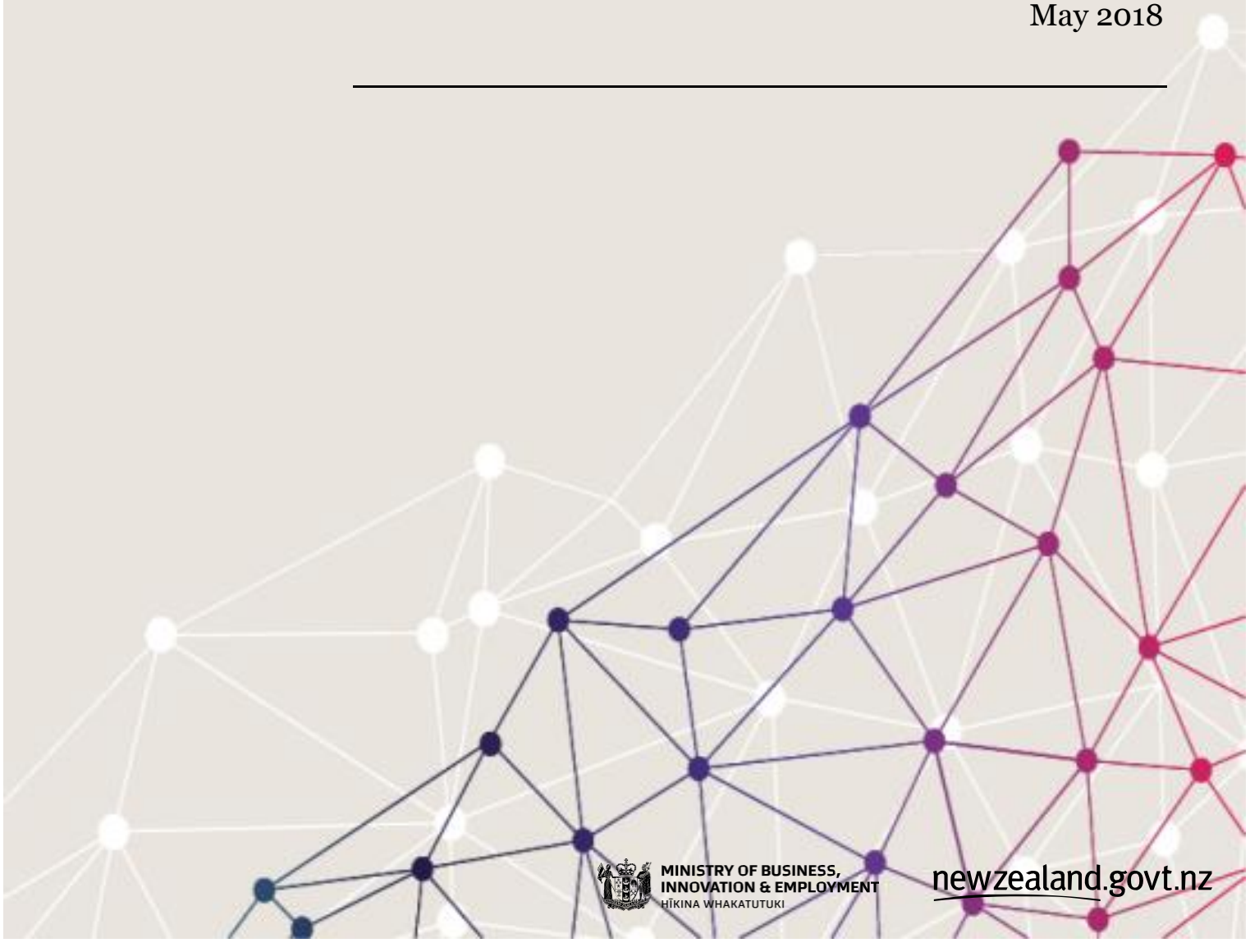
National Science Challenges

Mid-Way Review Panel Guidelines

May 2018



MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

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Contents

Introduction

Thank you for agreeing to take part in a Review Panel for the National Science Challenges (NSCs or the Challenges). We appreciate your contribution to this important investment process. The Terms of Reference document that you have previously received outlines the process for the review for each Challenge and the roles of each party involved. We have produced these guidelines to provide further information to assist Panel Members with the review process.

The 11 NSCs are a set of mission-led science investments that help to address some of the most fundamental issues New Zealand faces for its future development.

The New Zealand Government has committed funding for the NSCs for ten years to 30 June 2024. Funding was allocated to each Challenge initially for the first funding period to 30 June 2019.

The 11 NSCs are being reviewed in 2018. The review will result in decisions on funding for each of the NSCs for the second period (July 2019 to June 2024). The Science Board will make the funding decisions.

The Ministry of Business, Innovation and Employment (MBIE) has established an independent Panel to review each Challenge. The role of each Panel is to:

- Review documentation
- Assess quality of the Future Strategy based on the Challenge's past performance
- Meet with key Challenge representatives and
- Prepare a report for the Science Board with a recommendation around second-period funding.

The Science Board will then make its decision based on the Review Panel's report, its own analysis, and information provided by MBIE.

Further background information on the NSCs can be found at Appendix 1.

Policy Review

MBIE will also carry out a review of the NSC policy in 2018. Panel Members are not required to be involved in that policy review.

If you have any logistical questions, please feel free to contact the review team at ContactNSC@mbie.govt.nz

2 Important Dates

DATE	ACTION
2018	
31 May	Challenge sends Overview of Progress, 2017/18 Progress Report, and information on unspent funding to MBIE
By 15 June	MBIE sends first pack of background and review documentation via file sharing tool 'box'
June	MBIE assesses the 2017/18 Progress Report MBIE gives feedback to the Challenge on its 2017/18 Progress Report by early July
NSC specific	Challenge submits Future Strategy to MBIE
NSC specific	Chair of the Challenge science advisory Panel submits report to MBIE
NSC specific	MBIE sends remaining review documentation to Panel Members via file sharing tool 'box'
NSC specific	Panel Members raise questions for the Challenge with MBIE lead contact. MBIE works with Panel Chair to collate questions
NSC specific	MBIE passes on these questions to the Challenge to include in their presentation(s) to the Panel
NSC specific	**Review Panel meets**
NSC specific	Panel meets at MBIE at 5.00pm Dinner from 6.30pm
NSC specific	Panel discussion > Challenge representatives meet with Panel and make presentations > Challenge submits Supplementary Information (optional)
NSC specific	Panel discussion and report-writing Challenge available for questions (tele- or video-conference) Chair of the science advisory Panel discusses their report with Panel in person or by tele- or video-conference
NSC specific	**Panel Chair sends draft report to MBIE**
NSC specific	MBIE sends Panel's draft report to Challenge host and management
NSC specific	Challenge provides feedback to MBIE on Panel's draft report
By 19 September	Panel Chair finalises the report
24 October	**Science Board meets**
November	MBIE sends letter to Challenge regarding Science Board's funding decision
2019	
January	MBIE and Challenge commence contracting process (subject to Science Board funding decision)
1 July	New contracts and funding (subject to Science Board funding decision) take effect for the period 1 July 2019 – 30 June 2024

Your Role in the Review Process

This section outlines how the Review Panels are established, and provides an outline of the tasks the Panel will undertake.

Panel Member Expertise

Each Panel has five Members who have been chosen for different reasons. We expect that between you and your Panel colleagues, the Panel will be able to cover the following areas.

SCIENCE STRATEGY AND EXCELLENCE

- Ability to assess a Challenge's science strategy and ability to conduct high-quality research

GOVERNANCE AND MANAGEMENT

- Ability to assess the soundness of a Challenge's governance and management arrangements
- Hands-on experience in management of research activities (preferably of a scale similar to the NSCs) including IP

VISION MĀTAURANGA (VM)

- Ability to understand and analyse how the Challenge is responding to the VM policy
- Good understanding of Māori research needs and opportunities

DELIVERY OF IMPACTS AND ASSESSMENT OF BENEFITS

- Knowledge of a Challenge's specific sector, its science, and ability to determine whether research programme will deliver impacts of the scale sought by the NSCs
- Ability to assess the plausibility of the relationship between research and outcomes/benefits.

