

Briefing to the Incoming Minister of Research, Science and Innovation

October 2017

Callaghan
Innovation

The logo for Callaghan Innovation, featuring the text "Callaghan Innovation" in a white sans-serif font on a yellow square background. A small blue and green square graphic is located at the bottom right corner of the yellow square.

Executive Summary

Who we are

Callaghan Innovation is the Government's business innovation agency. Our mission is to accelerate the commercialisation of innovation by New Zealand businesses, building a more diversified and productive economy so all New Zealanders can enjoy a prosperous way of life. We have staff and facilities in Wellington, Auckland and Christchurch.

Callaghan Innovation is a one-stop shop, connecting businesses to the networks, capability and funding they need to make their ideas happen, and challenging our customers and New Zealand to step up to the challenge of technological change along with a rapidly intensifying, globalised and competitive marketplace.

Our support for businesses includes:

- Research and technical services, delivered by around 200 scientists and engineers
- Programmes to improve businesses' innovation skills and capability
- R&D grants, worth more than \$140m a year.

Callaghan Innovation is a Crown Entity established by the Callaghan Innovation Act 2012. Callaghan Innovation is governed by a Board, supported by a Stakeholder Advisory Group (see Appendix A for members).

We are monitored by, and report to you through, the Ministry of Business, Innovation and Employment (MBIE). Our operating revenue for the year ended 30 June 2018 is forecast to be \$307.5 million. This includes \$78.1 million from the Crown for operational costs, \$204.8 million from the Crown for grants, and \$21 million generated by Callaghan Innovation from commercial revenue.

Our impact

Our services help to grow business investment in R&D, innovation and capability well above what they would be able to achieve on their own. Business expenditure on R&D grew by 29% between 2014-16. Over the same period Callaghan Innovation customers increased their R&D spend by 46%.¹

Our grants are a key mechanism for stimulating R&D expenditure by businesses. In the last financial year our grants recipients invested \$3.70 for every \$1 we provided in grants.

There has also been strong demand for the skills and expertise provided by our scientists and engineers to support our customers' R&D projects. Last financial year resulted in our highest level of commercial revenue for this group (\$18.2 million).

Over the last 12 months 2,747 organisations have engaged with our services:

- 843 have had R&D grant contracts
- 539 have attended our capability building workshops and programmes
- 369 have worked with our scientists and technical experts
- 1356 have attended our events or international delegations.

¹ Analysis based on a sample of 103 businesses where data on R&D expenditure was available for the period 2014-16 and they had used a Callaghan Innovation service during that period.

We are successful when our customers are growing and succeeding. 67% of the TIN200 list of leading technology companies have engaged with us in the last 12 months. Those who engaged with us had revenue and staff growth rates that were nearly 4 times higher than those we weren't engaged with. In addition, every category winner in the Hi-Tech Awards earlier this year was a customer of Callaghan Innovation. In the recent Innovation Awards, Supreme Winner Rocket Lab has been a customer of Callaghan Innovation since 2013, and 50% of the category winners in those awards have benefited from one or more of our services in the last 12 months.

Our customers are some of our best advocates and strongly recommend our services. Our most recent Net Promoter Score was +55.² To put this in context NZ IT Services is -1, Professional Services is +10 and Retail is +22.

How we work with you

As the Minister with accountability for Callaghan Innovation your main responsibilities include ensuring Callaghan Innovation has an effective Board in place, participating in setting the direction for Callaghan Innovation, monitoring and reviewing Callaghan Innovation's operations and performance, and managing risks on behalf of the Crown. The Private Secretary for MBIE assists you in your engagement with Callaghan Innovation.

Callaghan Innovation currently provides your office with fortnightly reports, including reporting on media activity, and advice and briefings relating to events, issue management and operational policy decisions. Detailed information on our progress against your priorities, and financial information, will be provided to you in quarterly reports.

