



Callaghan Innovation  
Te Pokapū Auaha

# Briefing for the Incoming Minister of Science, Innovation and Technology

Callaghan Innovation  
24 November 2023



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# Executive Summary

Callaghan Innovation works on the frontline to power New Zealand's entrepreneurial innovators to grow businesses from their initial ideas, into global success stories. Our organisation has deep connections with the private sector through the innovation ecosystem; because our staff are from this ecosystem. With this comes a strong industry voice which we use to deliver insights and data to the Government directly from the private sector. We are highly delivery and customer focussed with a strong bias to action and creating impact in the short, medium and long term. We can move fast to deliver on new ideas, priorities and programmes.

Our key observations and suggestions after 10-years of operating as New Zealand's innovation agency:

[1] Productivity in New Zealand remains a challenge as many new technologies and ways of doing things are not readily adopted across our local firms. We are focused on working with established and emerging innovators to drive technology and process adoption through initiatives such as Industry 4.0, the Construction Sector Activator, etc. Callaghan Innovation would like to see more targeted interventions to move our local firms to the productivity and innovation frontier (e.g. when compared with firms in other small advanced economies).

[2] The start-up and innovation ecosystem in New Zealand is also still emerging and on the whole relatively immature. Key success stories are usually driven by exceptional individuals but there is no broad "bench strength" of key innovation and commercialisation skills. We believe the area of skill development and capability is crucially important for New Zealand at this point and significant impact could be achieved for relatively modest investment (in particular as compared to the level of investment required to build new facilities). Callaghan Innovation would like to see much more focus on skill development in key areas such as "Dynamic Capabilities".

[3] The Māori economy is a fast growing and high potential part of the New Zealand economy which can and should be further supported to increase innovation through research and development (R&D) and commercialisation. Māori authorities and SMEs are more likely to export, and have higher rates of innovation and R&D, than other New Zealand firms. Callaghan Innovation is committed to continuing to support indigenous innovation as a key pillar of our organisational strategy. We would like to see greater access to capital and innovation skills support for Māori entrepreneurs which we believe is best addressed through partnership with Māori-led providers.

[4] Most countries around the world with thriving innovation ecosystems have innovation locations which drive collaborative and co-located R&D, with a focus on commercialisation and mission-led innovation that delivers results in the short and medium term. We can fully realise the full potential of these types of locations, including at Callaghan Innovation's Gracefield Innovation Quarter (GIQ) in Lower Hutt. Callaghan Innovation would like to see a strong focus on collaboration with the private sector (both with established firms and startups), Māori businesses and organisations, tertiary institutions and students as well as local communities.

[5] New Zealand is full of talented entrepreneurs and ideas with enormous potential, and we believe the innovation ecosystem could be optimised to deliver greater impact through a focus on industry-led commercialisation and mission-led public-private partnerships to tackle the big challenges in our country and the world. Callaghan Innovation would like to see more direct support for industry-led commercialisation and problem-solving that delivers results in the short term rather than long-term focused 'blue sky' research. Targeted commercialisation support through commercialisation activators such as the Healthtech Activator and Agritech Activator ensures founders in important deeptech areas are supported and developed.

In line with our observations and suggestions above, Callaghan Innovation initially proposes the following ideas for our action at your discretion:

- 1. Establishment of a "Productivity Activator" for the ecosystem**

Broaden the current sector specific "Activator" programmes to create a "Productivity Activator" delivering stage-gated productivity advisory, technical problem-solving and technology adoption

support for both our high potential emerging sectors (eg. Digital and Artificial Intelligence) and existing sectors (eg. Agritech).

**2. Increasing commercialisation maturity of the innovation ecosystem**

The ecosystem could be more connected and businesses better supported to commercialise through the implementation of the key recommendations of the Startup Advisory Council report. These include a national coordinating body for the ecosystem, increasing funding to a national network of incubator support programmes, and improving commercialisation from publicly funded research.

Callaghan Innovation would also scale-up the existing “Dynamic Capability” and “10 Types of Innovation” pilot programmes to drive awareness and utilisation of new technologies and how to meaningfully adopt them in existing products and services (across emerging and established sectors).

**3. Indigenous Innovation Partnerships expansion**

Callaghan Innovation believes the most effective way to support the Māori economy is to partner with and expand Māori-led private sector networks. Callaghan Innovation has already signed partnership agreements with Whāriki, the Māori business network, to accelerate the commercialisation of innovation in Māori enterprise, and Te Taumata to support the growth of Māori participation and influence across the RSI sector. This could be expanded with further partnerships in the future to reach more Māori businesses.

**4. Establishment of a co-development strategy for GIQ land to bring in private sector investment and a national innovation infrastructure system**

A possible path forward would be to develop a co-investment strategy for key sites such as GIQ to create highly diverse and shared use innovation and technology parks. Alongside this, consider development of a system that catalogues publicly funded R&D and innovation related infrastructure (labs, equipment, etc) with functionality for private sector firms to book / utilise infrastructure with expert support.

**5. Expansion of commercialisation support for the ecosystem**

Broaden our startup and industry support with a Commercialisation Activator that can be rolled out to support specific priority sectors. This would focus on nurturing customer-led or industry-led commercialisation in chosen priority sectors. Existing examples of the success of such a model are the Healthtech Activator and Agritech Activator.

**Key challenges we are facing**

Callaghan Innovation faces significant challenges to delivering its role for the innovation ecosystem. We are experiencing significant cost pressures due to historic deferred maintenance and “run to failure” approaches on a large and complex infrastructure portfolio, inflationary pressures (insurance, remuneration, depreciation, etc) and funding cliffs for essential programmes such as the HealthTech Activator. 9(2)(f)(iv) - Advice to Government

From FY24/25 increasing costs means that we will no longer be able to maintain our existing property and service delivery portfolio without further OPEX and CAPEX investment. 9(2)(f)(iv) - Advice to Government

**9(2)(f)(iv) - Advice to Government**

Whilst the initial GIQ Programme investment has resulted in a tangible improvement of conditions at the GIQ, the Programme was initially intended to be the first step in a more significant, long-term journey to bring the precinct back to a useful standard for a world-class innovation community. During the last five years, greater understanding has been gained about facilities and conditions at the GIQ, building standards have changed (such as seismic & energy efficiency), and assets have continued to further deteriorate and advance towards end-of-life.



9(2)(f)(iv) - Advice to Government

Opportunities remain to create a fully realised innovation location that can be shared between the public and private sector and we look forward to discussing these matters with you.

Callaghan Innovation is highly committed, motivated and ready to assist the Government with rapid implementation and delivery of targeted initiatives to enhance New Zealand's innovation and commercialisation impact.

Dr Stefan Korn, **Chief Executive**

Hon. Pete Hodgson, **Chair**

Proactively Released



## Callaghan Innovation's Vision

Sir Paul Callaghan, one of New Zealand's most renowned scientists and respected leaders, is the namesake of Callaghan Innovation. Sir Paul believed that 100 inspired entrepreneurs creating companies in high-value niche areas could create a step change improvement to New Zealand's economy. This was his challenge to the country to which Callaghan Innovation seeks to rise. As such Callaghan Innovation has adopted "a place where talent wants to live" as Callaghan Innovation's vision. Through the work of the organisation, Callaghan Innovation aims to help New Zealand to be a place where inspired entrepreneurs can thrive.

## Callaghan Innovation's Purpose

Callaghan Innovation's purpose is to activate innovation, accelerate commercialisation and help businesses grow faster for a better New Zealand. The Callaghan Innovation Act states that "Callaghan Innovation's main objective is to support science and technology-based innovation and its commercialisation by businesses, primarily in the manufacturing and services sectors, in order to improve their growth and competitiveness."

## Callaghan Innovation's Customers

Callaghan Innovation works with entrepreneurs and businesses of all sizes engaged in innovation and R&D. This includes helping grow the community of founders and startups, Māori businesses, and those companies conducting research and development (R&D). Over the last three years Callaghan Innovation has structured work with customers to deliver "high-touch" support for Frontier Ventures<sup>1</sup> and Māori businesses, and deliver a "digital first" support model for all other customer groups.

## New Zealand's Innovation Context

### Why Innovation matters for New Zealand

Innovation is a key driver of better economic outcomes, increased resilience and higher productivity in order to improve the future wellbeing for New Zealanders. The disciplined creation and utilisation of new ideas, processes and technologies can drive a highly desirable outcome for a more resilient and profitable economy in New Zealand. Higher export revenues, higher margins and higher wages can provide the financial resources required to deal with some of the pressing nation-wide challenges. Successive governments have therefore had objectives around investment in innovation and supporting New Zealand entrepreneurs to succeed. Callaghan Innovation is one of the essential implementation agencies to deliver Government interventions directly to businesses and entrepreneurs in New Zealand.