Each Challenge is different and, therefore, a Panel specific to each Challenge has been formed. Some people will be sitting on more than one Panel as they have skills relevant to more than one Challenge. We do not expect that you will be able to comment on all aspects of the Challenge. In particular, we acknowledge that international Panel Members may be less knowledgeable about the New Zealand context than New Zealand-based Members. For information on the New Zealand science system please refer to Appendix 7.

The Panel as a whole owns the final analysis and recommendations in the Panel report; Panel's advice should make the best use of the Panel's diverse skills. To achieve these ends, we suggest the following principles in the Panel discussion:

- Provide input on the areas above in which you have expertise and experience
- Where you think it will add value, be prepared to ask questions about other areas that will help the Panel's examination of those areas.

Role of Assessment Panel Chair

The Chair has been selected for their ability to lead the Panel discussions and to contribute in one or more of the above areas. After receiving written information from the Challenge, and with input from the Panel, the Chair and MBIE will collate key questions for the Challenge to clarify in their presentation.

The Chair will facilitate the Panel's discussions with the Challenge, and lead the Panel in drafting a report at the Panel meeting. Following the Panel meeting, the Chair has approximately three weeks to finalise a draft report, in conjunction with Panel Members. The Chair is asked not to include any comments in the Panel report that may identify a particular Panel Member.

MBIE will assist the Chair to finalise the report. The Chair is likely to ask other Panel Members to review the draft report by e-mail. MBIE will also modify any comments in the Panel report that have been missed that may identify a particular Panel Member. MBIE will send the Panel's report to the Challenge.

The Chair will then finalise the report in discussion with MBIE. The Chair will appear before the Science Board (in person or by tele- or video-conference) to discuss the Panel report.

4 The Panel Meeting

The Review Panel for each Challenge will meet for two and a half days in Wellington. We expect the involvement of Panel Members in the review to be up to five days. A formal agenda will be sent closer to the Panel meeting.

UP TO...	TO
two days	read through the background material and read the documentation
two and a half days	attend the Panel meeting in Wellington, and begin drafting report
half a day	complete report

DAY 1 – WELCOME AND INTRODUCTION

- The Panel discussion begins with a preparatory meeting at MBIE from **5.00pm**. This is the first opportunity for Panellists to meet each other and MBIE staff in person.
- The Panel Chair will outline a plan for the next day and the Panel and MBIE staff will discuss how they want to approach the face-to-face components of the meeting
- Walk to dinner venue together (from **6:30pm**)
- The dinner will open with a karakia (Māori prayer). Over dinner Panellists can informally discuss their observations of the Challenge from material received to date.
- Panellists may want to ask MBIE representatives questions about the review process.

Day 2 – MAIN OPPORTUNITY FOR REVIEW PANEL TO INTERACT WITH CHALLENGE

Key Challenge and host organisation personnel will meet with the Panel. Challenges are encouraged to involve the Chairs of their kāhui and governance group and may invite end-user representatives.

During the Panel meeting:

- Day 2 begins with Panel only time **9.00am-10.00am**
- Between **10:00am-12:30pm** and **1:00pm-3:00pm** Challenge representatives will make a presentation to the Panel, which will include information responding to any questions asked by the Review Panel prior to the meeting
- **Lunch** and **3:00pm-4:00pm** will be Panel only time for discussions
- From **4:00pm-5:00pm** the Panel will ask the Challenge to return to the room for a question and answer session.

A dinner is organised for Panel Members that night.

Day 3 – PANEL REPORT WRITING

- The Review Panel will begin to draft the Science Board report; this should be near to complete by the end of day 3
- Review Panellists will continue discussing their conclusions from the written material and interactions with the Challenge, end-users and the science advisory Panel Chair
- Panellists may ask further questions from key Challenge representatives. Challenge representatives have been asked to be available for any follow-up questions on day 3. Tele- or video-conferencing is acceptable for day 3.

PRE-MEETINGS ORGANISED BY MBIE

Prior to the Panel meeting MBIE will organise a time for the Chair of the Challenge's science advisory Panel to appear before the Panel by tele- or video-conference to present their report (this is likely to be on day 2 or 3).

MBIE will also contact the host organisation and ask them to nominate a representative able to appear before the Panel and talk about their role as host and support for the Challenge (this is likely to be on day 2 or 3 also).

Considering Written Materials from the Challenge and MBIE

MBIE will send Panel Members documents in two stages prior to the Panel meeting. Please read through the documents before the Panel meeting to form a preliminary view. The review of each Challenge will look at both past performance and future strategies with an **emphasis** on the Future Strategy.

Review Documentation

The following documents form part of the review and will be provided to Panel Members in advance of the Panel meeting.

INFORMATION PROVIDED BY THE CHALLENGE

- Past Performance
  - Overview of progress
  - Financial information
- Future Strategy
  - Supplementary information (optional)

INFORMATION PROVIDED BY THE CHALLENGE'S SCIENCE ADVISORY PANEL

- Report from the Chair of the Challenge's science advisory Panel

INFORMATION PROVIDED BY MBIE

- Terms of Reference for the NSC Review
- Original proposal for funding from the Challenge, including any resubmitted research and business plans, if relevant
- Letter from MBIE to the Challenge advising the Science Board's funding decision
- NSC Investment Contract and Challenge Programme Agreement (including any variations)
- 2015/16, 2016/17 and 2017/18 NSC Progress Reports and MBIE analysis
- Colmar Brunton Detailed Stakeholder Survey Reports
- Feedback letter from Paul Stocks (MBIE's Deputy Chief Executive – Labour, Science and Enterprise) after his visit to the Challenge governance group meeting
- Reports on any previous reviews that Challenges have undergone and any other documentation MBIE considers relevant to each Challenge (on a case by case basis).
- Primary sector science roadmap – Te ao Tūroa and Conservation and Environment Science Roadmap (if relevant)

OTHER MATERIAL

For annual reporting purposes and to prepare for the Mid-way Review, MBIE issued a Performance Framework Guidance Document (Appendix 2). This framework aims to measure the extent to which each Challenge is achieving its objective and, in general, whether the aims of the NSC policy are being met.

Prior to the Panel meeting Panel Members will also receive confirmation of their travel itinerary, accommodation details, and location/ timing of the Panel dinner.

Please let the MBIE lead contact know if you require an explanation of any context or terminology. For international Panel Members we have included in the glossary commonly used Māori language terms, as you may come across these terms in the documentation you receive.

Questions for the Challenge

ACTION TO COMPLETE BY NSC SPECIFIC

Please email the MBIE lead contact (see page 1) **by NSC Specific** if you have any specific questions you want Challenge representatives to address in their presentations.

Questions should probe any major gaps you think the Challenge has not addressed that you think would be useful for the Challenge to think through prior to the Panel meeting. We anticipate that this will be a small number of key questions (1-5).

The MBIE lead contact will work with the Panel Chair to collate these questions for day two of the Panel; these will be forwarded onto the Challenge prior to the Panel meeting.

Finalising the Panel Report

The output from the meeting will be a report to the Science Board from the Review Panel using the template in Appendix 8. The report does not have to be complete by the end of the meeting but we expect that the Panel would have agreed on its recommendations and made reasonable progress with the report.

The template in Appendix 8 allows the Review Panel to:

- Identify how well the Challenge is meeting the criteria the Science Board must use in making funding decisions about each Challenge
- Provide a view of the Challenge's Past Performance and Future Strategies
- Provide recommendations to the Science Board on funding, and to MBIE on contracting
- Help ensure that the Science Board receives information and advice from each Panel in a consistent manner.

In its report the Review Panel will make recommendations e.g. decline funding, approve funding up to the maximum available, approve with conditions, approve for a shorter term and/or with less funding etc. In addition, the Panel can recommend that MBIE seek additional funds from Government. The Review Panel *cannot* make a recommendation to fund a proposal for a period longer than five years.

The Panel can recommend guidance or actions for MBIE to include in contract negotiations. The Panel *may* recommend pre-contractual and/or contractual conditions. MBIE suggests, however, that the Panel consider the seriousness of issues and whether clear feedback would be sufficient, provided that the Panel has trust that the Challenge would adequately respond to the feedback.

Once finalised, MBIE will forward the report to the Challenge host and management team (recommendations will not be included). The Challenge can provide their views on whether the report includes errors of fact or interpretation. MBIE will forward on this feedback and the Chair will finalise the report.

