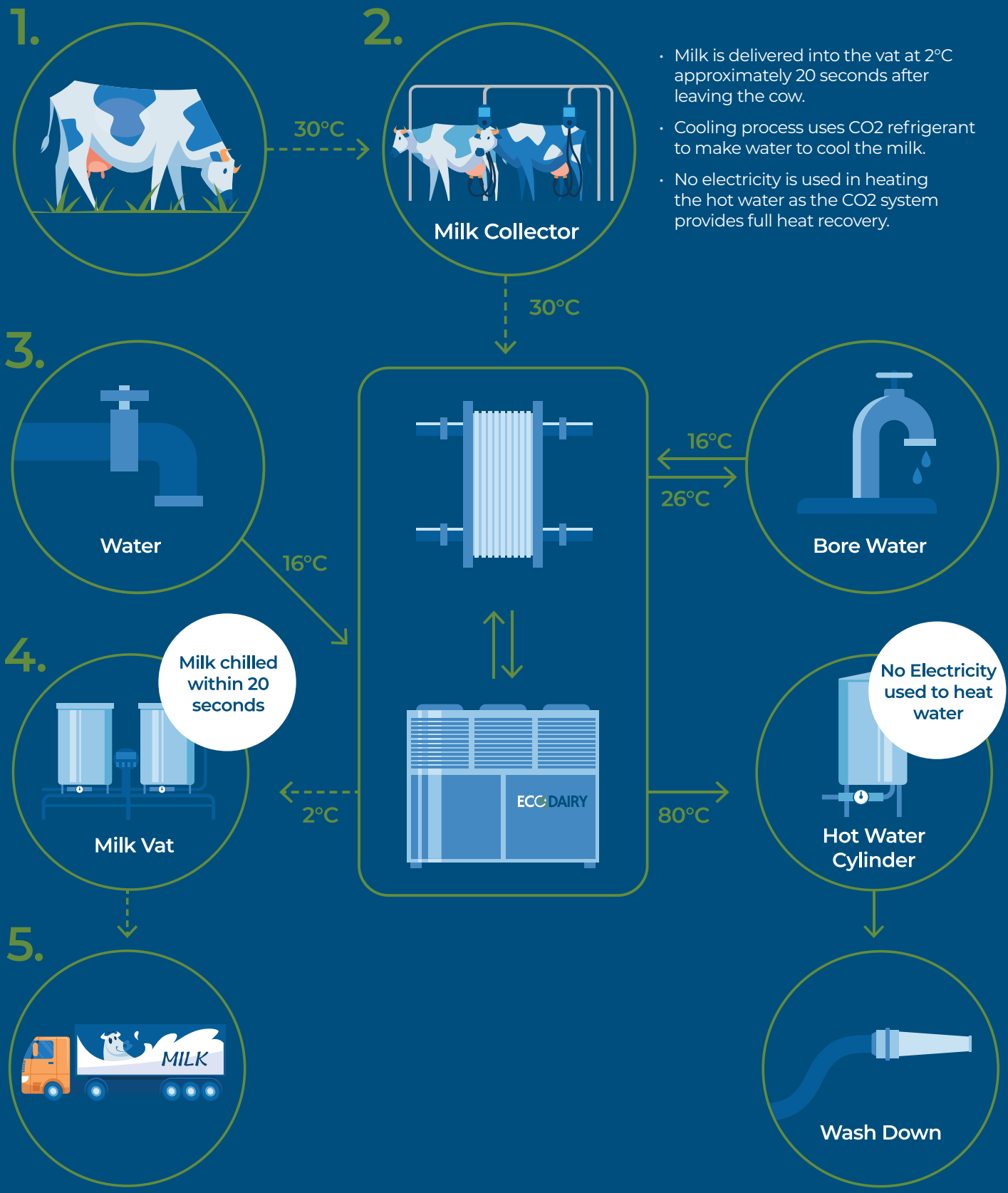


System Two



- Milk must be at or below 6°C within 6 hours of the start of milking, which can be a struggle for current systems.
- Cooling process uses high GWP HFC refrigerants.
- Waste heat collected for heating is limited by refrigerant and system type.

