



**MINISTRY OF BUSINESS,
INNOVATION & EMPLOYMENT**
HĪKINA WHAKATUTUKI



Briefing for the Incoming Minister of Research, Science and Innovation

November 2020



MBIE Karakia

Tāwhia tō mana kia mau, kia māia

Ka huri taku aro ki te pae kahurangi,
kei reira te oranga mōku

Mā mahi tahi, ka ora, ka puāwai

Ā mātau mahi katoa, ka pono, ka tika

TIHEI MAURI ORA

TRANSLATION:

Retain and hold fast to your mana, be bold, be brave

We turn our attention to the future, that's where the opportunities lie

By working together we will flourish and achieve greatness

Taking responsibility to commit to doing things right

TIHEI MAURI ORA

MĀIA
BOLD & BRAVE

**PAE
KAHURANGI**
BUILD OUR FUTURE

MAHI TAHI
BETTER TOGETHER

**PONO
ME TE TIKA**
OWN IT

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1. Overview of the Research, Science and Innovation System

Purpose

1. This briefing provides you with information about the Research, Science and Innovation (RSI) portfolio. Further briefings will be provided focussing on your priority areas.

Research, science and innovation provide unique contributions to achieving government priorities

2. Research expands our knowledge base and helps us understand the world. It helps us answer important questions and solve specific social, cultural, environmental, and economic challenges. By converting knowledge into new products, processes and services – innovation – we can reduce our emissions, preserve and protect our environment, create fulfilling, high-value jobs, and increase our well-being. Research also helps us understand New Zealand’s distinctive place in the world and this can serve as a source of national pride. For example, research helps to explore, conserve and advance our unique heritage of Mātauranga Māori.
3. Research underpins many of government’s core functions and provides critical support to several of the regulatory systems we depend on for New Zealand’s wellbeing and resilience. It is central to environmental monitoring, public health, our conservation efforts, and progressing responses to significant global challenges like climate change.
4. Our researchers and innovators provide us with onshore capability to respond to emerging threats and opportunities, and the ability to readily access global research. This response function of our research and innovation system has been central during the COVID-19 pandemic, through vaccine development, testing, modelling, and PPE manufacture. The RSI sector responded similarly to challenges such as the Canterbury earthquakes, the Kaikōura earthquake, and the Whakaari/White Island eruption.
5. Innovation makes firms more competitive, efficient, and helps them gain and maintain market share. Knowledge-intensive businesses provide high-value employment and products and greater wellbeing for both employees and consumers. Research and Development (R&D) intensive businesses are often high-wage/high-skill and can introduce new high-value products into global markets. Our technology sector businesses are a good example of this.
6. New Zealand has become an increasingly attractive international destination for R&D, attracting high-tech firms with high-value research projects. Initial signals indicate that New Zealand’s response to COVID-19 has further positioned us as an attractive safe haven for global firms to conduct R&D.

The RSI System

7. Our RSI system consists of people, institutions (including research organisations and businesses), and infrastructure. Many people are engaged day-to-day in innovating, researching, and connecting with each other in a wide range of activities that contribute to RSI. There is no single

overview of this activity held in any one place, and this is fundamental to its fluid nature. To be successful, innovations rely on fluid connections, chance encounters and free sharing of knowledge.

8. Our system contains around 20,000 full-time equivalent (FTE) researchers (not including students), around 4,000 R&D performing businesses (with many more reporting innovation), eight Universities, seven Crown Research Institutes, and many independent research organisations, business accelerators and incubators, and other support functions. Overall investment in this system was approximately \$4 billion in 2019, with Government investment accounting for around 45 per cent of this.

Government

9. The government provides a stewardship role for the RSI system by setting the overall strategy and direction, investing, providing ownership of some institutions, and creating enabling regulatory frameworks. The Government has the following roles regarding RSI:
 - **Sets strategic direction.** Government's involvement in the RSI system has significant influence over the direction of the system
 - **An owner** of parts of the system, most notably Crown Research Institutes and Callaghan Innovation
 - **A funder** of RSI activities and infrastructure
 - **A regulator.** The government does not directly regulate science and innovation activities but its wider set of regulations has a strong impact on the system. For example, the granting of intellectual property rights creates incentives to innovate
 - **A provider of information.** The government collects and shares information to support good decision-making
 - **A coordinator and connector.** The government is active in coordinating the activity of various entities across the RSI system, including connecting these entities with international research institutions and R&D intensive firms.

Businesses

10. Businesses are investors in, producers of, and users of R&D. They undertake 55 per cent of the R&D in New Zealand by expenditure¹. Businesses create value from innovation by developing new products, processes and services, and by undertaking, adopting and commercialising knowledge and research. The government supports businesses to innovate by:
 - a. connecting industry to R&D expertise
 - b. supporting entrepreneurs to access the advice and support they need
 - c. providing R&D tax incentives, R&D loans (part of the Government's response to COVID-19), and grants
 - d. providing a range of information services.

¹ Business expenditure measures the R&D undertaken by business, regardless of the source of funding.

11. More researchers in New Zealand work in business than in research institutions.

Māori

12. As a Treaty partner, Māori have a special place in the research system as users and producers of research, as well as custodians, users and producers of our unique body of mātauranga Māori. The Vision Mātauranga policy adopted in 2005 reflects this, and provides a framework to unlock the innovation potential of Māori knowledge, resources and people.
13. Vision Mātauranga was developed in consultation with research funders, researchers and research users including Māori communities. The framework is designed to assist these participants when they consider research of relevance to Māori – particularly its distinctive aspects – and how this might be supported through the RSI portfolio.

Research institutions

14. Publicly funded research institutions undertake R&D and related activities. The main research institutions in New Zealand are the eight universities, seven Crown Research Institutes, and a number of independent research organisations.

Callaghan Innovation

15. Callaghan Innovation was established in 2013 as a business-facing Crown Entity to accelerate the growth, scale and intensity of commercial innovation. It provides R&D incentives, innovation support services, and access to facilities and networking services.

Infrastructure

16. Government directly invests in some domestic research and innovation infrastructure. This includes some research facilities, collections and databases, digital connectivity infrastructure, and high-performance computing. It also invests or co-invests with other countries in some international, large-scale technological infrastructure such as the Australian Synchrotron.

2. Research, Science and Innovation and COVID-19

17. The Research, Science and Innovation portfolio contributed to New Zealand's response to the COVID-19 pandemic by:
- a. providing advice, scientific input, and research and innovation activity to both the domestic and global COVID-19 response
 - b. working to make sure that, as far as possible, levels of R&D do not reduce in response to challenging economic conditions.

RSI response

18. RSI activities have had a significant role in the response to the COVID-19 pandemic outbreak. Local scientific modelling was used to inform the Government's decision-making about the alert levels, and The Institute of Environmental Science and Research Limited (ESR)'s diagnostics capabilities and public health surveillance helped us understand the extent of the outbreak. Our research system is working on a range of prevention, testing, and treatment technologies, in addition to the Vaccine Strategy (see page 8). This has been a joint effort, with researchers from universities, Crown Research Institutes, and industry working together on shared solutions.
19. To help with the RSI response to COVID-19 the Government undertook the following actions:
- a. The **COVID-19 Innovation Acceleration Fund** of \$25 million launched in late March 2020. The Fund aimed to accelerate the development of innovative products or services to support responses to COVID-19, alleviate the direct effects of the virus, and provide rapid short-term support to New Zealand-based entities to develop and more quickly deploy a range of new products, processes, or services.
 - b. The **Health Research Council** ran two funding rounds, of \$8.3 million and \$3.8 million respectively, to fund research that immediately responds to the COVID-19 threat and strengthens New Zealand's response and readiness to an outbreak.

Protecting our R&D base

20. Previous economic challenges such as the Global Financial Crisis suggest that R&D is usually reduced disproportionately compared to other activities. Both businesses and government have tended to treat R&D expenditure as discretionary when revenue is constrained, and consequently make significant cuts. As our levels of R&D are already too low (see next section), we should not go backwards.
21. To help make sure our R&D base is protected, the Government undertook the following actions:
- a. The Government established the **Temporary Research & Development Loan Scheme** which is a \$150 million scheme to provide an immediate source of loan finance to R&D-performing businesses that were affected by COVID-19. The scheme aims to help businesses to maintain as much R&D investment as possible.
 - b. **\$72.3 million was invested in Crown Research Institutes and Callaghan Innovation** to enable them to maintain critical R&D capability in the face of falling commercial revenue.
 - c. The Government introduced **enhanced refundability for the R&D Tax Incentive**, to enable more R&D-performing businesses to receive their Tax Incentive payment in cash, rather than as a Tax Credit.