### Key Indicators of Innovation in New Zealand

1. **New Zealand continues to have low productivity.** New Zealand's labour productivity was 15% lower than OECD average in 2020 and the gap increased to 18% in 2021<sup>2</sup>. Innovation is globally recognised as a key enabler of driving productivity up, and will continue to be critical to meet productivity challenges.

<sup>1</sup> Frontier Ventures in New Zealand are characterised by; a growth mindset, R&D intensive, internationally ambitious, and are producing new-to-world goods, services, processes and business models. They are creating value propositions which don't already exist (here or overseas), from which commercial benefit follows, and with high potential to contribute to New Zealand's economy (eg. through jobs, revenue and productivity growth).

<sup>2</sup> OECD Compendium of Productivity Indicators 2023, Figure 2.6, Figure 2.7, [https://www.oecd-ilibrary.org/sites/74623e5b-en/1/3/2/index.html?itemId=/content/publication/74623e5b-en&\\_csp\\_=726cfd36827aced56f33312dd7c53477&itemIGO=oecd&itemContentType=book](https://www.oecd-ilibrary.org/sites/74623e5b-en/1/3/2/index.html?itemId=/content/publication/74623e5b-en&_csp_=726cfd36827aced56f33312dd7c53477&itemIGO=oecd&itemContentType=book)



Callaghan Innovation supports new businesses at the cutting edge of their sectors that are creating new skilled workforces to accelerate economic growth.

- 2. New Zealand's R&D expenditure as a percentage of GDP is slowly increasing, but remains lower than the OECD average.** Total R&D expenditure (business + government + higher education) reached \$5.2 billion in 2022, up 11% compared to the previous year, and R&D expenditure as a proportion of GDP rose from 1.46% to 1.47%<sup>3</sup>. New Zealand's total R&D expenditure remains substantially below the OECD average of 2.71% of GDP from 2021. International research shows that increasing national R&D expenditure has a positive impact on economic growth, both directly and indirectly. Callaghan Innovation aims to support economic growth by driving up R&D expenditure by the private sector.
- 3. The business sector was the largest contributor to total R&D expenditure, accounting for 59 percent (\$3.1 billion) in 2022.** Between 2021 and 2022, BERD reached \$3.1 billion (up 9%, compared to 2020/21), delivered by 2350 businesses performing R&D, and 21,000 FTE working on R&D<sup>4</sup>. Higher Education R&D expenditure (HERD) and Government R&D Expenditure (GovERD) have remained stable.
- 4. There is rapid growth in R&D spend by businesses in the scientific research and technical services industry.** Statistics show that since 2016, R&D expenditure by scientific research and technical services has grown at a much faster rate (326%) than any other service industry, and in the number of businesses in this industry undertaking R&D, with an increase of 108%<sup>5</sup>. This indicates that this industry is becoming a more significant player in the New Zealand economy in terms of R&D than it used to be.
- 5. New Zealand's capital environment is beginning to show long term growth in startup investments.** In the second half of 2022, early stage investors invested \$118 million in startups, matched by an additional \$117 million of funding from Venture Capitalists (VCs) for a total transaction value of just under \$230 million.<sup>6</sup> Supporting the capital investment environment in New Zealand, Callaghan Innovation's Technology Incubator programme invested \$26.25 million in government repayable grants, which created \$75 million in private sector funding being committed to the participating ventures.

## Innovation Insights from Callaghan Innovation customers

- 1. Between FY17/18-FY22/23 the Digital sector (customers who self-identify as primarily operating in the Digital sector) received over 40% of grants funding indicating that this sector has a high innovation potential.** In comparison, the next two largest recipients are the High Tech sector (19%) and the Agri Tech sector (13%).
- 2. Student Grants (career and experience grants) are the most popular and widely used Grant in the product portfolio (around 500-700 recipients each year).**
- 3. Māori innovators (businesses that self-identify as Māori business) continue to be under-represented as Callaghan Innovation Grant recipients.** Between FY17/18-FY22/23 only 3% of Grants payments have been awarded to Māori ventures.
- 4. Frontier Ventures (highly innovative potentially disruptive businesses) are over-represented as Grant recipients.** Over the past 18 months over 30% of Grants payments were awarded to Frontier Ventures (FV's only make up 13% of Callaghan Innovation's customer set)
- 5. Overall Grants funding available to and consumed by businesses is trending down.** This is mainly driven by retiring Growth Grants and Project Grants with the shift to the Research and Development Tax Incentive (RDTI) as the primary vehicle to incentivise R&D. In FY17/18 total Grants payments exceeded \$125m whereas in FY22/23 total payments were less than \$30m.

<sup>3</sup> Stats NZ, Research and development survey: 2022.

<https://www.stats.govt.nz/information-releases/research-and-development-survey-2022/>

<sup>4</sup> Stats NZ, Research and development survey: 2022.

<https://www.stats.govt.nz/information-releases/research-and-development-survey-2022/>

<sup>5</sup> Stats NZ, Research and development survey: 2022.

<https://www.stats.govt.nz/information-releases/research-and-development-survey-2022/>

<sup>6</sup> Startup Investment Report New Zealand, Autumn 2023.

<https://www.pwc.co.nz/insights-and-publications/2023-publications/startup-investment-autumn-2023.html>

6. **46% (\$233M) of grant payments between FY17/18-22/23 were awarded to early-stage ventures (seed & startup).** In comparison, 28% (\$143M) was awarded to companies in the Growth phase, and 22% (113M) to companies in the Established/Expansion phase.

## How Callaghan Innovation describes New Zealand's Innovation Ecosystem

Callaghan Innovation is part of a network across New Zealand informally referred to as the Innovation Ecosystem. From our perspective, the Innovation Ecosystem is made up of groups from across the private sector, R&D institutions and providers, business support networks and Government agencies.

Private Sector	R&D Institutions and Providers
<ul style="list-style-type: none"> <li>• Frontier Ventures</li> <li>• Māori businesses, Innovators, Iwi</li> <li>• Founders and inventors</li> <li>• Startups &amp; scale-ups</li> <li>• Small to medium enterprises</li> <li>• Large companies</li> <li>• New Zealand based subsidiaries of multinational corporations</li> </ul>	<ul style="list-style-type: none"> <li>• Crown Research Institutes (CRIs)</li> <li>• Universities</li> <li>• Independent Research Organisations</li> <li>• Science New Zealand</li> </ul>
	Business Support Networks
Government Agencies	
<ul style="list-style-type: none"> <li>• Callaghan Innovation (includes Glycosyn, Measurement Standards Laboratory)</li> <li>• Ministry of Business, Innovation &amp; Employment (MBIE)</li> <li>• Inland Revenue (IR)</li> <li>• New Zealand Trade &amp; Enterprise (NZTE)</li> <li>• Kāinga Ora</li> <li>• Te Puni Kōkiri (TPK)</li> <li>• NZ Growth Capital Partners (NZGCP)</li> </ul>	

Figure 1: The Innovation Ecosystem

## Callaghan Innovation's role for New Zealand

As a delivery agency, it is Callaghan Innovation's job to support and assist innovative businesses on their journey to success. Callaghan Innovation's specific role in the ecosystem is to support businesses to innovate, commercialise new ideas or inventions and to undertake R&D. Callaghan Innovation fulfils its role using a "product-based business model"<sup>7</sup> and delivery through five distinct product categories:

**Fund** - Focused grants that target specific areas that need additional support to ensure Callaghan Innovation is helping to develop and grow export-led companies. This includes the "New to R&D", "Arohia Innovation Trailblazer" and career / student grants as well as the R&D Tax Incentive (RDTI)

**Upskill** - Helping businesses develop innovation and commercialisation skills to ensure investment through grants is more likely to succeed. This includes upskilling programmes on IP management, capital raising, product development, dynamic capabilities, etc.

<sup>7</sup>Callaghan Innovation delivers services through a product model which allows the organisation to utilise staff's private sector expertise for this delivery model. The main benefits of this model are: scalable, structured, repeatable consistent delivery, greater visibility and accessibility of offerings to customers and clear targeting of products to priority customer groups.



**Connect** - Boosting commercialisation by facilitating investment and collaboration between the research and science sector (RSI), industry and entrepreneurs.

**Solve** - Providing deep tech problem solving expertise to help businesses overcome technical challenges and leverage opportunities presented by new technologies.

**Grow** - Expert coaching and support to help Frontier Ventures and Māori businesses structure their R&D and commercialisation journeys.