The Eco2Dairy Cooling System

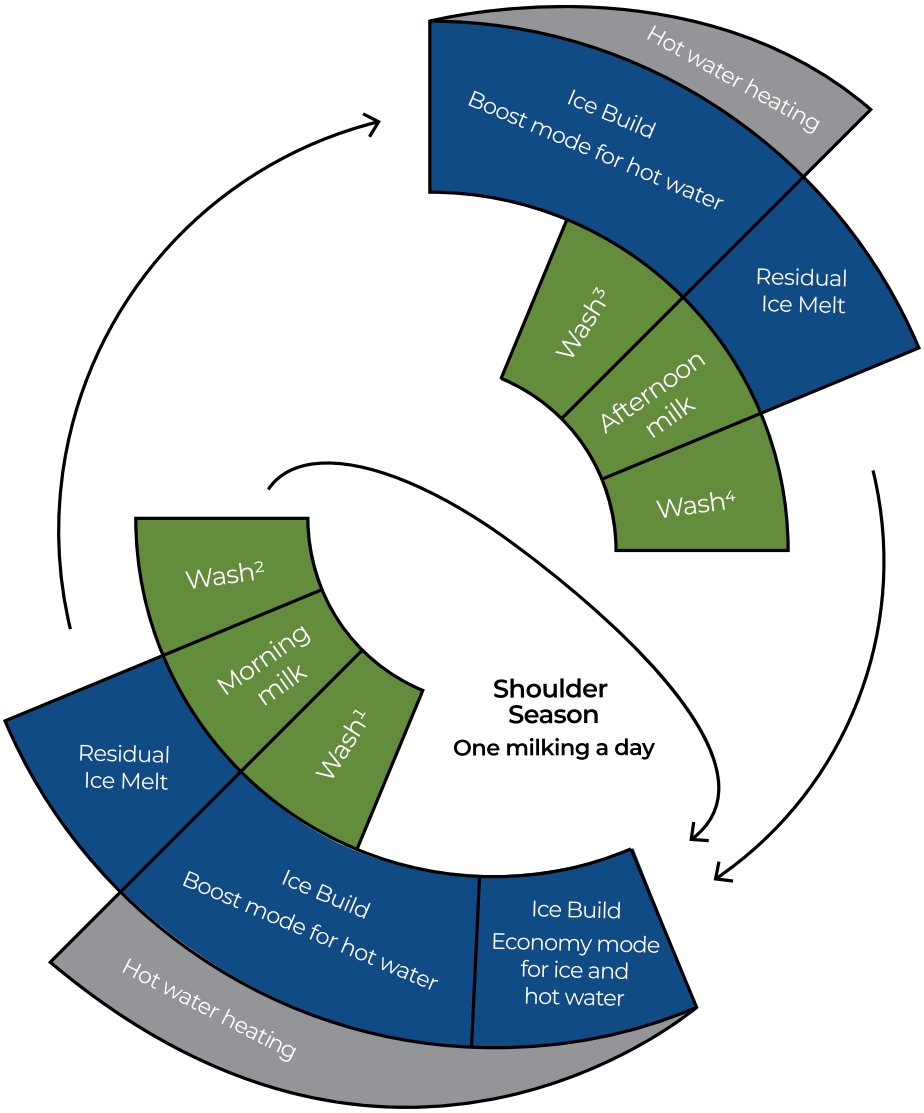


- Milk is delivered into the vat at 2°C approximately 20 seconds after leaving the cow.
- Cooling process uses CO2 refrigerant to make water to cool the milk.
- No electricity is used in heating the hot water as the CO2 system provides full heat recovery.

Additional Benefits for Farmers

In either system, farmers are washing down the cowshed numerous times per day. In the Eco2Dairy system, no electricity is used in the heating of the hot water as the CO2 system provides full heat recovery. Therefore, we are not just cooling the milk better - but we're also reducing power usage for the wash down cycle.

