



BIORESOURCE
PROCESSING ALLIANCE

IMPACT REPORT 2025/26



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All dollar amounts reported are in NZ dollars unless otherwise stated

Our purpose

We provide funding to augment industry investment in research and development projects that create high-value products from low-value primary industry biological resources.

The BPA is funded by the Ministry of Business, Innovation and Employment (MBIE) to facilitate industry connections to research, technical expertise and facilities. It is a bridge between industry and innovation, supporting job creation, productivity improvement, new domestic and export revenue and environmental benefits for New Zealanders, through the application of

technology to biological resources. It supports and facilitates collaborations between industry and experts, by leveraging the specialist skills and capabilities of the Bioeconomy Science Institute Maiangi Taiao, Callaghan Innovation, New Zealand universities and our other research and development partners.



"The BPA was a game-changer for us in terms of collaborating with Callaghan Innovation and the way we thought about innovation and product development. It really opened up the possibilities for us and broadened our thinking to a whole range of new products."

Jason Galloway – Alchemy Gisborne

Our people

Science Leadership Group

The Science Leadership Group is made up of industry experts from across our alliance. They review proposals for funding and support in the first instance, and make their recommendations to the board for final approval.

Christophe Collet, Bioeconomy Science Institute Maiangi Taiao

Christophe's current research area focuses on using biomass resources available in New Zealand, including wood waste, dairy waste streams, other agro-industrial waste streams, and industrial gases containing CH₄ and/or CO₂, to produce value-add materials, such as single cell protein, bioplastics, bio-composites and synthetic biology products. He also works with New Zealand biotech start-up companies and research laboratories, developing and scaling fermentation processes from 0.25L to 1,000L bioreactors, as well as downstream processing to finished products for a range of applications. He is based at the Bioeconomy Science Institute's Industrial Biotechnology Platform in Rotorua.

www.linkedin.com/in/christophe-collet-82242bb/



Stewart Collie, Bioeconomy Science Institute Maiangi Taiao

Stewart is a senior scientist and team leader with a background in wool and textile technology. His team's research activities include a range of bio-based materials, formats and processes, especially protein-based materials coming from secondary resource streams from the agriculture sector, and bioextracts from diverse sources for application in the personal care sector.

www.linkedin.com/in/stewart-collie-a57a2741/



Richard Edmonds, Bioeconomy Science Institute Maiangi Taiao

Richard is a senior bioprocessing engineer based in Palmerston North, part of the Food Solutions team applying science and engineering to develop and commercialise innovative food and feed ingredient processes for industry.

Richard joined the Bioeconomy Science Institute in 2018, where his work focuses on plant ingredient processing and techno-economic analysis to support commercially viable outcomes.

www.linkedin.com/in/richard-edmonds-94433048/



Stephen Tallon, Callaghan Innovation Biotechnologies Group

Stephen Tallon is a senior scientist at Callaghan Innovation in the Biotechnologies group. He leads a team of process and biotech engineers specialising in developing new products and processes in the food and natural products industries. The team operates a pilot product development suite for rapid assessment and development of opportunities, from concept through to small scale manufacture. Specialist subject areas include the use of pressurised and supercritical solvents, separation processes, and enzymatic transformation. He also has expertise in process design, feasibility assessment, and hazard assessment.

www.linkedin.com/in/stephen-tallon-ba287733/





The BPA board and Science Leadership Group

Management

Our general manager maintains links between the BPA, our R&D partners, industry and the innovation sector, providing funding advice and support in developing project ideas and submitting applications. The general manager is supported by the project co-ordinator who provides expertise in operational delivery, project contract administration and management.

Ian Raynor, Project Co-ordinator, Callaghan Innovation

Ian has served as the product co-ordinator at Callaghan Innovation since 2022. In this role, he provides support to the BPA general manager, board and Science Leadership Group, including operational delivery, project contract administration and management. Ian brings extensive experience as a project co-ordinator, having held similar roles over many years at Callaghan Innovation and its predecessor organisations.



Nicky Solomon, General Manager, Bioresource Processing Alliance

Nicky joined the BPA as general manager in 2023. She also works for the New Zealand Food Innovation Network, is a member of the NZ Food Safety/Haumaru Kai Aotearoa Advisory Board and is the current chair of the board of Foodeast Haumako, an innovation hub in Hawke's Bay.

www.linkedin.com/in/nicky-solomon-cminstd-b4b1716/



Our board

Our board of directors governs the BPA's performance, makes funding decisions, and provides strategic direction.

Max Kennedy, Chair

Max Kennedy is a biochemical engineer specialising in fermentation and is the managing director of consulting company, Biolighthouse Ltd. Previously, he was manager of contestable investments at the New Zealand Ministry of Business, Innovation and Employment (MBIE). In this role, Max was responsible for R&D supporting transformative economic, environmental and social outcomes for New Zealand including from the Endeavour Fund (New Zealand's largest contestable research fund), the industry-led Partnership Fund, the Pre-Seed Acceleration Fund, and the Vision Mātauranga Capability Fund. Max also led MBIE's COVID Innovation Acceleration Fund to support research to respond to the COVID-19 pandemic. Prior to this Max was involved in the meat, wool, and pharmaceutical sectors.

www.linkedin.com/in/maxkennedy/



Katy Bluett, Independent Board Member

Katy Bluett is an experienced food and innovation leader with a background spanning multinational FMCG companies, startups, and the public sector. Through her consultancy, Appetite for Change, she supports businesses, researchers, and founders to translate innovation into commercial outcomes.

She is also executive director of Future Food Aotearoa, supporting the growth and impact of New Zealand's foodtech sector through collaboration, international connections, and ecosystem development.

Katy brings extensive experience in food innovation, commercialisation, and food systems transformation.

www.linkedin.com/in/katy-bluett-05353a1b/



Owen Catchpole, Callaghan Innovation Biotechnologies Group

Owen is the chief engineer and team leader of the Food Processing Technologies team in the Biotechnologies Group of Callaghan Innovation. The Biotechnologies Group specialises in near-to-market research and development into the application of bioprocessing to biologically-derived raw materials to make high-value nutraceuticals, food ingredients and biopharmaceuticals. His work was instrumental in establishing a supercritical extraction industry in New Zealand to make such products, which has led to a Royal Society NZ Science & Technology Silver Medal, the NZIC Fonterra prize for Industrial and Applied Research, being elected a Fellow of Engineering NZ and a Fellow of the Royal Society Te Aparangi, and most recently, being awarded the R J Scott Medal.

www.linkedin.com/in/owen-catchpole-8478287/



TC Chadderton, Bioeconomy Science Institute Maiangi Taiao

In his role within the Bioeconomy Science Institute, TC leads a multidisciplinary group of 35 science staff studying food impacts on human health, consumer responses to foods and food system innovations, and chemosensory systems. The group operates specialised Consumer Research and Human Clinical Trial facilities that are unique within New Zealand.

TC brings extensive experience in research and innovation leadership, including formulating R&D team strategy, establishing strategic collaborations, and securing investment in people, equipment and infrastructure. His career has included four years as business development manager (US/Americas) for Plant & Food Research, as well as roles as operations manager, research team leader and research engineer.

www.linkedin.com/in/tcchadderton/



Stefan Clerens, Bioeconomy Science Institute Maiangi Taiao

Stefan manages a group comprising six science teams in the food science and biomaterials space. The group's food sciences capabilities include microbial food safety and shelf life, flavour and aroma profiling, dairy and meat processing, non-invasive sensing, precision fermentation, gut health, behaviour and cognitive wellbeing, consumer understanding, and emerging proteins.

Stefan's research experience revolves around omics technologies, specifically proteomics and peptidomics as applied to food and bioproduct matrices.

