PreSeed Report
2023

Publicly funded research with big ambitions.

KiwiNet

kiwinet.org.nz

ABOUT THIS REPORT

This report from Kiwi Innovation Network Ltd (KiwiNet) is prepared on behalf of 17 public research organisations (PROs). These 17 PROs receive funding through the PreSeed Accelerator Fund (PreSeed) as pooling partners of KiwiNet. Since its inception, KiwiNet and the wider Commercialisation Partner Network (CPN) has demonstrated the power of bringing together diverse players across the science and innovation ecosystem to work towards a collective vision for New Zealand. Together, they are driving towards a globally competitive technology sector that delivers significant economic growth and prosperity.

The foremost ingredient for success is collaboration. KiwiNet is a standalone company run by seven universities, six Crown Research Institutes (CRIs), one Crown Entity (Callaghan Innovation) and one independent research organisation (Cawthron Institute). KiwiNet exists to drive prosperity from science and innovation. We achieve this by joining forces to transform scientific discoveries into new business.

KiwiNet's Investment Committee (IC) makes all major PreSeed investment decisions for KiwiNet. The committee brings together independent experts, with extensive business and

investment experience, and technology transfer leaders from across 19 research organisations in an environment of openness, transparency, trust, and mutual support. The IC is a focal point for collaboration between research organisations where projects are discussed, supported, and funded on the merits of their commercial promise. This review summarises the outcomes of the KiwiNet IC PreSeed investments made between 1 July 2019 and 30 June 2023 (current contract), together with an update on commercialisation outcomes from earlier PreSeed projects (including those preceding or not funded through KiwiNet). The second section of the report provides a selection of impact case studies resulting from projects within the KiwiNet portfolio.

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EXECUTIVE SUMMARY

PreSeed Accelerator Funding (PreSeed) is an intervention unique to Aotearoa New Zealand. It is successfully driving prosperity from science and innovation by transforming scientific discoveries from Public Research Organisations (PROs) into new products and services. By incentivising investment from PROs and business into research commercialisation, PreSeed takes early-stage discoveries with commercial promise from publicly-funded research and progresses them to a point where they are 'investor-ready.' The KiwiNet Investment Committee funds PreSeed (50% of project costs) into projects with the greatest potential for creating jobs and generating export revenue for New Zealand business. A total of $17.3M in PreSeed funded 562 projects between 1 July 2019 and 30 June 2023.

Highlights from the PreSeed project portfolio (current contract) include:

- $17.3M in PreSeed funding provided across 416 projects
- $3.7M in business co-funding into PreSeed projects, across 104 companies
- $18.9M in co-funding alongside PreSeed from other (non-business) sources, including PROs

An important objective of PreSeed funding is to foster greater connections between research organisations and business. These interactions enable New Zealand businesses to directly benefit from publicly funded scientific research by empowering them to develop new disruptive products and services while driving improvements in productivity and efficiency and diversifying the economy.

Commercialisation outcomes from projects in the current PreSeed contract (since July 2019) include:

- 1,641 businesses meaningfully engaged in PreSeed projects, with 659 international connections made
- 84 commercial deals to date, across 55 projects
- 32 New Zealand start-up companies formed (including 7 formed from pre-July-2019 projects)
- $33.7M in commercial returns to NZ businesses and research organisations to date
- $1.2B in potential export earnings (first 5 years of sales, once in market)
- 157 employment opportunities generated or sustained in New Zealand

As PreSeed projects mature, substantial economic returns are generated for New Zealand and productive relationships are formed between research organisations and business.

The following data represent *known* economic returns generated by PreSeed projects since 2003:

- $60.7M in PreSeed funding across 1,730 projects by KiwiNet pooling partners since 2003
- $23.6M in business co-investment into PreSeed projects

- Over 3100 known connections made between research organisations and businesses
- 584 commercial deals across 204 projects
- 82 NZ start-up companies formed
- Over 704 employment opportunities generated or sustained in New Zealand
- $558M in total known financial returns to NZ, including export revenue to NZ businesses