The COVID-19 Vaccine Strategy

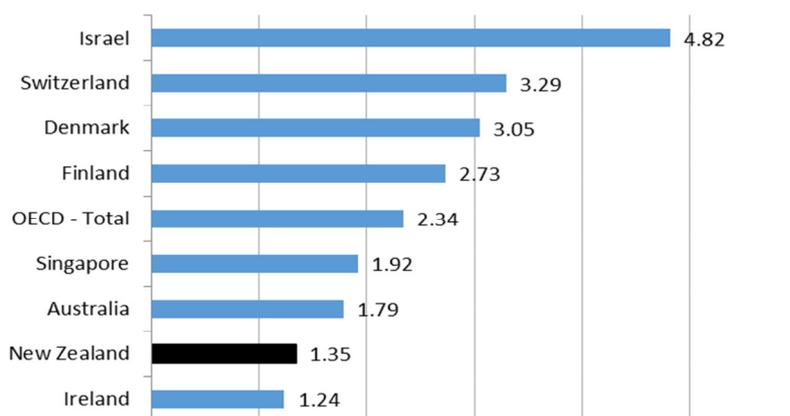
22. You, the Prime Minister, and the Ministers of Finance and Health (the joint ministers) currently have delegated authority to make purchase decisions as part of the COVID-19 Vaccine Strategy, which seeks to make sure New Zealand has access to sufficient quantities of safe and effective COVID-19 vaccines at the earliest possible time. The Ministry of Business, Innovation and Employment (MBIE) chairs the inter-agency task force that carries out the Strategy.
23. The task force is focused on securing advanced purchase agreements to purchase early access to promising COVID-19 vaccine candidates. Due to the uncertainties involved in vaccine development, the task force is seeking to establish a portfolio of advanced purchase agreements to maximise our overall likelihood of timely access to viable vaccines. These advanced purchase agreements are funded from a s 9(2)(j) contingency in Vote Health agreed by Cabinet on 10 August 2020. You and the other joint ministers must approve any advanced purchase agreements negotiated by the task force.
24. MBIE is also responsible for leading the task force's vaccine science, research, and manufacturing work programmes. This includes an initial investment in increasing New Zealand's domestic human vaccine manufacturing capacity and a \$10 million investment to establish the Vaccine Alliance Aotearoa New Zealand; a domestic COVID-19 vaccine research platform. The task force is investigating the merits of additional investments in vaccine research and manufacturing as part of the COVID-19 response and as potential investments in building New Zealand's preparedness for future pandemics.

3. The Current State of the RSI System

Despite recent growth, our RSI system is too small compared to other small advanced economies

25. There is much to be proud of about the quality of, and public confidence in, New Zealand’s RSI system, but increasing the scale of investment remains a pressing need. The size of our RSI system compared to the total size of our economy is a measure of the extent to which we choose to spend our limited national resources on activities that will increase our knowledge base, improve our environmental impact and productivity, and prepare us for the future. Compared to other countries, we are not doing enough.
26. Our R&D activity is currently 1.35 per cent of GDP, while the average of the countries in the Organisation for Economic Co-operation and Development (OECD) is approximately 2.34 per cent. Small advanced economies such as Denmark, Switzerland, and Israel have rates above 3 per cent. These numbers are from the 2018 R&D Survey.

Figure 1: Our research, science and innovation system is quite small relative to the size of our economy

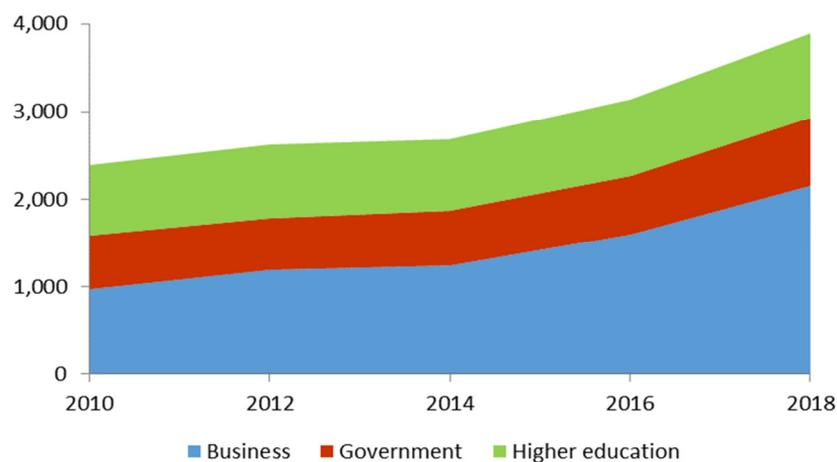


Source: Statistics New Zealand (2019). 2018 R&D Survey.

27. Our expenditure on R&D is growing, but from a low base compared to other small advanced economies,² particularly for business R&D. Growth in business expenditure was the main driver behind a 63 per cent increase in total expenditure on R&D across the economy from 2010 to 2018, but at 0.74 per cent of GDP in 2018 it was less than half of the OECD average (1.70 per cent).
28. As we noted in the previous section, this recent strong growth is highly likely to be threatened by the effects of COVID-19 unless the Government redoubles its efforts to maintain it.

² Small advanced economies is an initiative of small economic countries as defined by International Monetary Fund standards, and are of similar scale in terms of population within the range of around 5 to 10 million inhabitants. These consist of Denmark, Finland, Ireland, Israel, New Zealand, Singapore, and Switzerland. See: <https://www.smalladvancedeconomies.org/>.

Figure 2: Our R&D expenditure by type of organisation has continued to grow

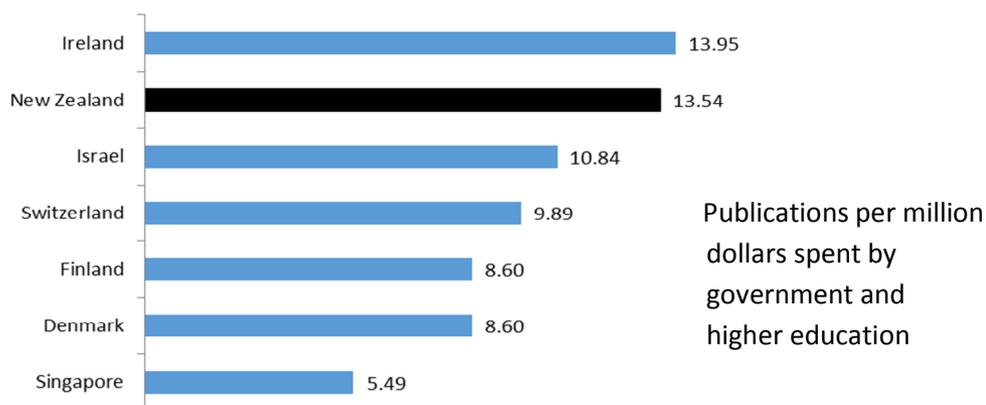


Source: Statistics New Zealand (2019). 2018 R&D Survey (nominal NZ\$).

Our research is of comparable quality to other countries, and we are good at producing it

29. Despite our lower levels of investment, New Zealand’s research sector is very efficient for the amount of science output per dollar. Our top researchers have been successful in making an impact in their academic fields.

Figure 3: Our science system is relatively productive



Source: Dimensions bibliometric database and OECD main science and technology indicator data³.

The quality and uptake of our research is high based on rates of citation

30. New Zealand research publications are highly cited, out-performing the world average in almost all fields. Overall 18 per cent of New Zealand publications are in the world’s 10 per cent most cited. This means that we have almost twice as many highly cited papers as you would expect if they were distributed evenly to all countries.

31. Of New Zealand’s highly cited papers; 33 per cent are in the Medical and Health Sciences field, eight per cent Biological Sciences, seven per cent Engineering, six per cent Studies in Human

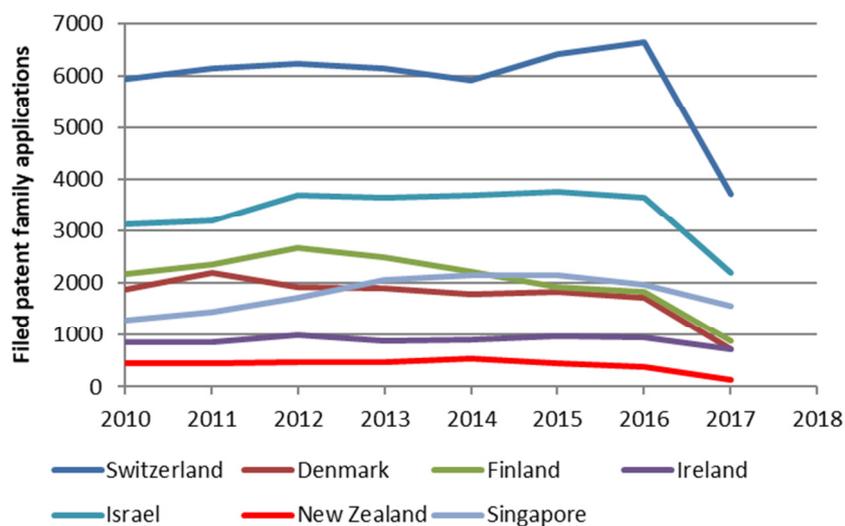
³ denominator - variables G_PPP and B_PPP - R&D expenditure by Government and Higher Education

Society and five per cent in Psychology and Cognitive Sciences. However there are there niche areas of high performance in smaller fields. For example physical sciences publications are 3.2 times more cited than the world average, and those in the field of Commerce, Management, Tourism and Services are 2.7 times more cited than the world average⁴, despite making up only a small proportion of our output by volume.

However New Zealand files fewer patents than other small advanced economies

32. New Zealand has consistently filed far fewer patents than other small advanced economies; with a slight declining trend. Other small advanced economy countries file 2-10 times as many patents as New Zealand.⁵ Patents filed gives a partial picture of the flow of innovation emerging from an economy; however it does not capture new research and innovation kept within organisations as commercial or trade secrets.

Figure 4: We file fewer patents than other Small Advanced Economies



Source: World Intellectual Property Organisation patent database
(Foreign-oriented patent family by origin, per year)

We have good international research and innovation links

33. Indicators that look at the level of international connectedness of New Zealand’s research sector shows a mixed performance. While we have high rates of researcher mobility, and our international co-publishing rates are higher than the OECD average, these indicators look less strong when compared against other small advanced economies. For all small advanced economies their researchers have a greater need to collaborate internationally due to the smaller pool of local researchers.

34. International collaboration is particularly critical for us as we produce a very small amount of the world’s research (0.2 per cent), so we need to make use of research produced elsewhere. We do this through adapting and expanding the research to fit New Zealand’s needs and conditions. To

⁴ Citation metrics are from the Dimensions bibliometric database

⁵ This measure is the number of patent families (each family consisting of different applications of one invention) filed abroad, starting from a domestic filed invention. It indicates the inventions intended for international protection and use.

do this we need to maintain our international connections and flow of ideas, investment and people. The current COVID-19 environment has made it more difficult to maintain and build these connections.