Stefan received his PhD from the University of Leuven (Belgium) in mass spectrometry of biomolecules. He is a member of the Riddet Institute Partner Reference Group, and sits on the New Zealand Synchrotron Group and the Canterbury Joint Postgraduate School Food Transitions 2050 as a Bioeconomy Science Institute representative.

www.linkedin.com/in/stefan-clerens-16293485/



Marc Gaugler, Bioeconomy Science Institute Maiangi Taiao

Marc is a chemical engineer, with a current focus on using biomass resources available in New Zealand to produce value-add materials, such as bioplastics, composites and biochemicals from woody biomass. He started his professional life developing, identifying and developing bio-based plastics additives, and then moved into plastics product and processing development.

www.linkedin.com/in/marc-gaugler-a4361914/



Peter Gostomski, University of Canterbury

Peter is a Professor of Chemical and Process Engineering at the University of Canterbury. He has previously held acting positions as Deputy Vice-Chancellor Research and Executive Dean of Engineering and was Head of Department of Chemical and Process Engineering for 17 years. His research interests are in bioprocess engineering, looking at both the production of biochemicals and environmental biotreatment technologies. Specific projects that he is actively working on include biofiltration, denitrification and microbial fuel cells. He is a Fellow of both IChemE and Engineering NZ.

www.linkedin.com/in/peter-gostomski-64688b25/



Francene Wineti, Independent Board Member

Te Atihaunui a Pāpārangi, Ngāti Tūwharetoa, Ngāti Rangī, Ngāti Kahungunu ki Wairoa.

Francene is owner and director of Awariki Limited, a niche consultancy company delivering specialised services on kaupapa Māori research and development and Māori cultural capability. Francene has a wealth of experience in iwi/Māori development and strong relationships in the government, science and innovation sectors with well established iwi/Māori networks, across all faces of Māori business.

Her areas of expertise include fisheries, aquaculture, agribusiness, agrifood, science and innovation, and iwi/Māori economic development. She holds a number of governance roles including Director of Ngāti Tūwharetoa Fisheries Limited, Hautaki Trust and Trustee of Te Huarahi Tika Trust – the Māori Radio Spectrum Trust and Te Ara Pōtiki Trust – a charitable trust that aims to increase the number of Māori people connected to and experienced with international start-ups in the agrifood sector.

www.linkedin.com/in/fwineti/



Message from the chair

In my address at this year's Sustainable Solutions Symposium – our second annual event – I said that the BPA offers a "win-win-win situation" — delivering benefits for industry and the economy, creating stronger connections between science and business, and contributing to a more circular economy.

Despite challenging economic conditions, New Zealand's bioeconomy sector is ambitious, collaborative and increasingly focused on creating high-value, sustainable solutions. I firmly believe that the key point to ponder is not the potential of the bioeconomy, but how we build on existing momentum to achieve that potential.

Since our inception in 2012, we have supported hundreds of projects, resulting in job creation, domestic and export revenue, new business and the growth of existing business, student success and diversion of waste from landfill.

The role that the BPA has played over the past decade in connecting science and industry to accelerate innovation and commercialisation across New Zealand's bioeconomy is showcased in the stories of some of the companies that we have supported. Here are just a few examples.

At Ecogas in Reporoa, where organic waste is converted into energy and fertiliser, we provided funding to enable them to take a pilot-scale project to the next level.

At New Zealand King Salmon in Nelson, we supported their R&D process with early and developmental stage funding, enabling the conversion of unused salmon into high-value pet treats.

At Miti in North Otago, our collaboration and project support has de-risked their next stage of scale-up, including manufacturing trials and investor engagement, as they advance the conversion of underutilised dairy beef and convert it into protein snacks.

For Rotorua-based Cetogenix, beyond our project funding, we have enabled access to independent scientific expertise and facilities, providing critical third-party validation as they

begin the exciting journey of commercialising the conversion of complex organic waste into biogas and fertiliser.

And finally, at Marlborough-based NZ Extracts, which converts waste grape seeds into high-value bioactive supplements, we have shown our strong support for regional economic impact with both their raw materials and manufacturing process sourced and based in the region.

You can read more about some of these companies in the following pages. We pride ourselves on the variety of companies we support, and their geographical spread across New Zealand.

The funding we receive from the Ministry of Business, Innovation and Employment (MBIE) has enabled us to further our mission of turning primary sector coproducts into commercially successful high added-value products, and we acknowledge and value their support. I would also like to acknowledge the support we have had from Callaghan Innovation over the years, which has assisted with the running of the BPA.

Our organisation is focused on collaboration, and every project is a team effort, both past and present. This year, we farewelled our long-serving and highly esteemed board member, Susan Marshall, who brought wisdom and expertise to her work with the BPA, and we wish her well in her new endeavours.

I would also like to acknowledge the work and untiring dedication of our general manager, Nicky Solomon, my fellow board members, the Science Leadership Group, and researchers and scientists from the Bioeconomy Science Institute, universities and other organisations in labs across the motu who take the seed of an idea and help make this all happen.



Max Kennedy
Board Chair





"BPA support has materially increased our appetite and confidence to invest in R&D. For a small New Zealand company with a thin balance sheet, early process de-risking is often the difference between continuing an ambitious science programme and parking it. BPA support allowed us to generate credible process and economic evidence before raising or committing larger capital. The outcomes have helped us secure stronger internal support from shareholders and research partners to continue the sarmentosin programme through safety, regulatory, extraction and human clinical work."

Angus Brown – Ārepa

Message from the general manager

Since our inception, collaboration has been a core tenet of the BPA.

Nurturing collaboration between industry and the research sector, as well as between various research providers, is core business for us. Our industry partners benefit from our support to access the world-class expertise of our research partners, and our partners benefit from connections to industry and to each other.

It has been a year of many highlights achieved through this collaboration.

With 23 projects completed this year, the combination of R&D expertise, innovation and entrepreneurship across our industry and research partners has created some compelling success stories, with the potential for many more. It is particularly encouraging to see the enduring commitment of New Zealand industry to innovation, even in a challenging economic environment and across the spectrum from start-ups to SMEs through to corporates. This continued focus on creating economic value while improving sustainability reinforces the vital role that innovation plays in building a more prosperous and resilient future.

We were delighted to welcome a stellar group of speakers, presenters and attendees to our second annual Sustainable Solutions Symposium, held this year in Rotorua.

Attendees at last year's event told us that they really valued hearing the success stories of New Zealand businesses that had benefited from our collaboration and expertise. We were proud to highlight five more organisations at this year's event, all exemplifying how our combined support has helped generate value-add opportunities and drive economic and export growth.

In her opening address at the symposium, Hon Penny Simmonds, Minister of Science, Innovation and Technology, described the bioeconomy sector as ambitious, collaborative and increasingly focused on creating high-value, sustainable solutions. The key question, she said, is no longer whether New Zealand's bioeconomy has potential, but how quickly its impact can be increased.

This impact remains our key focus. I conduct surveys with businesses at the conclusion of their projects, and I am delighted to report that out of those completed this financial year, all said our support had increased their business' appetite to invest in R&D and had nurtured a collaboration. Most businesses reported that they have plans to progress their innovation and have new products or processes in development. Significantly, nearly three quarters anticipate that their project will lead to diversion of waste from landfill.

We are committed to understanding how our impact carries forward into the future, recognising that investment in innovation takes some time to come to fruition. Since our inception 14 years ago, we have supported nearly 200 companies to de-risk their investment in innovation and attracted industry investment of \$10 million into R&D projects. Businesses we have supported have gone on to achieve significant investment and commercial production at scale, forge meaningful partnerships and expand internationally. You can read more about some of them in the following pages.

The BPA has long recognised that the future of New Zealand's bioeconomy depends on investing in emerging researchers. To date, we have funded 45 student interns and more than 20 postgraduate students, supported and supervised by a collaboration of scientists and researchers from New Zealand universities and

our other research partners, including those now part of the recently formed Bioeconomy Science Institute.

I would like to acknowledge the outstanding leadership and guidance provided by our board chair, Max Kennedy, whose unwavering support, encouragement and wise counsel have been invaluable to me throughout the year.

I would also like to thank the Science Leadership Group, members of the board and my other colleagues at Callaghan Innovation and the Bioeconomy Science Institute for their continued support and strategic oversight.

Their dedication, along with the calibre of discussion, insight and constructive debate they bring, strengthens the work of the BPA and contributes significantly to our success.