The following regular interactions with Callaghan Innovation also take place:

- Board Chair and Chief Executive meetings – you may choose to have meetings with Callaghan Innovation's Board Chair and Chief Executive (currently held monthly).
- Regular meetings with officials from MBIE and Callaghan Innovation to discuss policy issues. Presently, these are held every week.
- Company visits – your regional travel provides an opportunity for you to visit and engage with companies that work with Callaghan Innovation. Callaghan Innovation provides briefings to support these visits and is available to accompany you.

Key areas that we will brief you further on

Over the coming weeks we will work with MBIE to provide you with further briefings on the following priority areas:

- The development of our 3 – 5 year strategy
- The renewal of the Gracefield Innovation Quarter
- The start-up ecosystem
- Support for regional economic development
- Growing the Māori economy
- Maximising the benefits from our international connections
- Briefing on our commercial businesses.

² Net Promoter Score produces a result from +100 to -100. It is calculated by asking whether customers would recommend a service or organisation. The score is the % of promoters (those scoring 9-10 on a 0-10 scale) minus the % of detractors (scoring 6 or under).

Callaghan Innovation

Key facts

What we do

Deliver innovation services to businesses:



R&D



Innovation skills programmes



Grants



Build New Zealand's innovation capability

Our impact



increase in business spending on R&D from 2014-16



increase in spending on R&D by businesses with **Callaghan Innovation grants** from 2014-2016

Our expenditure

\$307.4m

2017/18
EXPECTED SPENDING

\$204.8m

GRANTS

\$45.7m

PERSONNEL

\$27.1m

SCIENCE PROJECTS & SUBCONTRACTS

\$29.8m

OTHER

Our reach



2473

ORGANISATIONS ENGAGED WITH US IN 2016/17

Our Mission and Origins

Callaghan Innovation's Whakatauākī, our guiding proverb, is **Rukuhia te wāhi ngaro, he maunga tātai whetū: Explore the unknown, pursue excellence**. Our mission is to accelerate the commercialisation of innovation by New Zealand businesses, and to grow New Zealand's economy by helping innovative businesses to succeed.

We have our sights firmly set on how innovation, technology and increased R&D can make a real difference to our economy and our country by 2040. Why 2040? Because the next technological revolution will be well through, completely changing the way we live and work. Callaghan Innovation can play a role in how our business sector rides the wave of technology coming our way to grasp the opportunities rather than be swamped by them. 2040 is also two hundred years from signing the Treaty of Waitangi, it's enough time for us to have worked with innovators and businesses to diversify our economy, jobs, lift productivity and therefore make a broader social difference for our country.

Callaghan Innovation contributes to the growth of New Zealand's economy in the regions, nationally and internationally. Our mission is to support the diversification and therefore the resilience of New Zealand's economy, ensuring that economic growth translates to improved wellbeing for everyone, now and in the future. Our current priority areas are:

- Investing for a growing and resilient economy. This means focusing our resources to create future wellbeing, including investment in infrastructure, businesses, and social and natural capital.
- Diversification and adding value. We want to promote creation of a knowledge-intensive, high value economy.
- Inclusive and sustainable growth. Economic growth must also be socially and environmentally sustainable, and all New Zealanders should share in the benefits of growth.

Callaghan Innovation was established in 2013, following the consolidation of Industrial Research Limited and the grants programme run out of MBIE. Our name celebrates Sir Paul Callaghan (1947–2012), one of New Zealand's greatest scientists. Sir Paul championed science and business as being crucial to New Zealand's economic growth. Sir Paul's vision for New Zealand was as a hub of smart, export-focused entrepreneurs, where a high quality lifestyle is achieved through excellence in education and R&D. We share Sir Paul's ambition for commercialising scientific research and his legacy inspires us to build New Zealand's innovation capability and contribute to growing our innovation economy.

The world is facing significant technological changes, with huge implications for New Zealand. New Zealand's short term economic outlook is strong, but there are major long-term challenges, notably low productivity growth, a changing labour market, and the loss of jobs through automation. Callaghan Innovation exists to help New Zealand overcome these challenges by helping New Zealand's R&D community turn its findings into marketable products and services, building new businesses and jobs and growing the economy.