## How Callaghan Innovation defines Innovation and Research and Development (R&D)

### Innovation

Callaghan Innovation defines innovation as:

1. a new, or significantly enhanced, product, service, process, or business model that creates new value in a market through its use and implementation<sup>8</sup>.

And notes that:

2. The value created may be economic, societal and/or environmental.
3. Innovation is not the same as R&D. R&D is a subset of activities required under innovation and commercialisation. Innovation can and frequently does occur without R&D as categorised in the “10 Types of Innovation” framework<sup>9</sup>.
4. Innovation is a distinct discipline that requires skill, process, structure and practice. Innovation is typically not something people can “just do”. It requires specific training just like other business skills (e.g. such as accounting or project management).
5. Innovation is a key enabler to address some of the biggest challenges in New Zealand: productivity, de-commoditisation, economic transformation and responding to global challenges.

### Research and Development (R&D)

There are several ways that R&D can be defined but Callaghan Innovation typically relies on the definition used in the OECD Frascati Manual<sup>10</sup>. For most of our funding products R&D is defined as an activity that:

1. Has the purpose of resolving scientific or technological uncertainty
2. Has the purpose of creating new knowledge, or new or improved processes, services or goods
3. Uses a systematic approach

and where the required knowledge is:

1. Not publicly available
2. Unable to be worked out by a competent professional in that field

## Commercialisation

Broadly speaking, commercialisation is the process to create economic value from intellectual property (IP) through the vehicle of products or services. Commercialisation as a business function can involve many aspects of bringing a product or service to market including production, distribution, marketing, customer support, etc.

<sup>8</sup> Differs from ‘invention’ which is just creating or doing something new, with no associated value.

<sup>9</sup> Ten Types of Innovation® framework, Deloitte Digital

<https://www.deloittedigital.com/us/en/offers/customer-led-marketing/customer-strategy-and-applied-design/applied-design-and-innovation/ten-types.html>

<sup>10</sup> OECD (2015), *Frascati Manual 2015: Guidelines for Collecting and Reporting Data on Research and Experimental Development, The Measurement of Scientific, Technological and Innovation Activities*, OECD Publishing, Paris, <https://doi.org/10.1787/9789264239012-en>.

It is critically important to distinguish between two distinct approaches to achieve commercialisation outcomes which can be categorised as follows:

1. **Science-led commercialisation.** This approach is based on conducting research in a particular field and then subsequently identifying commercial applications of interesting research findings. Typically this type of research is done by publicly funded research organisations who would then use commercialisation programmes or technology transfer offices to find commercial partners for particular research findings. This approach essentially starts with a solution that is looking for suitable demand in markets.
2. **Customer-led commercialisation.** This approach is based on finding R&D solutions to a particular market opportunity, product/service challenge or customer demand. This approach is based on looking for a technology solution to an existing market opportunity or customer demand.

While both approaches can lead to highly successful commercial outcomes, they have very different characteristics. Science-led commercialisation typically requires a portfolio-based investment approach, is significantly more capital intensive and carries a high degree of commercial risk and uncertainty (until commercial demand is validated). **Callaghan Innovation is focused on driving customer-led commercialisation as dictated by the Callaghan Innovation Act.**

## Supporting Frontier Ventures and Māori businesses

To help deliver New Zealand's aspirations for an innovative and highly productive economy, Callaghan Innovation has chosen to put a specific focus on support for high potential customers and sectors. Frontier Ventures have been identified as key drivers of productivity and export revenue, and is an area where New Zealand underperforms. Frontier Ventures are at, or have the potential to be at the 'Innovation Frontier' characterised by high investment in R&D, high productivity, and a global, export driven focus.

Callaghan Innovation believe that the characteristics of Māori ventures such as long term ambition, specialised distinct products and a willingness to collaborate, show the enormous innovation potential of the sector. A focus on Māori businesses therefore represents a strong opportunity for Callaghan Innovation to further fulfil its role supporting innovation, and grow the New Zealand economy.

Callaghan Innovation's services have historically had lower usage rates by Māori ventures. Once identified this led to a strategic change to encourage and support uptake of Callaghan Innovation's products by Māori ventures. In the past financial year (22/23) Callaghan Innovation has seen an 83% increase in Māori customer engagement, and worked with 139 Māori businesses in FY22/23.

In FY22/23 the organisation internally launched the Ngā pou o te piriti (Māori engagement) strategy, prioritising Māori lead initiatives to grow Callaghan Innovation's support for the Māori economy. Included in the strategy is Callaghan Innovation's intent to build trust and add value to the Māori economy in Māori environments.

By focusing intensive, wraparound support and specific products to meet the needs of Frontier Ventures and Māori businesses Callaghan Innovation is accelerating the contribution of high impact businesses to the New Zealand economy and society. The differentiated delivery model ensures best value for taxpayer money by focusing more intensively on the customers who are working to become high-productivity, high-growth export companies, while still ensuring that all innovators can access Callaghan Innovation's core products and services through digital, self-service or low-touch support mechanisms.

# Callaghan Innovation’s impact

## Specific impact along the innovation journey

Callaghan Innovation creates impact in a number of ways across a typical innovation and commercialisation journey. Each year, Callaghan Innovation supports over 2000 customers in the innovation ecosystem through highly defined and targeted products. With Callaghan Innovation’s help businesses succeed in their innovation and commercialisation ambitions which ultimately result in creating new jobs, industries, solving problems for New Zealanders, bringing investment capital and talent into New Zealand, and increasing national GDP.