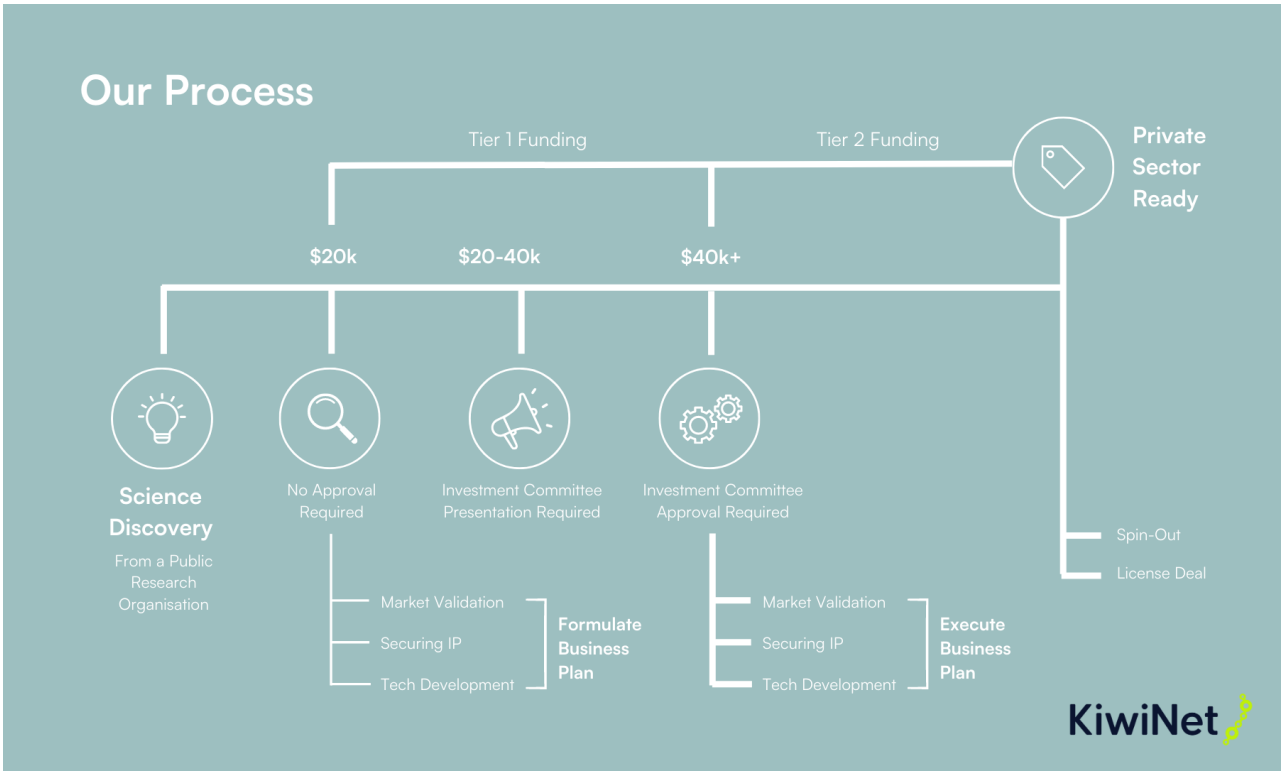
These figures represent a **return to New Zealand over nine times greater than the PreSeed invested**. PreSeed is successfully harnessing New Zealand science to drive a globally competitive technology sector that fuels business innovation, job creation, and growth in export earnings.

COMMERCIAL HIGHLIGHTS FROM THE KIWINET PRESEED PORTFOLIO

This report summarises some of the commercial benefits realised by projects receiving PreSeed investment in KiwiNet's current MBIE contract (covering the period 1 July 2019 to 30 June 2023). It also includes an update on commercial progress on historical projects from within the KiwiNet portfolio. Experience monitoring PreSeed projects shows that tangible commercial outcomes and impacts from PreSeed investment often take time to mature. For this reason, KiwiNet continues to monitor the commercialisation outcomes of historical PreSeed projects, and we are committed to ensuring optimal returns from projects that have received PreSeed from previous contracts. **KiwiNet is happy to provide detailed project information, figures, and outcomes on request.**

PRESEED PROJECT PORTFOLIO

PreSeed funding is a critical government intervention at the point where scientific discoveries can be transformed into investable technologies for uptake by the private sector. Early-stage discoveries that enter the KiwiNet PreSeed process begin with limited commercial and market validation, limited intellectual property protection, and limited technical validation. The outcome of a PreSeed project is an investable commercial proposition that can be transferred into the private sector in the form of a start-up company, joint venture, or high-value licensing deal. The endgame is an innovative new product or service that is adding value to the economy and delivering impact for New Zealand.



Acceleration is the key, and many projects will be 'fast-failed' alongside those that are successful — the purpose being to scale our collaborative commercialisation process across a maximum number of early-stage research discoveries. KiwiNet's rigorous PreSeed investment processes, alongside the PROs' own systems and processes, empower research organisations to accelerate good opportunities to market while maximising benefits to New Zealand.

Table 1 summarises total research commercialisation investment into PreSeed projects, in both the current and earlier contracts, for the 17 research organisations that access pooled KiwiNet PreSeed funding.

Of the total $40.6M invested in research commercialisation in the current contract to 30 June 2023, 43% is allocated from PreSeed funding, 47% from research organisation co-investment, and 10% from business co-investment. KiwiNet takes no equity stake or other benefit share from PreSeed Accelerator Funding.

The considerable number of abandoned projects reflects the early stage, high-risk nature of projects into which PreSeed is initially invested. Additionally, abandoned projects are a welcome outcome, as technology opportunities are accelerated towards 'fast fail' or an alternative (non- commercialisation) impact pathway. This process enables valuable commercialisation resource to be subsequently redeployed within research organisations and a suite of commercialisation opportunities to be rapidly triaged over a given time period. Abandoned projects typically make up a small percentage of the total *quantum* of PreSeed investment, since Tier One investment normally provides sufficient validation to determine whether further investment will deliver commercial success.

Business co-investment is an important validation for the market opportunity. It is typically attracted because PreSeed investment lowers the risk for businesses to participate in the commercialisation process earlier than they would normally. Businesses that co-invest alongside PreSeed often become manufacturing or co-development partners, or eventual licensees of resulting technology.

The IC approved the continuation of 76 projects from the 2016-2019 PreSeed contract (ending 30 June 2019) into the current fund.

Table 1: Commercialisation Investment into KiwiNet PreSeed Projects

	Current Contract	**Historical* (pre 01/07/19)**	**TOTAL**
Number of PreSeed-Funded Projects	562	1168	1730
Of which are:			
Completed	*228*	*998*	*1226*

Abandoned	*108*	*145*	*253*
On-hold	*3*	*2*	*5*
In Progress	*223*	*25*	*246*
PreSeed Funding Allocated	$19,762,356	$44,220,241	$63,982,596
PreSeed Funding Invoiced to Date	$17,284,372	$43,408,390	$60,692,762
PRO Co-Investment into PreSeed	$19,192,467	$35,396579	$54,589,046
Business Co-Investment into PreSeed	$3,752,605	$19,851,750	$23,604,356
Number of Business Co-Investors	*104*	*178*	*282*
Investment from Reprioritised MBIE Funds	$324,580	$9,366,508	$9,691,088
Total Investment into Commercialisation	$40,601,442	$108,000,227	$148,601,669

* *NB: data on historical projects will likely be incomplete due to the reliance on historical reporting processes and associated attenuation of project intelligence within research organisations over time.*

PORTFOLIO PERFORMANCE

The goal of PreSeed investment is to accelerate the commercialisation of new products and services from our world-class scientific research for the benefit of New Zealand. This is achieved through increasing export revenue, employment opportunities, and improving productivity and efficiency of NZ firms. Bringing new innovations from publicly-funded research into the world also delivers a pathway to non-economic impact, including social, health, wellbeing, and environmental benefits, while interfacing with te ao Māori and enriching the Māori economy.