Daily Cycle of the System During Milking Season



Wash 1 - 4
By farmers preference
has a choice of 2 washes a day

How it works

The system has set a new benchmark in on farm cooling, bringing milk to 2 degrees almost instantly, using a natural refrigerant – carbon dioxide (CO2). The system consumes lower electricity and through its process as a by-product of cooling, generates hot water at a temperature of up to 85°C, for use in cleaning, wash down and other on farm needs.

Why it's better

- Precooled milk as low as 2°C entering the vat.
- Little fluctuation in subsequent milking vat temperature.
- No electrical upgrade required.
- Lower total on farm energy input costs.
- Using CO2 as a refrigerant the system is environmentally beneficial when compared to anything else currently available for on farm cooling.
- Hot water production of up to 85°C.
- Wifi capable controls means remote access to system to view and control operation.
- Remote alarms and technical support for diagnostics and fault finding.
- Data capture of temperatures, pulldown times, energy use and hot water supply.

The Engineering

At its heart, the system operates on natural refrigerant CO2 and water, and works on a process of creating a constant cycle of building and melting ice, known as the ice bank. The energy used in that process is used to either cool down milk or heat up water.

By aligning the phases of building and melting the ice to the milking cycle the system maximises the energy it uses for just the right timing, making it highly efficient.

The process happens within the ice bank tank that sits on site and is controlled by the Eco2Dairy chiller unit; the system 'brain" that manages the cooling system and uses modern engineering componentry to drive further system efficiencies.

The Controls Technology

We wanted to take cooling out of the plant room and into the hands of famers.

Providing a dedicated, customisable operations portal the Eco2Dairy unit incorporates software that delivers control and monitoring solutions in real-time.

Built-in alerts via email and text provide immediate visibility of issues and actions, giving on farm staff and refrigeration service providers the ability to log in without an immediate need for onsite call outs.

Delivering remote access, management of IT security, incident handling and the ability to drive predictive maintenance, users have control of the cooling and hot water heat reclaim system, energy use data, load demand control and early warning refrigerant leak detection.

Configured to monitor metered consumables like water and electricity, the portal provides consumption statistics, predicts budget needs and display trends. Providing full visibility of data at a time and place that is relevant, critical operating data helps to identify inefficiencies and opportunities for cost savings.

Capturing cooling system and temperature data, Eco2Dairy provides vital compliance and auditing information for farmers and through open source protocols, data can be integrated when and where its needed for other data management requirements with no lock in.

One Farmer's Story

Located in Waiuku - just south of Auckland - the trial farm has a herd of approximately 425 Jersey cows. Average milk production of the herd is 24L/cow/day. The shed is a 40/side herringbone style and the average milking time is 2 hours. The average bore water precooler supply temperature is approximately 17°C. The hot water system consists of two 350L electric hot water cylinders, each with 6kW of resistance heaters. Tanker pick-up time is after 6:30pm, with the second milk typically finishing before 5:30pm.

	Typical Farm system	Eco2Dairy System
Initial system cost	$65,000	$95,000
One off installation cost	$ 10,000	$10,000
Total Capex	$75,000	$105,000
Typical life expectancy	15	15
Annual maintenance cost	$1,000	$1,000
Annual refrigerant leakage cost	$2,061	$137
Annual energy cost	$10,258	$6,118
Annual Opex	$13,320	$7,255
Lifetime Opex	$199,796	$108,825
Lifetime cost	$274,796	$213,825