Science Board Decision

The MBIE Science Board is responsible for making independent decisions to allocate funding appropriated for research, science and technology and related activities. The Board was established by the Minister of Science and Innovation pursuant to the Research, Science and Technology Act 2010 on 1 February 2011. The Minister is responsible for the appointment of the Board's Chair and Members.

The review report will be the key input into the Science Board's decision. MBIE will forward the Review Panel's report and other supporting information to the Science Board in October 2018. The Chair of the Review Panel will appear before the Science Board (in person or by tele- or video-conference) to discuss the Panel report. MBIE will also provide the Science Board with MBIE's analysis of the reports and recommendations, including analysis of cross-Challenge issues and opportunities.

The Science Board will make a decision on second-period funding for each Challenge. The Science Board may make a decision that differs from the recommendation from the Review Panel.

MBIE will advise the Challenge of the Science Board's decision. If the Science Board's decision is to provide second-period funding, MBIE will proceed with contracting the Challenge for 2019-2024, and will consider any guidance from the Panel during contract negotiations.

Panel Members will be sent information on the Science Board decisions after the October 2018 meeting.

How MBIE will support Review Panels

The MBIE review team will provide logistical and administrative support for the Review Panels and Science Board and can be contacted at ContactNSC@mbie.govt.nz.

MBIE also offer the following support to assist you in carrying out your role:

TERMS OF REFERENCE

- Outlines the process for the review for each Challenge and the roles of each party involved

THESE GUIDELINES

- These guidelines form the principal documentation of what you need to do in the review process
- Along with these guidelines MBIE will provide further information in video form on the NSCs, the review process and MBIE's Vision Mātauranga policy

DISCUSSION ON DAY ONE/PANEL DINNER

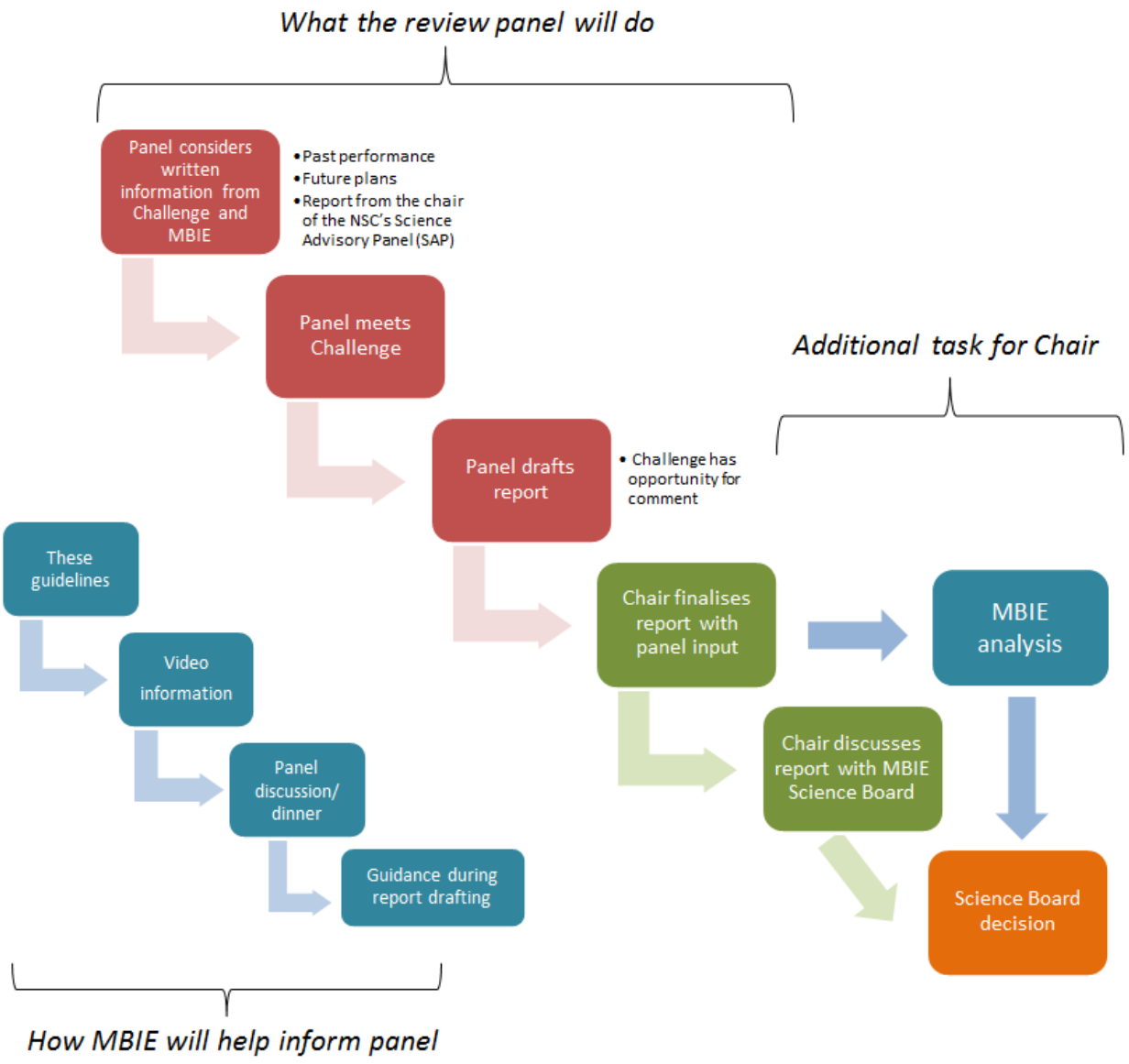
- Panel Members and key MBIE staff (see page 1) will:
  - informally discuss an approach to the face-to-face meeting with the Challenge

ASSISTANCE WITH REPORT WRITING

- Key MBIE staff will attend the Panel meeting to assist in the report writing
- After the meeting MBIE will work with the Panel Chair to finalise the formatting of the report and will forward the report to the Science Board
- Key MBIE staff will forward the Panel report onto the NSC host.

The Review Panel can at any time ask MBIE to provide explanatory or background information. However, MBIE cannot provide advice that might influence the Panel's recommendation.

8 Diagram Overview of the Review Process



Review Criteria – New Zealand Gazette Notice

The New Zealand Gazette notice dated 12 September 2017 outlines the assessment criteria that each Review Panel will use to review a Challenge's Future Strategy. The Review Panel will use no other criteria. The New Zealand Gazette forms instructions from the Minister of Research, Science and Innovation to the Science Board. Section 6 outlines the criteria that the Science Board must use when deciding on second-period funding. It is important that Review Panels use these same criteria when forming their recommendation to the Science Board.

Criteria for Proposals for Second Period National Science Challenges Funding
Pursuant to the Research, Science, and Technology Act 2010

GENERAL INTRODUCTION

In August 2012, the Government agreed to the creation of the National Science Challenges policy. The Challenges are a set of mission-led science investments that will help to address some of the most fundamental issues New Zealand faces for its future development. The process of identifying the Challenges involved significant public engagement and recommendations by an independent National Science Challenge Panel.

Over 2014 and 2015 the Science Board made funding decisions for the 11 National Science Challenges for the first funding period ending 30 June 2019.

The Science Board will make funding decisions on proposals for these 11 National Science Challenges for the second funding period from 1 July 2019 to 30 June 2024.

DEFINITIONS

- Additionality – research, progress and impact generated by the collaborative, mission-led Challenge approach that would not otherwise have happened.
- Mission-led science investments – the funding of research, science, or technology or related activities directed at achieving a specific outcome.
- Outcome – the likely or achieved short- and medium-term effects of an intervention's outputs.
- Related activities – includes engagement with communities, schools, businesses and end-users of research to support/ensure technology transfer and uptake of research; capability development directly associated with the research planned; science communication and promotion; and providing for open access and reuse of data.
- Relevant schedule – the schedule that outlines the specific Challenge objective, themes and outcomes.
- Science priorities – areas of research, science, technology and related activities that the government has identified as key priorities, including the Primary Sector Science Roadmap and Conservation and Environment Science Roadmap.