Commercialisation outcomes such as business-PRO interactions, revenue from deals, jobs created, new licensing arrangements, and the formation of start-up companies are important markers of PreSeed success. Not only can these outcomes be directly measured, but they also represent important first steps in the journey towards meaningful impact for New Zealand.

Table 2 summarises *known* commercialisation outcomes of KiwiNet PreSeed investments to date. A total of 1,641 businesses have been meaningfully engaged in PreSeed projects in the current contract to date. These interactions led to some form of legal agreement (such as an NDA), co-investment in PreSeed projects, commercial deals, and commercial partnerships — some of which have led to ongoing strategic relationships.

These interactions empower NZ businesses to directly access scientific knowledge and technology in public research organisations. This in turn fuels the innovation of new products, processes, and services, while bringing important private sector expertise and investment to bear on early-stage technology opportunities to maximise their chances of successfully

reaching the market. PreSeed investment is working to de-risk the early steps of the innovation process for NZ businesses and investors.

Of the 1,641 recorded business interactions, 659 international connections have resulted. These have generated export revenue, provided opportunities for our world-class science and innovation on the world stage and have, in some instances, leveraged foreign direct investment into NZ ventures and R&D.

KiwiNet PreSeed investments since July 2019 have so far resulted in 84 commercial deals, across 55 projects. Of these, 25 start-up companies have been formed (see Appendix One), alongside 7 new start-ups from older projects (pre-July-2019). Of the start-ups formed from PreSeed projects funded in the current contract, one has entered Callaghan Innovation's technology-focused incubators. Private investment into new ventures arising from PreSeed projects totals $28.0M to date. A grand total of 82 start-ups have resulted from all KiwiNet PreSeed projects to date.

It should be noted that commercial returns are typically lower for more recent investments, given the time required for research commercialisation projects to mature (often 5-7 years or even longer). Intellectual property protection and business engagement figures are up significantly compared with historical data, reflecting an increasing focus on forming an IP strategy quickly and engaging with business early.

Table 2: Commercialisation outcomes of PreSeed projects to 30 June 2023

	Current Contract	**Historical* (pre 01/07/19)**	**TOTAL**
Patents Filed	463	557	1,020
Patents assigned or transferred to external parties	34	50	84
Other IP Secured (copyright, trademarks, trade secrets)	604	257	861
Total Pieces of IP Secured	1067	814	1,881
Number of Businesses Meaningfully Engaged *Including:*	1,641	1,508	3,149
International Connections	*659*	*462*	*1,121*
Number of Commercial Deals	84	500	584
Number of Projects Generating Deals	55	149	204
Of these:			
Number of Start-ups Formed	25	57	82

Tech Incubator Engagement	91	26	117
Tech Incubator Uptake	1	16	17
% Resulting in Start-ups	45%	39%	40%
% Resulting in Contract Research, Licensing, Technology Sales, or Consultancy Deals	55%	61%	60%
PRO Revenue from Licensing, Contract Research, Technology Sales, and Consultancy	$222,000	$147,187,730	$147,369,730
Private Investment into New Ventures	$27,979,565	$215,040,940	$243,020,505
Total Private Investment into New Ventures and PRO Revenue to Date	$28,201,565	$362,223,670	$390,435,235

** NB: data on historical projects will likely be incomplete due to the reliance on historical reporting processes and the attenuation of project intelligence within research organisations over time.*

ECONOMIC RETURNS TO NEW ZEALAND

PreSeed commercialisation projects have a significant impact on the NZ economy and our research and innovation ecosystem. Revenue to NZ businesses and follow-on investment develops over time as projects mature and technologies reach the market as new products and services. Employment opportunities are created, and export revenues grow. New business is created based on disruptive and innovative technologies that are helping diversify the New Zealand economy.

Table 3 summarises the wider impact of PreSeed commercialisation projects to date. This data represents only that disclosed to KiwiNet and will not, therefore, represent a complete picture of the revenue generated by the many private entities that benefit from the innovations arising from PreSeed investment. Research organisations are in some instances made aware of follow-on benefits experienced by the end-users of PreSeed technologies, and these are captured in our data. Outcomes include both domestic and export sales, follow-on private investment in new ventures and an increase in technological capability which can lead to Business Expenditure on R&D (BERD) and further innovation.

PreSeed projects receiving investment from the most recent fund have yet to generate follow-on investment and NZ business revenue. It is expected, however, that this number will rise over time, since downstream returns from research commercialisation do not typically occur until a project has fully matured (often in the range of 5-7 years, if not longer). Known follow-on investment and direct revenue to NZ businesses resulting from the entire KiwiNet

PreSeed portfolio (including historical projects) is $377M and is likely to represent only the 'tip-of-the-iceberg.'

These figures, combined with revenue outlined in Table 2, contribute to a **total known revenue from all KiwiNet pooling partner PreSeed investments of at least $560M**, originating from a total PreSeed investment of $60.7M and representing a **greater-than nine-fold incremental return to NZ from PreSeed funding**.