Notes

Energy costs calculated on $0.22/kWh

Annual refrigerant replacement based on a typical leakage rate of 24%

All calculations based on a typical operating time of 270 days per year

Annual CO2 emissions	32,543	12,784
Lifetime CO2 emissions	488,148	191,753

Oakenhill Farm Site Layout

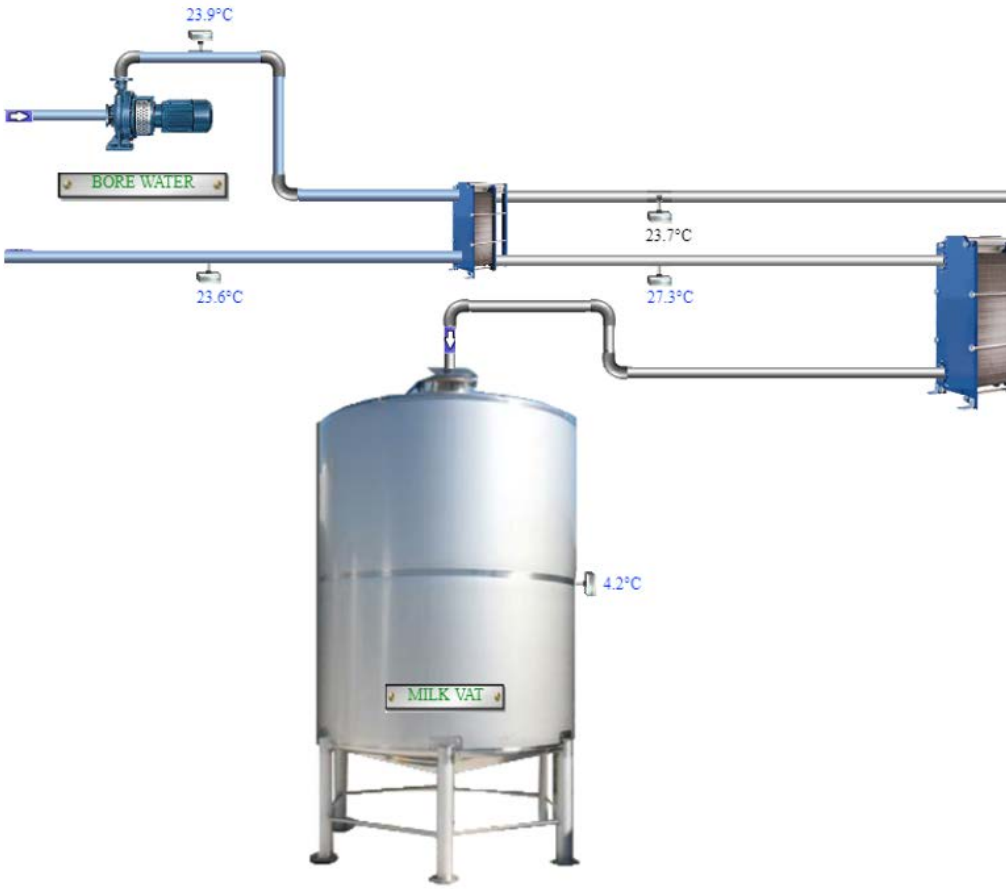



Image provided by Cold Energy Technology


FIELD MILK
23.4°C
HOT WATER
54.7°C
CHILLER
0.1°C
ICE BANK
BOOST MODE ON
SHUTDOWN OFF
Normal
Alarm
Defrost
Off
Inhibited
Not Present
Milk AM
Milk PM
Auto
Auto Milk AM PM

The evolution of the Eco2Dairy Product (developed by Cold Energy Technology)

Eco2Dairy		Our Track Record, in the Refrigeration Space
	2002	EcoChill established
	2006	New Zealand's first Supermarket Glycol system
Matthew floats the idea of using Carbon Dioxide (CO_2) as a natural coolant at an industry workshop	2007	New Zealand's 1st CO_2/Propylene system
	2009	New Zealand's 1st EcoChill system for export kiwifruit bulk storage
A friend asks for assistance with his cooling unit. The Eco2Dairy journey begins. Generation (Gen. 1) of Cooling Unit built with on-farm chilled water *(using hydrocarbons)* Gen. 1.1 *(with hydrocarbons)* developed	2010	North Island's 1st Supermarket Subcritical CO_2 system
Gen 1.2 *(with hydrocarbons)* - Auckland Factory	2012	New Zealand's 1st Transcritical CO_2 system
Gen. 2.0 (with CO_2) - Christchurch Factory Gen. 2.1 (with CO_2) - Christchurch Factory	2014	New Zealand's 1st 5-star Green Building Refrigerated Distribution Centre: Ceres Organics.
	2017	New Zealand's first distribution center sub-critical CO2/HC cascade system New Zealand's first supermarket water loop system
Gen. 2.2 (with CO_2) - On farm ice bank Gen. 2.3 (with CO_2) - On farm ice bank	2018	New Zealand's first parallel compression CO_2 system
Eco2Dairy prepares to go to market with 7th generation system	2021	