NOTICE TO THE SCIENCE BOARD

1.1 In this notice, I:

a. specify that the Science Board is to make funding decisions on proposals for National Science Challenges funding under section 10(3)(b) of the Research, Science, and Technology Act 2010 for the period 1 July 2019 to 30 June 2024; and
b. set the criteria for the assessment of proposals for National Science Challenges second period funding for 1 July 2019 to 30 June 2024 under section 8(1) of the Research, Science, and Technology Act 2010.

GENERAL POLICY OBJECTIVE

2.1 The general policy objective of National Science Challenges funding is to fund research, science, or technology, or related activities that have the potential to:

a. respond to the most important, national-scale issues and opportunities identified by science stakeholders and the New Zealand public;
b. promote collaboration across a number of research providers and involve a broad portfolio of multi-disciplinary research activity;
c. enable government to take a more long-term strategic approach to managing and coordinating mission-led science investments;
d. complement other science priorities; and
e. give effect to the Vision Mātauranga policy.

VISION MĀTAURANGA POLICY

3.1 The Vision Mātauranga policy aims to unlock the science and innovation potential of Māori knowledge, resources and people for the benefit of New Zealand. It focuses on four themes:

a. Indigenous Innovation – contributing to economic growth through distinctive science and innovation;
b. Taiao/Environment – achieving environmental sustainability through iwi and hapū relationships with land and sea;
c. Hauora/Health – improving health and social well-being; and
d. Mātauranga – exploring indigenous knowledge and science and innovation.

SCIENCE BOARD TO MAKE DECISIONS ON PROPOSALS FOR NATIONAL SCIENCE CHALLENGES FUNDING

4.1 The Science Board will make funding decisions on proposals for National Science Challenges funding for the period 1 July 2019 to 30 June 2024 in accordance with the Research, Science, and Technology Act 2010.

4.2 In making funding decisions on proposals for National Science Challenges funding, the Science Board will allocate funds from the National Science Challenges appropriation in Vote Business, Science and Innovation.

4.3 The Science Board must make funding decisions on proposals for National Science Challenges funding in accordance with:

a. the Public Finance Act 1989 and the relevant Appropriation Acts for Vote Business, Science and Innovation;

b. the funding amounts and specific criteria as outlined in the relevant schedule of this notice ("the Relevant Schedule"); and
c. the following general eligibility criteria and assessment criteria set out in clauses 5.1–6.2.

4.4 In making funding decisions on proposals for National Science Challenges second period funding, the Science Board must consider the Challenge's future strategy and activities, informed by the Challenge's performance over the first funding period, and take into account the amount of time the Challenge has operated to date.

GENERAL ELIGIBILITY CRITERIA FOR NATIONAL SCIENCE CHALLENGES FUNDING PROPOSALS

5.1 For a proposal to be assessed against the criteria in clauses 6.1 and 6.2, the proposal must:

a. be to undertake research, science, or technology, or related activities that are in a Challenge specified in the Relevant Schedule;
b. be made under one Challenge as specified in the Relevant Schedule;
c. meet any requirements specified in the Relevant Schedule;
d. be made by a legal entity (based in New Zealand) representing a comprehensive range of organisations and individuals with a track record in the research area of the Challenge;
e. not be made by or include a department of the public service as listed in Schedule 1 of the State Sector Act 1988;
f. not be solely for the benefit of the applicant (which includes the organisations and individuals it represents);
g. not be for capital expenditure;
h. be for research, science, or technology, or related activities, the majority of which are to be undertaken in New Zealand, unless the Science Board considers that there are compelling reasons to consider the proposal, despite the amount of research, science, or technology, or related activities being proposed to be undertaken overseas;
i. meet any applicable timing, formatting, system or other similar administrative requirements imposed by the Ministry of Business, Innovation, and Employment in supplying administrative services to the Science Board under section 10(7) of the Research, Science, and Technology Act 2010; and
j. advise that the proposed funding recipient will, and the Science Board is of the view that it can, adhere to the terms and conditions of funding set out in an investment contract determined by the Science Board.

ASSESSMENT CRITERIA FOR NATIONAL SCIENCE CHALLENGES FUNDING PROPOSALS

6.1 A proposal that has been assessed as eligible for National Science Challenges funding under clause 5.1 must also be assessed having regard to whether:

a. **The proposal is collaborative and responds to the most important, national-scale issues for New Zealand and the Challenge objective**
The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period builds on the Challenge's activities in the first funding period to:
    - provide a strategic, integrated and multidisciplinary portfolio of research, science, technology and related activities that meets the Challenge objective and outcomes (having reference to the themes), and the needs of end-users;

- build on and make best use of relevant New Zealand and international research, capabilities and user communities, including accessing funding and support from a range of sources; and
- give effect to the Vision Mātauranga policy in clause 3.1.

6.2 In doing this, the Science Board must have regard to the extent to which the proposal meets the following criteria:

a. **The research, science, and technology will be of excellent quality**
The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period will deliver excellence, and builds on the Challenge's activities in the first funding period to:
   - make best use of, and build the skills and expertise of New Zealand researchers to deliver the Challenge objective and outcomes (having reference to the themes), leveraging international researchers and research organisations, and allowing for the dynamic introduction of new capability, research and researchers;
   - contribute to science quality, across a portfolio which appropriately balances high risk, high return research and new knowledge generation with incremental research and helping end-users to take up research (horizons balance), and appropriately balances science disciplines; and
   - give effect to the Vision Mātauranga policy in clause 3.1.

b. **The proposal is focused on delivering impact**
The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period will deliver impact, and builds on the Challenge's activities in the first funding period to:
   - realise a credible pathway to create the impacts necessary to achieve the Challenge's objectives and outcomes (having reference to the themes);
   - deliver benefits and additionality to New Zealand and to New Zealand science; and
   - give effect to the Vision Mātauranga policy in clause 3.1.

c. **Decision-making and accountability arrangements are sound and enduring**
Based on the Challenge's performance during the first funding period and any proposed changes, the Science Board must confirm that the Challenge's governance, management, and financial structures, including decision-making and accountability arrangements, are effective, appropriate and give effect to the Vision Mātauranga policy in clause 3.1.

REVOCATION OF PREVIOUS NOTICES

7.1 I hereby revoke the following notices:

1. The notice titled "Criteria for Proposals for National Science Challenges Funding" published as a supplement to the *New Zealand* Gazette, 1 October 2013, No. 135, page 3701;
2. the notice titled "Criteria for Proposals for National Science Challenges Funding" published as a supplement to the *New Zealand* Gazette, 31 January 2014, No. 12, page 285; and
3. the notice titled "Amendment to Criteria for Proposals for National Science Challenges Funding" published in the *New Zealand* Gazette, 15 January 2015, Issue No. 3, Notice No. 2015-go250.

Dated at Wellington this 21st day of August 2017.
Hon PAUL GOLDSMITH, Minister of Science and Innovation.

Schedule: NSC Specific

Suggested Questions to consider before the Panel Meeting

Prior to the Panel meeting, Panel Members may want to use some of the questions below when considering the review material.

PHASE 1 PERFORMANCE TO DATE

- ? Has the Challenge's work programme had a clear strategic focus and narrative?
  I.e. is there a cohesive work programme aligned with the Challenge objective, is there a clear rationale for prioritisation and is there a clear definition of which activities are out of scope?
- ? What evidence is there that the Challenge has shown leadership in its fields of research?
  E.g. by acting as a catalyst and focal point for related research activities.
- ? What evidence is there that the science undertaken by the Challenge is cutting edge and world leading?
- ? What approach has the Challenge taken to fostering collaboration (including international) and was this successful? What, if anything, should have been done differently?
- ? What evidence is there that the Challenge has been dynamic, has responded to new opportunities and pulled in additional capability when needed? Was the mechanism to do this effective? What, if anything, should have been done differently?
- ? What is the quality of the relationship between the Challenge and its stakeholders? Has the Challenge taken a partnership approach or is it more of a transactional approach? Are stakeholders confident that the Challenge is providing useful outcomes for them?
- ? What evidence is there that the Challenge responds to Māori issues or needs and meets or builds the aspirations of Māori?
- ? What evidence is there that the Challenge has independent, effective and transparent governance and management structures in place?
- ? What role does the Challenge host play? What kind of support does it provide, and is the level of support appropriate?
- ? How well have the Challenge's research and activities to date positioned it for success in a further 5-year term of research?
- ? What, if anything, suggests a change is needed in future research or activities, and why?