35. Highly internationally mobile researchers make a particularly high quality contribution to New Zealand's research outputs. Until the recent COVID-19 disruption, we successfully attracted science professionals⁶ from overseas as permanent or long-term immigrants. In 2018 (the last year for which complete data is available) we gained around 2,500 more than we lost that year.⁷
36. MBIE's Innovative Partnerships Programme (the Programme) works with international firms and innovators to attract R&D investment in frontier innovation into New Zealand by building New Zealand's competitive advantage as a location for R&D investment and activities. It has attracted 14 companies to New Zealand, creating jobs, new partnerships across the RSI system, and reputational gain in areas of disruptive technologies. In addition to attracting international firms the programme has created a better environment for frontier firms in New Zealand, enabling them to innovate faster in areas such as advanced aviation. More attraction mechanisms and ensuring safe access of overseas talent to New Zealand's shores would allow the Programme to take advantage of a significant increase in international interest in New Zealand as an R&D destination.
37. MBIE uses bilateral and multi-lateral science and innovation partnerships to develop and implement opportunities to strengthen New Zealand's international connections across its RSI system. In 2017, New Zealand and Australia signed a science and innovation partnership agreement to lift collaboration across the system, and new cooperative research arrangements with Singapore and the United States of America Department of Homeland Security have been signed in recent years.

Our firms report availability of skills as being a significant barrier to innovation

38. Business expenditure on R&D is the major proxy for levels of innovation in New Zealand. Expenditure increased by 121 per cent between 2010 and 2018⁸. However, business expenditure on R&D is low relative to other countries; 0.74 per cent of New Zealand's GDP in 2018 compared to the average for other small advanced economies (1.88 per cent), and the overall OECD average (1.70 per cent)⁹.
39. The biennial Business Operations Survey questions firms on their innovation activity over the last two years¹⁰. Since 2015, the proportion of businesses reporting some form of sales from innovation has remained fairly constant at about 18 per cent¹¹. However, in recent years there has been a large increase in the number of businesses citing lack of marketing personnel (up from 10 per cent in 2017 to 18 per cent in 2019), lack of information (up from 8 per cent to 15 per

⁶ This includes people in a science, engineering or IT-related occupation.

⁷ StatsNZ infoshare Table ITM307AA (2019).

⁸ StatsNZ Infoshare Table RAD007AA.

⁹ Statistics New Zealand (2019). 2018 R&D Survey results. OECD (2020).

¹⁰ The Business Operations Survey is a self-reported survey of firms which asks questions on a range of topics, including business operations, innovation, ICT usage, regulation, and skills.

¹¹ StatsNZ Business Operations Survey, Table BUO162AA.

cent), and lack of appropriate personnel (up from 24 to 30 per cent) as barriers to being able to innovate.

4. Key Opportunities and Challenges for the Portfolio

40. This section presents a summary of our advice on the key opportunities and challenges for this portfolio in the coming term of Government. We propose to provide you with further advice on these matters, and any others of interest to you, following your feedback on this briefing.

Ensuring we retain as much R&D as possible in the face of economic challenges

41. We have already noted the threats to our recent strong growth in R&D expenditure posed by the COVID-19 pandemic. It is important we do as much as possible to avoid going backwards on this measure; R&D is critical to the future of New Zealand.

42. It will be particularly important to continue to ensure smooth implementation of the R&D Tax Incentive. The R&D Tax Incentive is Government's main instrument to encourage businesses to perform R&D, New Zealand's largest single investment in R&D, and will be a significant part of our economic recovery from the pandemic.

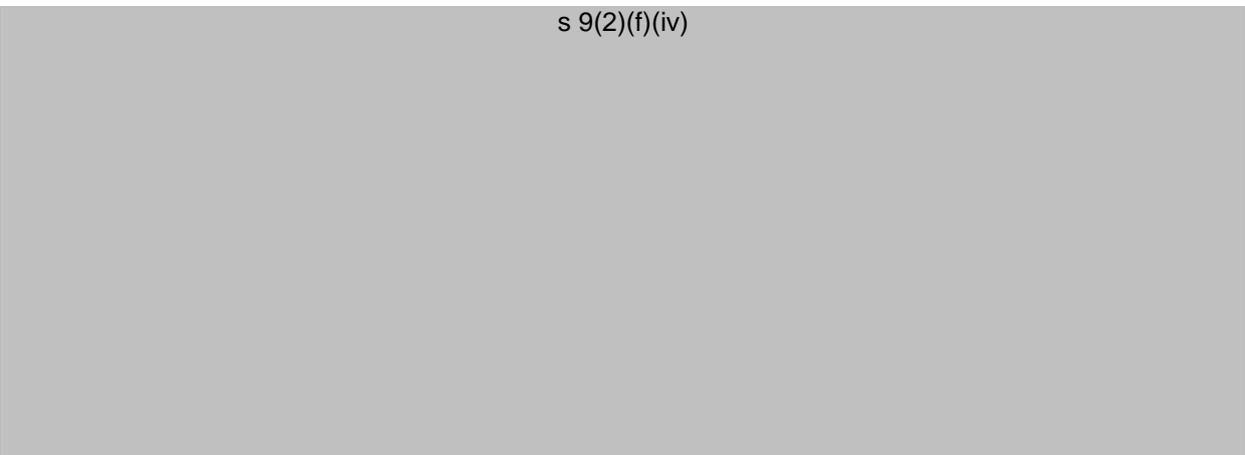
A Knowledge-Intensive Recovery

43. RSI has underpinned New Zealand's response to COVID-19 by providing information, expertise, and technologies to guide our response and enable the development of innovative solutions, eg through improving COVID-19 diagnostic testing and the search for a vaccine. It has also enabled companies to adapt to the new environment and provided opportunities in new areas, eg digital technologies, deep tech.

44. If RSI is at the core of our recovery and rebuild efforts, New Zealand can emerge from this crisis with a more resilient and sustainable economy. RSI is fundamental to achieving sustainable growth and solving major social and environmental challenges. These challenges will grow unless we continue efforts to tackle these now.

45. RSI can help New Zealand to diversify from sectors that are structurally challenged to those with greater potential to produce skilled jobs and high-value products. RSI-led sectors generally offer higher-paid jobs, greater productivity, have less impact on environment, and are more sustainable. Taking this approach will mean evolving our investments, both to transform existing areas of focus, and deliberately support new and evolving technologies and innovation.

s 9(2)(f)(iv)



5. Portfolio Responsibilities

Your responsibilities

48. As Minister of Research, Science and Innovation you have distinct yet complementary roles.

You have a leadership role for the RSI system

49. As Minister of Research, Science and Innovation you provide leadership and direction to the overall RSI system through funding and ownership and links with other relevant portfolios.

50. You have several portfolio functions and responsibilities:

- a. Legislative responsibilities: the subsection below outlines the legislation that informs your oversight over Crown entities and other relevant bodies, and your role as Minister of Research, Science and Innovation.
- b. Vote Business, Science and Innovation – Minister’s role: this subsection summarises the different classifications of RSI appropriations and your responsibilities.
- c. Vote Business, Science and Innovation – funding bodies’ role: this subsection outlines entities which make independent funding decisions in your portfolio under your oversight and direction setting.
- d. Advisory Bodies: this subsection summarises sources of advice in the RSI system.

Legislative responsibilities

51. You have certain functions, duties and powers under several Acts of Parliament as Minister of Research, Science and Innovation. These do not usually require your daily attention, so we will brief you on them as needed. We have summarised Acts you are responsible for below and have listed your more significant functions, duties and powers.

Research, Science and Technology Act 2010

52. This Act establishes the purposes the government’s research, science and technology for which funding can be allocated and the processes for allocation.

53. Under this Act you are responsible for:

- Establishing and appointing members of the Science Board. The Science Board is responsible for making independent funding decisions on RSI.
- Setting criteria for the assessment of funding applications. The Science Board must make funding decisions according to these criteria.

54. Depending on the fund, some funding decisions are made by the Science Board, and others are made by you, MBIE, or other entities.

Crown Research Institutes Act 1992

55. This Act establishes your role as one of the shareholding Ministers responsible for the Crown Research Institutes. You are responsible for the following Crown Entities (see **Annex 1** for more detail):

- Crown Research Institutes:
 - AgResearch Limited
 - The Institute of Environmental Science and Research Limited (ESR)
 - The Institute of Geological and Nuclear Sciences Limited (GNS Science)
 - Manaaki Whenua Landcare Research New Zealand Ltd (Manaaki Whenua)
 - The National Institute of Water and Atmospheric Research (NIWA)
 - The New Zealand Institute for Plant and Food Research Limited (Plant and Food Research)
 - The New Zealand Forest Research Institute Limited (Scion).

Callaghan Innovation Act 2012

56. This Act established Callaghan Innovation as a Crown entity with the aim of supporting science and technology-based innovation and its commercialisation by New Zealand businesses to improve their growth and competitiveness.

Income Tax Act 2007 and Tax Administration Act 1994

57. The Minister of Research, Science and Innovation and the Minister of Revenue are jointly responsible for the policy settings of the R&D Tax Incentive. The R&D Tax Incentive was introduced from the 2019/2020 tax year for businesses conducting eligible R&D and enacted by the Taxation (Research and Development Tax Credits) Act 2019. MBIE and Inland Revenue provide advice about the scheme. Callaghan Innovation also plays a critical role in the delivery of the R&D Tax Incentive through assessing the eligibility of R&D activities.