Our strategic plan for 2017-2018 encompasses three key strategic catalysts to strengthen our organisation. These include building stronger relationships with customers ('Delight Customers'), recognising that every connection we make builds opportunities for our customers ('Every Connection Matters') and moving away from organisational silos to a collaborative and connected organisation that is living and breathing the technology and innovation practices we prescribe to our customers ('ONE Callaghan Innovation, Digital First').

Our Purpose



SIR PAUL CALLAGHAN

One hundred inspired New Zealand entrepreneurs can turn this country around that is the challenge for us all

OUR PURPOSE

Helping business succeed through technology

OUR PROMISE

Liberating businesses
Individuals & future generations to unleash our economy

we

connect, navigate, nurture & challenge by being the super-connector in the innovation ecosystem

HOW DO WE DO THIS

Every connection matters

Delight Customers

Drive one Callaghan, digital first



What we do

Callaghan Innovation is a one-stop shop for innovative new businesses and those seeking to grow their investment in R&D. We provide research, technical expertise and facilities for businesses, targeted grants to support investment in R&D, and a range of innovation skills programmes. We also have a strong emphasis on growing the Māori economy by developing the potential of Māori businesses.

Our services span the whole innovation journey, from seed idea to start-up through to business growth and expansion. Our innovation services have a strongly practical focus. We help businesses to take an idea from concept to commercial reality – such as through incubators or accelerator programmes – and provide access to experts for advice, skills, support and technical expertise. We also provide specialist input to help businesses build in-house innovation skills and capability.

Research and Technical Services

Through our Research and Technical Services (RTS) branch our world class scientists and engineers help businesses deliver product development R&D and achieve better levels of productivity and innovation. In 2016/17 247 businesses benefited from access to our research and technical services. The RTS group is organised across four technology platforms:

- Advanced Manufacturing: including advanced engineering, robotics, automation and manufacturing technology
- Biotechnology: including lipid chemistry, analytical services, and carbohydrate and pharmaceutical chemistry
- Advanced Materials: design, selection, sourcing and testing of materials; materials processing and part fabrication; smart materials
- Internet of Things and Data Solutions: including microfabrication, microfluidics, chemical and biochemical analysis; transducers and sensing; communications technologies and data science and analytics.

R&D Grants

Our targeted grants provide a strong incentive and support for businesses to invest more in R&D. Our grants include:

- Growth Grants – Our Growth Grants co-fund 20% of a business's R&D costs, up to \$5 million a year, and are available to businesses that invest over 1.5% of revenue in R&D. In 2016/17 244 companies received Growth Grants.
- Project Grants – Project Grants co-fund up to 40% of R&D costs of an R&D Project. They are targeted towards companies that have less established R&D programmes with the goal of developing them into stable and substantial R&D performers. In 2016/17 464 companies were awarded Project Grants.
- Student Grants – These grants support New Zealand students to gain and develop their technical skills in commercial R&D environments. In 2016/17 232 Student Grants were awarded.

Innovation skills and capability programmes

Our innovation skills and capability programmes increase business capability to innovate, grow and scale up. Our programmes include:

- Better by Lean – in 2016/17 301 businesses attended workshops (Better By Lean) to help them review processes and management systems in order to improve productivity and reduce waste.
- Incubator programmes to support start-ups – in 2016/17 122 businesses received targeted support from one of our incubators.
- High Performance Work Initiative – in 2016/17 80 businesses took part in the High Performance Working Initiative, which helps businesses to create environments in which innovation can thrive. We increased the number of Māori enterprises to 15% percent of those taking part.
- Innovation IP – this programme gives businesses the knowledge, capability and confidence to leverage their intellectual property and assets for accelerated business growth. 68 businesses worked with us in 2016/17.
- Build for Speed – in 2016/17 33 software development businesses took part in a programme (Build for Speed) to accelerate software development / product delivery.