PHASE 2 FUTURE STRATEGY 'PROPOSAL'

The proposal is collaborative and responds to the most important, national-scale issues for New Zealand and the Challenge objective.

- ? Does the proposed strategy have a clear focus and narrative, and why is this the best approach to achieving the Challenge objective?
- ? What evidence is there that the strategy demonstrates an understanding of the research landscape in which the Challenge will operate?
- ? What evidence is there that the strategy is aligned to government or other relevant strategies, including sector roadmaps (Primary sector science roadmap – Te ao Tūroa and Conservation and Environment Science Roadmap) where relevant?
- ? What is the quality of the relationship with stakeholders and what input have they had to the strategy?

- ? Were appropriate processes used for identifying all the necessary inputs (e.g. resource, skill sets, cultural perspectives, end users)? Have any inputs been missed or are they lacking?
- ? What evidence is there that the strategy will address the needs and aspirations of Māori?

The research, science, and technology will be of excellent quality.

- ? What evidence is there that the strategy has an appropriate balance between high risk / high return activities and activities with more immediate benefits?
- ? What processes are in place to ensure science quality?
- ? What steps have been taken to ensure that the Challenge is collaborative and has identified the 'best team'? How does this differ from the Phase 1 team and what new expertise has been brought into the Challenge for Phase 2?
- ? What process is in place for identifying and obtaining necessary expertise as the work programme progresses?
- ? How will the Challenge ensure it remains dynamic and can respond quickly to new opportunities and research directions?
- ? How will the Challenge draw on or enhance mātauranga Māori within the work programme?
- ? What international experience will the Challenge draw on and how has the best source of expertise been identified?
- ? What plans are in place to build NZ capability in areas relevant to the Challenge?

The proposal is focused on delivering impact.

- ? In what ways is it envisaged the Challenge will create additionality; i.e. outcomes that would not be achieved if the Challenge did not exist?
- ? What level of involvement will stakeholders (including Māori) have in delivering the Challenge objective and what is the pathway for stakeholder uptake of research outputs /outcomes?
- ? What does the Challenge envisage that stakeholders will do differently as a result of the research undertaken by the Challenge?
- ? What risks to delivery have been identified and how will they be mitigated?
- ? What evidence is there that decision-making and accountability arrangements are sound and enduring?
- ? What changes, if any, are proposed to the governance and management arrangements for Phase 2 and why?

Confidentiality and Conflict of Interest

Confidentiality

Review Panel Members must:

- Ensure the safe-keeping of all related documents (for example, workbooks, notes, etc.)
- Destroy any remaining documentation or return it to MBIE at the conclusion of the Panel meeting
- Not correspond or discuss the review with the Challenge or any other party. If a Challenge contacts you direct them to MBIE (ContactNSC@mbie.govt.nz) and email MBIE with the details of your contact
- Not use any confidential information for any purpose other than the review.

OFFICIAL INFORMATION ACT 1982

Documentation and the review of documentation are confidential unless otherwise stated. MBIE is subject to the Official Information Act 1982 and information relating to a review may be released if required.

Conflicts of Interest

MBIE follows a rigorous process to maintain the credibility of investment decisions and to assure Challenge's that the documentation is given fair and reasonable appraisal. Before commencing your review you will need to check the documentation for any conflicts of interest.

WHAT IS CONSIDERED A CONFLICT OF INTEREST?

Conflicts of interest may occur on two different levels:

- A **direct** conflict of interest; where you are:
  - directly involved with a Future Strategy *(as a participant, manager, mentor, or partner)* or you have a close personal relationship with the Challenge, **or**
  - a collaborator or in some other way involved with a Challenge's work programme.
- An **indirect** conflict of interest; where you:
  - are employed by an organisation involved in the Challenge but are not part of the Challenge's work programme
  - have a personal and/or professional relationship with the Challenge, for example, an acquaintance
  - be in direct competition with a Challenge being reviewed or where the impacts proposed by a Challenge under discussion may compete with your personal business interests.

REPORTING IDENTIFIED CONFLICTS

All conflicts of interest must be declared. If you feel you have an indirect conflict email ContactNSC@mbie.govt.nz

Handling Conflicts of Interest during the Assessment Panel Meeting

Should you have a **direct conflict** of interest during the Panel meeting, declare the conflict, and then leave the room whilst the ensuing discussion takes place.

Action required for a declared **indirect conflict** of interest is at the discretion of the Panel Chair; this could be to:

- Leave the room
- Stay but remain silent unless asked to respond to a direct question
- Contribute to the review.

Should the Chair declare a conflict of interest, a deputy Chair will be appointed for the review discussion. All conflict of interest declarations and resulting Panel Member actions during the Panel meeting will be recorded.

Appendix 1: Background to the National Science Challenges

Purpose of the NSCs

NSC funding is to support research, science, or technology, or related activities that have the potential to:

- Respond to the most important, national-scale issues and opportunities identified by science stakeholders and the New Zealand public
- Promote collaboration across a number of research providers and involve a broad portfolio of multi-disciplinary research activity
- Enable government to take a more long-term strategic approach to managing and coordinating mission-led science investments.

The NSCs involve alignment and co-ordination of research to generate greater impact and value from the Government's science investment.

Each NSC is hosted by a research organisation; it is not a legal entity. NSCs require collaboration between researchers across a number of research providers.

Each NSC is responsible to deliver against a high-level objective determined by the Government and contracted against by MBIE (included in the table below). Each Challenge contains a governance group which is independent from the Challenge parties. MBIE has devolved decisions on funding and strategic direction to the governance group. A Director or co-Directors oversee Challenge activity among the participants.

Each Challenge has developed its own approach to incorporate Māori advice and/or decision-making into its delivery of the Challenge objective and delivery against the Vision Mātauranga policy, through including people with relevant expertise in governance and/or advisory groups.

Each Challenge has an independent science advisory Panel (or equivalent) to provide a review of the quality of the Challenge's science and its best research team approach. The science advisory Panel must also look at what steps the Challenge has taken to verify independently that its science is internationally robust and of high quality.

In the first funding period, MBIE required each NSC to run a contestable process for a proportion of its funds to enable new entrants and new ideas into the Challenge.

History of the NSCs

In 2011 the New Zealand Government announced its intention to establish the NSCs to find innovative solutions to some of the most fundamental science-based issues facing New Zealand. Issues to be addressed by the Challenges would cut across various sectors, therefore, would not fit well with existing funding arrangements.

A high-profile public awareness campaign was rolled out in 2012/13 to raise ideas from the public for potential Challenges. An independent group of science experts, Chaired by the Prime Minister's Chief Science Advisor, reviewed public submissions and ideas and recommended proposed Challenges to Cabinet.

The Government agreed to implement the following 11 Challenges.

CHALLENGE	LAUNCH DATE	OBJECTIVE
A Better Start	February 2016	To harness science to sustain health and wellbeing into the later years of life
Ageing Well	March 2015	To improve the potential of young New Zealanders to have a healthy and successful life
Building Better Homes, Towns, and Cities	May 2016	To improve the quality and supply of housing and create smart and attractive urban environments
The Deep South	August 2014	To understand the role of the Antarctic and the Southern Ocean in determining our climate and our future environment

Healthier Lives	December 2015	To reduce the burden of major New Zealand health problems
High-Value Nutrition	April 2014	To develop high-value foods with validated health benefits to drive economic growth
New Zealand's Biological Heritage	August 2014	To protect and manage New Zealand's biodiversity, improve our biosecurity, and enhance our resilience to harmful organisms
Our Land and Water	January 2016	To enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations
Resilience to Nature's Challenges	June 2015	To enhance New Zealand's resilience to natural disasters
Science for Technological Innovation	September 2015	To enhance the capacity of New Zealand to use physical and engineering sciences for economic growth
Sustainable Seas	September 2014	To enhance utilisation of our marine resources within environmental and biological constraints

In 2013 the Ministry of Business, Innovation and Employment (MBIE) issued a request for proposals. Research providers formed consortia and submitted proposals. MBIE established independent Panels to assess the proposals and to made recommendations to the MBIE Science Board. The Science Board is an independent board that makes funding decisions. The Science Board agreed to provide funding for the Challenges. In some cases this involved the need to resubmit improved proposals, or conditions were placed on funding.