Measurement Standards Act 1992

58. This Act provides for the use of uniform units of measurement for physical quantities throughout New Zealand, and for the establishment and maintenance of standards of measurement of physical quantities. The Measurement Standards Laboratory of New Zealand operates as a business unit of Callaghan Innovation and is funded by a separate appropriation. Under the Act, the Minister shall provide for the use throughout New Zealand of uniform units of measurement of physical quantities, and for the establishment and maintenance of standards of measurement of physical quantities.

Building Research Levy Act 1969

59. This Act allows for a levy to be drawn from building and construction work and then paid to an industry organisation to fund building and construction research. You are the Minister responsible for the levy and may prescribe the rate of levy after consulting the New Zealand Master Builders' Federation Incorporated and the Building Research Association of New Zealand Incorporated (BRANZ). The latter entity receives the levies prescribed under this Act.

Heavy Engineering Research Levy Act 1978

60. This Act allows for a levy to be drawn from producers and importers of steel goods and then paid to an industry organisation to fund heavy engineering research. You may prescribe the rate of levy after recommendation from The New Zealand Heavy Engineering Research Association (Incorporated) and consultation with the New Zealand Manufacturers and Exporters Association Incorporated. The latter entity trades as “The Manufacturers Network”. The Heavy Engineering Research Association receives these levies. Please refer to the Research, Science and Innovation work programme (**Section 57**) for the action required to amend this Act.

Wheat Industry Levies Act 1989

61. This Act allows for a levy to be drawn from wheat growers, flour millers, and purchasers of flour to be supplied to various industry organisations to fund research. United Wheatgrowers (N Z) Limited determines the levy and reports to you annually about how it is spent.

Royal Society of New Zealand Act 1997

62. This Act establishes The Royal Society Te Apārangi as an organisation with the objective of advancing and promoting science, technology, and the humanities in New Zealand.

Vote Business, Science and Innovation – Minister’s role

63. You have overall responsibility for RSI expenditure within Vote Business, Science and Innovation totalling \$1,659 million in 2020/21. You set the priorities for investment via mechanisms such as investment plans and terms of reference for funding bodies.
64. The annual Budget round is particularly important in the Research, Science and Innovation portfolio because expenditure is one of the main ways you influence the New Zealand science and innovation system. We would like to have an early conversation with you about your plans for Budget 2021.
65. **Non-departmental output expenses** (\$1,401 million) are spent by MBIE on your behalf to purchase a range of outputs from the RSI sector. They represent most of MBIE’s science and innovation investment and include MBIE’s direct investment, strategic science investment funding, and funding allocated on behalf of MBIE by the Marsden Fund Council and the Health Research Council. Individual funds and other programmes are described in detail below.
66. **Non-departmental capital expenditure** (\$178 million) includes funding for the temporary R&D Loan Scheme and to construct Callaghan Innovation’s new Measurement Standards Laboratory facilities.
67. **Non-departmental “other expenses”** (\$46 million) cannot be classified within other appropriation types. This includes funding provided to the Catalyst Fund and Regional Research Institutes.
68. **Multi-year appropriations** (\$320 million in 2020/21) are used when spending falls across two or more years (but no more than five years), but the timing of expenditure is uncertain. Vote Business, Science and Innovation has three multi-year appropriations in the Research, Science and Innovation portfolio: National Science Challenges, Growth Grants, and Targeted Business Research and Development Funding (which is spent in Project Grants and Student Grants).

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69. **Departmental output expenses** (\$34 million) are MBIE's internal operating expenses. They enable MBIE to provide policy advice, monitoring and evaluation services, and other assistance to the RSI sector.
70. **Annex 2** contains a full table of RSI expenditure.
71. **Annex 3** provides a diagram of RSI appropriations.

Vote Business, Science and Innovation – funding bodies' role

72. A number of entities are responsible for independent funding decisions from the RSI portfolio. You have oversight of and set the direction for these funding decisions.

The Science Board

73. The Science Board is responsible for making independent funding decisions for the Endeavour Fund and National Science Challenges. The total value of these funds is \$325 million in 2021/22. You appoint the Board members and set the direction of investment under the Research, Science, and Technology Act 2010. MBIE provides administrative support to the Science Board.

The Marsden Fund Council

74. The Marsden Fund Council is responsible for making annual funding decisions for the Marsden Fund. It made decisions on \$78.5 million of funding in 2020/21. The duties and responsibilities of the Marsden Fund Council are set out in a Terms of Reference set by you as Minister. You appoint the Marsden Fund Council and the Royal Society Te Apārangi provides administrative support.

The Health Research Council

75. The Health Research Council is responsible for funding decisions in health research. The research is both investigator- and mission-led. Total funding for 2020/21 is of \$125 million across four different appropriations from Vote Business, Science and Innovation, and a small amount of funding from the Ministry of Health. You and the Minister of Health are jointly responsible for the efficient and effective functioning of the Health Research Council, including setting expectations for the Health Research Council and making appointments to the Council. Responsibilities are set out in a Memorandum of Understanding between the two Ministers.

Callaghan Innovation

76. Callaghan Innovation delivers several funding programmes to incentivise businesses to invest in R&D and support them to grow the size of their R&D programmes.

Advisory Bodies

77. There are several sources of advice in the RSI system.

The Royal Society Te Apārangi

78. The Royal Society Te Apārangi is an independent, non-government organisation with a key role as New Zealand's academy of sciences. Its core purpose is the advancement and promotion of science, technology and the humanities in New Zealand. The Royal Society's broader functions include providing expert advice on important public issues for the Government and the community. The Royal Society also administers several funds on your behalf, including the Marsden Fund.

The Health Research Council

79. The Minister of Health is the Minister responsible for the Health Research Council, whose statutory functions include advising the Minister of Health on national health research policy and advising on health research priorities for New Zealand.

MBIE Chief Science Advisor and Departmental Science Advisors

80. MBIE's Chief Science Advisor, Professor Gary Evans MNZM, leads the Science Leadership team which includes fellow Departmental Science Advisors Professor Hamish Spencer FRSNZ and Dr Rob Murdoch. This team:

- leads MBIE's relationship with the science sector
- provides scientific leadership within MBIE in areas requiring scientific depth
- is part of the Prime Minister's Chief Science Advisor forum, providing connectivity between a variety of Government agencies and ministries around science-related issues.

Major research and science funds and programmes

Strategic Science Investment Fund (SSIF)

81. The Strategic Science Investment Fund supports longer-term underpinning infrastructure and programmes for mission-led science that is critical to New Zealand's future. It was established in 2016 by combining existing investments and new Budget 2016 funding. An SSIF Investment Plan sets out what the Government is seeking from SSIF investments.

National Science Challenges

82. The National Science Challenges were established in 2014 and are a set of eleven mission-led research programmes which aim to address issues of national significance to New Zealand over ten years. MBIE will undertake a policy review of National Science Challenges in 2021.

Endeavour Fund

83. The Endeavour Fund is the Government's main competitive mission-led science investment, designed to allocate funding to support research, science or technology that has the potential to positively transform New Zealand's economic performance and the sustainability and integrity of our environment, help strengthen our society, and to give effect to the Vision Mātauranga policy.

Marsden Fund

84. The Marsden Fund is MBIE's major investigator-led research fund. The strategy for expenditure is outlined in an investment plan, which covers a three year period and is updated annually to confirm funding projections. A new investment plan will be published in early 2021.

Catalyst Fund

85. MBIE directly invests in international science partnerships through the Catalyst Fund. The Fund supports activities that initiate, develop and foster collaborations leveraging international science and innovation for New Zealand's benefit. MBIE is the decision-maker for the Catalyst Fund.

-
86. MBIE develops and implements opportunities to strengthen New Zealand's international connections across its science and innovation systems through bi-lateral and multi-lateral science and innovation partnerships. In 2017, New Zealand and Australia signed a science and innovation partnership agreement to lift collaboration across the systems and new cooperative research arrangements with Singapore and the United States of America Department of Homeland Security have been signed in recent years.

Talent and Science Promotion

87. Talent and Science Promotion funds engagement between scientists and the public by carrying out research and innovation and contributing to the development of talented, skilled individuals and their organisations. Initiatives include Fellowships for Excellence, Science in Society (including A Nation of Curious Minds), and Te Pūnaha Hihiko – Vision Mātauranga Capability Fund.

Te Pūnaha Hihiko – Vision Mātauranga Capability Fund

88. Te Pūnaha Hihiko – Vision Mātauranga Capability Fund is a capability-building fund aimed at enabling the implementation of Vision Mātauranga policy across the Government's investments in RSI. It invests about \$4 million each year into projects that strengthen capability, capacity, skills and networks between Māori and the science and innovation system. Projects increase the understanding of how research can contribute to the aspirations of Māori organisations and deliver benefit for New Zealand.

Expanding the Impact of Vision Mātauranga Initiative

89. This initiative focusses on creating a sustainable Māori research and science workforce and making research fit-for-purpose for Māori people, Mātauranga Māori and Rangahau Māori.
90. \$33 million over four years is available to develop an investment that:
- a. attracts and grows Māori talent in the RSI system
 - b. enables Māori to better navigate and participate in the system
 - c. funds Māori-led RSI.
91. This new initiative will fulfil a separate purpose to the Te Pūnaha Hihiko/Vision Mātauranga Capability Fund, the latter is to support research connections and placements while this initiative is to create a sustainable Māori research and science workforce and make research fit-for-purpose for Māori people, Mātauranga Māori and Rangahau Māori.

Health Research

92. The Health Research Council is primarily funded through Vote Research, Science and Innovation with some funding from the Ministry of Health. The Council funds both investigator- and mission-led research. Most funding is awarded through its annual contestable Project (short term) and Programme (longer term) grants and through investment streams aligned with key Government priorities.
93. MBIE, the Ministry of Health and the Health Research Council are jointly responsible for implementing the New Zealand Health Research Strategy. The Strategy sets out the

Government's vision for a world-leading health research and innovation system that, through excellent research, improves the health and wellbeing of all New Zealanders.