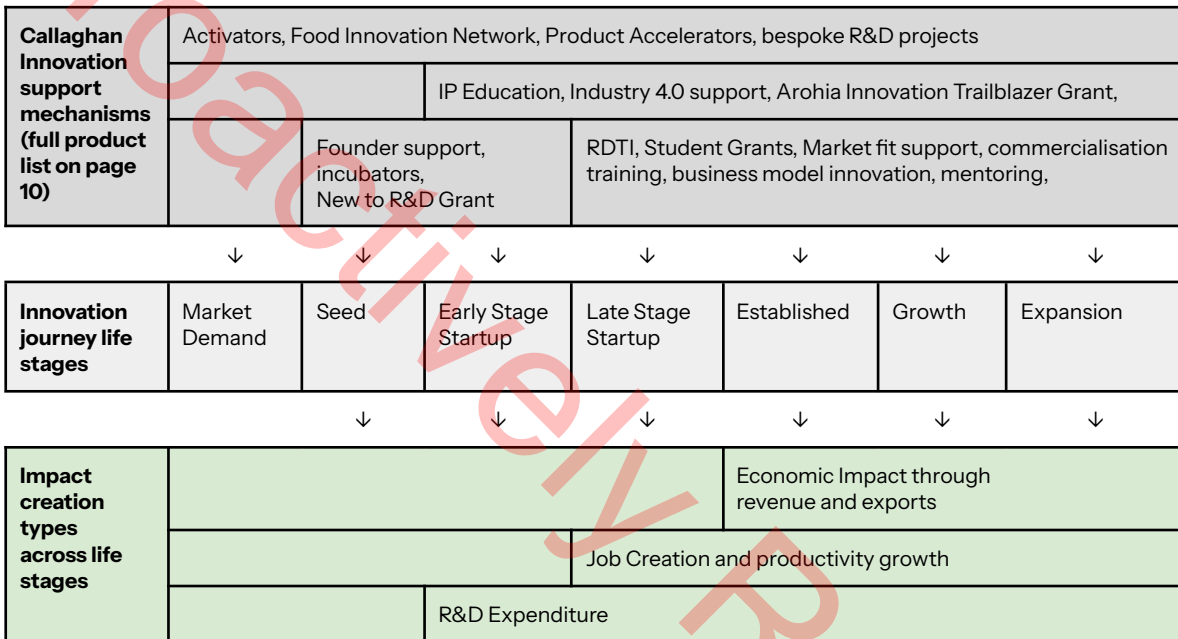


Figure 2: Impact across a customer innovation journey

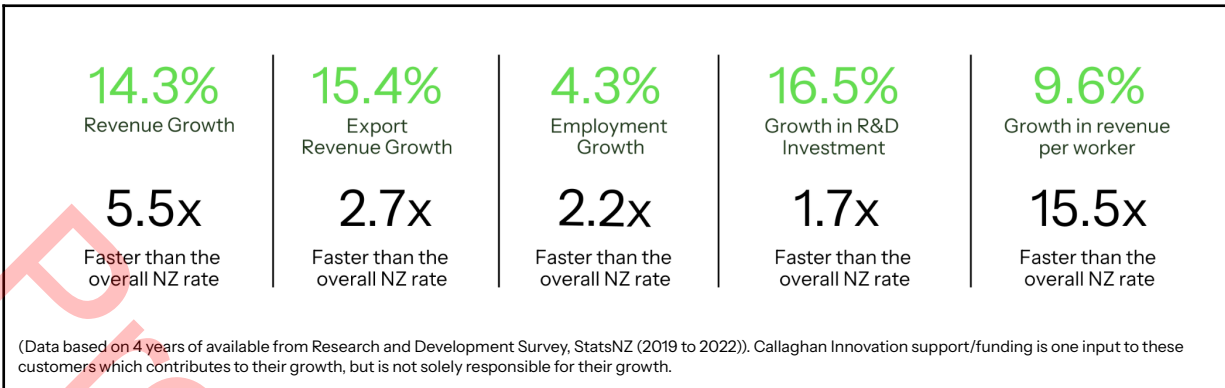
It is worth noting that the innovation journeys of companies is typically not linear – i.e. for most new products and services it tends to be an iterative process where companies have to loop through a process of customer discovery, market testing and scaling until they have evidence of product-market fit in a particular market. Callaghan Innovation products are well designed to support customers along those cycles and on their wider growth journey. Callaghan Innovation notes the importance of a tight connection in the customer teams between Callaghan Innovation and New Zealand Trade and Enterprise (NZTE). There is a significant overlap in the customer bases and Callaghan Innovation already shares basic customer information (to the extent that it is allowed under information sharing provisions). **9(2)(f)(iv) - Advice to Government**

## Impact on Callaghan Innovation customers

### Callaghan Innovation customers tend to grow faster

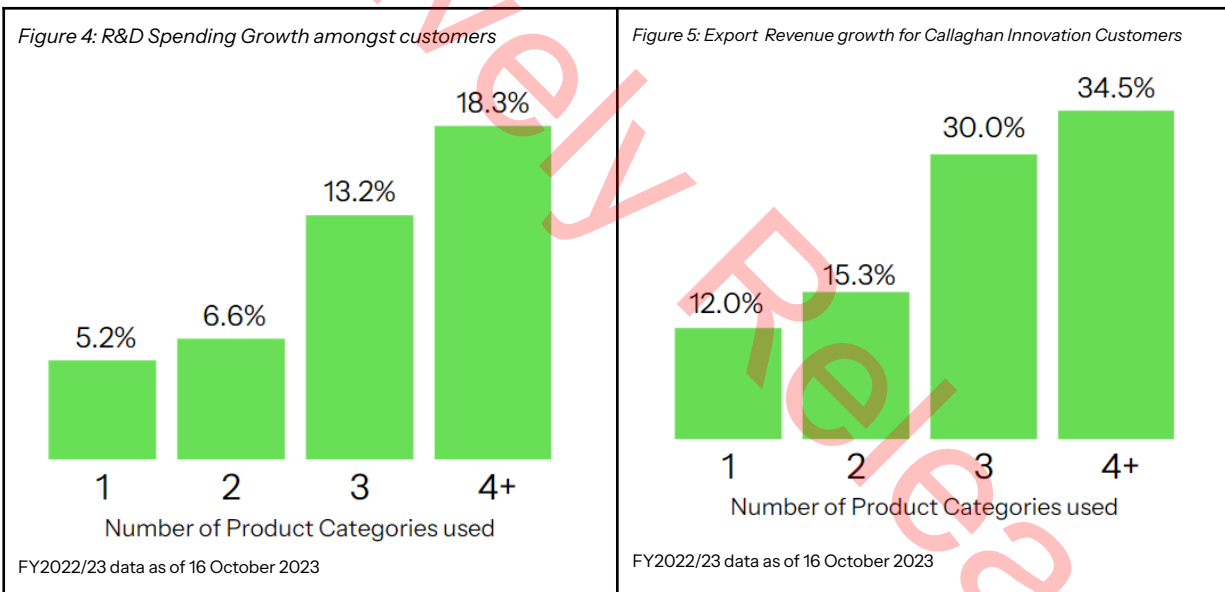
Callaghan Innovation customer data compared to the New Zealand business population (from FY18/19 to FY22/23) shows that our customers grew faster across all categories.

Figure 3: Callaghan Innovation customer performance



## Customers perform better using more Callaghan Innovation products

Callaghan Innovation has been deepening relationships with customers year-on-year, with an increasing proportion of customers engaging multiple times. An increasing proportion of Callaghan Innovation's annual customer base has consumed products multiple times. In 2022/23 76% of customers have consumed two or more products with us, an increase from 70% in 2018/19. This is impactful, as the deeper a customer's relationship with Callaghan Innovation, the better they tend to perform across key areas (see below).



## Increased R&D spending

Callaghan Innovation's customers were questioned in June 2023 in a commercialisation survey aimed at understanding business R&D commercialisation outcomes and experiences. Of the customers surveyed who Callaghan Innovation worked with in the past two years (191), 73% had launched one or more R&D projects. A large majority of respondents (88%) said that they met or exceeded their expectations regarding the business objectives of their recently launched R&D projects. The data also demonstrated that customers consuming from multiple product categories tended to perform more R&D (figure 4).

## Economic Impact of Callaghan Innovation support

### Value of Government Investment

Callaghan Innovation is focused on using its funding mechanisms prudently for customers to deliver the maximum financial value on the investment possible for New Zealanders. As an illustration, to date tax credits totalling \$312 million dollars have supported at least \$2 billion in Business R&D under the RDTI scheme. This funding mechanism delivers a ratio of government investment to resulting spend of 1 : 6.41<sup>11</sup>.

### Investing in successful commercialisation

Callaghan Innovation's core purpose is to support and promote the development of early stage, high risk and R&D intensive businesses. By definition this means that some of these companies will fail and others will go on to create the skilled workforce to accelerate economic growth New Zealand needs. This is not a failure of Government investment - the very reason it exists is to de-risk R&D investment, and the benefits of this use of funds far outweighs the risks for New Zealanders. When R&D intensive businesses do fail, the knowledge and skills created are retained in the ecosystem for the benefit of existing and new startup ventures. Callaghan Innovation does have mechanisms to recoup money from businesses in some instances, which can then be reinvested into other customers.

Also by taking a sector-specific approach Callaghan Innovation creates efficiencies (for example through the Healthtech Activator) and the support provided helps multiple companies navigate similar challenges, such as exporting to different countries with different regulatory systems. By supporting sectors in this way, this not only delivers better value for money for taxpayers, but also supports overall success in commercialisation for the sectors with the highest potential to deliver returns to the New Zealand economy.

### Commercialisation Experiences

In the June 2023 survey, 73% of customers who worked with Callaghan Innovation over the last 2 years had launched one or more R&D project. 80% of respondents who launched their innovations said that Callaghan Innovation helped them to commercialise faster from idea to market. This is impactful because faster commercialisation results in more immediate economic benefits.

From the same survey, some of the factors identified that enabled businesses to achieve their project objectives include: a deep understanding of customer needs; funding and access to resources; a continuous R&D cadence with a commercial objective; effective collaboration with cross functional teams, and strong R&D expertise and experience. This list is similar to well documented insights about what drives successful businesses, which has been a key influence in the designing of product categories and bundles.

***“We used the Summer student programme to fast track our new developments and hit customer target timings. Without their help we would have achieved a lot less.” (Food & Beverage customer, Marlborough)***

***“Getting the right external international experts at the right time that were able to upskill our internal team for a cost that was affordable because of the R&D grants and incentives.” (Digital customer, Bay of Plenty)***

***“Having Callaghan Innovation support allowed us to get to market quicker and mitigate the risk of having a competitor do this.” (Frontier Venture Digital customer, Canterbury)***

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<sup>11</sup> RDTI Spending

<https://www.mbie.govt.nz/about/news/government-drives-2-billion-of-business-research-and-development/>

# Callaghan Innovation's operations

## Funding and financial position

In 2022/23 Callaghan Innovation received funding totalling **\$209.1 million**, with **\$184.4 million** of this from annual appropriations, and **\$24.6 million** from other revenue. In financial year 22/23 Callaghan Innovation received:

- Operations: **\$120.2m** to broker and provide innovation services, and deliver programmes to businesses
- Transitional support to businesses: **\$8.3m** to support businesses as they transition from the Growth Grants Scheme to the RDTI
- Student Grants: **\$14.0m** to provide co-funding for private businesses to support student to work in a commercial R&D setting
- Repayable Grants for Startups: **\$12.6m** to fund services to support the growth of high value start-ups
- New to R&D grant: **\$0.3m** to provide co-funding to encourage businesses without R&D capabilities and experience to build R&D programmes
- Industry 4.0: **\$1.6m** to help businesses make the most out of the opportunities the fourth industrial revolution (Industry 4.0) offers
- R&D Project Grant: **\$16.1m** to support private businesses with existing R&D Project Grants until the expiry of the Grant
- National Measurement Standards: **\$9.6m** to fund the Measurement Standard Laboratory (MSL), NZ's national Metrology Institute
- Ārohia Innovation Trailblazer Grant: **\$5.0m** to fund businesses to undertake innovation activities that are not specifically R&D
- Capital Investment: **\$21.3m** to support infrastructure investment to enable us to provide services to businesses. The major focus in 2022/23 was the continued redevelopment of GIO.