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Appendix 2: National Science Challenge Performance Framework

Appendix 3:
National Science Challenge Principles

20 Appendix 4: MBIE's Governance Group Visit Report

Appendix 5: MBIE's Vision Mātauranga Policy

MBIE will provide Panel Members with video guidance specifically on MBIE's **Vision Mātauranga** (VM) policy.

Unlocking Māori potential

MBIE understands that Māori success is New Zealand's success. Unlocking the science and innovation potential of Māori knowledge, people and resources will benefit New Zealand. For this reason we have embedded our VM policy across all priority investment areas.

The policy aims to unlock the science and innovation potential of Māori knowledge, people, and resources to benefit New Zealand. Its purpose is:

- To recognise Māori as important partners in science and innovation; both as inter-generational guardians of significant natural resources and indigenous knowledge, and owners and managers of commercial assets
- To build the capability of Māori individuals, businesses, incorporations, rūnanga, trusts, iwi, hapū, and marae to engage with science and innovation
- To maximise the quality of the relationship between Māori and the Crown through science and innovation through the Treaty of Waitangi.

It has the following themes:

- **Indigenous innovation:** contributing to economic growth through distinctive R&D
- **Taiao/environment:** achieving environmental sustainability through iwi and hapū relationships with land and sea
- **Hauora/health:** improving health and social wellbeing
- **Mātauranga:** exploring indigenous knowledge and science and innovation.

Applicants for MBIE funding, including NSC funding, are required to show in their proposals how they will give effect to the VM policy. Potential outcomes of the VM policy may include, for example:

- Research and development activities that assist Māori businesses and other enterprises to uplift productivity and performance, enabling them to make real and sustainable contributions to national economic growth
- Increased understanding of how the New Zealand land- and seascape are distinctively experienced and explained by Māori, and of the contribution that this can make to achieving sustainable environmental outcomes and healthy communities
- Real gains in health and social wellbeing for Māori from investments in a range of researchers and scientists, including Māori
- A deep exploration of indigenous knowledge to understand how it can add value to research, science and technology.

For quick reference a VM 2-pager is included below.

The VM policy can be found here: http://www.mbie.govt.nz/info-services/science-innovation/pdf-library/vm-booklet.pdf

Appendix 6: Glossary and Abbreviations

Glossary

Challenge host	Each Challenge has selected an organisation (one of the Challenge Members/partners) to be responsible for the management of the Challenge, including contracting with MBIE and financial management. The Challenge is not a legal entity.
Challenge Members/partners	Challenge Members are the organisations or individuals with a track record in the research area of the Challenge who come together to develop a national-scale collaborative proposal for NSC funding for that specific Challenge.
Challenge programme	The Challenge Programme is a detailed work programme for the first five years. If a proposal is successful, the NSC Investment Contract with MBIE will contain a Challenge Programme Agreement that outlines the approved Challenge Programme that MBIE will fund. The information for the Challenge Programme will be taken from the description of the detailed work programme for the first five years in the Research Plan in a proposal.
Governance structure	The governance structure is the body that will have responsibility to oversee the strategy development, implementation, management, and delivery of the Challenge Programme.
New Zealand Gazette Notice	The New Zealand Gazette is the Government's official newspaper and is produced by the Department of Internal Affairs. Items in the Gazette are Gazette notices. The Minister of Research, Science and Innovation issues Gazette notices to, amongst other things, instruct the Science Board on the assessment of proposals for science-led contestable funding.

Abbreviations

CoRE	Centre of Research Excellence
CRI	Crown research institute
DHB	District health board
DOC	Department of Conservation
EPA	Environmental Protection Authority
HRC	Health Research Council
IRO	Independent research organisation
MBIE	Ministry of Business, Innovation and Employment
MfE	Ministry for the Environment
MOH	Ministry of Health
MPI	Ministry for Primary Industries
PGP	Primary Growth Partnership
RRI	Regional research institute
RSNZ	Royal Society of New Zealand
TEC	Tertiary Education Commission
TEI	Tertiary education institute (e.g. university)
TPK	Te Puni Kōkiri – Ministry of Māori Development
VM	Vision Mātauranga

Commonly Used Māori Language Terms

Aotearoa	New Zealand
Hapū	Subtribe, clan, a collective of related whānau (see 'whānau' below)
Hauora	Health
Hui	Meeting
Iwi	Tribe
Kāhui	(Advisory) council
Kai	Food
Kaimoana	Seafood
Kaitiakitanga	Stewardship or guardianship of natural resources
Kaumatua	Elders (of respected standing)
Kaupapa Māori	A plan of action created by Māori which expresses Māori aspirations, values, and perspectives
Kōrero	Talk, speak, discuss, have a discussion
Mana	Authority, power, reputation, respected status
Marae	Traditional community meeting area, with a traditional meeting house as its focal point – often the centre of activity in a Māori community
Mātauranga	Knowledge
Pākehā	Non-Māori person, predominantly of European descent
Pūtaiao	Science
Rangahau	Research, investigate
Rangatiratanga	Self-determination
Rohe	Territory or boundaries of iwi groups
Rūnanga	Māori assembly or council
Taiao	Environment
Tamariki	Children
Tangaroa	Māori god of the sea and fish
Tangata whenua	People of the land
Taonga	Treasured possessions or cultural items
Tapu	Maori customary state of 'sacredness', or being in a restricted state due to spiritual importance
Te reo	Māori language
Tikanga	Customary practices/meaning
Wānanga	Publicly owned tertiary education institute (university) that provides education in a Māori cultural context
Whakapapa	Genealogy
Whānau	Family (often extended family)
Whenua	Land

Appendix 7: Overview of New Zealand and its Science System

New Zealand's Land and People

New Zealand is an island nation with a relatively small population (4.8 million – similar to Ireland and the state of Queensland), low population density, a temperate climate, productive agricultural land, and scenic natural environments. Particular features of New Zealand that are relevant to the National Science Challenges (NSCs) include the following.

An Ageing and Diversifying Population

About one quarter of New Zealanders live in the South Island and three quarters in the North Island. New Zealand is an urban society. Auckland is the largest city, accounting for about one third of the population, and is projected to continue to grow at a faster rate than most other regions.

The national population has grown quickly in recent years due to high net international migration as both more New Zealand citizens return from overseas (and fewer leave New Zealand) and immigrants arrive from other countries.

Birth rates are falling and there is a growing proportion in older age groups, although more elderly New Zealanders are remaining active in the workforce beyond the usual retirement age of 65 when all New Zealanders are entitled to receive a pension. The proportion of people with European ancestry (about three quarters of the population) is slowly decreasing as the size of the Māori (16%), Asian (12%), and Pacific Island (8%) and other communities increases (people can identify with more than one ethnic group). These demographic changes lend themselves to an increasing role for science to provide for healthier living, considering in particular the needs of different ethnic groups.

Social drivers for research in New Zealand include the poor health, diet, and quality of housing of lower socio-economic groups, the health needs of New Zealand's elderly population, and the implications of New Zealand's increasing ethnic mix.

Summary statistics about New Zealand can be found at: https://www.stats.govt.nz/insights?filters=Infographics

Importance of the Primary Sector

The primary sector is of major importance for New Zealand. Exports from the primary sector (agriculture, horticulture, forestry, fishing, food and beverage, and processed products based on primary sector products) have been important from the start of New Zealand's modern history and make up about two thirds of total merchandise exports. Milk powder, butter, and cheese account for one quarter of exported goods.

The influence of the primary sector is even greater given the small size of the domestic market and the fact that many companies in manufacturing, high-technology and other industries service and support the primary sector. In overseas markets, consumers and retailers are increasingly demanding verified sustainability credentials for primary and food products and information on food safety, traceability, and animal welfare. In addition, it is important to protect New Zealand's productive base from pests and diseases and to lift production efficiency. The outbreak of a disease affecting our primary species would be devastating for New Zealand's economy.

The marine environment is also important as a source of primary products. The vast majority of New Zealanders live on the coast and no part of the country is more than 130km from the ocean. Although New Zealand has a relatively small land area, its marine exclusive economic zone is the fourth largest in the world, making the country's combined terrestrial and marine footprint about half the size of that of Australia.