Research & Development Tax Incentive

94. The Research & Development Tax Incentive (the tax incentive) is MBIE's primary initiative to incentivise increased business investment in R&D and encourage more New Zealand businesses to undertake R&D.
95. Delivering the incentive through the tax system has the benefit of being broad-based (all businesses undertaking eligible R&D can access it) and rules-based (providing businesses with certainty). The tax credit replaces the previous Growth Grants programme, which will be fully phased out by March 2021.
96. You are responsible for the relevant appropriations and policy settings, while the tax incentive is delivered through the tax system. MBIE, Inland Revenue and Callaghan Innovation are collectively responsible for the tax incentive:
 - MBIE has overall policy responsibility
 - Inland Revenue is responsible for tax policy and for the delivery of the scheme through the tax system
 - Callaghan Innovation's role is to assess whether the businesses' activities meet the definition of R&D under the legislation and thus qualify for the tax incentive. It is also responsible for education and engagement with the market.

Business Grants and Loans

97. Callaghan Innovation administers several R&D Grants that complement the broad-based R&D Tax Incentive mechanism by providing direct and targeted financial support to businesses:
 - **Project Grants** are targeted at businesses new to R&D or less-established R&D performers.
 - **Student Grants** provide funding to businesses to subsidise the cost of student summer interns (Experience Grants), PhD or Masters students (Fellowship Grants), or the first 6 months' salary costs for recent graduates hired by the business (Career Grants).
98. In addition, a time-limited **R&D Loan Scheme** of \$150 million was launched to help R&D-performing businesses affected by COVID-19. The scheme allows eligible businesses to borrow up to \$400,000 under favourable lending conditions to counteract the high costs associated with R&D programmes. This acknowledges the role R&D is predicted to play in New Zealand's economic future. Applications will close on 31 March 2021.

Commercialising Public Research

99. The **Commercialisation Partner Network** was established in 2010 to share commercialisation expertise among public research organisations. There are currently two commercial partners:
 - Return on Science (run by the University of Auckland)
 - KiwiNet (a collaboration of the other universities, all the Crown Research Institutes, Cawthron Institute, Malaghan Institute, and the Health Innovation Hub).

100. The fund has increased collaboration on commercialisation activities and significantly improved researchers' commercialisation capabilities.

101. The **PreSeed Accelerator Fund** (PreSeed) was established in 2003 and co-funds early-stage commercialisation activities from publicly funded research by Crown Research Institutes and universities. PreSeed is to help researchers to develop opportunities to attract private investment that prompts further growth.

Other Government agencies' investment in research

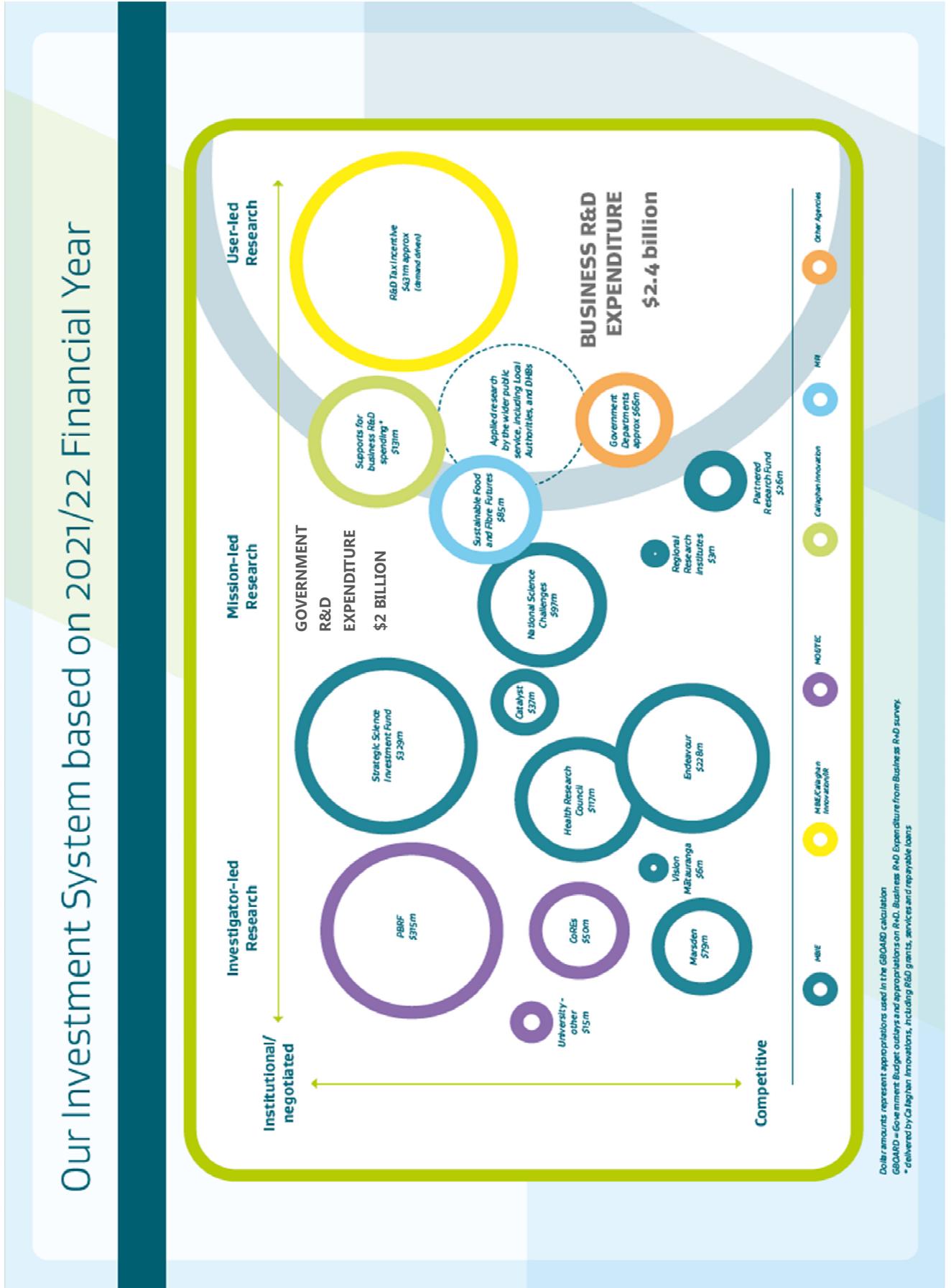
102. The Tertiary Education Commission administers the **Performance-Based Research Fund** and **Centres of Research Excellence** which are both directed at Tertiary Education Organisations.

- a. Centres of Research Excellence (CoREs) are inter-organisational research networks working on commonly agreed researcher-led, curiosity-driven programmes. They are funded through a contestable process that considers research excellence, benefits to New Zealand, outcomes for tertiary education and the governance/management strength.
- b. The Performance-Based Research Fund (PBRF) is a performance-based funding system to encourage and reward excellent research in New Zealand's degree-granting organisations.

103. The Ministry of Primary Industries co-invests in industry-led research and innovation in New Zealand's food and fibre sectors through the **Sustainable Food & Fibre Futures Fund**.

104. Several departments fund mission-led research to support their own activities, including the Department of Conservation, the Ministry for the Environment and the Ministry of Primary Industries.