The Market Opportunity

Now is the right time to grow the business

Currently, we are looking at an environment where we have an industry which is facing increasing operational costs and ever-tightening regulatory requirements for milk temperatures and cooling times.

We are in the midst of a climate emergency and working within an industry that has the ability to contribute positively (rather than negatively) to the problem.

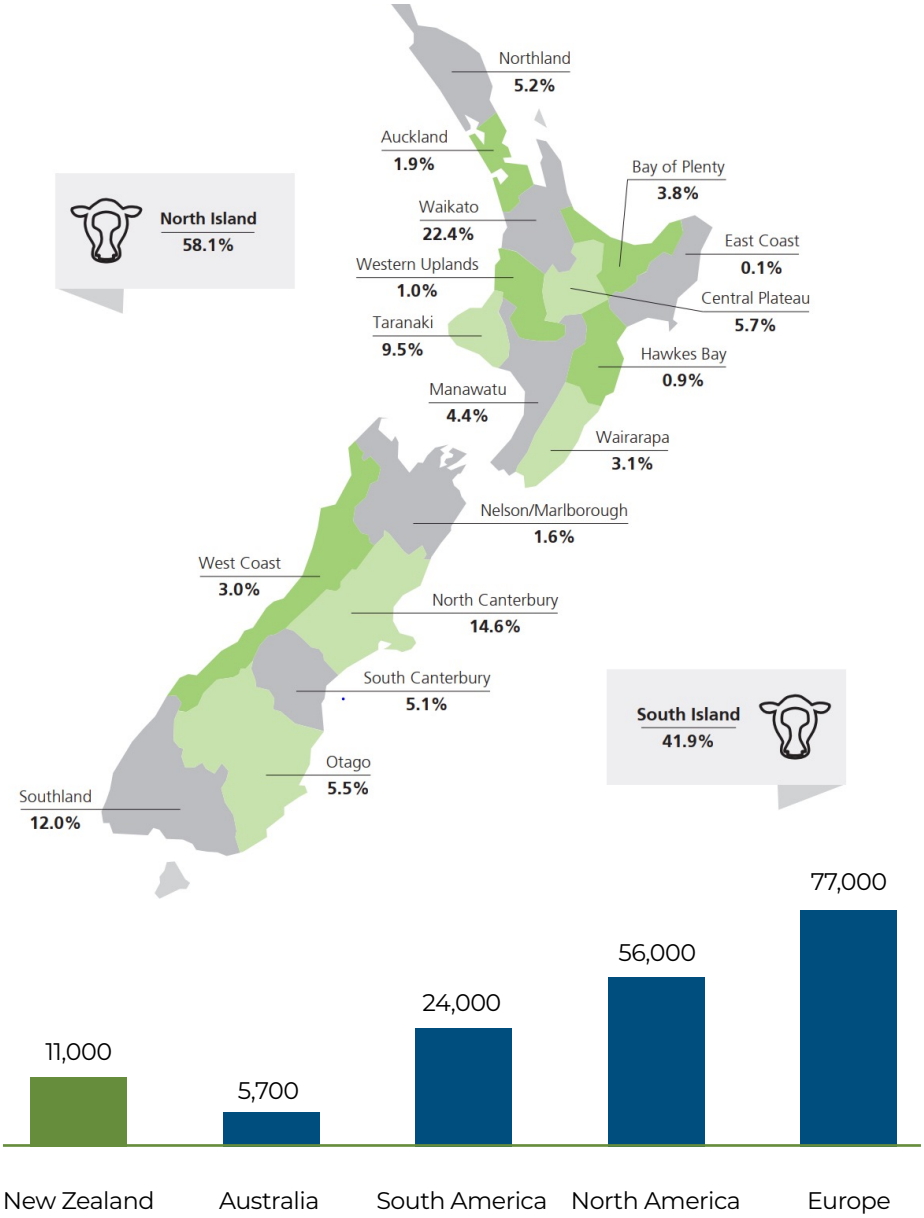
Cold Energy Technology has first-mover advantage, supported by a team with over twenty years of cutting-edge experience in this space.