N. Solomon

Nicky Solomon
General Manager



OUR IMPACT

Our impact since 2012:

- Provided >\$24m funding
- Funded >300 projects
- Helped 200 companies de-risk their investment in innovation
- Attracted \$10m industry investment in R&D
- Funded 65 students



Our impact over time

The BPA was established in 2012 as a collaboration between Callaghan Innovation, Scion, AgResearch, Plant & Food Research and New Zealand universities, to develop high-value products from low-value primary industry biological raw resources.

We are focused on the impact that our funding has on the businesses that we support. As well as more immediate results, we are committed to understanding how that impact evolves into the future, recognising that investment in innovation takes some time to come to fruition.

Since our inception in 2012, we have provided over \$24 million of funding support to more than 300 projects.

We have supported almost 200 different companies to de-risk their investment in

innovation and attracted industry investment of \$10 million into research and development projects.

We have funded 45 student interns and more than 20 postgraduate students.

To illustrate our impact, we have profiled two companies that we supported in their early stages, mapping their progress and where they are now.



"BPA funding created opportunities for us to review processes and fundamentally transform our conversations from simply avoiding waste disposal to creating true value. The BPA's support has allowed our company to plan further into the future and solidify our innovation pipeline."

Stephen Giterau – Alliance

We are stronger together



Anagenix, the nutraceutical ingredient manufacturer, is proof of what can be achieved when research and industry work together.

When Anagenix was founded in 2013, the company's vision was ambitious: to develop scientifically validated health ingredients from New Zealand fruit that could compete on the world stage. Turning that vision into reality required more than great ideas—it required research expertise, commercial support and the right partners.

That began with the BPA.

Anagenix's first BPA-supported project focused on developing a gut health ingredient from kiwifruit.

While the health benefits of kiwifruit were well recognised, producing a stable, commercially viable freeze-dried powder presented a significant technical challenge.

At the time, commercial freeze-drying expertise in New Zealand was limited, and Anagenix was attempting to bridge the gap between laboratory research and large-scale manufacturing.

"The first funding round was incredibly important," says Anagenix. "It enabled us to start our kiwifruit project, investigate how to make a better product, and understand how to translate our research into commercial manufacturing."

For Anagenix, the BPA was the ideal partner because it shared the company's commitment to advancing New Zealand's primary industries through innovation. The support provided not only funding but also the confidence to tackle complex scientific problems that would ultimately underpin the company's future success.

The success of the kiwifruit programme quickly led to a second BPA-supported project, this time exploring the health potential of feijoa.

By then, Anagenix had become convinced that New Zealand fruit represented an untapped opportunity for developing premium nutraceutical ingredients with global appeal.

Lessons learned from the kiwifruit project—including how freeze-drying could create stable, appealing whole-fruit powders—provided a strong foundation for the next stage of research.

The science delivered an unexpected breakthrough. Researchers discovered that feijoa could reduce age-related pro-inflammatory cytokines, revealing a previously unrecognised mechanism that could support healthy ageing. More importantly, the work demonstrated that Anagenix was creating ingredients with unique health benefits that were not available elsewhere in the world.

A key strength of the BPA has been its ability to connect businesses with New Zealand's leading research organisations, and those relationships have become central to Anagenix's growth.

Over the past decade, the company has worked closely with Callaghan Innovation and Plant & Food Research, now part of the Bioeconomy Science Institute Maiangi Taiao. Those collaborations have extended far beyond the original BPA projects and continue to support new product development today.

Together, the partners have undertaken in vivo testing, compositional analysis, synbiotic research, clinical trials and advanced analytical work that Anagenix says simply would not have been possible on its own. Access to specialised expertise in freeze-drying, polyphenol analysis and product validation has enabled the company to build a scientific evidence base that differentiates its ingredients in international markets.

The BPA's collaborative model has allowed Anagenix to transform promising fruit science into commercially successful products backed by robust research.



"New Zealand may be a small country, but when science and industry collaborate, we can achieve global success. Through the support of the BPA and our research partners, we've created products backed by science that don't exist anywhere else in the world. We are stronger together."

Anagenix

Today, many of the company's flagship ingredients trace their origins directly back to those early BPA-supported projects. Both Actazin®, the company's green kiwifruit ingredient, and Livaux®, its gold kiwifruit ingredient, were supported with BPA funded research.

Since then, Anagenix has grown into a global supplier of premium whole-fruit ingredients. The company has completed 11 clinical studies and 22 in vivo and in vitro studies across its product portfolio, established its own freeze-drying facility and secured patents for three products in more than 22 countries.

Regulatory milestones, including approvals from Food Standards Australia and New Zealand (FSANZ) and Health Canada for bowel regularity claims relating to Actazin®, have further strengthened the company's international position.

Commercial success has followed scientific success. Anagenix now supplies nutraceutical, functional food, sports nutrition and pet health companies around the world, with the United States and Europe emerging as its largest export markets. The company attributes that growth to a combination of rigorous science, manufacturing capability, regulatory approvals and partnerships with more than 25 distributors worldwide.

Independent scientific validation has become one of Anagenix's strongest competitive

advantages. Every ingredient is verified through third-party testing, while collaborations with New Zealand research institutes provide customers with confidence that the science has been independently assessed.

Looking back, Anagenix believes the BPA's greatest contribution has been enabling the company to explore opportunities that commercial constraints might otherwise have prevented.

"The BPA has helped us investigate ideas that have both commercial and sustainability benefits, while reducing the risks of innovation through well-structured research programmes," says Anagenix.

That philosophy continues to shape Anagenix's innovation strategy. Today, the company is investigating ways to better utilise horticultural waste streams while advancing research into microbiome science, whole-fruit bioavailability and new applications for natural ingredients.

Looking ahead, Anagenix wants to be recognised globally as the leading provider of clean-label, scientifically backed whole-fruit solutions for gut health, immunity, metabolic and cognitive health.

Reflecting on more than a decade of collaboration, the company sees its partnership with the BPA as proof of what can be achieved when research and industry work together.

www.anagenix.com

Scaling the circular economy



Over the past four years, Ecogas has demonstrated that food waste is far more than a disposal challenge—it is a valuable resource capable of producing renewable energy, low-carbon fertilisers and recycled carbon dioxide.

As the company has progressed from proving its anaerobic digestion technology at Reporoa to expanding nationally, the BPA has played an important role in supporting the research, collaboration and innovation that underpin its growth.

One of the company's most significant milestones has been successfully bringing its Reporoa facility into stable commercial operation. The site now converts food waste into renewable biomethane that is injected directly into New Zealand's natural gas network—the country's first commercial gas-to-grid biomethane project.

At the same time, Ecogas has completed another important part of the circular economy by supplying recovered bio-CO₂ to tomato grower T&G Global's nearby glasshouse operations. Together with its biofertiliser production, the facility now captures value from every stage of the anaerobic digestion process.

For Ecogas, achieving this fully integrated system has been a defining moment.

"We have closed the loop fully in Reporoa," says Dr Alzbeta Bouskova Houghton, Chief Technology Officer at Ecogas, pointing to renewable gas, bio-CO₂ and biofertiliser as tangible examples of how organic waste can become valuable products rather than emissions at landfill.

The experience gained at Reporoa is now being applied to the company's second organics processing plant in Christchurch.

Following the signing of a services agreement with Christchurch City Council, the project has progressed through contractor selection, resource consenting and construction, with

commissioning targeted for the third quarter of 2027.

While the Christchurch facility builds on the proven Reporoa model, it also incorporates new product streams. Unlike Reporoa, which processes primarily food waste, Christchurch will accept food and garden organics (FOGO), which creates opportunities to produce additional products.

One notable innovation will be the production of compressed digestate fibre briquettes from garden waste. These will be supplied as a renewable biomass fuel for Canterbury's industrial heat sector, extending the value recovered from organic waste even further.

Many of the engineering improvements incorporated into the Christchurch facility have come directly from operational experience at Reporoa, including design changes to improve plant operability and maintainability, the use of proven contractors and suppliers and refinements to project delivery.