Figure 5: Government funding for research, science and innovation investments



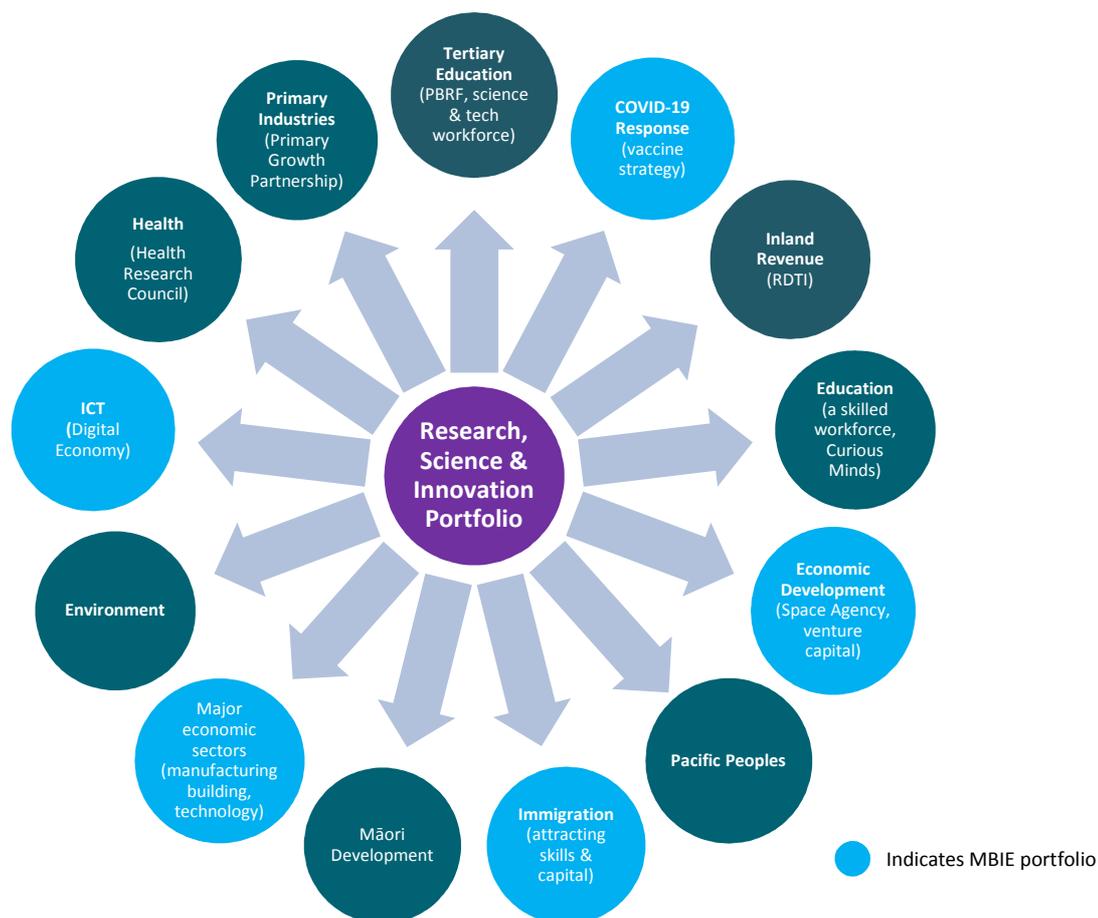
6. Major Links with Other Portfolios

105. The government’s total investment in RSI is approximately \$1.8 billion in the 2020/21 financial year. Within Vote Business, Science and Innovation (BSI), Research, Science and Innovation is the single largest source of Government funding (\$949 million in 2020/21). The R&D Tax incentive is part of Vote Revenue with Vote BSI responsible for policy and implementation via Callaghan Innovation. Vote Tertiary Education and Vote Primary Industries also make significant direct investments to RSI. Several other portfolios are involved in the RSI system.

106. Research and innovation are mission-critical inputs into Economic Development, and the portfolios need to remain closely aligned. Even prior to the COVID-19 pandemic, Health was a key portfolio connection, with significant RSI investment, and cross-portfolio work governed by the Health Research Strategy. Around half of publicly funded research takes place in the Tertiary Education sector, meaning Universities are key delivery entities in this portfolio. Given the current focus of our CRIs, the natural resources sector (in particular Primary Industries, Environment, and Conservation) maintain a keen interest in RSI.

107. Other areas of government with key interests in our research system in particular include Energy, Climate Change, Transport, National Security and Defence, Inland Revenue, and Emergency Management.

108. The diagram below highlights links between the Research, Science and Innovation portfolio and other portfolios.



7. How MBIE Helps You

Key MBIE officials

109. Responsibility for providing advice on RSI issues sits within the Ministry's Science, Skills and Innovation Group. Key contacts are set out in the table below:

Contact		Priority Area	Contact details
Carolyn Tremain Secretary, MBIE		All	E carolyn.tremain@mbie.govt.nz P 04 901 1357 s 9(2)(a)
Paul Stocks Deputy Secretary, Labour, Science and Enterprise		All	E paul.stocks@mbie.govt.nz s 9(2)(a)
Dr Peter Crabtree General Manager, Science Innovation and International		Science, innovation and international, policy	E peter.crabtree@mbie.govt.nz P 04 901 3907 s 9(2)(a)
Dr Prue Williams General Manager, Science System Investment and Performance		Science investments	E prue.williams@mbie.govt.nz P 04 901 3939 s 9(2)(a)

<p>Michael Bird General Manager, Entity Performance and Investment</p>		<p>Crown Research Institute and Callaghan Innovation monitoring, Crown entity responsibilities</p>	<p>E michael.bird@mbie.govt.nz P 04 901 3929 s 9(2)(a)</p>
<p>Professor Gary Evans, Chief Science Advisor, Labour, Science and Enterprise</p>		<p>Science advice and science sector relationship</p>	<p>E Gary.Evans@mbie.govt.nz P 04 901 2291 s 9(2)(a)</p>

The advice and support we provide to you

110. MBIE provides a range of support and advice to you in your role as the Minister of Research, Science and Innovation. This includes:

- **response to the COVID-19 pandemic** including delivering the vaccine strategy, increasing relevant scientific and innovative capabilities, and providing advice about future responses to emergencies
- **research, science and innovation policy** as well as advice on the leadership and development of the research, science and innovation system
- **management of Research, Science and Innovation appropriations** within Vote Business, Science and Innovation, including planning and prioritising funding
- **Crown entity ownership and monitoring** including commenting on draft statutory planning documents, developing and communicating Government’s ownership priorities and objectives for Crown Research Institutes, and monitoring Crown Research Institute performance
- **international science and innovation partnerships** including advice on investments, developing international partnerships, and providing support for your missions and international meetings.

8. Research, Science and Innovation Work Programme

Upcoming Portfolio Matters and Decisions

111. The table below lists the major decisions and actions we advise you to take before Christmas as the Minister of Research, Science and Innovation. These cover the day-to-day operational requirements of your role – Board appointments, funding decisions, significant policy decisions, and other matters which require your immediate attention.

<i>Immediate System Oversight – before Christmas</i>			
<i>Topic</i>	<i>Description</i>	<i>Driver/Action</i>	<i>Timing</i>
Manifesto Commitments	As part of the Manifesto, you have announced a number of commitments within the Research, Science and Innovation portfolio. We would like to have an early conversation with you on implementation of these commitments.	Manifesto. Action: meet with officials to have an early discussion.	At your earliest convenience
s 9(2)(f)(iv)			
COVID impacts on the RSI system	We will provide you with advice about the impacts COVID-19 can have on RSI system performance in supporting New Zealand's economic, environmental and social recovery	Budget 2021. Action: discuss next steps.	November 2020.
Annual meetings with Crown Research Institutions	Crown Research Institutions hold their Annual Meetings October to December. It is customary for the Minister, or a proxy, to attend Annual Meetings. There is a legal requirement relating to annual reporting and audit, but the main focus of the meetings is to discuss the Crown Research Institutions' strategic direction.	Relationship with Crown Research Institutes. Action: attend Crown Research Institute Annual Meetings.	October – December 2020

<i>Topic</i>	<i>Description</i>	<i>Driver/Action</i>	<i>Timing</i>
COVID-19 Vaccine Strategy	MBIE chairs the COVID-19 Vaccine Strategy Task Force, which seeks to ensure New Zealand's access to sufficient quantities of safe and effective COVID-19 vaccines at the earliest possible time. The Task Force is currently focusing on securing advanced purchase agreements (APAs) to purchase early access to promising COVID-19 vaccine candidates from vaccine developers, funded from a s 9(2)(j) contingency agreed by Cabinet on 10 August 2020. We will provide you with an update and advice.	Vaccine Strategy. Action: Ministers of Finance, Foreign Affairs, Research Science and Innovation and Health to update Cabinet. Joint Ministers with a delegation to agree to advance purchase of vaccines (the Prime Minister, and the Ministers of Research Science and Innovation, Finance, and Health).	November 2020
Critical Appointments	There are a number of upcoming vacancies on boards that sit within your portfolio where appointment decisions will be required. We will provide you with advice about these appointments. Given appointment processes can take between six and twelve months, we would like to start engaging with you on these appointments at your earliest convenience.	Governance. Action: consult with MBIE to make appointments to boards that sit across the Research, Science and Innovation portfolio.	November-December 2020

s 9(2)(f)(iv)

<i>Topic</i>	<i>Description</i>	<i>Driver/Action</i>	<i>Timing</i>
s 9(2)(f)(iv)			
s9(2)(f)(iv), s9(2)(j)			

112. The table below lists the major decisions and actions for your consideration in the new year as the Minister of Research, Science and Innovation. Advice will cover strategic decisions, providing direction for Crown entities and investments.

System Oversight - New Year Advice			
<i>Topic</i>	<i>Description</i>	<i>Driver</i>	<i>Timing</i>
System Oversight - Other			
Research, Science and Innovation Strategy	We are keen to engage with you on the future of the draft Research, Science and Innovation Strategy. After wide consultation with the sector in 2019-2020, we developed a near-final version of the Research, Science and Innovation strategy and an accompanying National Statement of Research, Science and Innovation Investment. However the work was paused due to COVID-19. We believe that the key policy principles will still be applicable, but COVID-19 means we need to revisit the actions which may require more public stakeholder engagement.	Ministerial direction. Action: Agree next steps.	Early 2021
Crown Entities Letters of Expectations	It is customary for you as the primary shareholding Minister for Crown Research Institutes to send an annual Letter of Expectations. These expectations are addressed in Statements of Intent and other public accountability documents. We will advise you on possible content of these letters.	Governance Action: consider and finalise annual Letter of Expectations setting out key expectations to the Crown Research Institutes.	Early 2021

<i>Topic</i>	<i>Description</i>	<i>Driver</i>	<i>Timing</i>
Implementing Vision Mātauranga initiative	We have made some progress with implementing the new Vision Mātauranga initiative to support talent, navigation, and Māori-led RSI, and now seek conversations with you on strategic options regarding the next phase.	Implement Budget 2020 initiative. Action: provide feedback on how to proceed with initiative.	Early 2021
Temporary Research & Development Loan Scheme	Through the temporary R&D Loan Scheme, administered by Callaghan Innovation, the Government provided \$149 million for loans to R&D-performing businesses affected by COVID-19. s 9(2)(f)(iv) [Redacted] [Redacted] [Redacted] [Redacted] [Redacted]	Ministerial Direction. Action: agree next steps.	Early 2021
s 9(2)(f)(iv)			

113. We will work with you to agree a work programme that extends beyond advice and decisions mentioned here. There are reviews and other decisions planned for 2021, which we will advise you on after discussions regarding your priorities.