## How Callaghan Innovation serves its customers

Callaghan Innovation uses a "product-based" operating and business model which allows the organisation to maximise customer excellence in a highly cost-efficient delivery approach. The main benefits of this model are:

- Scalable, structured, repeatable consistent delivery
- Greater visibility and accessibility of offerings to customers
- Clear targeting of products to priority customer groups

Callaghan Innovation also measures all products through a prioritisation framework to ensure that products are strongly aligned with Government priorities, policy intent and the purpose of Callaghan Innovation, are well targeted at key groups and outcomes, and are delivering value for money. Callaghan Innovation's product portfolio includes directed or contracted products as determined by MBIE, alongside products developed and funded from Callaghan Innovation's operating funding according to customer needs.

The product-based model means that Callaghan Innovation works effectively as a delivery agency and can quickly design and operationalise new products. A product-based model works equally well to rapidly deliver policy interventions, initiatives agreed by Ministers or responses to needs identified by the customers, industries or communities.

## Callaghan Innovation's products

Callaghan Innovation's overall product portfolio is easy to understand by looking at the five main product categories that are used to differentiate between the various individual products. The five product categories are: **Fund, Solve, Connect, Upskill and Grow**. The following section provides detailed information about each category and its products.

*All funding amounts in \$000 as budgeted for FY23/24 unless otherwise specified*

## Products in the “Fund” category

### **New to R&D Grant**

*\$15,625 - New to R&D Grant 2023-2028 Multi Year Appropriation (MYA) (Total MYA: \$115,674)*

Funding and support to help customers that are new to R&D to successfully develop their capability for long-term R&D. The aim is to increase the number of New Zealand businesses systematically engaging in R&D over the long term, and to create a pipeline to the RDTI by supporting businesses to transition onto the RDTI for ongoing government R&D support. Since the grant opened in December 2022, Callaghan Innovation has engaged with 209 businesses looking to start their R&D journey and awarded \$3.5m to 29 businesses.

### **R&D Tax Incentive (RDTI)**

*\$535,334 - Tax Credit funded via Vote Revenue R&D Tax Incentive Appropriation*

A tax credit equal to 15% of a business' eligible R&D expenditure, aimed at transforming the New Zealand economy into a high-skill, knowledge-based, and productive economy by supporting businesses to increase Business Expenditure on R&D (BERD).

Since 2019, Government investment of \$312 million dollars in tax credits has supported at least \$2 billion in business R&D spend, and in FY23 Customer Engagement Specialists supported 766 customers with education on applying for the RDTI.

### **RDTI Transitional Support Payment**

*\$57,000 - Transitional Support to Research and Development Performing Businesses Appropriation*

Funding available for former Growth Grant customers to help them transition to the RDTI ensuring that, during the transition, they are able to maintain or increase their level of R&D by receiving similar levels of government support for R&D.

### **Ārohia Innovation Trailblazer Grant**

*\$6,250 - Innovation Trailblazer Grant 2023-2028 Multi Year Appropriation (Total MYA: \$110,621)*

Funding for non R&D activities involved in taking a world-leading innovation to market, that can help transform New Zealand's innovation ecosystem and that is likely to generate significant spillover benefits to the rest of the New Zealand innovation system and the economy more broadly. There are two grants; Ārohia Seed Grant - up to \$25,000 for businesses to validate their innovation prior to applying for an Ārohia Full Grant, and Ārohia Full Grant - 20% co-funding up to \$4m to develop a world-leading innovation.

Since the Seed Grant opened in July 2023 \$3.86m has been awarded to 156 customers and 114 applications were received for the first Full Grant round. Successful Full Grant applicants will be announced in the coming weeks.

### **Student Grants**

*\$14,990 - Targeted Business Research and Development Funding Multi Category Appropriation: Category 2 - Student Grant*

Funding to support students and recent graduates to work on research projects in a commercial R&D environment. The aim is to create an R&D talent pipeline for businesses by ensuring that graduates have the necessary skills to undertake industry-focussed R&D. There are three grants; Experience Grants support an undergraduate student to undertake a research project with a business over the summer break, Fellowship Grants support MSc and PhD students to undertake a research thesis with a business, and Career Grants support businesses to employ a recent graduate to undertake R&D.

In FY23 578 businesses supported students through the Student Grant programme.

### **Technology Incubators and Repayable Grants**

*\$14,886 - Technology Incubator Programme 2023-2027 Multi Year Appropriation (Total MYA: \$75,646)*

Funding and support for the commercialisation of complex products and technologies. These are technologies that typically have a longer runway or significant technical hurdles that must be overcome in order to commercialise and create a viable business proposition. Eligible startups that partner with a Technology Incubator provider can access Repayable Grants of up to \$750,000 (plus \$250,000 of Incubator investment) and

specialist incubation and commercialisation support. Since the Technology Incubator programme was launched 25 new deep tech ventures have been created. The government has invested \$18m in Repayable Grants, which has generated \$67m of private investment.

## Products in the “Solve” category

### Research & Development Solutions

*\$19,523 - Callaghan Innovation Operations Multi-Category Appropriation: Category 3 - Research and Development Services and Facilities for Business and Industry plus Commercial Revenue*

Contract R&D services provided by 200 scientists and engineers, from expert advice and consultancy to end-to-end product development and large process design and scale-up projects. The aim is to assist businesses to benefit from science and technology-based innovation by providing access to expertise, equipment and facilities that they don't have in-house. In FY22/23 Callaghan Innovation scientists worked with 219 businesses, which contributed \$11m in commercial revenue.

## Products in the “Connect” category

### Founder and Startup Support Programme

*\$2,717 - Founder and Startup Support Appropriation*

A collection of startup and entrepreneurship initiatives (typically business incubator and accelerator programmes) delivered by partner organisations to build 'entrepreneurial capability' in aspiring entrepreneurs, accelerate the growth of high-quality startups through mentorship and training, and grow the number of tech startups in New Zealand.

In FY22/23 the six providers supported 224 startup businesses to access programmes and support.

### Whare and Industry Support (including Agritech Support Explorer, Web3)

Whare are small teams of multidisciplinary and cross-functional experts from across Callaghan Innovation. The Whare model is a vehicle for delivering sector specific support by rapidly mobilising the right experts to develop and deliver products that accelerate business growth and the commercialisation of technologies in focus sectors. Products are typically focused on solving sector-specific challenges for customers by providing connections, advice, education, technical expertise and assisting with uptake of new technologies. Currently Whare are focused on the HealthTech, Digital and Artificial Intelligence, CleanTech and Construction sectors.

### HealthTech Activator

The HealthTech Activator (HTA) is a coordinated, ecosystem-wide support mechanism for early-stage founders and companies in NZ's healthtech sector that makes it easier and faster for healthtech companies to find and access the support they need to commercialise their health innovations into successful businesses. 200+ healthtech companies have been directly supported by the HTA.

### BioResource Processing Alliance & NZ Product Accelerator

*\$4,500 - Callaghan Innovation Operations Multi-Category Appropriation: Category 3 - Research and Development Services and Facilities for Business and Industry*

Two products focused on growing the manufacturing sector by connecting industry with networks of researchers that can use science and technology to solve industry relevant problems and accelerate product development into global markets. The BioResource Processing Alliance (BPA) is a network of scientists that help businesses derive high-value products from low-value biological resources and waste streams. The NZ Product Accelerator (NZPA) is a network of scientists, researchers and industry practitioners that connect companies in the manufacturing sector with science and technology teams to assist with new product development, problem-solving and embedding technology.

### NZ Food Innovation Network



*\$4,515 - Callaghan Innovation Operations Multi-Category Appropriation: Category 3 - Research and Development Services and Facilities for Business and Industry and Commercial Revenue*

The NZ Food Innovation Network (NZFIN) is a national network of science and technology resources that supports the growth and development of New Zealand food, beverage and nutraceutical businesses, particularly with the transition from a volume-to-value strategy. It helps business access to the facilities and expertise needed to de-risk the development and piloting of new products and processes, from proof of concept through to commercial prototyping and export production.