Alongside commercial development, research partnerships have continued to strengthen Ecogas' capabilities.

The company has deepened its collaboration with the University of Auckland, working with Professor Saeid Baroutian on digestate composition research, while continuing carbon intensity methodology work with Toitū Envirocare.

Ecogas has also entered into a memorandum of understanding with Cetogenix (another BPA-supported business) to demonstrate emerging technology at the Reporoa site.

These collaborations reflect the same model championed by the BPA of bringing together industry and research organisations to accelerate innovation and strengthen commercial outcomes.



"Our progress from Reporoa to Christchurch shows what is possible when research, innovation and industry work together—and demonstrates the role that collaborative programmes such as the BPA can play in helping New Zealand businesses scale solutions with lasting environmental and economic impact."

Dr Alzbeta Bouskova Houghton, Chief Technology Officer – Ecogas

As the business has grown, Ecogas' understanding of the wider opportunities within the circular bioeconomy has also evolved.

While diverting food waste from landfill remains important, the company increasingly sees renewable gas production as a critical contributor to New Zealand's future energy resilience and independence. Biofertiliser markets have matured, with Fertify® now achieving DBPAS certification and establishing a stable customer base, while demand for renewable biomethane continues to grow.

The successful supply of bio-CO₂ to T&G Global demonstrates another valuable revenue stream that reduces emissions while supporting resilience and independence of New Zealand food production.

Ecogas believes many of the remaining challenges are no longer technological.

Instead, the barriers are largely policy and market related. The company argues that policies targeting diversion of organic waste from landfill, alongside clear renewable gas targets, would accelerate investment and create a stronger foundation for the anaerobic digestion sector.

The company has become an increasingly active voice in these discussions, contributing submissions on emissions trading regulations, organic waste policy and sustainable finance frameworks. This advocacy reflects a growing recognition that innovation alone is not

enough—Ecogas says that supportive policy settings are key to the accelerated unlocking of the full potential of New Zealand's bioeconomy.

Looking ahead, Ecogas' priorities are clear. Over the next two years, the company aims to deliver the Christchurch facility on schedule while expanding the Reporoa plant to process up to 100,000 tonnes of organic material annually. Beyond that, it sees opportunities for additional projects across both New Zealand and Australia, where recently introduced legislation in organic waste diversion is creating new market opportunities.

Throughout this growth, the collaborative approach promoted by the BPA continues to provide an important foundation. By encouraging partnerships between researchers, industry and government, the BPA has helped create an environment where innovative technologies can move beyond demonstration and into commercial reality.

Ecogas believes New Zealand has all the ingredients required to become a leader in the circular bioeconomy.

"The challenge now is ensuring that organic waste is recognised not as a disposal problem, but as a valuable national resource capable of producing renewable energy, reducing emissions and supporting more resilient food and energy systems," says Dr Bouskova Houghton.

www.ecogas.co.nz

Our impact by the numbers

Highlights from 2025–26

We are very proud of the incredible ideas we have helped bring to life over the past year. Here is a snapshot of the impact we have had.



26 PROJECTS APPROVED

- 18 game-changing commercial ideas
- 8 student projects secured funding
(1 PhD, 3 master's and 4 summer intern students)



23 NUMBER OF PROJECTS COMPLETED

The BPA funds multi-year projects



28% MĀORI AFFILIATED ENTITIES

BPA funding allocated:

\$1,763,000



Cash co-funding from industry:

\$511,000



In-kind co-funding from industry:

\$237,000



Northland

Auckland

Waikato

Bay of Plenty

Hawke's Bay

Marlborough

Nelson/Tasman

Canterbury



Our geographical and regional impact

The 18 commercial projects we have supported over the past year are spread throughout Aotearoa New Zealand in the following regions.



"Access to BPA funding makes investment into research more palatable for business and creates an incentive for research teams to bring ideas our way. Researchers might suggest a novel process or diversification area to our business that we might otherwise not have considered. In our case, BPA funding gave us a realistic idea of what the commercial aspects of the project would look like, allowing us to make well-informed business decisions."

Jason McLaren – Freshpork NZ

Helping build brands based on heritage, provenance and mātauranga Māori

Seeding and supporting innovation in the Māori economy

Māori bioresources and mātauranga Māori represent one of New Zealand's most distinctive sources of future competitive advantage. By combining indigenous knowledge with science, engineering and commercial expertise, new opportunities are emerging to create premium ingredients, consumer products and advanced biomaterials that can generate greater economic, cultural and environmental value.

The BPA plays a unique role in helping move these opportunities from concept towards commercial reality. Through techno-economic analysis, product development and translational research, we support Māori enterprises to identify viable markets, reduce commercial risk and build businesses grounded in heritage, provenance and innovation.

This year, we supported five Māori-affiliated projects spanning harakeke, mamaku (black tree fern), kūmara vines and forestry residues - demonstrating how underutilised natural resources can become the foundation for new products, stronger regional economies and higher-value export opportunities. Alongside these projects, our long-standing partnerships with innovative Māori businesses such as Miti and AgriSea continue to show how science and mātauranga Māori can combine to create globally relevant businesses with enduring impact.

Creating value from underutilised bioresources

Harakeke fibre production

We supported a team exploring uses for three by-products from harakeke fibre production; leaf butts and trimmings, green strippings and the waxy para. With quality muka fibre only making up about 7% of the harakeke leaf processed, having a use for the remaining plant material is important. The techno economic analysis generated by this project highlighted labour as the dominant cost and helped the team identify where to focus next.

Another harakeke project which is currently underway builds on these learnings and investigates the potential for a Northland micro enterprise producing a range of harakeke products, including gel, oil and fibre.

Clearfell harvest residue

A study carried out for two large Māori forest trusts sought to address concern over the volume of residues left in the forest after clearfell harvest and the potential unrealised value that these represent. It examined potential economic uses for the low-grade wood - a growing concern with the closure of the pulp mill at Karioi and the paper machine at the Kinleith pulp mill. With over 50,000 hectares of land, the trustees are examining the best land use for the next century or more. This project assessed the techno economics of options identified in a previous project and enabled the trusts to determine which options are worthy of further development.

Building premium Māori products and brands

Mamaku gel by-products

We have also explored the higher-value uses of by-products from the production of a mamaku gel used in skincare. The mamaku gel by-products are currently used as mulch, but there is potential for higher-value uses including an ingredient for cleaning or laundry products for sensitive skin. The techno economic analysis resulting from this project enabled the business to identify a promising market opportunity, which they plan to pursue.

www.mamakuskin.com

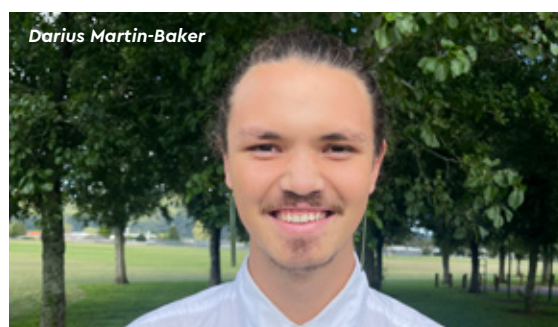


"The BPA-funded techno economic analysis provided the foundation for us to explore the possibilities for waste streams from the Mamaku extract. We can now see the way forward to explore different processing options and to scale for export. We've always had an interest in R&D – the BPA allowed us to retain that interest. It's a great way to outsource R&D when it can't always be a priority in a small business. We particularly appreciate the relationship with our key contact at the BSI – sensitivity is a key point of difference for us from our business model to our products, and she understands that."

Tessa Davis – Mamaku Skin

Kūmara vine powder

A BPA-funded research programme with Callaghan Innovation was completed this year, resulting in a proven, scalable route to a stable kūmara vine powder, and a clear picture of where the nutritional and bioactive value sits within the plant. With the research phase complete, focus is now on product development, commercial viability and the regulatory pathway for selling a kūmara vine-based health product.



"I believe there's a real gap in the New Zealand premium greens powder market for a brand built on heritage and provenance rather than just nutrition, convenience or price. No-one is telling a genuine cultural story. I'm aiming to normalise the use of plant-based health products as a key part of Māori-based healing, or rongoā Māori."