Annex 1: Crown Entities

A number of Crown Entities fall within the Research, Science and Innovation portfolio. You are responsible for overseeing and managing the Crown's interest in, and relationship with, these entities, and to carry out any statutory responsibilities including:

- Making sure an effective board is in place to govern each entity through the appointment, reappointment and removal of board members
- Participating in setting the strategic direction and annual expectations of the entities
- Reviewing performance and results
- Managing risks on behalf of the Crown
- Agreeing to the levels of funding for reportable outputs for non-CRI Crown Agents
- Answering to Parliament for entity performance.

Crown Research Institutes

Crown Research Institutes are Crown-owned companies that do scientific research for the benefit of New Zealand. Each of the seven Crown Research Institutes is aligned with a productive sector of the economy or a grouping of natural resources. Crown Research Institutes are also partner investors with private sector organisations in science and innovation alongside MBIE investment, and are some of New Zealand's most significant producers of science and technology. Crown Research Institutes receive revenue of \$811 million. The Crown Research Institute portfolio is largely funded by the Government through SSIF and other Government programmes such as Endeavour and National Science Challenges.

Crown Research Institutes Act 1992

Under this Act, the Minister of Finance and the Minister of Research, Science and Innovation are shareholding Ministers responsible for the Crown Research Institutes. The Minister of Research, Science and Innovation generally takes the lead shareholder role, particularly as the formal point of contact with the CRI Boards. Your responsibilities as a shareholding Minister include:

- Appointing and dismissing directors
- Overseeing the Government's ownership priorities and objectives
- Approving any major transactions
- Monitoring Board performance.

Annual cycle

- Send the Letter of Expectation (January/February)
- Table the half-year report (March)
- Accept and table the Statement of Corporate Intent (June)
- Table annual report (October)
- Attend the CRI Annual Meetings (October – December) or send a proxy.

Other

- Meet with Crown Research Institutes (usually Chair and Chief Executive), new Directors and visit CRI campuses
- Accept and endorse CRI business cases (with the other shareholding Minister).

Crown Research Institutes and their Boards

On-Watch monitoring status		Board Members																				
 <p>AgResearch Limited – AgResearch’s purpose is to enhance the value, productivity, and profitability of New Zealand’s pastoral, agri-food, and agri-technology sectors.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Implementation of strategic refresh and Science Plan • Development of Lincoln facility • Positive early financial tracking following COVID-19. <table border="1"> <thead> <tr> <th></th> <th>2019/20</th> </tr> </thead> <tbody> <tr> <td>Total assets</td> <td>\$335.9 million</td> </tr> <tr> <td>Total liabilities</td> <td>\$90.8 million</td> </tr> <tr> <td>Revenue</td> <td>\$156.1 million</td> </tr> <tr> <td>CE and ELT remuneration</td> <td>\$4.0 million</td> </tr> <tr> <td>Full-time employees</td> <td>643.6 FTEs</td> </tr> <tr> <td>COVID-19 Recovery funding</td> <td>s 9(2)(b)(ii)</td> </tr> <tr> <td>Return on Investment (ROE)</td> <td>2.00%</td> </tr> <tr> <td>Return on Assets (ROA)</td> <td>1.00%</td> </tr> <tr> <td>% of revenue from Govt</td> <td>50.5%</td> </tr> </tbody> </table>			2019/20	Total assets	\$335.9 million	Total liabilities	\$90.8 million	Revenue	\$156.1 million	CE and ELT remuneration	\$4.0 million	Full-time employees	643.6 FTEs	COVID-19 Recovery funding	s 9(2)(b)(ii)	Return on Investment (ROE)	2.00%	Return on Assets (ROA)	1.00%	% of revenue from Govt	50.5%	<p>Dr Paul Reynolds, QSO (Chair)</p> <p>Kim Wallace (Deputy Chair)</p> <p>Colin Armer</p> <p>Dr Louise Cullen</p> <p>Lain Jager</p> <p>Jackie Lloyd</p> <p>Rukumoana Schaafhausen</p> <p>Chief Executive: Dr Sue Bidrose</p>
	2019/20																					
Total assets	\$335.9 million																					
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Return on Assets (ROA)	1.00%																					
% of revenue from Govt	50.5%																					

Standard monitoring status		Board Members																				
 <p>The Institute of Environmental Science and Research Limited (ESR) – ESR’s purpose is to deliver scientific and research services to the public health, food safety, security and justice systems, and the environment sector.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • Property programme at Kenepuru • Implementation of Transformation Programme • Contributions to COVID-19 Response and Recovery. <table border="1"> <thead> <tr> <th></th> <th>2019/20</th> </tr> </thead> <tbody> <tr> <td>Total assets</td> <td>\$82.8 million</td> </tr> <tr> <td>Total liabilities</td> <td>\$23.9 million</td> </tr> <tr> <td>Revenue</td> <td>\$83.8 million</td> </tr> <tr> <td>CE and ELT remuneration</td> <td>\$2.0 million</td> </tr> <tr> <td>Full-time employees</td> <td>404.9 FTEs</td> </tr> <tr> <td>COVID-19 Recovery funding</td> <td>s 9(2)(b)(ii)</td> </tr> <tr> <td>Return on Investment (ROE)</td> <td>4.50%</td> </tr> <tr> <td>Return on Assets (ROA)</td> <td>1.7%</td> </tr> <tr> <td>% of revenue from Govt</td> <td>72.8%</td> </tr> </tbody> </table>			2019/20	Total assets	\$82.8 million	Total liabilities	\$23.9 million	Revenue	\$83.8 million	CE and ELT remuneration	\$2.0 million	Full-time employees	404.9 FTEs	COVID-19 Recovery funding	s 9(2)(b)(ii)	Return on Investment (ROE)	4.50%	Return on Assets (ROA)	1.7%	% of revenue from Govt	72.8%	<p>Denise Church QSO (Chair)</p> <p>Richard Gill</p> <p>Professor Cristin Print</p> <p>Dr Andy Shenk</p> <p>Kate Thomson</p> <p>Vacancy</p> <p>Vacancy</p> <p>Chief Executive: Peter Lennox</p>
	2019/20																					
Total assets	\$82.8 million																					
Total liabilities	\$23.9 million																					
Revenue	\$83.8 million																					
CE and ELT remuneration	\$2.0 million																					
Full-time employees	404.9 FTEs																					
COVID-19 Recovery funding	s 9(2)(b)(ii)																					
Return on Investment (ROE)	4.50%																					
Return on Assets (ROA)	1.7%																					
% of revenue from Govt	72.8%																					



Standard monitoring status

Board Members

The National Institute of Water and Atmospheric Research (NIWA) – NIWA’s purpose is to enhance the value and management of New Zealand’s aquatic resources and environments, and to improve understanding and prediction of climate and weather hazards.

Key issues:

- Development of its property investments (Wellington, Hamilton and Christchurch)
- Strategy on how it will respond to changes in its operating environment
- Utilisation of and investment in its fleet given current COVID-19 and oil and gas exploration circumstances.

	2019/20
Total assets	\$192.3 million
Total liabilities	\$56.7 million
Revenue	\$159.5 million
CE and ELT remuneration	\$3.4 million
Full-time employees	668.0 FTEs
COVID-19 Recovery funding	s 9(2)(b)(ii)
Return on Investment (ROE)	8.90%
Return on Assets (ROA)	5.40%
% of revenue from Govt	81.0%

Barry Harris (Chair)

Nick Main (Deputy Chair)

Dr Tracey Batten

Mary-Anne Macleod

Dr Helen Anderson
QSO, CFinstD

Dr Gillian Lewis

Vacancy

Chief Executive:
John Morgan



Standard monitoring status

Board Members

The New Zealand Institute for Plant and Food Research Limited (Plant & Food Research) – Plant & Food Research’s purpose is to enhance the value, productivity and sustainability of New Zealand’s horticultural, arable, seafood, and food and beverage industries.

Key issues:

- Impact on commercial and royalty revenue due to COVID-19
- Impact on long term Capital Plan due to COVID-19.

	2019/20
Total assets	\$183.3 million
Total liabilities	\$58.6 million
Revenue	\$169.0 million
CE and ELT remuneration	\$3.1 million
Full-time employees	904.0 FTEs
COVID-19 Recovery funding	s 9(2)(b)(ii)
Return on Investment (ROE)	5.60%
Return on Assets (ROA)	5.40%
% of revenue from Govt	38%

Professor Nicola Shadbolt ONZM (Chair)

Colin Dawson (Deputy Chair)

Dr Parmjot Bains

Dean Moana

Nadine Tunley

Wendy Venter

Vacancy

Chief Executive:
David Hughes



On-Watch monitoring status

The New Zealand Forest Research Institute Limited (Scion) – Scion’s purpose is to drive growth from New Zealand’s forestry, wood products, wood-derived materials, and other biomaterials.

Key issues:

- Outcome of MBIE’s review of Scion’s science
- Ability to deliver on its Strategy to 2030 and transition to a circular bio-economy
- Financial viability.