Within research organisations, individuals involved in PreSeed commercialisation projects benefit from the resulting expertise and experience they gain. This strengthens NZ's innovation capabilities by providing direct, first-hand experience of research commercialisation, while helping to foster a culture of innovation across our science base. Many individuals go on to form start-up companies, work in high-technology companies or pursue new research commercialisation opportunities. 157 FTE employment opportunities have been created as a direct result of projects in the current contract and over 700 FTEs since 2003.

Table 3: Known economic impact of PreSeed commercialisation projects

	Current Contract	Historical* (pre 01/07/19)	TOTAL
Follow-on Business Expenditure into R&D incurred as a result of the PreSeed project	$4,489,854	$130,747,871	$135,237,725
Number of Jobs Created (FTEs)	157	547	704
Potential Revenue to NZ from Export Earnings in First 5 Years of Sales	$1,195,057,555	$2,504,246,222	$3,698,303,777
Known Follow-on Investment in New Ventures and NZ Business Revenue	$28,201,565	$362,233,670	$390,436,235
Total Known Revenue to NZ Businesses and PROs from PreSeed Projects to Date	$35,193,579	$525,267,250	$560,460,785

* *NB: data on historical projects will likely be incomplete due to the reliance on historical reporting processes and the attenuation of project intelligence within research organisations over time. The number of individuals gaining commercialisation experience and level of follow-on investment will, therefore, likely be higher than that reported.*

PreSeed Projects Generating Social Impact to New Zealand

Examples of PreSeed projects that are generating social impact to New Zealand:

- Manaaki Whenua Landcare Research has developed a natural superlure that has doubled the rate of capture of stoats over food-based lures, increasing the trapping efficacy with no increase in labour costs. Stoats are a major pest species in NZ and are implicated in the decline of native bird species. Increasing the capture rate of these pests helps restore NZ's native bird populations.
- WaikatoLink has developed an application to help pregnant women and their partners manage their mental wellbeing through pregnancy. The application enables parents to think, plan and find resources and strategies the improve parenting confidence, improve mood and reduce anxiety, build social support and increase knowledge and awareness of mental wellness. The application was based on research developed by the University of Waikato's psychology department and is available for free on Apple and Android app stores. positivelypregnant.org.nz
- University of Canterbury has developed an application to provide a safe space for young people to engage with reliable and informative information related to sex, sexuality, gender identity and healthy relationships. The application is specifically designed to target challenges around sexual and reproductive health for Māori youth and embeds indigenous knowledge within the application. The team worked with Puāwai, a Maori youth organisation, to ensure information was accurate based on the needs of Māori and that the application was created by Māori, and for Māori. The application is now available for free on Apple and Android app stores. https://www.beyondthebirdsandbees.co.nz/
- ESR has developed a screening technology called Lumi™ that enables screening of drug samples in real-time. Lumi™ has enabled NZ Police to rapidly test suspected drug samples for the presence of MDMA, cocaine, and methamphetamine, using a handheld device, and then receive near-instant results on their smartphone. The devices can also screen samples through plastic, meaning suspected items do not need to be opened, protecting officers from potentially harmful substances.

2.1 ZINCOVERY — UNIVERSITY OF CANTERBURY

ZINCOVERY
Decarbonizing zinc recycling

UC
UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Zincovery's technology holds the promise of significantly reducing the carbon footprint of the multi-billion-dollar global zinc recycling industry.

Zinc recycling vital for reducing the environmental impact of producing zinc, the fourth most consumed metal in the world. However, current zinc recycling methods are expensive, consume excessive energy, and produce significantly more emissions that mining new zinc.

Zincovery, founded by engineer Jonathan Ring and his former professor Aaron Marshall from the University of Canterbury, offers a groundbreaking solution. Their innovative technology focuses on extracting zinc from furnace dust generated during steel recycling.

In lab trials, it uses 70% less energy and produces only a fraction of the carbon emissions compared to traditional methods. Moreover, it's 45% cheaper. It can recycle zinc and produce less than 1 tonne of CO2 per tonne of zinc (typically recycled zinc requires five or more) using an innovative, low-temperature furnace process.

Zincovery's recent successful $3 million early-stage funding round, with investors including Icehouse Ventures, K1W1, the Climate Venture Capital Fund, marks a significant step forward.

The company plans to establish a pilot plant to test their technology on a larger scale, aiming to secure another $10 million for a larger demonstration plant. Their long-term goal is full-scale production.

Through lower energy use, emissions, and costs, Zincovery is on its way to benefit the zinc recycling industry, fostering a cleaner, more sustainable future.

In Figures

- $242,731.78 PreSeed Accelerator Funding received
- $4,020,000 capital raised
- $100,000 revenue to date
- 3 FTEs

2.2 XFRAME — WELLINGTON UNIVENTURES

XFRAME

WELLINGTON UNIVENTURES Te Paewai

XFrame is making significant strides in advancing its circular architecture system and gaining recognition on a global stage.

The building sector is responsible for 30% of all waste due to construction, renovation, and demolition activities. XFrame is on a mission to change this.

With their recoverable and reusable framing system, they are contributing to their vision of transitioning the building sector to a circular economy. The modular system can be moved, reused, and reinstalled, minimising construction waste.

By utilising 20% less material than standard timber wall framing and incorporating carbon-negative and rapidly recoverable elements, XFrame addresses the pressing issues of building waste and carbon emissions in the construction industry.

The innovative building technology was developed by Ged Finch at Te Herenga Waka — Victoria University of Wellington as part of his PhD research. Recognising the potential of XFrame's circular architecture system, the project received $40,000 in PreSeed Acceleration Funding (PSAF) to progress the commercialisation of the technology.