Darius Martin-Baker – Ngāpuhi (Waimā and Ngāwhā)



Daniel Carson

Supporting Māori-led commercialisation

Miti – one year on

We featured North Otago-based Miti in last year's Impact Report as an example of an innovative business that had recently wrapped up a BPA-funded project.

The Miti project has been a breakthrough for Alps2Ocean Foods, the Māori-owned company behind the product, demonstrating that young dairy-derived beef can be transformed into a premium, shelf-stable, nutrient-dense food with a significantly lower on-farm carbon footprint than traditional beef.

We take another look at Miti 12 months on to see what's progressed.

During that time, Miti has been recognised in a range of awards, including:

- Australian Dairy Conference Innovator Award 2026
- Meat & Livestock Australia Innovation Challenge, Gulfood, Dubai 2026
- Finalist in the Māori Company of the Year category at the 2026 New Zealand Hi-Tech Awards
- Finalist in the 2025 New Zealand Food Awards

www.miti.nz

"Crucially, BPA funding enabled us to bring together a coalition of aligned partners across the red meat, science and sustainability value chains. This collaboration would not have been possible without the project support and has de-risked our next stage of start-up, including manufacturing trials and investor engagement."

Daniel Carson – Alps2Ocean Foods

Systems for young beef and potential partnerships

Miti has also completed the product development work for a new high-fibre variant of Miti and is currently researching manufacturing pathways for commercial production and exploring cost viability.

Work has continued to develop on the young beef side, including the carbon science, traceability and supply-chain system that sits behind the model. They are seeing stronger interest from potential partners in Australia, particularly around applying the system to dairy-origin young beef and connecting verified animals with committed buyers.

Working towards a stronger global position for Māori-led foods

Alps2Ocean Foods was a recipient in the 2026 Ara Whaihua funding round of He Ara Whakahihiho Capability Fund (MBIE); one of 19 work programmes whose primary focus is the pathway to commercialisation and/or economic growth from excellent science.

The aim of its Kaitiakitanga in Action project is to show how New Zealand can meet global demand for sustainable and ethical food by combining cutting-edge research. The outcome will be a set of consumer-facing materials and a process guide that other Māori agribusinesses can adapt to create their own science-based export stories. The expected benefit is a stronger global position for Māori-led foods, starting with Miti as a demonstration case. Over time, this work will help New Zealand farmers, Māori enterprises, and communities capture greater value by showing the world that our country's pastoral food systems can deliver nutrition with integrity, innovation, and a lighter footprint.

How we measure impact

The BPA conducts regular surveys with businesses at the conclusion of projects to gauge impact.

The data below is aggregated across responses received for projects completed this financial year.

- 100% report that BPA funding has nurtured a collaboration and/or knowledge sharing
- 100% report that BPA support has increased business appetite to invest in R&D
- 92% of businesses have plans to progress their innovation
- 85% currently have new products or processes in development
- 69% anticipate diversion of waste from landfill or other disposal
- 62% have invested or plan to invest in new capital as a result of BPA project



Risk profile – commercial projects funded in 2025/26:

- **Exploratory** – 50% (known as Technology Readiness Levels (TRL 1-3))
- **Development** – 44% (known as TRL 4-6)
- **Commercialisation** – 6% (known as TRL 7-9)

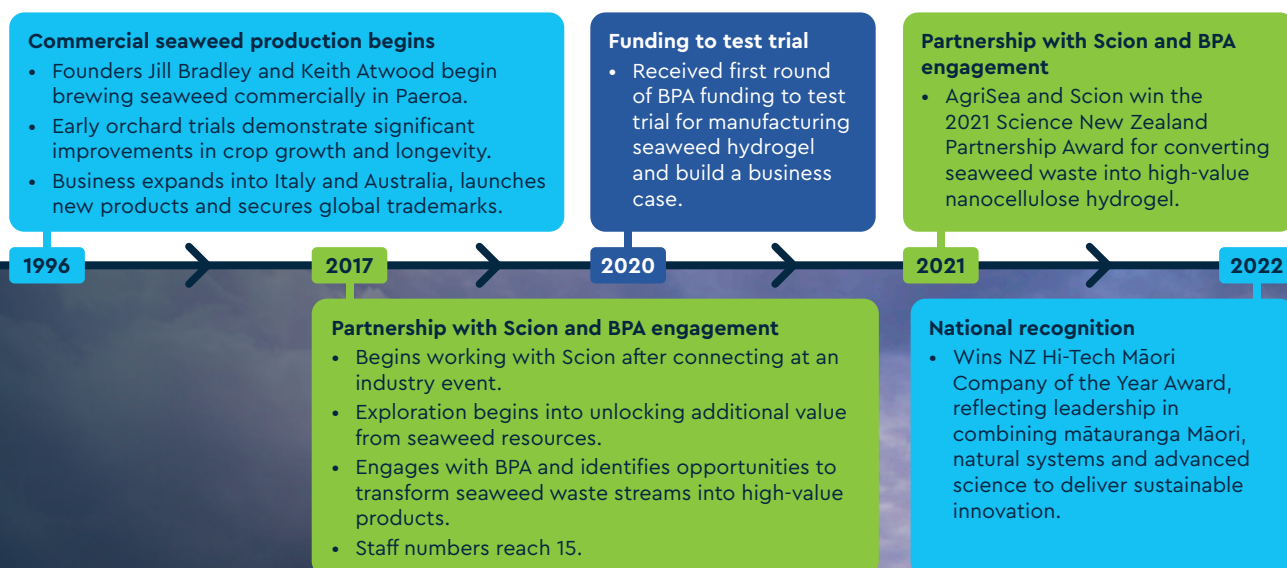


Scaling science into commercial reality



BPA impact:

- Funding enabled scale-up from laboratory research to commercial production.
- Supported pilot trials, plant design and business case development, reducing technical and commercial risk.
- Helped transform a seaweed waste stream into a scalable, globally relevant biomaterials platform.
- Partnership/support highlights successful translation of science into commercial outcomes delivering benefits for New Zealand.



"The success of the commercial-scale plant depended on first scaling scientific processes from the lab to pilot scale. Funding from BPA enabled this critical intermediate work with AgriSea, ensuring a seamless transition to full-scale operations. The BPA has enabled us to take our business to the next level of scalability and commercial viability."

Clare Bradley, CEO – AgriSea

"Support from the BPA has significantly accelerated our progress, transforming what was a low-value by-product into valuable coproducts and advancing a true circular bioeconomy that boosts material efficiency and commercial viability."

Clare Bradley, CEO – AgriSea

Clare and Tane Bradley

BPA support accelerates scale-up and commercialisation

- Successful pilot-scale trials completed at FoodPilot in Palmerston North.
- Launch of NanoSea™, showcasing emerging biomaterials platform.
- Achieves B Corp certification, in recognition of social and environmental impact, governance and community involvement.

Ongoing recognition and opportunities for growth

- Finalist in Success in Innovation / Commercialisation category of the Science New Zealand 2026 Awards.
- Recipient of 2026 Ara Whaihua funding (He Ara Whakahihiho Capability Fund).
- CEO Clare Bradley named Nuffield Scholar.
- Licensing discussions with large-scale companies, exploring opportunities for technology transfer and IP licensing.
- High-value opportunities explored for the recovery of other materials.
- Team grown to 27 staff.