Commercial entities

Callaghan Innovation also has three commercial entities that generate revenue and provide expertise that our customers can access. Our commercial entities are:

- Measurement Standards Laboratory (MSL) – MSL is New Zealand's national metrology service, responsible for providing national measurements, standards and related services in accordance with section 4 of the Measurement Standards Act 1992. MSL enables New Zealand's businesses to work and compete globally by providing uniform units of measurement and standards for electricity, temperature and humidity, time and frequency, length, mass and pressure, and photometry and radiometry.
- KiwiStar Optics – provides customised precision optics, largely for astronomy. Examples of its work include mounted mirrors, lens assemblies such as spectrograph cameras and complete optical instruments such as spectrographs. KiwiStar Optics focuses on civilian astronomical projects but has also successfully completed work in instrumentation, defence and surveillance.
- GlycoSyn – researches, develops, manufactures and sells active pharmaceutical ingredients for pre-clinical and clinical trials, and undertakes specialty manufacture of commercial ingredients under contract to pharmaceutical companies around the globe.

Our partners and our work in the regions

Callaghan Innovation works to be a super connector within the innovation ecosystem. We collaborate with many New Zealand organisations involved in supporting businesses or science and innovation. Our key government partners include New Zealand Trade and Enterprise (NZTE), which supports companies to grow and expand internationally, and Auckland Tourism Events and Economic Development (ATEED), a co-owner with Callaghan Innovation of The Foodbowl, a facility based in Auckland where companies can produce commercial runs of new products for trial marketing. We also work closely with New Zealand's universities and Crown Research Institutes to identify research results that can be commercialised, and help them develop a path to markets.

Callaghan Innovation supports business innovation in the regions through the Regional Business Partner programme, jointly administered by New Zealand Trade and Enterprise. Our Regional Business Partners are a nationwide network providing businesses with localised access to information, training and development services and funding. Regional Business Partner staff act as account managers, assessing businesses and working with them on their needs and growth opportunities.

In 2017 we are funding business incubators to expand their presence in the regions, where this support for start-ups has been lacking. For example, Waikato-based founder incubator Hamilton-based SODA Inc. is working with partners to deliver services to start-ups in the Bay of Plenty, Gisborne/Tairāwhiti and Hawke's Bay.

We also hold a wide range of activities in the regions, including programmes to improve business productivity and eliminate waste, and events to inform and inspire businesses about technology change and the opportunities being created.

Our international connections

In the international space we work closely with NZTE to maximise the services both organisations offer customers. We connect New Zealand businesses to people, technology, knowledge, ideas, events and opportunities that will inspire and assist them to succeed through technology. We lead business delegations to overseas technology events and discovery programmes, provide international connection services to companies, organise opportunities for collaboration with innovation agencies in other countries, and host visiting delegations, experts and potential R&D partners. Recent delegations have included a group of ten early-stage agritech companies to the World Dairy Forum in Madison, Wisconsin, and twenty software-as-a-service start-up companies to SaaSr in San Francisco to learn about the latest technologies, find innovation partners, and validate their product development for target markets. Both delegations scored a high +90 Net Promoter Score (NPS).

We are working with Australian contacts and partners. Our CEO co-chairs the Australia New Zealand Leadership Forum Innovation stream to strengthen and further Australia-New Zealand cooperation on shared science infrastructure and collaborative research projects. This work comes under the Australia-NZ Science, Research and Innovation Agreement. We will also be included in proposed agreements led by MBIE with Israel (as the implementation agency) and Singapore, and are talking with South Korea and Taiwan on formal arrangements. Callaghan Innovation is also a member of the Enterprise Europe Network, partner in the EU's EPIC ICT sector programme, and has relationships with a wide range of research institutes, universities, companies and other members of innovation ecosystems in other countries (such as Germany, France, Ireland, Netherlands, the UK, China, and the USA).