With commercialisation support from Wellington UniVentures, XFrame transitioned from research to a commercially viable technology and spinout in 2019.

Fast forward to present day, XFrame has scaled significantly, with project operations in New Zealand, Australia, and the United States. XFrame works in three areas: building frames for homes and small structures, versatile interior design for offices and retail spaces, and furniture that complements these designs.

XFrame raised $1.5 million the previous year and reported $3.2 million in revenue, demonstrating the growing demand for its innovative solution.

In Figures

- $40,000 PreSeed Accelerator Funding granted
- $2,050,000 capital raised
- $3,200,000 AUD revenue to date
- 4 FTEs

2.3 BSPKL — GNS SCIENCE

Bspkl, New Zealand's pioneering deep-tech startup, is poised to meet the surging global demand for green hydrogen, supporting the transition to a sustainable, low-carbon world.

A shortage of iridium, an essential element for efficient hydrogen production, poses a major obstacle to the hydrogen industry's expansion due to its limited supply and high cost.

Bspkl combats this problem with catalyst coated membrane (CCM) technology that uses a significantly lower iridium load.

Developed by Co-Founder and CTO Jérôme Leveneur at his tenure at GNS Science, Bspkl's technology reduces iridium usage by 25 times, overcoming critical industry bottlenecks. Further, Bspkl can manufacture this low-iridium CCM at a commercial scale, potentially transforming the hydrogen industry's manufacturing landscape.

Bspkl's remarkable reduction in iridium usage not only fosters industry growth but also substantially contributes to a more sustainable, low-carbon world. By reducing the reliance on this precious metal, Bspkl's innovation is accelerating the transition to green hydrogen production methods.

In early 2023, Bspkl launched as the first spin-out company from GNS Science, with a $2.85 million capital raise led by WNT Ventures. The seed funding included a $750,000 Repayable Grant from Callaghan Innovation's Technology Incubator Programme.

With the rapid expansion of the green hydrogen sector driven by environmental initiatives, Bspkl is poised for remarkable success with their industry-leading product.

In Figures:

- $224,225 PreSeed Accelerator Funding received
- $2,050,000 capital raised
- 6 FTEs

2.4 HOT LIME LABS — CALLAGHAN INNOVATION

Hot Lime Labs is empowering greenhouses across the globe to embrace the transition to renewable energy sources, while simultaneously taking their yields and profits to new heights.

The greenhouse industry faces a critical challenge: heavy reliance on fossil fuels for carbon dioxide (CO2), vital for boosting plant production. The shortage and rising costs of CO2 is disrupting crop production and raising consumer produce prices as a result.

Wellington-based cleantech startup Hot Lime Labs is addressing this by providing a renewable source of carbon dioxide (CO2).

Their patented 'Hot Lime' technology extracts clean CO2 from crop and wood waste and introduces it into greenhouses, increasing yields by up to 25 percent.

Originally designed for the power industry, the technology was adapted to meet the unmet demand for clean CO2 in agriculture. Hot Lime Labs is now scaling up its operations, with plans to install the first commercial-scale system for Gourmet Mokai Limited later this year.

They are also exploring additional applications for its technology, including the creation of biochar as a by-product of the CO2 capture process. This biochar, made from biomass, can filter wastewater, sequester carbon in the ground, and enhance soil nutrients, potentially leading to carbon-negative greenhouse 'hubs.'

With a recent $4 million funding round valuing the company at $20 million, the future looks promising for Hot Lime Labs as they continue to drive innovation in greenhouse operations.

In Figures:

- $97,500 PreSeed Accelerator Funding received
- >$8,000,000m private capital raised
- 23 FTEs

2.5 EATKINDA — MASSEY VENTURES

Massey Ventures
Supporting Research Innovation

EATKINDA

EatKinda is transforming the ice cream industry by offering a sustainable, vegan-friendly treat that's setting the standard for deliciousness and environmental responsibility.

New Zealand's food waste crisis sees 40% of locally grown fruit and vegetables discarded, and much of this produce not making it onto supermarket shelves because they're cosmetically imperfect.

EatKinda, was co-founded by Jenni Matheson and Mrinali Kumar, who was completing a Master of Food Technology at Massey University, a created an exceptional plant-based ice cream primarily crafted from cauliflower. EatKinda ice cream not only delicious, but also an eco-conscious alternative to traditional dairy ice cream.

With two female founders at the helm, EatKinda is on a mission to help the world eat different, in a way that is kinder to the planet. Their research demonstrates that 'cauli-powered' ice cream uses 93% less land, 81% less water, 84% fewer greenhouse gas emissions, and 53% less nutrient runoff compared to milk production.

EatKinda, propelled by its unique product and the support of Massey Ventures and KiwiNet's PreSeed Acceleration Funding (PSAF), successfully transitioned from a local sensation to a global one.

Their partnership with Hell Pizza in March 2023 marked a turning point, with stores quickly selling out nationwide eight weeks after launching. Since then, EatKinda has been scooped up by nationwide and global media, surprised by the indulgent and creamy taste of the plant-based ice cream.

In July 2023, they partnered with online supermarket, Supie, known for their sustainable ethos, to launch the first commercially made chocolate ice cream using cauliflower.

In Figures:

- PreSeed Accelerator Funding received through the Emerging Innovator Programme
- 4 FTEs — all female team

KIWINET OPERATIONS

KiwiNet was established in July 2011, building on the foundation of a consortium of four universities which were awarded a devolved PreSeed contract in 2008 (under KiwiNet's precursor, UniCom). The group now comprises 15 shareholder organisations and 17 organisations (from July 2019) that access pooled PreSeed Accelerator Funding through KiwiNet. Together, they work in an open environment of trust and collaboration, as part of the Commercialisation Partner Network (CPN).