2023

2024

2025

2026

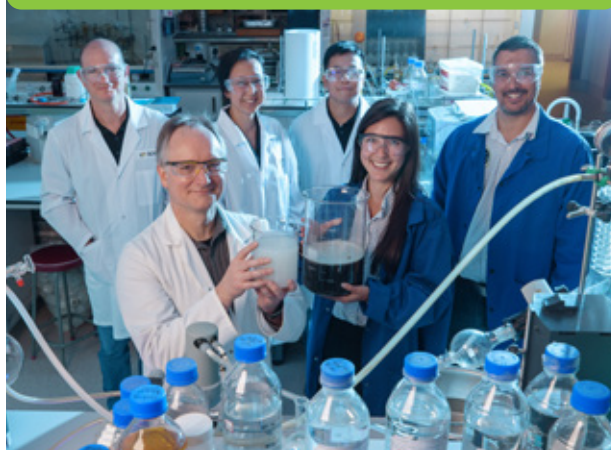
Nanocellulose intellectual property secured

- BPA-funded project investigates value extraction opportunities from nanocellulose waste stream. Supports scale-up trials of technology, pilot plant concept design and business case development.
- Global trademarks secured for nanocellulose technology.
- Nanocellulose developed from seaweed processing residues, creating a pathway to transform waste into high-value biomaterials.



Commercial production and sustainability leadership

- Receives New Zealand International Business Award for Excellence in Sustainability.
- Dedicated nanocellulose hydrogel facility opens at Paeroa headquarters, producing bleached and unbleached cellulose microsheets (CMS) for medical, pharmaceutical and cosmetic applications.
- Creates new local employment opportunities and strengthens partnerships across the Māori economy.



Taking a science-led approach to proving performance

BPA impact:

- Helped de-risk demonstration-scale deployment of Ceto-Boost hydrothermal oxidation technology.
- Enabled anaerobic digestion systems to evolve into integrated Energy and Nutrient Hubs that reduce emissions, recover nutrients and strengthen New Zealand's renewable energy infrastructure.
- Established a viable pathway for regional renewable gas production and nutrient recovery at scale.
- Reduced technical risk and enhanced investment-readiness and long-term growth prospects.
- Supported student to investigate valuable performance attribute of Ceto-Boost™.

Company formation and seed investment

- Established headquarters at Te Papa Tipu Innovation Park in Rotorua.
- Raised \$4.5 million in seed funding.
- Began scaling technology to convert organic waste into renewable natural gas and fertiliser.
- Early commercial modelling indicated potential annual revenues of up to \$300 million.
- Received two rounds of BPA funding to evaluate the opportunity for Cetogenix technology to fit the NZ agriculture sector, and to assess key parameters relating to hydrothermal oxidation of lignocellulosic and agricultural residues.

Strategic pivot and BPA support

- Refocused technology platform on renewable natural gas production, modular deployment and integration with anaerobic digestion systems.
- Secured BPA co-funding to de-risk integration of anaerobic digestion (AD) and Ceto-Boost™ hydrothermal oxidation (HTO) technology.
- Partnership with a large dairy farm operator focused on operational resilience of farm operations.
- Completed feasibility studies which confirmed capital and operational benefits for a regional Energy and Nutrient Hub model.
- Defined a pathway to advance technology readiness from TRL 5 to TRL 7.

Addressing industry challenges

- Identified key barriers to standalone on-farm anaerobic digestion, including economics, feedstock variability and nutrient losses.
- Developed Ceto-Hub concept to aggregate regional dairy and agro-industrial waste streams into scalable renewable energy and nutrient infrastructure.

2022

2023

2024

Technical validation and industry recognition

- BPA-supported Cetogenix/Scion project won the Science New Zealand Collaboration for Impact Award.
- Laboratory studies demonstrated successful processing of mixed agro-industrial feedstocks across dairy and industrial waste streams.
- Achieved methane yields of up to 261 L/kg volatile solids through integrated digestion and HTO processes – confirming modelled predictions.
- Confirmed nitrogen recovery and nutrient enhancement through laboratory optimisation and glasshouse trials.
- Named one of the Global Cleantech Group's Top 50 Companies to Watch.
- Progressed plans with dairy farm partner for the first commercial-scale Ceto-Hub demonstration.
- Received third round of BPA funding to deliver a "large laboratory scale" demonstration of each of the value propositions for Ceto-Boost™ technology.



CETOGENIX

The Cetogenix team – on the ground (L-R): Trevor Stuthridge (CEO), Penelope Wilson (Process Engineer), Kirk Torr (Laboratory Manager), Daniel Gapes (CSO), George Estcourt (Engineer), Alexandra Stuthridge (COO). In the tree (L-R): Jeremy Thomas (Senior Process Engineer), Simon Charman (PhD student), Ben MacDonald (Engineer), Rob Lei (CCO), Marcel van Leewen (Electrician) – not pictured

“Having BPA alongside us meant we could take a disciplined, science-led approach to proving performance before moving to scale. That validation has significantly reduced technical uncertainty and strengthened our case for demonstration investment and long-term infrastructure deployment.”

Trevor Stuthridge, CEO – Cetogenix

Establishing viable pathways

- Completed a structured TRL 6 risk register and validated technology integration pathways.
- Confirmed ammonia stripping performance for nutrient recovery and management.
- Demonstrated potential methane emission reductions of up to 85% from effluent storage systems.
- BPA-supported project established a viable pathway for regional renewable gas production and nutrient recovery at scale. Outcomes integrated into GasNZ biomethane strategy.
- Ceto-Boost™ recognised for converting organic waste into biomethane, fertiliser and biomaterials through hydrothermal oxidation.
- MOU signed with Ecogas for TRL 7 trials at Reporoa site.

Growing capability and research impact

- Student investigation of microplastic destruction through hydrothermal oxidation – a valuable performance attribute for the Ceto-Boost™ market.
- Demonstrated potential for cleaner waste management systems and reduced environmental plastic pollution.
- Team grown from four co-founders to 12 full-time staff.
- Supported 12 summer interns since 2022 via Callaghan Experience Grants.

Scaling energy and nutrient hubs

- Developing the first demonstration-scale Energy and Nutrient Hub with NZ dairy operations partner, supported by an indicative \$18.7 million capital commitment.
- Targeting renewable gas production for grid injection and regional-scale nutrient recovery.
- Creating a scalable blueprint for New Zealand's agricultural bioeconomy.

2025

2026

Looking Ahead

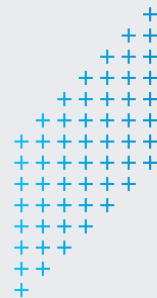


De-risking demonstration-scale deployment

- Completed design and upgrade for fourth-generation pilot plant at Rotorua base.
- Design underway for TRL 7 plant to be deployed at NZ water treatment site.

International expansion and validation

- Range of techno-economic assessments completed for end-user stakeholders across international market.
- Secured \$23 million grant from UK water regulator Ofwat to be core technology provider for a three-year international programme, Hydrothermal Oxidation – Futureproofing Bioresource Management, led by Anglian Water Services.
- Expanded application of Ceto-Boost™ technology into international water and biosolids management markets.



Sustainable Solutions Symposium

Second annual Sustainable Solutions Symposium focuses on collaboration and action

The BPA's second annual Sustainable Solutions Symposium held in Rotorua in May brought together researchers, innovators, founders, industry leaders and investors working across Aotearoa New Zealand's growing bioeconomy.



Hon Penny Simmonds, Minister of Science, Innovation and Technology, speaking at the Sustainable Solutions Symposium

The event opened with remarks from Hon Penny Simmonds, Minister of Science, Innovation and Technology, following an introduction from BPA chair Max Kennedy. Both highlighted the role the BPA has played over the past decade in connecting science and industry to accelerate innovation and commercialisation across New Zealand's bioeconomy. Minister Simmonds emphasised that the future success of the sector would depend on "what we do next together," setting the tone for a day that focused on collaboration and action.

The Bioeconomy Science Institute's transition CEO Mark Piper reinforced the scale of the opportunity ahead, referencing the Government's ambition to double the value of exports by 2034.

Achieving that target, he said, would require far more than incremental growth.

"That's not going to come by simply doing more of the same," he said, challenging attendees to think differently about innovation

and commercialisation. He emphasised the importance of openness across the sector, encouraging organisations to share knowledge where possible to accelerate collective progress.

Mark also reflected on the importance of timing, pointing out that Nespresso first launched in 1976 — a reminder that even great ideas need the right market conditions and sustained support to succeed. He stressed the importance of building stronger commercialisation pathways around New Zealand's growing research momentum.

Throughout the day, speakers reflected on the realities of innovation — including the risks involved.