With the seventh generation of the Eco2Dairy unit, we have worked hard to bring cooling into the 21st Century; we are ready to scale this company and take this innovative technology global.

The team has also identified several other industries in which the technology could be applied and continues to investigate these for future opportunities.

The Opportunity, within New Zealand:

- 20.7 billion litres of milk produced, 1.85 billion kilograms of milk solids
- 4.99 million cows in New Zealand. 11,590 herds with an average size of 431 cows
- Estimated 16,500 units in total market fleet
- The current lifetime of existing cooling equipment is 15 years
- The New Zealand dairy sector is responsible for 22.5% of national emissions, and must be reduced to net zero by 2050.
- New Zealand's 11,000+ farms use over 7% of the country's total electricity use, at over $250m in cost.
- Cold Energy Technology has optionality to provide a 'Cooling As A Service' model, and provide more efficient, data-driven solutions to users.



Looking to the rest of the world, in terms of numbers of farms:

Source:

DairyNZ

Use of Funds

Why Equity Crowdfunding?

We made the decision over 20 years ago that we would invest in innovating engineering systems that would enable New Zealand to have clean cooling.

It became very apparent to us through this journey that this is a collective effort in order to achieve our vision of cooling that is environmentally, socially and economically sustainable – cooling that helps New Zealand and the planet adapt and thrive. We wanted to bring this technology to the community to allow everyone to join us.

Equity Crowdfunding - offering shares and sourcing support for this technology - enables us to build a community that is investing in smart, low emission, systems that are innovating cooling for a better world.

Whether you're passionate about supporting New Zealand's shift to net zero emissions by 2050, a dairy farmer looking to invest in new (and better) systems or you're just really excited about the innovative technology that we've developed: we're looking forward to welcoming you onboard as a shareholder of Cold Energy Technology Ltd.

Use of Funds

By investing in Cold Energy Technology, you will be enabling:

Implement Sales Programme

- Hire key resources to drive sales, including a general manager, business development and marketing staff
- Develop sales aggregation plan to target strategic channels (e.g. distributors, power companies, dairy corporates)
- Initial scouting of overseas markets

Ongoing R&D projects

- Further progress of 3D printed componentry
- Complete development of data analytics offering

Working Capital

- Growth of supply chain and procurement
- Initial receivables management
- Promote manufacturing efficiencies
- Repayment of current R&D payables

Use of Funds	Minimum Raised	Maximum Raised
Implement Sales Program	$250,000	$600,000
Ongoing R&D Projects	$50,000	$350,000
Working Capital	$197,500	$700,000

"Cold Energy Technology is so much more than on-farm cooling. It's building a future that's carbon free. It's making energy reusable within our everyday lives. It's transforming our traditional thinking of processes that operate independently with little consideration for downstream and upstream benefits. It's the future of applying energy in ways that truly benefit today as well as protecting the future."

- Matthew Darby

Share Offer

Buy shares in Cold Energy Technology and join us, as we innovate cooling for a better world.

Minimum investment:

$5K

Maximum investment:

$1.65M

Up to 42% of the company on offer (if maximum raised)

Minimum raise:

$497.5K

Maximum raise:

$1.65M

Share Classes:

Class A shares will be issued to those investors that subscribe for more than 22,222 shares (who invest greater than NZ$50,000 at a share price of $2.25). These Class A shares will be granted full voting rights within the company, as set out in the Shareholders' Agreement.