Export Growth and Diversification

Exports account for about 30% of New Zealand's GDP. While the primary sector remains important, the shape of the economy is changing as New Zealand's exports and export markets diversify. New Zealand's major trading partners are (in order of size) China, Australia, the EU, the US and Japan. In addition to wool, dairy, and meat products, New Zealand now exports more horticultural, wine, forestry, and fish products, and has strong niche

manufacturing, ICT, and healthcare products. Tourism is also an important component of the economy and, in terms of export earnings, is now on a par with the dairy sector.

New Zealand's main economic challenge is to increase economic return through more efficient primary production and by developing value-added products and manufacturing processes. Achieving this requires, in part, greater engagement by firms with research and development (R&D). By OECD standards, New Zealand has low R&D expenditure by business as a proportion of GDP.

Physical Environment

New Zealanders in general place a high degree of importance on environmental issues (Māori, in particular, have a special relationship in their custodianship of the land). While it remains important to maintain the productive capacity of New Zealand's agricultural land and marine environments, there is also a need to preserve biodiversity and natural landscapes, maintain air and water quality, and keep New Zealand pest-free. Related to this there is some caution about science and innovation in areas such as genetic modification.

New Zealand is vulnerable to natural hazards. For example, significant earthquakes occurred in Kaikōura in November 2016 and Christchurch (New Zealand's second largest city) in 2010/11. The estimated rebuilding cost following the Christchurch earthquakes is approximately NZ$40 billion (about US$28 billion, 25 billion Euros, AU$36 billion). These events have generated increased interest in research into natural hazards.

Structure of New Zealand's Science System

An understanding of the structure of the science system is particularly important for two reasons. Firstly, Challenges are required to build on existing relevant research. Secondly, Challenges are expected to form New Zealand's 'best team'. This will involve collaboration across research organisations and the best use of existing skills across the New Zealand science system.

National Statement of Science Investment

The National Statement of Science Investment 2015-25 (NSSI) outlines the Government's strategic direction for science investment over the next decade. The final document contains a clearer description of what Government expects the growing science system to achieve, and a simpler vision statement for science and innovation funding in New Zealand. It relies mostly on two main 'pillars' as the means to achieve that vision: excellence and impact. Evidence for strong performance under these two pillars will be a prerequisite for further public investment.

The NSSI can be found here: http://www.mbie.govt.nz/info-services/science-innovation/pdf-library/NSSI%20Final%20Document%202015.pdf

1. FUNDERS OF RESEARCH

Funders of research in New Zealand are principally businesses, the government, tertiary education providers, and overseas funders.

The **Ministry of Business, Innovation and Employment** (MBIE) is the main funder of science. It is one of New Zealand's 30 government departments and is headed by a Chief Executive Officer who reports to the Minister of Research, Science and Innovation.

MBIE tended in the past to allocate the majority of its funding for research related to the primary industries, energy and minerals, environment, hazards and infrastructure, health and society, and manufacturing. MBIE's investment objectives are now less sector-specific.

MBIE manages various funding mechanisms but typically issues request for proposals documents and runs contestable processes. Research organisations such as Crown Research Institutes (CRIs), universities, businesses, and others are eligible to apply.

MBIE also provides allocated funding for infrastructure items including, for example, New Zealand's research vessel, nationally significant collections and databases, and geohazard monitoring.

The **Health Research Council** (HRC) is a Crown organisation that provides funding for health research. The HRC receives its funding via MBIE.

The **Royal Society of New Zealand** administers several funds for science and technology including the

prestigious Marsden Fund that supports excellence in untargeted investigator-initiated research through contestable funding.

Other government departments have over time increased their focus on research, appointed chief science advisors, and make smaller amounts of research funding available.

- In particular, the **Ministry for Primary Industries** (MPI) manages some funding schemes in areas such as sustainable farming and climate change research. Through MPI the Government co-invests with industry in long-term innovation programmes in the primary sector through the Primary Growth Partnership (PGP)
- The **Tertiary Education Commission** provides funding for universities (see below)
- **Other departments** that provide some funding or have a particular interest in research include the Department of Conservation, Ministry for the Environment, and the Ministry of Health. Te Puni Kōkiri (the Ministry of Māori Development) is interested in research that supports the well-being of the Māori population.

Callaghan Innovation is a Crown organisation that provides R&D funding for businesses. This activity used to be delivered by MBIE but was transferred to Callaghan Innovation when it was formed in 2012.

In the **private sector**, some firms employ their own researchers. However, the number is limited. New Zealand does not have many large firms with the budget and ability to employ their own researchers. In the primary sector, there are some industry associations that impose a levy on their Members (i.e. growers and producers) to fund industry activities such as R&D and marketing.

Private firms and industry organisations without their own researchers can contract research directly from research providers (often CRIs) on a fee-for-service basis or can promise co-funding or provide matching funding when research organisations apply for public funding from government sources such as MBIE.

2. RESEARCH PROVIDERS

Universities: There are eight universities in New Zealand, all of which carry out teaching and research activities. The universities receive research funding from MBIE through annual contestable rounds, like other providers. They also receive funding from the Tertiary Education Commission through the Performance-Based Research Fund (PBRF). The primary purpose of the PBRF is to ensure that excellent research in the tertiary education sector is encouraged and rewarded. This involves assessing the research performance of tertiary education organisations and then funding them on the basis of their performance.

The universities, in general, offer the same range of courses. Massey and Lincoln Universities have an agricultural tradition and some of their courses are focused on the agricultural sector. New Zealand has two medical schools, at the Universities of Otago and Auckland.

Wānanga: Wānanga are publicly owned tertiary education institutions that provide education in a Māori cultural context. There are three wānanga in New Zealand. They carry out some research.

Crown Research Institutes (CRIs): CRIs are government-owned research organisations that carry out research generally focused on different sectors. The CRIs were formed in 1992 mostly out of the former Department of Scientific and Industrial Research. They are managed by boards, appointed by Ministers. The seven CRIs and their main areas of focus are:

AgResearch - Dairy, meat, wool, pastoral
Institute of Environmental Science and Research (ESR) - Forensic, food safety, public health, environment
GNS Science - Energy, resources, hazards
Manaaki Whenua - Landcare Research - Biodiversity, land resources
National Institute of Water and Atmospheric Research (NIWA) - Oceans, aquaculture, fisheries
Plant & Food Research - Fruit, vegetables, seafood
Scion - Forestry, biomaterials

The CRIs receive income for research from both public and private sources. They also receive funding from MBIE which allows them to carry out research into the areas outlined in their statements of core purpose. The board of each CRI chooses their areas of research, in line with government signals for investment.

Centres of research excellence (CoREs): CoREs are collaborative organisations that conduct research of world-class quality in an area of importance to New Zealand. . There are ten CoREs and they receive public funding through the Tertiary Education Commission. The CoREs operate in diverse areas, some of which overlap with the NSCs – for instance, in areas of health, indigenous research, complex systems, medical devices and

earthquakes. Each CoRE is hosted by a university and comprises a number of partner organisations, including other universities, CRIs, and wānanga. **Callaghan Innovation**: Callaghan Innovation is a Crown-owned organisation that helps New Zealand companies' access research capability and build their own research capacity.

Independent research organisations (IROs): IROs are organisations that offer research services. They are industry-linked or non-government organisations that rely on funding from corporate, charitable, and contestable government sources. They focus on specific areas of expertise such as medicine, building research, environment or climate change. Examples include Cawthron Institute (marine science), Building Research Association of New Zealand, and Malaghan Institute of Medical Research.

Regional research institutes (RRIs) are a new type of research organisation in the process of being formed. They seek to maximise the unique business, technology, and economic growth opportunities in certain regions. For example, the New Zealand Winegrowers Research Centre was selected as the first RRI and is based in Marlborough, one of the country's main wine-producing regions.

There is generally a good level of collaboration between research providers in New Zealand, which is partly a reflection of the small size of the country. It is not uncommon, for example, for researchers to move between CRIs and universities during their career and many researchers in a particular field will know each other personally. Many researchers in CRIs also supervise PhD students or have teaching positions at universities.