BPA general manager Nicky Solomon reminded attendees that "being in business is risky, being innovative is risky," while also celebrating the opportunity to learn from one another. That spirit of shared learning and cross-sector collaboration was evident across the symposium's presentations and workshops.

One of the strongest themes throughout the symposium was the emergence of longer-term impact stories from the BPA ecosystem. Beyond research projects alone, attendees heard examples of companies, products and partnerships beginning to achieve genuine commercial traction.

Shelley Houston shared the journey behind KiwiLeather Innovations (now known as Materially Kiwi), explaining how an early fascination with chemistry through her



L to R: Max Kennedy, Tania Watson, Clare Bradley, Shelley Houston, Angus Brown, Jerome Chua

cosmetics company eventually evolved into developing sustainable, animal-free leather alternatives from kiwifruit waste. With increasing interest from Europe in sustainable automotive interiors, the opportunity is becoming increasingly tangible. You can read more about Materially Kiwi on page 34.

Angus Brown spoke about scaling Ārepa's sarmentosin molecule derived from blackcurrant by-products, alongside growing international interest in the company's brain health and menopause research. His ambition was clear: to deliver "a billion better brain days" by 2030.

Tania Watson from the Baking Industry Research Trust delivered a grounded and practical account of efforts to address New Zealand's estimated 9,000 metric tonnes of bread waste and 220 million single-use plastic bags simultaneously. While the technology itself proved successful, Tania said that the real challenge lies in the economics.

"Sustainability initiatives still need to stack up commercially to achieve widespread adoption," she said.

Jerome Chua shared the story of transforming crayfish waste into durable fishing lures for commercial vessels — a project that began as a master's initiative at Massey University and is now progressing toward scaling and commercialisation.

Clare Bradley reflected on AgriSea's seaweed to nanocellulose journey, which originated from a chance conversation with a scientist in 2017. Today, the project has reached proof of concept, established US commercialisation partnerships and rapidly expanded its international networks.

Interactive sessions in the afternoon encouraged participants to think about the future potential of natural fibres and advanced materials. Workshop facilitators Jacinta FitzGerald, CE of Fashion and

Textiles NZ, and Kelly McLean, programme lead, Future of Fibre Aotearoa, guided attendees through activities exploring opportunities for fibre innovation beyond current applications, prompting discussion around future markets and sustainable materials development.

Max Kennedy's closing remarks summed up the collaborative ethos underpinning the symposium. He described the BPA as a "win-win-win situation" — delivering benefits for industry and the economy, creating stronger connections between science and business, and benefitting the country's environment, helping a more circular economy in New Zealand.

"New Zealand's bioeconomy sector is ambitious, collaborative and increasingly focused on creating high-value, sustainable solutions," he said.

"The key question is no longer whether New Zealand's bioeconomy has potential, but how quickly that momentum can be scaled further."



The Future of Fibre workshop at the symposium

Student Stories:

From bright ideas to bioeconomy impact: supporting tomorrow's researchers

The BPA has long recognised that the future of New Zealand's bioeconomy depends on investing in emerging researchers. That commitment was on full display at the Sustainable Solutions Symposium, where student-led research featured prominently through presentations, posters and networking opportunities that connected the next generation of scientists with industry and research leaders.

Among the student contributors was Jerome Chua, who shared his journey developing the innovative "sea sausage" concept. His presentation, *From Lab Bench to Longline: My Journey Developing the Sea Sausage*, highlighted how curiosity-driven research can evolve into practical solutions with potential benefits for New Zealand's aquaculture and food sectors.

Jerome's story reflected one of the BPA's core goals: helping students translate research into real-world impact.

Student research was also showcased through poster presentations from two BPA-supported researchers: Akhila Mathew from the University of Waikato and Mary Dang from Lincoln University.

Akhila's research explores bio-based foams for building safety, developing sustainable alternatives that could reduce reliance on petroleum-based materials while maintaining fire safety performance. Her work demonstrates the breadth of innovation emerging from New Zealand's bioeconomy, extending beyond food and fibre into advanced materials and construction applications.

Mary Dang's research focuses on reducing carbon emissions in wine production through the utilisation of grape marc, a major winery by-product. Her work investigates the potential of grape marc-derived biochar to improve

soil health, support vine performance, and contribute to greenhouse gas emissions reduction in vineyards. The project reflects the growing importance of circular economy solutions that transform waste streams into valuable resources.

For both students, the BPA's support has extended well beyond funding, helping them develop research capability, build professional networks and share their work with the wider bioeconomy community.

"The support of the BPA has been invaluable throughout my PhD journey," says Akhila. "It has provided not only financial support but also access to resources. This enabled me to undertake and advance my research at the University of Waikato."

She says the BPA has also created opportunities to collaborate with the Bioeconomy Science Institute, connect with researchers and industry professionals and showcase her research to wider audiences.

"Presenting my research at the BPA Sustainable Solutions Symposium 2026 was a particularly rewarding experience, providing valuable feedback and opportunities to engage with the wider bioeconomy community," she says. "I am grateful for the ongoing encouragement, support and opportunities that the BPA continues to provide to emerging researchers."

Mary says the BPA's support has been instrumental in enabling her to pursue research that addresses both environmental and industry challenges.

"The support from the BPA has been vital in both financially and personally encouraging me throughout this project," she says.

"Receiving the funding allowed me to fully engage in the research and gain valuable experience in vineyard soil science, greenhouse experimentation, and carbon assessment."

"It has been especially motivating to feel that the BPA recognises the importance of research focused on sustainable viticulture and practical solutions for managing winery waste. Knowing that the project could contribute to improving soil health, vine resilience, and carbon sequestration in New Zealand vineyards has given me a strong sense of purpose and confidence in my work."

Hamish Lindsay is a master's student at the University of Canterbury who is exploring whether kiwifruit waste can be converted into a useful feedstock for phycocyanin (a pigment protein complex) production.

"Given the large volumes of kiwifruit produced locally, there is a significant amount of waste biomass generated, and finding a higher-value use for this stream could add real value to the industry," he says.

"At the same time, I hope to help fill in knowledge gaps surrounding phycocyanin

production, with the broader aim of supporting the development of high-value exports and IP for New Zealand."

Hamish says the support from the BPA has helped on multiple levels.

"The BPA support has allowed me to step away from part-time work and focus fully on my lab work without external commitments getting in the way. This has enabled me to progress much faster than I would have expected, particularly in terms of experimental throughput and being able to build on results more efficiently.

"In a professional context, the BPA support has allowed me to attend two industry conferences (including the BPA's Sustainable Solutions Symposium), both of which were extremely valuable, particularly for the networking opportunities."

Each year, the BPA funds one PhD, two master's and up to eight summer internships, supported and supervised by a collaboration of scientists and researchers from the Bioeconomy Science Institute.

The student round opens in early August, with the successful applicants starting their four-month summer internships in November of that year.

For more information on the BPA's student funding options and how to apply, see here: <https://bioresourceprocessing.co.nz/apply-now/application-form-students/>



Mary Dang



Akhila Mathew



Hamish Lindsay



Jerome Chua

CASE STUDIES

"Having the support from BPA and the enthusiasm from the Bioeconomy Science Institute is validating when talking to commercial partners and other stakeholders. In addition to the practicalities of the financial support, which allows us to pursue our ideas, the support allowed us to be taken seriously with the backing rather than being dismissed as a conceptual start-up. The support of the BPA and the BSI made us feel confident that commercialising our project was possible."

Ingrid Vink – Loopback

Case Study:

Critical support from the BPA

Hawke's Bay-based Kabocha Innovations has taken the deep process knowledge developed through its award-winning Kabocha Milk product and applied it to an even larger commercial opportunity — the extraction of high-value protein powder, culinary oil and functional peptides from kabocha squash kernels.

The company's partnership with Callaghan Innovation Biotechnologies Group, which began with BPA support in 2022, has proven pivotal. Further funding rounds in 2023 and 2024 allowed them to conduct small-scale commercial trials and ultimately, the production of specific products for customers.