Class B shares will be issued to those investors that subscribe for less than 22,222 shares (who invest less than NZ$50,000 at a share price of $2.25). Class B shares will not be eligible to vote on decisions proposed by the company, or at the Annual General Meeting. Class B shares will still receive a full consideration as to the total shareholding of the business.

Indicative Capitalisation Table

	Pre Money @ NZ$2.25 per share			Post-Money		
	Shares	Value (NZ$)	Shares (%)	Shares	Value (NZ$)	Shares (%)
Founders Shareholding	1,000,000	2,250,000	100%	1,000,000	2,250,000	58%
PledgeMe Crowdfunding	-	-		733,333	1,650,000	42%
Total	**1,000,000**	**2,250,000**	**100%**	**1,733,333**	**3,900,000**	**100%**

Cold Energy Technology Financials & Assumptions

These financial projections represent the company's strategy of targeting the domestic market first, before seeking to expand into foreign territories. The table below has been presented up to the EBITDA line (earnings before interest, tax, depreciation and amortisation) as the company wishes to explore options around a subscription model in the medium- to long-term. Current balance sheet modelling assumes a simplified manufacturing scenario in which products are assets owned by customers.

Summary Statement of Financial Performance - Cold Energy Technology

FYE 31 March NZD ('000s)	Year 1 Budget	Year 2 Forecast	Year 3 Forecast	Year 4 Forecast
Total Units Deployed	50	141	266	450
Annual Sales				
Units				
New Zealand	4,750	8,731	12,114	15,661
Australia	-	-	-	2,280
Servicing	-	51	144	274
Total Sales	**4,750**	**8,782**	**12,258**	**18,215**
Cost of Sales	3,325	6,146	8,576	12,978
Gross Profit	**1,425**	**2,636**	**3,682**	**5,237**
Gross Margin	30%	30%	30%	29%
Expenses	1,381	1,596	1,856	2,291
EBITDA	**44**	**1,040**	**1,826**	**2,946**
EBITDA Margin	1%	12%	15%	16%

Sales

By 2025 the business aims to have sold c. 400 units into the New Zealand market, representing an estimated 2.5% penetration of current New Zealand dairy farms. Sales efforts will be targeted at market aggregators and third-party farm suppliers; however one-off customer sales will be considered. A 1% inflation rate has been assumed for all sales and cost prices, although no growth of market size has been modelled at this stage. An initial sales price of NZ$95,000 per unit has been assumed.

Once a foothold has been gained in New Zealand, foreign markets will be entered; Australia is expected to be first, with Europe, South America, North America and South Asia to follow.

Manufacturing and Servicing

Cold Energy Technology has a Master Services Agreement with its current manufacturer, part supplier and related party, EcoChill. The business is confident that a similar margin could be achieved with other suppliers in the short- to medium-term. All design, engineering and assembly will take place within New Zealand.

The creditors listed in the balance sheet (p25) relate to the product development work provided to date by EcoChill. A portion of the funds raised for working capital requirements will be allocated towards this payables figure.

Servicing revenue has been forecast on a simple c. NZ$ 1,000 per annum rate per unit deployed. As further improvements are made to the service and data offering, this revenue stream could grow substantially.

Expenses

Administration and operational expenses have been forecast based on EcoChill's previous experience growing a technical business with a dynamic and agile team. Sales and marketing will be Cold Energy Technology's main focus initially, and as such it is the most significant item in the expenses budget.

Financing

Cold Energy Technology has been fully funded by its shareholders to date, with no external debt or equity providers. As the business enters the next stage of its growth, debt financing arrangements will be considered, but have not yet been modelled currently. Further equity funding has not been considered.

Returns

Cold Energy Technology has assumed no returns to shareholders within these forecasts presented. It is the company's intent to re-invest earnings in the short- to medium-term, in order to fund further growth and working capital requirements.