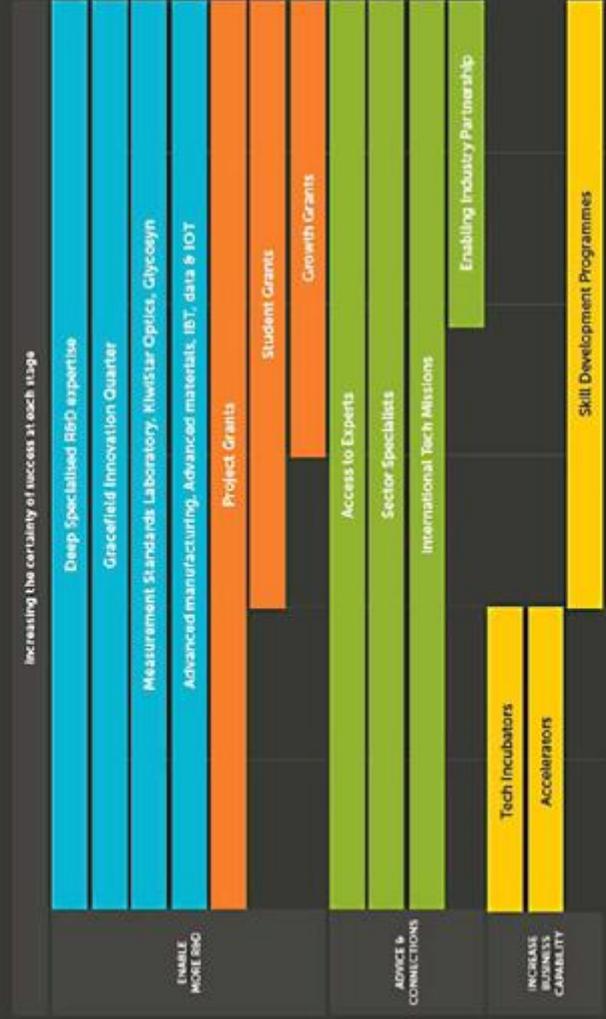
Finally, we are connected into the Small Advanced Economies initiative which provides numerous opportunities to collaborate with these countries around measurement of our services, technology forecasting and connecting innovation eco-systems.

Innovator's journey



OUR SUCCESS IS YOUR SUCCESS

- 99%** WOULD RECOMMEND R&D STUDENT EXPERIENCE GRANTS
- 95%** SAID THEIR PROJECT GRANT IMPROVED THEIR R&D
- 87%** RATED OUR PROGRAMMES, EVENTS AND MISSIONS 7/10 OR HIGHER
- 99%** WITH GROWTH GRANTS MAINTAINED OR INCREASED SPENDING ON R&D
- +46%** INCREASE IN R&D SPENDING BY CALLAGHAN INNOVATION CUSTOMERS WITH GRANTS FROM 2014 TO 2016



About Callaghan Innovation

Callaghan Innovation employs 386 people across our offices in Wellington, the Gracefield campus in Lower Hutt, Auckland and Christchurch.

Our Executive Leadership Team reports to our Chief Executive, Vic Crone. We have made changes to the executive team this year to support increased collaboration across the organisation, and to strengthen customer focus and our strategic and stakeholder management capabilities.

Our people are organised into seven business units:

- Strategy, Impact and Insights (develops strategy and aligns organisation to it).
- Sectors (customer facing).
- Research and Technical Services (customer facing).
- Market, Engagement and Experience (manage stakeholders and communications).
- People and Capability.
- Corporate Services (covers finance, IT services, facilities and grants reports here).
- Commercial Business (covers KiwiStar, GlycoSyn and MSL).

The development manager of the Gracefield precinct project reports directly to the CEO.

Callaghan Innovation is governed by a Board. All decisions relating to the organisation's operation are made by, or under the authority of, the Board in accordance with the Callaghan Innovation Act 2012 and the Crown Entities Act 2004. Please refer to Appendix A for a list of Board members.

The Callaghan Innovation Act 2012 allows you to:

- Appoint at least 5, but not more than 9 persons as members of the Callaghan Innovation board. You may appoint the Chief Executive of Callaghan Innovation as a special advisor to the board.
- Establish a stakeholder advisory group to provide advice to the board on matters relating to the performance of its function.