Research conducted at Callaghan's Gracefield facility has validated a proprietary extraction process that unlocks two premium product streams — a neutral-flavoured, allergen-free protein powder and a distinctive culinary oil — from the same kernel that once went to waste. The process is protected by granted patents in New Zealand, the United States and South Korea, with an international Patent Cooperation Treaty (PCT) application now filed covering nearly 160 countries.

"Support from the BPA has been critical in getting our business to where it is now, on the cusp of a capital raise which will allow us to invest in production at a scale that will really benefit New Zealand. We wouldn't be where we are today without support from the BPA."

Shane Newman, founder and CEO
Kabocha Innovations

K A B O C H A
M I L K



We profiled Kabocha Milk in last year's Impact Report. Key updates from the past 12 months include:

- Secured 12 letters of intent from domestic and international ingredient buyers across five product application categories, including a major Japanese ingredient distributor, confirming strong commercial demand.
- Filed a PCT international patent application, establishing priority rights across more than 157 countries and positioning the company's New Zealand-developed IP for potential global licensing.
- Active development of an engineering design basis for a dedicated commercial extraction facility in Hawke's Bay, targeting commissioning in 2029.
- Continues to build on its Japan market relationships, with interest in both its oil and functional peptide products from established food and beverage manufacturers.

www.kabochamilk.com

Case Study:

Materially Kiwi Innovations: connecting industry with innovation



Business founder and innovator Shelley Houston was one of the speakers at our Sustainable Solutions Symposium, where she talked about how her project has grown from a kitchen-based experiment into a world-first, plastic-free leather alternative made from kiwifruit waste.

Since then, the company has entered an exciting new chapter, including a new identity. KiwiLeather Innovations is now Materially Kiwi Innovations, reflecting a broader vision to develop next-generation bio-based materials and maximise the value of New Zealand's biological resources.

Their science journey has continued to evolve through its collaboration with Scion, the Bioeconomy Science Institute and the BPA. Rather than focusing solely on developing a leather-like material, they are now looking into extracting and refining compounds from waste

kiwifruit to better position the business for the development of a superior bio-based leather-like material.

Alongside this work, several horticultural bioactive opportunities are also being investigated, with the potential to create circular pathways that return value back into the kiwifruit and wider horticultural sectors. Every stage of the research is helping them better understand the functionality of individual compounds and how they can contribute to future material performance while creating additional value from what was previously considered waste.

"One of the greatest lessons from working alongside the BSI and BPA has been understanding that innovation often requires going backwards to go forwards," says founding director Shelley Houston.

"Together with the research team, we have systematically stripped back our formulations, validating every ingredient and every processing step to build a stronger scientific foundation for future commercialisation. This disciplined approach has strengthened our material, reduced technical risk and provided greater confidence as we prepare for our next phase of research and development."

The increased credibility provided through the BPA's support continues to create new opportunities.

During the past year, Materially Kiwi has been featured across national and international media, including a feature on Seven Sharp, interviews



Shelley Houston speaking at the Sustainable Solutions Symposium

with RNZ, and coverage in New Zealand and international publications highlighting the growing interest in their innovation and the opportunities for New Zealand's bioeconomy.

This year also marked another successful appearance in the Fieldays Innovation Hub, providing an opportunity to showcase their latest developments to thousands of visitors from across New Zealand's primary industries, manufacturing sector, investors and international delegates.

"Fieldays continues to be an invaluable platform for connecting innovation with industry and demonstrating how agricultural by-products can become high-value manufacturing materials," says Shelley.

Beyond research, Shelley has increasingly become an advocate for innovation and the circular bioeconomy. Following her presentation at the BPA Sustainable Solutions Symposium, she was invited to speak at the Threads of Tomorrow Summit, sharing the journey from creative founder to biomaterials entrepreneur and highlighting the importance of collaboration between industry and science.

Materially Kiwi has also been selected to participate in Creative HQ's Aurora Climate Lab, where the company is continuing to refine its commercial strategy and develop its investment readiness.

"As we look ahead, we are continuing to work with the BSI and prepare for the next phase of BPA-supported research. Our shared focus remains on advancing New Zealand science into commercially viable solutions that create



value from agricultural by-products, strengthen regional industries, and contribute to a more circular and sustainable manufacturing future," says Shelley.

"The BPA has played a pivotal role in helping transform an idea developed in a home kitchen into a science-backed platform with growing national and international recognition."

www.materiallykiwi.com



"Our appetite for R&D was born from the BPA support and look where we are now! We wouldn't have got anywhere without that first proof of concept project. The BPA has helped open a lot of doors, including to investment and to other businesses that we are intending to partner or collaborate with. The opportunity to speak at the Sustainable Solutions Symposium helped our profile and gave us confidence to present in other forums. We now belong to this incredible ecosystem thanks to the BPA – the more that can be done together, the better!"

Shelley Houston – Materially Kiwi

Case Study:

DAF to pet food project gaining ground



In a pioneering effort to boost sustainability and reduce product loss, researchers from Yili Innovation Center Oceania, National Technology Innovation Center for Dairy, Oceania Dairy Limited and Westland Milk Products are working on transforming an overlooked dairy by-product— DAF sludge— into a high-value, digestible protein source for pet food.

DAF sludge, or Dissolved Air Flotation sludge, is a by-product in dairy processing.

Traditionally low value, it is now being upcycled into a hydrolysed protein ingredient rich in essential amino acids.

We profiled the DAF-to-pet food project in last year's Impact Report, and since that time the project has advanced from proof-of-concept and early feeding validation into robust, formulation-relevant nutritional validation, significantly strengthening the commercial case for this technology.

Building on earlier results demonstrating high bioavailability and suitability for canine nutrition, recent collaborative work with Callaghan Innovation Technologies Group and the BPA has now confirmed that DAF-derived protein performs at inclusion levels of 15–20% in complete, extruded pet food diets, aligning with real-world commercial formulations.

Critically, the latest feeding trials show that diets containing DAF protein deliver significantly higher digestibility than soy-based controls across key nutritional metrics, including dry matter, energy, protein, fat, and amino acids.

This advancement materially reduces technical risk and strengthens the pathway to commercialisation, reinforcing the project's potential to convert low-value dairy by-products into high-value, export-ready ingredients.

The trials also confirmed that DAF-based diets are palatable, well-tolerated and suitable for extrusion, supporting manufacturability in commercial pet food systems.





These results represent a step-change from earlier outcomes reported in last year's case study, where the focus was on demonstrating feasibility, high bioavailability, and environmental and economic potential.

The project has now progressed to a stage where nutritional performance has been validated against industry-standard protein sources under realistic conditions, substantially reducing technical and market risk.

"BPA funding allowed us to get this project off the ground, and enabled internal engagement with key stakeholders by kick-starting and de-risking the innovation journey. Funding from the BPA helps attract interest from researchers too, and their enthusiasm, connections and expertise are very helpful. The model where industry works with the research sector to commercialise science is invaluable."

Dr Philip Wescombe
Development team member, Yili Innovation
Center Oceania, Lincoln University

From an impact perspective, this strengthens the project across three key BPA dimensions:

1. Economic impact

- Reinforces the projected value creation (US\$3,000 per tonne previously identified) by proving competitive nutritional performance versus established ingredients.
- Advances the ingredient closer to commercial adoption in formulated pet food products.

2. Environmental impact

- Continues to support the transformation of dairy waste streams into high-value ingredients.
- Underpins scalability by demonstrating viable use at meaningful inclusion rates (not just low-dose supplementation).

3. Innovation and commercial readiness

- Moves the technology beyond pilot validation into application-ready ingredient status.
- Establishes DAF protein as a functionally superior alternative to plant proteins in pet nutrition.
- Determined applications for the fat fraction of DAF reducing side stream cost of disposal.

www.oceaniadairy.co.nz



Sustainable Solutions Symposium

We look forward to hosting our third annual Sustainable Solutions Symposium in 2027

More details will be available on our website bpa-sss.co.nz





WE HELP INNOVATIVE BUSINESSES CREATE VALUE.

For further information on the BPA,
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