#### **Industry 4.0 Showcase**

*\$1,050 - Future-proofing New Zealand's Manufacturing Sector by Driving Industry 4.0 Uptake and Skills Development Appropriation*

Products that are aimed at educating businesses and helping them to overcome the barriers to adoption of Industry 4.0 technologies, which includes “smart” and data-driven technologies in the manufacturing sector. The adoption of such technologies will improve the productivity and competitiveness of New Zealand businesses.

## **Products in the “Upskill” category**

### **Lean**

A programme providing training on ‘lean’ product design to boost productivity. This includes helping customers identify customer value-adding activities, identify inefficiencies across their business, improve planning, staff engagement, customer value, inventory and production flow, and create a continuous culture of improvement.

### **Beyond IP**

An intangible asset management education programme on identifying and managing intellectual property strategies. These assets can make up as much as 80% of the value of an innovative business, and go beyond the patented or trademarked assets. It also includes staff expertise and experience, brand recognition, unique processes, proprietary data, customer relationships and network relationships. This programme therefore helps customers create a strategy to manage these assets to protect the value of their business and grow for the future.

### **Capital Education**

Free online education on how to effectively raise capital as an innovative business. Ideal for startups and early-stage businesses, the programme shares vital insights on raising capital, as well as providing helpful tips on where to begin, and explaining how to identify and avoid critical fish hooks along the way.

### **Product 360**

Product360 is a collection of resources that set out the commercialisation landscape with the purpose of helping customers to identify areas that may need to be resolved in order to achieve product success. These areas include market opportunity validation to ensure a product is viable, and commercialisation pathway validation to ensure a successful pathway to market.

### **Aronui Industry 4.0 Navigator**

*\$1,050 - Future-proofing New Zealand's Manufacturing Sector by Driving Industry 4.0 Uptake and Skills Development Appropriation*

An interactive learning space designed to demystify Industry 4.0, and encourage business leaders to create a tailored, actionable Industry 4.0 strategy for their business. The objective is to improve the productivity and competitiveness of New Zealand businesses by increasing the uptake of Industry 4.0 technologies

## **Products in the “Grow” category**

**Business Innovation Baseline, Strategy Design, Business Model Innovation, Innovation Roadmapping, BIA Mentoring, Research Commercialisation**

A suite of products that provide education and personalised advice for businesses that are at the stage of commercialising products and growing their business, to help them accelerate the rate at which they can commercialise and enter markets. These products evolve as new customer needs are discovered.

## Discontinued Products

### **Project Grant (Funding Product)**

*\$5,000 - R&D Project Grant 2023-2028 Multi Year Appropriation*

Funding to businesses with less established R&D programmes to undertake an R&D project. The aim was to encourage businesses to establish and grow their R&D programme to the point where they could take up a Growth Grant/RDTI. This grant was disestablished in 2022 and replaced by the more tightly targeted New to R&D Grant. Callaghan Innovation continues to manage existing contractual commitments from grants that were approved prior to the grant being disestablished.

### **R&D Loan (Funding Product)**

*\$149,000 - Callaghan Innovation Operations Multi-Category Appropriation: Short Term Research & Development Loan Scheme Category*

A short term funding intervention to support businesses that were impacted by COVID-19 to maintain their R&D programmes in the absence of regular types of private income. Loans of up to \$400,000 were available to eligible businesses for the period 1 July 2020 to 30 June 2021. This product recognised that other generic forms of COVID-19 business support (wage subsidy, business loans, etc) were insufficient to cover the higher costs associated with performing R&D. All the funding was allocated in 2020/21 but obligations to repay the loan have now begun for customers and Callaghan Innovation will continue to manage the loan book out to 2031.

## One front door for customers

Customers of Callaghan Innovation can easily interact with the agency using the 'one front door' (via the Callaghan Innovation website), which then filters to Callaghan Innovation's team of Customer Navigators. These navigators allow management of 2500+ customers in the most efficient way possible. They are experts in building and understanding a customer's needs and priorities and can add value by supporting their priorities by connecting to Callaghan Innovation products and/or wider ecosystem support networks across New Zealand. The navigators also identify customers that are a strategic focus for Callaghan Innovation, and there is a team who then offers wrap-around support for these groups. This includes Frontier Ventures, Māori innovators and high potential sectors (such as Healthtech, Agritech and Construction).

The navigator function, combined with the productisation of services, allows for a clear and consistent experience for customers, allows customers to access more of Callaghan Innovation's offerings, and allows Callaghan Innovation's internal resources to be focused for maximum impact and organisational efficiency. It also enables new products to be stood up quickly and efficiently in line with Government delivery priorities.

## Gracefield Innovation Quarter

### **Current status**

The Gracefield Innovation Quarter (GIQ) in Lower Hutt has been supporting innovation in New Zealand for over 70 years. Today, it hosts a community of over 200 researchers and innovators and continues to play a critical role as a national centre, supporting and enabling a modern RSI system. It plays host to Callaghan Innovation's Measurement Standards Laboratory (MSL) and GlycoSyn. In addition to Callaghan Innovation, organisations based at GIQ include Victoria University's Ferrier and Robinson Research Institutes.

Since 2019, the Crown has invested \$125 million into the site. The Tactical Estate Continuity Programme has stabilised the site's critical foundations, including new sitewide underground infrastructure, sitewide HVAC

upgrades, security work, demolition work and a new hazardous goods precinct. The programme has addressed issues of health and safety, build a new Hazardous Goods facility, redeveloped an existing building to create a new flexible office and meeting room facility (Ngutuihe), and built new laboratories (MSL facility and Te Pā Harakeke Flexible Laboratories) along with significant underground infrastructure work.

## Options for the future

Because innovation is fuelled by face-to-face interaction, innovation locations help to drive innovation and economic outcomes. In recognition of the important role of place-based innovation in driving innovation outcomes and economic success, there are more than 500 innovation hubs around the world. The vision for GIQ is to create a thriving innovation location. The GIQ site-wide masterplan structures the space into activity zones to maximise innovation and community engagement and optimise investment in the site. The pathway to private sector investment has been central to the long-term vision for GIQ, as illustrated in the Programme Business Case from 2019.

The GIQ site was proposed to be developed into a Research, Innovation & Technology Park. The \$230 million investment would create new technical facilities for research, prototyping and scale-up, which would be organised into technology zones, with space for entrepreneurs, start-ups and private sector partners alongside public sector researchers. These technology zones would be connected by an amenity-rich central corridor that brings people together via coworking, networking, education and training, workshop and event, and service provider spaces, along with a cafe.

There are scaled back development options at GIQ that could still allow the Crown to be the catalyst for bringing together researchers, innovators and larger companies to create a deep tech innovation location by investing in GIQ in ways that will attract the private sector to co-locate and invest in the site. Callaghan Innovation can provide a separate detailed briefing on these options.

## Collaboration across the Public Sector

### New Zealand Trade and Enterprise (NZTE)

NZTE is a key partner in realising Callaghan Innovation's customers' growth potential. NZTE's market development tools, investment expertise and international networks provide a crucial 'next step' lever to accelerate commercialisation and grow internationally once customers are ready to launch a product or service. Currently there is a shared customer base of 216 and Callaghan Innovation and NZTE customer facing teams work collaboratively to provide a seamless customer experience as support is transitioned from one organisation to the other. NZTE shares two board members with Callaghan Innovation further enhancing the agencies' strong ties. Callaghan Innovation are continually looking at ways to increase alignment between the two organisations.

### 9(2)(f)(iv) - Advice to Government

[Redacted]

- [Redacted]
- [Redacted]
- [Redacted]

### Ministry of Business, Innovation and Employment (MBIE)

As a Crown Entity MBIE monitors Callaghan Innovation's performance, and Callaghan Innovation works closely and collaboratively with several policy teams at MBIE (primarily the Innovation Policy team) to ensure that private

sector perspectives from customers are represented in the policy process and that Callaghan Innovation is delivering impactful policy for the Government.