The Stakeholder Advisory Group is accountable to the Callaghan Innovation Board, providing candid wisdom and insights to guide our strategy and design programmes. Stakeholder Advisory Group members are appointed on a voluntary basis and come from the business and science communities, with expertise in the manufacturing, research and services sectors, and include business, research, incubation and angel investment leaders.

Customer Experience



87%

of people who used a service or attended an event in 2016/17 would highly recommend it (rated us 7/10 or higher)

How many people – staff locations



60 | AUCKLAND

300 | WELLINGTON

30 | CHRISTCHURCH

14 | REGIONAL
BUSINESS
PARTNERS

Our Sectors



AGRITECH



HEALTH



DIGITAL



**ENERGY &
ENVIRONMENT**



**FOOD &
BEVERAGE**



**TRANSPORT
& LOGISTICS**



**MANUFACTURING
& NICHE**

Key areas that we will brief you further on

In the coming weeks we will brief you on the following high priority areas. We look forward to engaging with you on the work programme for the coming year.

The development of our 3 – 5 year strategy

We will engage with you on the objectives and targets for Callaghan Innovation for the next 3 to 5 years. This strategy will be set out in our Statement of Intent for 2018 – 2022, which will be produced early next year.

The renewal of the Gracefield Innovation Quarter

We are developing a Business Case for the modernisation and enhancement of the facilities at the Gracefield campus in Lower Hutt. Remedial works are currently underway on site to address issues caused by the November 2016 earthquake (including demolition of 2 buildings to eliminate an asbestos hazard, creation of a pop-up café to create space for evacuated staff, and new facilities for the Measurement Standards Laboratory).

The start-up ecosystem

We are carrying out an operational review of the incubator programme in the final quarter of this year. The results of this review will inform wider policy work on the start-up ecosystem, to be carried out by MBIE early next year. Additionally recent research has been completed on the New Zealand start-up ecosystem and we will brief you on this.

Support for regional economic development

Our services and programmes, such as the Regional Business Partners, support small businesses to establish themselves in the regions. We will discuss with you how we can maximise the benefits of our programmes for all New Zealanders.

Growing the Māori economy

Growing the Māori economy is one of our priority areas. We help connect businesses and entrepreneurs to collaborative Māori-oriented business networks and clusters, to access R&D and apply a Māori lens to their results. Through events such as Matariki X we bring together successful Māori business people to foster the cross-pollination of ideas while building connections between the leaders and future leaders of the Māori economy.

Maximising the benefits from our international connections

New Zealand has a number of international agreements, both existing and in development, related to cooperation on science and innovation. Callaghan Innovation is a key agency in the implementation of these agreements, and we will discuss with you how we can maximise the benefits for New Zealand through these opportunities.

Our commercial businesses

We will provide a full briefing on our commercial entities: GlycoSyn, Kiwistar Optics and MSL.

Appendix A: Our Leadership Team, Board, and Stakeholder Advisory Group

Callaghan Innovation Executive Leadership Team

Members	Role	
Vic Crone	Chief Executive Officer	
Paul Linton	General Manager Commercial Business	
Esther Livingston	General Manager People and Capability	
Erica Lloyd	General Manager Market Engagement and Experience	
Rosalie Nelson	General Manager Strategy Impacts and Insights	
Richard Perry	Chief Financial Officer	
Hēmi Rolleston	General Manager Sectors	

Callaghan Innovation Board

Members	Term End Date
Sue Suckling (Board Chair)	31/01/18
Robin Hapi (Deputy Chair)	30/06/18
Al Monro	30/06/18
Frances Valintine	27/02/19
Kate McGrath	27/02/19
Simon Botherway	27/02/19
Stefan Korn	28/08/19
George Gong	28/08/19

Callaghan Innovation Stakeholder Advisory Group

Members	Role	Organisation
Brett Hewlett	Consultant	Independent
Suse Reynolds	Executive Director	Angel Association of New Zealand
Claire Robinson	Pro Vice-Chancellor	Massey University
Charlotte Walsh	Chief Executive Officer	Dynamic Controls
Andy Hamilton	Chief Executive Officer	Icehouse
Tom Greally	Consultant	Independent