	2019/20
Total assets	\$48.7 million
Total liabilities	\$14.8 million
Revenue	\$57.9 million
CE and ELT remuneration	\$2.1 million
Full-time employees	320.1 FTEs
COVID-19 Recovery funding	s 9(2)(b)(ii)
Return on Investment (ROE)	11.1%
Return on Assets (ROA)	-
% of revenue from Govt	65%

Board Members

Dr Helen Anderson,
QSO, CFInstD
(Chair)

Dr Jon Ryder (Deputy
Chair)

Dr Barry O’Neil

Greg Mann

Stana Pezic

Steve Wilson

Colleen Neville

Chief Executive:
Julian Elder

Crown Agents

 Callaghan Innovation New Zealand’s Innovation Agency	Board Members*	Term of Appointment
	Callaghan Innovation is a Crown agent, established on 1 February 2013. As a business-facing organisation, its purpose is to accelerate the commercialisation of innovation by New Zealand businesses. Chief Executive: Vic Crone <i>Funding: \$87.1 million to support business \$ 205.1 million to incentivise business R&D \$149 million for COVID-19 R&D Loan Scheme \$ 8.1 million for Measurement Standards Laboratory</i>	Hon Pete Hodgson, Chair
Angela Bull		20/03/2019– 19/03/2022
Elena Trout		19/06/2019 – 18/06/2022
Jennifer Kerr, Deputy Chair		01/10/2018 – 30/09/2021
Matanuku Mahuika		19/06/2019 – 18/06/2022
Shaun Hendy		01/10/2018– 30/09/2021
Dr Stefan Korn		28/08/2017 – 15/01/2021
Vacancy		

**Members of the Callaghan Innovation Board remain on the Board despite the expiry of their terms. Stefan Korn has been granted a leave of absence from the Board until 15 January 2021.*

Other Crown Entities and/or Funding Bodies

 <p>The HRC receives funding through four appropriations under Vote Business, Science and Innovation: the Health Research Fund, the Vision Mātauranga Capability Fund, Catalyst Fund and the Research Contract Management fund. In 2020/21 this totals \$125 million.</p> <p>Chief Executive: Professor Catherine (Sunny) Collings</p>	Board Members	Term of Appointment
	Professor Lester Levy CNZM, Chair	01/01/2016 – 29/08/2022
	Professor Vicky Cameron, Chair of Biomedical Research Committee	30/08/2019 – 29/08/2022
	Dr Alison Dewes	01/05/2019 – 30/04/2022
	Associate Professor Suzanne Pitama	22/08/2015 – 29/08/2022
	Professor Jeroen Douwes, Chair of Public Health Research Committee	28/08/2015 – 29/08/2022
	Professor Parry Guilford	13/10/2016 – 12/10/2019
	Professor Lesley McCowan CNZM	24/02/2014 – 27/04/2020
	Tony Norman MNZM, Acting Deputy Chair	08/06/2017 – 07/06/2020
	Dr Will Barker	08/06/2017 – 07/06/2020
	Dr Monique Faleafa MNZM	08/06/2017 – 07/06/2020

 <p><i>Revenue: \$3 million</i></p> <p>Research and Education Advanced Network New Zealand Ltd (REANNZ) provides a high-performance computing network to promote research, education and innovation for the benefit of New Zealand. It was formed in September 2005 under the Companies Act 1993 and is listed under schedule 4A of the Public Finance Act 1989.</p> <p>Chief Executive: Dianna Taylor</p>	Board Members	Term of Appointment
	Janine Smith MNZM, Chair	12/11/2018 – 30/06/2021
	Ross Peat, Deputy Chair	01/07/2015 – 30/06/2021
	Sara Brownlie	01/10/2018 – 30/06/2021
	Liz Gosling	01/06/2019 – 30/06/2022
	Professor Jim Metson	01/09/2019 – 30/06/2022
	David Skinner	01/10/2018 – 30/06/2021

	Council Members	Term of Appointment
<p>The Marsden Fund Council is a non-statutory Ministerial Advisory Committee with the primary function of advising on the allocation of funds for the Marsden Fund non-departmental output expenses (\$78.545 million).</p> <p>The Royal Society Te Apārangi administers the fund and provides executive support to the Marsden Fund Council.</p>	Chair - Professor David Bilkey	01/03/2015 – 28/02/2021
	Professor Gillian Dobbie	01/03/2015 – 28/02/2021
	Professor Geoff Chase	01/03/2018 – 28/02/2021
	Dr Richard Newcomb	01/03/2018 – 28/02/2021
	Professor Kathleen Campbell	01/03/2018 - 30/11/2023
	Professor Cynthia White	01/03/2018 - 28/02/2022
	Professor Jarrod Haar	01/03/2018 - 28/02/2022
	Professor Colin Brown	01/12/2019 - 30/11/2023
	Professor Penelope Brothers	01/06/2017 - 30/11/2022
	Professor Paul Spoonley	01/06/2017 - 30/11/2022
	Professor Janet Wilmshurst	01/03/2019 - 28/02/2022

The Science Board	Board Members	Term of Appointment
<p>The Science Board is the statutory body responsible for making investment decisions for the Endeavour Fund and National Science Challenges. The Board consists of a Chair and seven members who are appointed by the Minister of Research, Science and Innovation.</p> <p>Chair: Professor Aidan Byrne</p> <p>* Agreed to extend membership until appointment process can begin</p>	Professor Aidan Byrne, Chair	01/03/2017 – 27/06/2022
	Dr Jessica Hutchings Member	01/07/2019 – 27/06/2022
	Ms Elizabeth Hopkins Member	01/07/2019 – 27/06/2022
	Professor Parry Guilford Member	01/01/2015 – 30/04/2021
	Dr Liz Wedderburn Member	30/04/2018 – 30/04/2021
	Dr Andrew McLeod Member	01/07/2017 – 30/06/2020*
	Dr Jill Vintiner Member	01/03/2017 – 28/02/2020*
	Dr David Wratt Member	01/03/2017 – 28/02/2020*

Annex 2: Research, Science and Innovation components of Vote Business, Science and Innovation as at Budget 2020

Research, Science & Innovation Portfolio- Appropriations

662 :2020 PREFU	20/21	21/22	22/23	23/24
	662:1:12	662:2:12	662:3:12	662:4:12
	Xtra BU 2020	Xtra BU 2020	Xtra BU 2020	Xtra BU 2020
	Jun 2021	Jun 2022	Jun 2023	Jun 2024
	locked	locked	locked	locked
Departmental Output Expenses				
Research, Science and Innovation: Innovative Partnerships	3,027	3,026	3,024	3,023
Research, Science and Innovation: National Research Information System	1,729	1,628	1,625	1,624
Total Departmental Output Expenses	4,756	4,654	4,649	4,647
Non-Departmental Output Expenses				
Research and Development Growth Grants	-	-	79,893	145,633
Research and Development Growth Grants - MYA	172,586	140,783	-	-
Research, Science and Innovation: Crown Research Institutes - COVID-19 Response and Recovery	72,300	-	-	-
Research, Science and Innovation: Endeavour Fund	265,507	227,665	229,257	242,712
Research, Science and Innovation: Health Research Fund	122,489	117,489	117,489	117,489
Research, Science and Innovation: Marsden Fund	78,545	78,545	78,545	78,545
Research, Science and Innovation: National Measurement Standards	8,118	8,567	11,789	11,789
Research, Science and Innovation: National Science Challenges - MYA	114,744	97,062	74,045	64,334
Research, Science and Innovation: Partnered Research Fund	33,390	26,261	23,051	22,311
Science and Innovation: Repayable Grants for Start-Ups	20,746	20,746	20,746	17,746
Targeted Business Research and Development Funding	-	-	37,500	37,500
Targeted Business Research and Development Funding - MYA	32,500	37,500	-	-
Total Non-Departmental Output Expenses	920,925	754,618	672,315	738,059
Non-Departmental Other Expenses				
Research, Science and Innovation: Catalyst Fund	34,751	36,501	48,151	24,651
Research, Science and Innovation: Regional Research Institutes	11,353	2,624	1,700	-
Total Non-Departmental Other Expenses	46,104	39,125	49,851	24,651
Non-Departmental Capital Expenditure				
Research, Science and Innovation: Callaghan Innovation	29,458	11,335	1,340	1,340
Total Non-Departmental Capital Expenditure	29,458	11,335	1,340	1,340
Multi-Category Expenses and Capital Expenditure				
Policy Advice and Related Outputs MCA	9,375	8,674	8,670	8,668
<i>Departmental Output Expenses</i>				
- Policy Advice - Science and Innovation	-	-	-	-
- Policy Advice and Related Services to Ministers - Research, Science and Innovation	9,375	8,674	8,670	8,668
- Related Services to Ministers - Science and Innovation	-	-	-	-
Research, Science and Innovation: Talent and Science Promotion MCA	28,989	28,901	28,901	26,901
<i>Non-Departmental Output Expenses</i>				
- Fellowships for Excellence	10,570	10,570	10,570	10,570
- Science in Society	11,849	11,849	11,849	9,849
- Vision Mātauranga Capability Fund	6,070	5,982	5,982	5,982
<i>Non-Departmental Other Expenses</i>				
- Royal Society of NZ	500	500	500	500

New

Research, Science and Innovation: Strategic Science Investment Fund MCA	353,431	328,742	325,505	304,133	
<i>Non-Departmental Output Expenses</i>					
- Strategic Science Investment Fund - Infrastructure	62,859	71,668	61,181	58,809	
- Strategic Science Investment Fund - Programmes	290,572	257,074	264,324	245,324	
Research, Science and Innovation: Callaghan Innovation - Operations MCA	236,138	71,968	69,068	68,518	
<i>Non-Departmental Output Expenses</i>	-	-	-	-	
- Building Business Innovation	36,928	33,028	33,028	32,478	
- Business Research and Development Contract Management	7,750	7,750	7,750	7,750	
- Research and Development Services and Facilities for Business and Industry	42,460	31,190	28,290	28,290	
<i>Non-Departmental Capital Expenditure</i>					
- Short-term Research and Development Loan Scheme	149,000	-	-	-	New
Research, Science and Innovation: Contract Management MCA	30,105	29,552	29,543	29,539	
<i>Departmental Output Expenses</i>					
- Science and Innovation Contract Management	19,432	18,879	18,870	18,866	
<i>Non-Departmental Output Expenses</i>					
- Research Contract Management	10,673	10,673	10,673	10,673	
Total Multi-Category Expenses and Capital Expenditure	658,038	467,837	461,687	437,759	
Total Annual and MYA Expenses	1,659,281	1,277,569	1,189,842	1,206,456	

Annex 3: Research, Science and Innovation bubble diagram as at Budget 2020