## Other Agencies

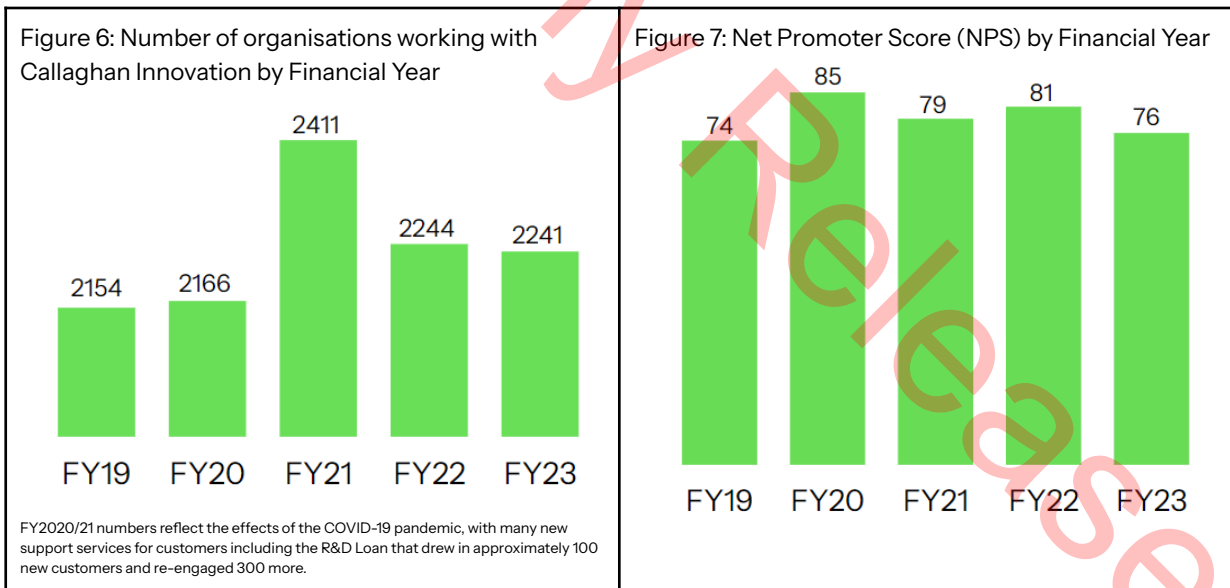
Callaghan Innovation also works collaboratively with the Ministry of Foreign Affairs (MFAT) on international delegations and matters of shared interest, the Ministry of Primary Industries on agritech and food & beverage matters, the Ministry for the Environment (MfE) on Cleantech matters, Kainga Ora on construction sector support, and the Crown Research Institutes through Callaghan Innovation’s membership of Science NZ.

# Who Callaghan Innovation works with

## Numbers of customers and customer satisfaction

Callaghan Innovation’s customers numbers have been sustainably growing with an average increase of approximately 20 customers year-on-year over the 5 year period. This reflects a strategic effort to focus more intensive support on priority groups (Frontier Ventures, Māori customers) whilst providing consistent and scalable service for the remaining customers.

Customers continue to enjoy and value the support Callaghan Innovation offers, and overall Net Promoter Score (NPS) has remained consistently high (range: 74-85) throughout the last 5 financial years, even as Callaghan Innovation has moved towards a productisation model to support more customers more efficiently.



## Frontier Ventures and Māori Innovators

A quarter of all customers in 2022/23 are considered “Frontier Ventures”. Frontier Ventures have deeper relationships with Callaghan Innovation compared to other customers both in the diversity of product consumption and intensity.

In FY2022/23, Callaghan Innovation worked with 139 Māori businesses (83% increase compared to FY2021/22), and Māori customers as a proportion of the annual customer base has also increased over the last 5 financial years. Callaghan Innovation has also observed a greater reach of Māori customers in the regions as well as a skew towards the Food & beverage, Agritech and Healthtech sectors.

The “high touch”, intensive support for Frontier Ventures and Māori businesses is intentional and aligned with Callaghan Innovation’s strategy to provide greater levels of support to customers that are most likely to make a significant difference to NZ. All other customers are still receiving high quality support from Callaghan Innovation but it is typically done through digital channels or “low touch” customer support.

## Regional and sector diversity

Callaghan Innovation customers are from across New Zealand, and across sectors. The most highly represented sectors are Digital, Hightech and Food and Beverage (noting that some customers may fall into more than one sector, such as Sustainable construction as Cleantech) and most represented regions are Auckland, Canterbury and Wellington.

## High potential sector work

High potential sectors are identified as key drivers of productivity and export revenue and an area where New Zealand underperforms. Callaghan Innovation provides targeted innovation support to particular sectors or areas of technology with the goals of:

- **Nurturing disruptive innovation.** Areas of disruptive emerging technology are often navigating uncharted territory in commercialising their innovations. Callaghan Innovation helps solve their unique commercialisation problems and aims to build a self-sustaining innovation community in that field. Callaghan Innovation’s Web3 initiative, which is focused on commercialisation of Web3 related technologies is an excellent example of Callaghan Innovation’s work to support disruptive technologies. The Web3 initiative sits within a broader suite of products to support AI and Digital technologies.
- **Growing innovative industries.** Callaghan Innovation provides services, advice and access to networks in New Zealand and internationally in a sector-specific way which creates efficiencies, particularly when navigating entry into international markets. The HealthTech Activator (HTA) and Agritech ITP are the current work streams that seek to grow existing innovative industries.
- **Improving productivity in established sectors.** Callaghan Innovation supports technology and innovation uptake in established sectors to improve their productivity and business growth. The Construction workstream focuses on innovative solutions to improve construction industry productivity such as manufacturing and advanced automation, decarbonisation of buildings, waste minimisation, digital tools and business model innovation. Callaghan Innovation’s partnership with the Construction Sector Accord, BRANZ, Kāinga Ora, Te Uru Rākau / Ministry of Primary Industries, Scion and universities leverages the organisation’s unique technical R&D and commercialisation capabilities to help accelerate construction innovation in New Zealand.

The delivery mechanism for high potential sectors allows Callaghan Innovation to easily pivot and align with Government priorities as these change and adapt to the needs of the ecosystem.

## The Regional Business Partnership Network

Callaghan Innovation has customer engagement staff across 14 regions of New Zealand. This is delivered through the Regional Business Partnership (RBP) Network, in Northland, Auckland, Waikato, Taranaki, Bay of Plenty, Central, East Coast, Hawkes Bay, Wellington, Marlborough/Nelson/Tasman, Canterbury, Otago, West Coast and Southland.

### Partners of the RBP Network include:

Northland Inc  
Auckland Business Chamber  
Tauranga Business Chamber  
Soda Inc

Venture Taranaki  
Trust Tairāwhiti  
Hawkes Bay Chamber of Commerce  
Central Economic Development Agency

The RBP network supported 71% of customer engagements in the last FY, and supports a large proportion of the Frontier Ventures and Māori customers. In addition to providing support to individual customers, the RBP network also aims to build connections across organisations and sectors. For example in September 2023, Callaghan Innovation and Scion (a CRI) collaborated with people from different organisations to develop innovative solutions to tackle the problem with forestry slash in Gisborne and the wider East Coast.

## Customer Stories

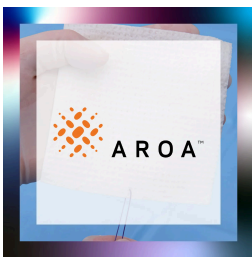
Callaghan Innovation wants to spotlight New Zealand's innovators who are at the heart of the organisation's work. Callaghan Innovation can arrange and support Ministerial visits to any of these customers or any other customers at your discretion.



### Digital: Mint Innovation

Mint Innovation uses its innovative technology to extract gold and other critical metals for electronics, to produce low-carbon 'green metals' and help move e-waste towards a circular economy. The company has benefitted from many of Callaghan Innovation's grants products and technical expertise. Mint Innovation team partnered with Callaghan Innovation to evaluate the feasibility of using the residual powders from e-waste in concrete. The innovation agency's scientists and engineers were able to use their expertise to better understand how e-waste powders could be used to

strengthen cement. With this support, the company is now global with its Sydney plant ramping up production, following a successful \$60 million capital raise. CEO Will Barker said *"In 10 years' time I think every investment is going to have a climate focus. So you need to think big and your tech needs to be scalable beyond New Zealand."* As the world continues to heavily rely on electronics there's no shortage of e-waste, and for Mint Innovation, this presents trash-to-treasure opportunities in Europe, the United Kingdom and across the United States.



### Healthtech: Aroa Biosurgery

Soft tissue reconstruction company selling medical devices for procedures to replace lost skin or muscle. Aroa Biosurgery has received 36 grants from Callaghan Innovation, and is based in Auckland. The company has a valuation cap on the Australian Stock Exchange (ASX) of \$387.71 million. Callaghan Innovation has been involved in Aroa since the beginning, with the company originally based at Callaghan Innovation's predecessor, Industrial Research Ltd (IRL). Callaghan Innovation scientists helped to develop the product, and customer experts supported the technical product

development and product commercialisation. Aroa Biosurgery now employs about 270 people and primarily operates in the United States. However it has approvals in 50 other countries and is starting to expand into Europe, the Middle East and Asia with the help of local partners. As a soft tissue reconstruction company, it develops, manufactures and sells medical devices for procedures in patients who have lost skin or muscle that needs to be replaced and regenerated. Founder Brian Ward said of the support from Callaghan Innovation that *"Callaghan Innovation certainly helped keep us alive. They not only provided the funding but also some really good people."*



## Food & Beverage: Leaflet Foods

Leaflet Foods produces Rubisco protein directly from leafy crops, like lucerne, resulting in significantly lower carbon emissions compared to conventional dairy protein production. It aims to develop a whole new food production system.