KiwiNet now represents the combined power of 19 of New Zealand's Universities, Crown Research Institutes and other research organisations who receive public funding. They are dedicated to taking a collaborative approach to transforming scientific discoveries into new business. Together, these research organisations represent a total combined research expenditure of over $715 million per annum and represent over 80% of the publicly funded researchers in New Zealand.

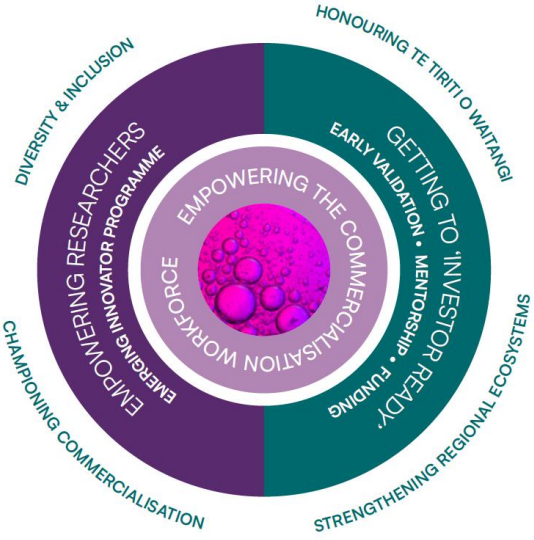
The KiwiNet IC includes 21 commercialisation experts, supported by 12 KiwiNet Management staff and numerous external experts. This provides a support network with extensive technical and commercial expertise to grow the pipeline and deliver impact. The IC fills the gap between public research organisations and the private sector to strengthen commercialisation and act as a focal point for collaboration and co-ordination. Together the consortium has a proven track-record of investing PreSeed into research commercialisation to deliver significant benefits to New Zealand.

MBIE provides Commercialisation Partner Network (CPN) funding for KiwiNet activities outside of the IC including the Board of Directors and Management team. CPN funding has enabled KiwiNet's scope of activities to expand beyond the operation of an IC to a much broader facilitation role within the research commercialisation ecosystem. KiwiNet invests CPN funding from MBIE into delivering a programme of activities and initiatives across five strategic themes that are aimed at powering up research commercialisation across the ecosystem.

KiwiNet's strategic themes are:

1. ***Project Pathway*** — Focuses on accelerating opportunities through our pipeline by facilitating committees to allocate funding and provide support and connections, wrap-around opportunity support by the KiwiNet team and initiatives that support opportunities that are past PreSeed funding.

   GOAL: A project pipeline that is delivering massive impact for New Zealand.



2. ***Researcher Pathway*** — Focuses on inspiring, incentivising, and empowering researchers to pursue commercialisation of their discoveries to create new business.

   GOAL: Researchers that are engaged with the commercialisation pathway and have social license to commercialise

3. ***Guiding Principles and Leadership*** — Ensuring initiatives that break down barriers to participation, build capability equally, and advocate widely for the value of commercialisation are woven through KiwiNet's work programme.

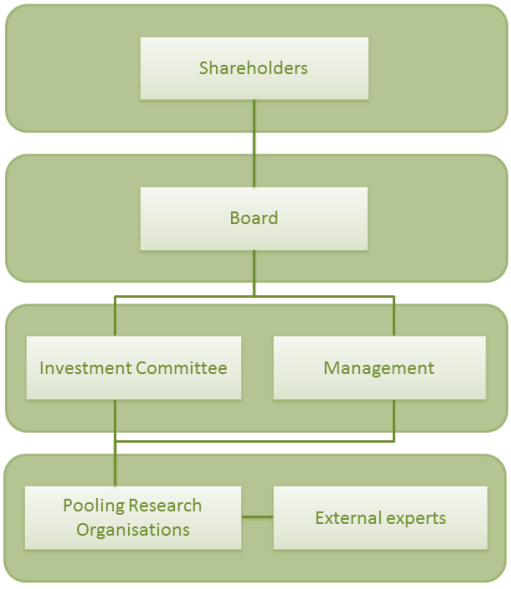
   GOAL: A more diverse, integrated, and vibrant science, research, and innovation ecosystem.

   GOAL: KiwiNet is a credible and trusted leader in the science, research, and innovation ecosystem.

4. ***Ecosystem Building Blocks*** — Providing core ecosystem building blocks to provide commercialisation projects and teams a secure base to grow from. This includes supporting regional ecosystem activity, resources, support, and opportunities to collaborate on projects and empowering commercialisation teams.

   GOAL: An empowered and savvy commercialisation profession.

The KiwiNet structure is depicted below. The Investment Committee (IC), not the KiwiNet Board or Management, is entirely responsible for the governance of PreSeed investment, including all investment decisions.



KiwiNet Shareholders

KiwiNet shareholders currently include seven universities, six Crown Research Institutes, a Crown Entity, and an independent research organisation (see Appendix Two for a full list of shareholders and PreSeed pooling research organisations).

KiwiNet Board of Directors

The Board reports to the shareholders and MBIE. The Board members are chosen for their considerable business experience, understanding of early-stage commercialisation and personal interest in growing New Zealand's economy. The Board has six members, including four independent directors (Will Barker— Chair, Vignesh Kumar, Debra Hall and Katherine Sandford), one CRI representative (Amanda Davies, Scion) and one university representative (Mark Cleaver, Massey University). The Board is not funded using PreSeed funds.