3. OTHER PLAYERS

Prime Minister's Chief Science Advisor: Sir Peter Gluckman was appointed as the inaugural Prime Minister's Chief Science Advisor in 2009. His role is to give strategic and operational advice on science and science policy issues to the Prime Minister.

Besides administering some funding programmes, the **Royal Society of New Zealand** also has a role in providing advice on scientific issues and promoting and communicating science.

28 Appendix 8: Template for Panel Report to the Science Board

National Science Challenges
Mid-Way Review

X Challenge

Report of the Review Panel to the Science Board

xxx 2018

Recommendation

The Panel's overall recommendation is that the Science Board (choose one option):

- fund [NSC] at the maximum available for second period funding
- fund [NSC] at the maximum available for second period funding, and seek additional funds as per our comments below
- fund [NSC] at less than the maximum available for second period funding, as per our comments below
- do not fund [NSC] in the second period, as per our comments below

Recommended guidance/actions for MBIE during the contract negotiation process [if relevant]

  - e.g. recommend that [NSC] update their X structure, as per our comments below
  - e.g. recommend that [NSC] include performance indicators on X, as per our comments below

Overall comments

View of Past Performance

- xxx
- xxx
- xxx

View of Future Strategy

- xxx
- xxx
- xxx

Comments against review criteria

The Panel's review was guided by the following gazetted criteria only.

6.1 (a) The proposal is collaborative and will respond to the most important, national-scale issues for New Zealand and the Challenge objective

The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period builds on the Challenge's activities in the first funding period to:

- provide a strategic, integrated and multidisciplinary portfolio of research, science, technology and related activities that meets the Challenge objective and outcomes (having reference to the themes), and the needs of end-users;
- build on and make best use of relevant New Zealand and international research, capabilities and user communities, including accessing funding and support from a range of sources; and
- give effect to the Vision Mātauranga policy in clause 3.1.

    - comment
    - xxx
    - xxx

6.2 (a) The research, science and technology will be excellent quality

The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period will deliver excellence, and builds on the Challenge's activities in the first funding period to:

- make best use of, and build the skills and expertise of New Zealand researchers to deliver the Challenge objective and outcomes (having reference to the themes), leveraging international researchers and research organisations, and allowing for the dynamic introduction of new capability, research and researchers;
- contribute to science quality, across a portfolio which appropriately balances high risk, high return research and new knowledge generation with incremental research and helping end-users to take up research (horizons balance), and appropriately balances science disciplines; and
- give effect to the Vision Mātauranga policy in clause 3.1.

    - comment
    - xxx
    - xxx

6.2 (b) The proposal is focused on delivering impact

The Science Board must consider to what extent the Challenge's strategy for research, science, technology and related activities in the second funding period will deliver impact, and builds on the Challenge's activities in the first funding period to:

- realise a credible pathway to create the impacts necessary to achieve the Challenge's objectives and outcomes (having reference to the themes);
- deliver benefits and additionality to New Zealand and to New Zealand science; and
- give effect to the Vision Mātauranga policy in clause 3.1.

    - comment
    - xxx
    - xxx

6.2 (c) Decision-making and accountability arrangements are sound and enduring

Based on the Challenge's performance during the first funding period and any proposed changes, the Science Board must confirm that the Challenge's governance, management, and financial structures, including decision-making and accountability arrangements, are effective, appropriate and give effect to the Vision Mātauranga policy in clause 3.1.

- comment
- xxx
- xxx

Background

1. MBIE formed an independent Panel with the following Members:

xxx (Chair)	[brief details]
xxx	[brief details]
xxx	[brief details]
xxx	[brief details]
xxx	[brief details]

2. Panel Members declared the following interests at the time of their recruitment and before the Panel meeting.

Panel Member name	Nature of Interest	Potential conflict	Resolution

3. The Panel met in Wellington on xxx 2018.

4. During the meeting, the following Challenge representatives made a presentation to the Panel:

- xxx
- xxx
- xxx
- xxx
- xxx

The Panel used this opportunity to ask questions of the Challenge representatives.

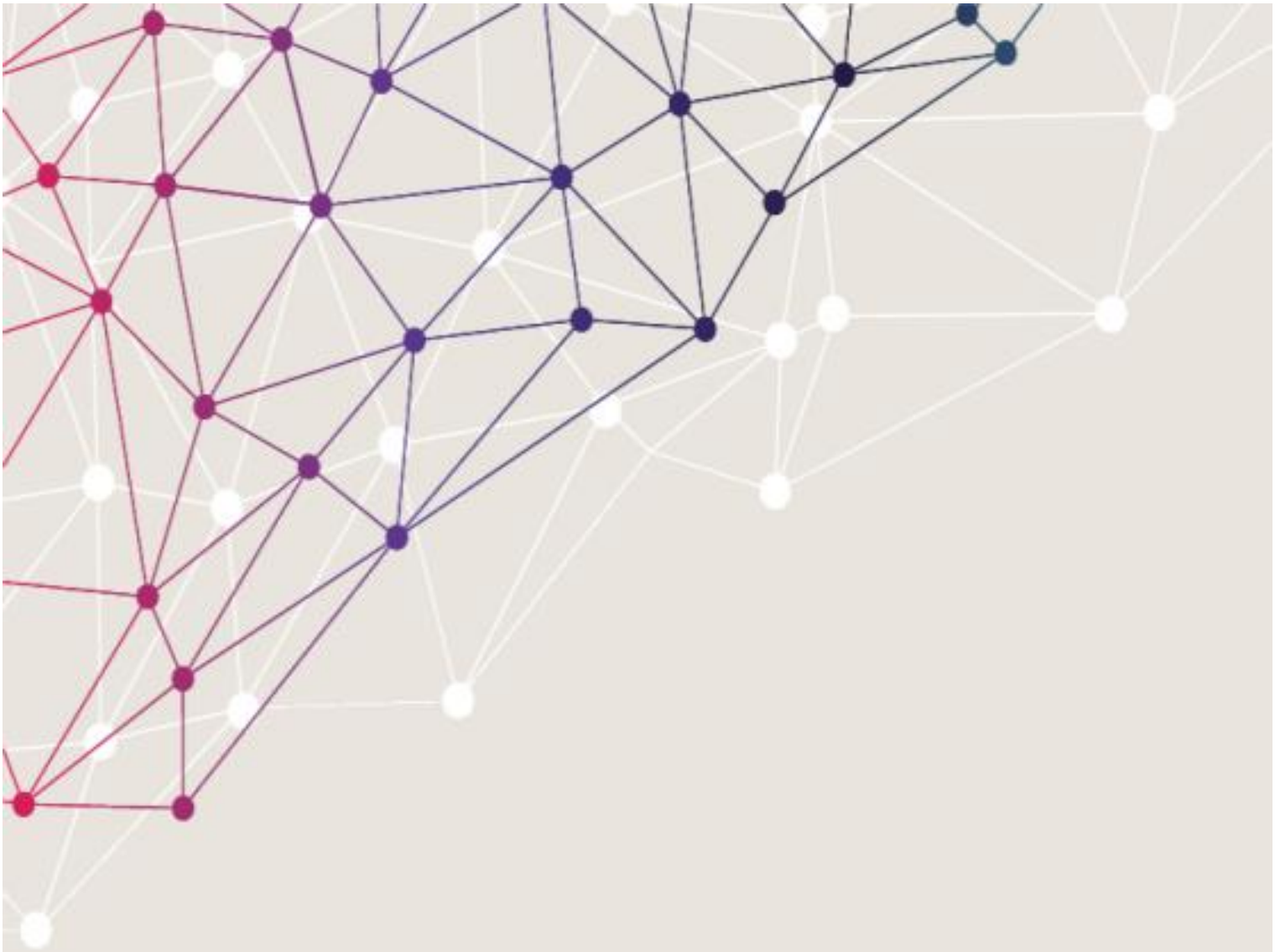
The Challenge representatives also provided the following additional written information to the Panel:

- xxx
- xxx
- xxx

5. During the meeting, xxx, Chair of the Challenge's science advisory group, appeared in person, tele, video conference to speak to his/her report and to answer questions from the Panel.

6. The Panel discussed the information received and reached a consensus decision on a recommendation to the Science Board.

7. The Panel began drafting this report during its meeting. The Panel Chair, in consultation with Panel Members, completed this report after the Panel meeting.



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