Cold Energy Technology Balance Sheet

Current Assets	
Inventory	397,785
Total Current Assets	397,785

Current Liabilities	
Creditors	500,000
Total Current Liabilities	**500,000**

Net Working Capital	**-102,215**

Non Current Assets	
Intangible Assets and IP	2,352,215
Total Non Current Assets	**2,250,000**

Net Operating Assets	**2,250,000**

Equity	**2,250,000**
Share Capital	1,154,000
Retained Earnings	-
Reserves	1,096,000
Total Equity	2,250,000
Shareholder Funds and Net Debt	**2,250,000**

The total obligation with the external trade creditors is $500k, relating to development of the technology and manufacturing to date. If Cold Energy Technology meets its minimum target of $497.5k, then the company expects to repay $117k of the outstanding amount. If the maximum target is met, then the company expects to repay the full amount. In the extent that the full amount is not repaid, the company expects to issue Ordinary B shares equal to the difference outstanding at $2.25 per share.

Risks & Mitigation

Risk	Mitigation
Other natural dairy refrigeration products enter the market	Cold Energy Technology has substantial intellectual property protection: the company has a first accepted patent application in New Zealand (due to grant in September) PN:774300, with a second divisional patent application in progress. Regional and National patent applications are in progress across ARIPO, India and South Africa. In the event that a competitor enters into the market with a similar product, Cold Energy Technology will pursue a litigation strategy to ensure its technological advantage is maintained. If a competitor were to develop its own, novel product, it would take significant time, resource and expertise. All of which provides a substantial barrier to new entrants.
Limited product sales	Having fully developed and tested the product, the company is primed to focus on distribution of its technology. Cold Energy Technology has dedicated the majority of new capital to growing its sales capacity and achieving its targets.
Delays in production	The Eco2Dairy units are assembled from a combination of local and offshore components, all of which are now standard with short lead times. Components can be sourced from a number of reputable suppliers if a supply blockage occurs. Investment will require scalability. Combination of locally assembled to match supply and demand. Cold Energy Technologys strategy is to attain sales through bulk aggregators, which will reduce unit-to-unit production difficulties and enable economies of scale throughout the supply chain.
Failure to raise capital	If Cold Energy Technology is unable to raise the minimum $697,500 sought, further funding will be sought from private investors.
Key people risk	All members of the Cold Energy Technology team are dedicated to the long-term success of the business. As part of the current evolution of the business, production processes have been mapped, and key relationships will be mitigated by the introduction of a General Manager.

Disclaimer from Cold Energy Technology

WARNING STATEMENT ABOUT CROWDFUNDING:

Equity crowdfunding is risky.

Issuers using this facility include new or rapidly growing ventures. Investment in these types of businesses is very speculative and carries high risks.

You may lose your entire investment, and must be in a position to bear this risk without undue hardship.

New Zealand law normally requires people who offer financial products to give information to investors before they invest. This requires those offering financial products to have disclosed information that is important for investors to make an informed decision.

The usual rules do not apply to offers by capital issuers using this facility. As a result, you may not be given all the information usually required. You will also have fewer other legal protections for this investment.

Ask questions, read all information given carefully, and seek independent financial advice before committing yourself.

WARNING STATEMENT FOR WHOLESALE INVESTORS INCLUDING THOSE INVESTING NZD $750,000 OR MORE:

New Zealand law normally requires people who offer financial products to give information to investors before they invest. This requires those offering financial products to have disclosed information that is important for investors to make an informed decision.

The usual rules do not apply to wholesale offers because there is an exclusion for offers made to wholesale investors (within the meaning of that term in the Financial Markets Conduct Act 2013), including where the amount invested upfront by the investor (plus any other investments the investor has already made in the financial products) is $750,000 or more.

Please ensure you have read and understood the Wholesale Investor warning statement provided by the Issuer in the Investment Memorandum.

Stock Image

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COLD ENERGY TECHNOLOGY