3.1 KIWINET INVESTMENT COMMITTEE

The KiwiNet IC is responsible for the allocation of MBIE PreSeed investment. The committee is governed by an Operations Policy (available upon request) that has been ratified by the

KiwiNet Board and Shareholders. The IC Operations Policy is amended to ensure compliance with MBIE and the objectives of KiwiNet. The committee is scheduled to meet face-to-face 8 times per year and is a forum open to all PROs to share ideas and opportunities. All people attending are under strict confidentiality agreements and conflicts of interest are managed for every project. The IC's functions include:

- **Investment allocation** — Approving investment allocation into projects, monitoring project progress and reviewing portfolio outcomes and impact.
- **Expert guidance** — Leveraging the combined expertise and networks of each committee member to provide expert technical and commercial advice.
- **Networking between PROs** — Creating a forum for senior technology transfer staff to build relationships and identify collaboration opportunities.
- **Capability development** — Provide an open forum for PRO staff to attend as observers and watch projects being discussed (under confidentiality).
- **Shared connections** — Share industry and investor connections between PROs to help each other pursue commercial opportunities.
- **Vision Mātauranga** — Consider opportunities to involve Māori knowledge, resources, and people in the commercialisation process as channel-to-market partners and/or end-users.

3.1.1 Investment Committee members

The Committee has 21 members comprising six independents and a representative from each of the 15 shareholder organisations. The independent members are:

- Debra Hall (18 Limited) — IC Chair
- Daniela (Dana) McKenzie (Yolana Limited)
- Nick Willis (Nick Willis Consulting)
- Brigitte Smith (Suppar Pty Ltd, Australia)
- Andrew Kelly (BioPacific Partners)

The KiwiNet shareholder representatives bring with them a wealth of personal expertise as well as deep knowledge of the activities and capabilities of their respective organisations:

- Rosanne Ellis (WaikatoLink, University of Waikato)
- Michael Fielding (AUT Ventures, Auckland University of Technology)
- Cliff Hastings (Callaghan Innovation)
- Travis Glare (Lincoln University)
- Andy Doube (Landcare Research)
- Sheena Thomas (GNS Science)
- Mark Cleaver (Massey Ventures)
- Dougal Fergusen (AgResearch)
- Peter Cook (Plant & Food Research)
- Pierre Malou (Wellington UniVentures, Victoria University of Wellington)
- Alexandra Tickle (Otago Innovation, University of Otago)
- Rebecca Warr (University of Canterbury)
- Mark Ottaway (ESR)
- Amanda Davies (SCION)
- Eric Swale (Cawthron Institute)

The committee encourages openness and involvement between all PROs and MBIE. Representatives from these organisations are encouraged to attend IC meetings as observers.

The IC is an MBIE approved CPN Investment Committee, meaning it is open to any PRO seeking feedback and advice or seeking approval for PreSeed investment greater than $60k.

3.1.2 Decision Independence

The Investment Committee includes representatives from the PROs. The IC operations policy contains the following rules to ensure independent decision-making:

- The Chair must be an independent member;
- Investment allocation requires a majority vote, including a majority of independent members;
- Presenting organisations cannot vote on their own projects and must leave the room during final decision making.

3.2 KIWINET PRESEED INVESTMENT PROCESSES

The KiwiNet investment process strikes a balance between empowering the PRO partners and ensuring IC oversight. It is essential that PROs can make quick decisions to pursue opportunities as they emerge. However, the partners recognise the importance of independent oversight and guidance from the IC.

KiwiNet invests PreSeed using a two-tiered system, with each tier unlocking greater PreSeed investment, but requiring increasing diligence and greater scrutiny by the IC. This system is reviewed and amended regularly to ensure it is fit for purpose.

3.2.1 Tier One

Up to $40,000 PreSeed investment per project

Tier One PreSeed funding is invested in earlier-stage commercialisation activities and small project commercialisation. Tier One activities can include market validation, recruitment of experts, business plan preparation, IP protection, and preliminary prototype development.

PROs do not need IC approval to allocate Tier 1 to a project; they just need to notify of project commencement by submitting a Project Notification Form. Each PRO has their own internal decision-making processes for Tier 1 investment. However, to ensure the IC has visibility of these projects, PROs must present the project for feedback before more than $20,000 of PreSeed is invested.

Small scale projects may reach the "investor ready" stage within the Tier 1 budget. For projects that require more than $40,000 PreSeed, Tier One enables PROs to prepare a Project Development Plan that is submitted to the IC for Tier 2 investment.

3.2.2 Tier Two

Above $40,000 PreSeed investment

Investment in Tier Two projects must be authorised by the IC. PreSeed funding is approved to execute a Commercial Development Plan based on a business plan, milestone plan, and budget. The plan should map the full pathway to an 'investor-ready' outcome and research organisations are expected to provide quarterly progress reports.

The IC requires the level of due diligence carried out for each project to appropriately reflect the level of PreSeed funding requested.

3.2.3 Other Allocations

- Up to 6.75% of the investment pool may be used to fund costs of portfolio management and the operation of the investment committee.
- Matched allocation for organisations to run a Tech Jumpstart competition and carry out basic market assessment on the resulting opportunities.

- Contribution to the costs of registration fees and eligible travel expenses incurred in sending staff members to events and courses that will help further their professional development in the technology transfer area.