Its food-safe technology creates highly digestible plant protein, while addressing the challenges of sourcing sufficient protein from green leaves.

Based in Lincoln, Canterbury, co-founder John Penno (who also led the creation of Synlait Milk) and Maury Leyland Penno (former senior Fonterra executive), led the

company to secure \$22 million in a series A investment round. Callaghan Innovation has been involved from day one, helping with its initial R&D concept, through prototyping and scaling up with the help from RDS teams in Wellington and Christchurch.

## How Callaghan Innovation works with you

As the Minister with accountability for Callaghan Innovation through the Science, Innovation and Technology portfolio, your main responsibilities are to ensure an effective Board is in place, set Callaghan Innovation's direction, monitor and review operations and performance, and manage risks on behalf of the Crown. You will provide Callaghan Innovation with annual Letters of Expectation, table the Annual Report, Statement of Performance Expectations, and Statement of Intent in Parliament, and oversee responses to questions from the Economic Development, Science and Innovation Select Committee. Callaghan Innovation will support you in these processes as required. Callaghan Innovation does not currently allocate a Private Secretary to your office as Callaghan Innovation works closely with the MBIE Private Secretary, but Callaghan Innovation would be happy to do so if required in consultation with you.

### In person

The Chair of the Board, Hon Pete Hodgson, and the Chief Executive, Dr Stefan Korn, will meet with you at a frequency of your choosing. These meetings provide an opportunity for substantial discussion on pressing matters for the organisation or the ecosystem, and have been held at both monthly and quarterly intervals in the past. Officials from Callaghan Innovation should also be part of your weekly RSI Officials meeting, providing a more regular opportunity for updates and policy discussions.

### Company visits

Your travel across New Zealand offers opportunities to engage with a number of customers of Callaghan Innovation. Callaghan Innovation can provide visit suggestions, including at short notice if required, and supports these visits with briefings. Callaghan Innovation's network of staff across the country are available to accompany these visits to provide additional support. Callaghan Innovation can provide a list of visit suggestions quickly at your discretion, based on your interests and priorities.

### Sector events

Callaghan Innovation can facilitate speaking appearances at industry events across the Innovation ecosystem. Previous examples include: Tech Week events, Electrify Aotearoa (conference for female startup founders) and the Science New Zealand Awards.

### Sector feedback sessions

Callaghan Innovation can also deliver events bringing together customers around a specific product, topic or issue in order to enable feedback directly from the private sector. Previous examples of this included: a roundtable discussion with Biotech startup leaders to discuss development at GIQ and issues for the sector, and a session with recipients of the Student Grants to discuss barriers to entering the innovation workforce and how the grant helps bridge these gaps. Callaghan Innovation will also be proactive about bringing sector feedback or insights to your attention outside of these events, where Callaghan Innovation feels that they will impact the

effective functioning of your portfolio.

### **Briefings**

Callaghan Innovation will provide briefings directly to your office of issues we wish to discuss with you, or where you have requested information. These are often provided jointly or in collaboration with MBIE and other government partners as the situation requires. Callaghan Innovation's fortnightly report provides you with day-to-day updates and general progress of the organisation. This is to keep you informed of progress towards targets and notable items on a regular basis.

### **Reporting**

Callaghan Innovation will provide you with regular updates on performance. The Entity Performance and Investment branch of MBIE will assist you in reviewing and approving these.

## **Board of Directors**

**Hon Pete Hodgson (Chair)** - Pete Hodgson is a former Cabinet Minister (NZ Government 1999 -2008) whose portfolios included Science, Economic Development, Tertiary Education, Energy, Transport, Forestry, Fisheries, Climate change policy and Commerce. He serves on the Board of Otago Innovation Limited, and was also Chief Executive from 2014 -18. Otago Innovation is the University of Otago's technology transfer office. He was Chair of the Southern District Health Board until dissolution and is actively engaged with multiple aspects of the New Dunedin Hospital build. He has a Bachelor's degree in Veterinary Science and a Master's degree in Public Policy (with Distinction).

**Elena Trout** - Elena Trout is a qualified civil engineer with extensive experience in the planning, development and implementation of large engineering and technical projects. She has held senior management roles in the energy, transport and infrastructure sectors and has been involved in a number of high-profile and nationally significant socio-economic infrastructure projects. Elena is a past President and Fellow of Engineering New Zealand.

**Jennifer Kerr** - Jennifer Kerr has extensive international experience in the HR and health, safety and wellbeing sectors in North America, Europe, the United Kingdom and New Zealand. She was formerly General Manager of Customers, People and Environment at Transpower and Group Director Human Resources and Health & Safety at Fonterra. She has also operated her own consultancy business, and prior to that was the Group Manager of Human Resources for Mobil Oil for all of Europe. Jennifer has governance experience in the United Kingdom and New Zealand, including pension plan trustee roles in both countries. Jennifer is a member of New Zealand Global Women and has taken an active role during her career in mentoring and coaching other women to achieve their potential. She is of Ngāti Mutunga and Ngāti Tama descent.

**Matanuku Mahuika** - Matanuku Mahuika has more than 25 years' experience as a lawyer advising on a wide range of corporate, commercial, Treaty of Waitangi, Māori land and administrative law issues. He has experience in working with early stage and start-up businesses and has held a wide variety of directorships and governance roles. Matanuku's tribal affiliations are Ngāti Porou and Ngāti Raukawa.









**Shaun Hendy** - Shaun Hendy FRSNZ is Director of Te Pūnaha Matatini, a New Zealand Centre of Research Excellence hosted by the University of Auckland. Shaun teaches in both the Department of Physics and the Centre for Innovation and Entrepreneurship at the University of Auckland. Shaun worked as a scientist at Industrial Research Ltd from 1998-2013, and at Callaghan Innovation as an Industry and Outreach Fellow in 2013. He also lectured at Victoria University of Wellington from 2003-2013 and was Deputy Director of the MacDiarmid Institute for Advanced Materials and Nanotechnology from 2008-2012. In 2012, Shaun was awarded the Callaghan Medal by the Royal Society of New Zealand and the Prime Minister's Science Media Communication Prize for his work as a science communicator. In 2013 he was awarded the E. O. Tuck medal for his research in applied mathematics, and co-authored Get Off the Grass with the late Sir Paul Callaghan. His most recent book, Silencing Science, was released in May 2016.



**Nicole Buisson** - Nicole Buisson is an independent director and also works with technology companies on growth and scaling initiatives. She currently sits on the Boards of New Zealand Growth Capital Partners, The Icehouse and Mosaic Business Solutions. She formerly sat on MBIE's Small Business Council and the Boards of WEL Networks, Ultra Fast Fibre and Rose & Thorne. Her corporate background combines a mix of technology (AWS, Xero), venture capital and private equity (3i and E&Y's Venture Capital Advisory Group), and corporate innovation (Vodafone, HK CSL). Nicole holds an MBA from Columbia University and London Business School and is a Chartered Member of the Institute of Directors.

**Sally McKechnie** - Sally McKechnie has more than 20 years experience as a public and administrative lawyer, advising and representing commercial entities, Government ministers, ministries, public sector and not for profit interests. She has experience working with and advising Crown and businesses entities in the science and innovation sector. She founded and leads Simpson Grierson's public law and government team in Wellington and earlier in her career she was Crown Counsel. Sally has had governance roles in the sport and not for profit sector, and is currently a director of Gymnastics New Zealand and Cricket Wellington. Sally holds an LLB(Hons) and a BA from Otago University, and a BCL and MPhil from Oxford University, where she attended as a Rhodes Scholar.

## Executive Leadership Team

			
Dr Stefan Korn Chief Executive	Kirsty Bellringer Chief Financial Officer	Brett Calton (Ngāti Kahungunu) Chief Product Officer	Jen Cherrington Chief Innovation Enablement Officer
			
Cliff Hastings Chief Innovation Expertise Officer	Henare Johnson (Ngāti Whare, Ngāti Manawa, Tuhoë, and Ngāti Porou) Chief Māori and Government Engagement Officer	Karen Skinner Chief Government and Strategic Initiatives Officer	Andrea Bubendorfer Chief Science Officer