3.2.4 Reporting

The IC monitors the outcomes from all PreSeed investments. The following on-going reporting requirements are expected by the IC:

- **Quarterly Progress Reporting** — PROs present a written and verbal progress report to the IC for all Tier Two projects each quarter. These reports give the IC the opportunity to provide further support and guidance as the project progresses.
- **Fund Management Report** — KiwiNet provides a quarterly report on the PreSeed project portfolio, which is reviewed by the IC.
- **Project Status Changes** — Research organisations must submit a Project Change Request to the IC for all proposed PreSeed investment or project end-date changes.
- **Annual outcomes reports** — Completed projects are periodically reviewed by the IC to monitor their ongoing progress and outcomes, including all Tier One projects.

3.3 KIWINET MANAGEMENT

The KiwiNet management team (see Appendix Two) works alongside technology transfer staff from PROs and other external organisations. The management team does not lead commercialisation projects *per se but* does provide substantial support around project planning. The role of the KiwiNet management team can be grouped into three main functions:

- Administration of the investment portfolio and reporting to MBIE to ensure a high standard of portfolio management and impact tracking.
- Supporting research organisation staff who are engaging with the investment committee to prepare and implement high quality commercialisation plans.
- Implementing initiatives to power-up research commercialisation across the network, in-line with the KiwiNet strategy, to maximise the size and impact of the PreSeed investment portfolio.

KiwiNet management is mostly funded with CPN funding. Only costs directly associated with IC governance and portfolio management are claimed from the PreSeed fund.

3.4 INVESTMENT COMMITTEE OUTCOMES JULY 2019 — JUNE 2023

The KiwiNet Investment Committees met 45 times between July 2019 and June 2023 to provide feedback on projects and approve investment into proposed PreSeed projects. During this period, the KiwiNet IC has allocated $19.8M in PreSeed funding across 562 projects from 16 pooling research organisations. This includes:

- 60 major projects where project plans were approved by the committee (Tier Two), totalling $8.5M PreSeed.

- 502 projects where the decision to invest was devolved to the research organisation (Tier One), totalling $8.0M PreSeed.
- 76 projects that were started in the previous contract (prior to July 2019) and for which the IC made the decision to continue their investment into the recent contract, totalling $2.4M PreSeed.
- $860,935 in PreSeed compliance and operational costs, including operation of the IC.

A total of 105 projects from 17 research organisations have been presented to the IC for feedback and approval over the 12 months from 1 July 2022 to 30 June 2023, including:

- Eleven full proposals for PreSeed funding reviewed by the KiwiNet IC, all of which were eventually approved for Tier 2 investment. This equated to $3.2M PreSeed allocated to Tier Two projects by the KiwiNet IC, Of these projects, one was from TiDA, a publicly funded research organisation seeking non-devolved funding and support from KiwiNet.
- 37 project previews were presented for feedback from the committee. All of which came from the KiwiNet PreSeed pool.

APPENDIX ONE: KIWINET MANAGEMENT AND SHAREHOLDERS

KiwiNet receives Commercialisation Partner Network (CPN) funding from MBIE to operate a national network that promotes greater collaboration and increased impact from commercialisation of public research.

Staff and management are employed by WaikatoLink Ltd (WLL) and seconded to KiwiNet under a management services agreement to maximise the efficient use of CPN funding. All staff seconded into KiwiNet report directly to the KiwiNet CEO. Consultants are contracted where appropriate to bring specialist independent expertise onto projects. Key Personnel (full time)

Name	Position
Dr James Hutchinson	CEO (Hamilton)
Kate Webby	Marketing and Events Manager (Ham)
Shannon Barclay	Marketing and Communications Specialist (Ham)
Glen Beattie	Private Sector Engagement Lead (AKL)
Dr Seumas McCroskery	Researcher Entrepreneurship Lead (Ham)
May Low	COO (Ham)
Michelle Polglase	Commcialisation Manager (Christchurch)
Madushi Wijesundara	Private Sector Engagement (AKL)
Dylan Watson	Portfolio and Systems Manager (Ham)
Alan Hucks	Commercialisation Manager (Wellington)
Mindy Wu	Financial Accountant (Ham)

Current KiwiNet Shareholders

KiwiNet is wholly owned by the following organisations through equal shareholdings:

- AUT Ventures Ltd (Auckland University of Technology)
- WaikatoLink Ltd (University of Waikato)
- Victoria Link Ltd (Victoria University of Wellington)
- University of Canterbury
- Lincoln University
- Institute of Environmental Science and Research Ltd (ESR)
- Otago Innovation Ltd (University of Otago)
- AgResearch Ltd
- The New Zealand Institute for Plant & Food Research Ltd
- Landcare Research New Zealand Ltd
- Callaghan Innovation
- Institute of Geological and Nuclear Sciences Ltd (GNS Science)

- New Zealand Forest Research Institute Ltd (SCION)
- Massey Ventures Ltd (Massey University)
- Cawthron Institute Ltd

KiwiNet PreSeed Pooling Partners

The following organisations access pooled PreSeed funding through MBIE's devolved contract* with KiwiNet:

- DAUT Ventures Ltd (Auckland University of Technology)
- WaikatoLink Ltd (University of Waikato)
- Victoria Link Ltd (Victoria University of Wellington)
- University of Canterbury
- Lincoln University
- AgResearch Ltd
- Lincoln Agritech Ltd
- Cawthron Institute Ltd
- Health Innovation Hub (HIH)
- Massey Ventures Ltd
- National Institute of Water and Atmospheric Research Ltd (NIWA)
- Malaghan Institute of Medical Research
- The New Zealand Institute for Plant & Food Research Ltd
- Landcare Research New Zealand Ltd
- Callaghan Innovation
- Institute of Environmental Science and Research Ltd (ESR)
- Institute of Geological and Nuclear Sciences Limited (GNS Science)

* Other public research organisations not formally in the KiwiNet pool are also eligible to access PreSeed funding through what was formerly known as MBIE's non-devolved fund.