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## SCIENCE BOARD INVESTMENT PRIORITIES FOR THE 2013 SCIENCE INVESTMENT ROUND AND THE 2013 SANDPIT ROUND AND OTHER RELATED NOTICES

PURSUANT TO THE RESEARCH, SCIENCE,  
AND TECHNOLOGY ACT 2010

This Supplement to the *New Zealand Gazette* contains the following 3 notices issued by The Honourable Steven Joyce, Minister of Science and Innovation, under the Research, Science, and Technology Act 2010:

1. Investment priorities for the 2013 science investment round and the 2013 Sandpit round
2. Criteria for proposals for science-led contestable funding
3. Criteria for proposals generated by a Sandpit process

Each notice contained in this supplement commences on the date of signature.

## **Investment priorities for the 2013 science investment round and 2013 Sandpit round**

### **1. NOTICE TO THE SCIENCE BOARD**

In this notice, I:

- (a) specify under section 10(3)(b) of the Research, Science, and Technology Act 2010:
  - (i) that the Science Board is to make funding decisions on proposals for funding under the 2013 science investment round and generated in the 2013 Sandpit round; and
  - (ii) the areas of research, science, and technology, or related activities for which funding is available; and
- (b) set criteria under section 8(1) of the Research, Science, and Technology Act 2010 for the assessment by the Science Board of proposals for funding:
  - (i) under the 2013 science investment round; and
  - (ii) generated in the 2013 Sandpit round.

### **2. 2013 SCIENCE INVESTMENT ROUND: ELIGIBILITY CRITERIA AND OTHER MATTERS**

- 2.1 Funding is available under the 2013 science investment round for research, science, and technology, or related activities that meet the eligibility criteria specified in clause 2.2.
- 2.2 For a proposal to be assessed in accordance with clause 3, the proposal must:
  - (a) be to undertake research, science, and technology, or related activities that are in an area specified in either Schedule 1, Schedule 2, Schedule 3, or Schedule 4 of this notice (the “relevant schedule”);
  - (b) specify the investment mechanism (“Investment Mechanism”) in the notice entitled “Criteria for Proposals for Science-led Contestable Funding” published in the Supplement to the *New Zealand Gazette*, 5 December 2012, No. 146, page 4242 (the “Science-led Contestable Tool”) under which the proposal is made;
  - (c) be made under one of the Investment Mechanisms for which funding proposals may be considered, as specified in the relevant schedule;
  - (d) relate to no more than one Investment Mechanism;
  - (e) meet any applicable requirements specified in the relevant schedule;
  - (f) meet any applicable eligibility criteria set out in the Science-led Contestable Tool; and
  - (g) 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 2012.

- 2.3 The areas of research, science, and technology, or related activities referred to in clause 2.2(a) are derived from the 2013 Sector Investment Plans developed for each relevant research fund. These provide the strategic context for the investment priorities, research questions and other requirements.

**3. CRITERIA FOR ASSESSMENT OF PROPOSALS UNDER 2013 SCIENCE INVESTMENT ROUND**

- 3.1 A proposal assessed as having met the eligibility criteria in clause 2.2 must be assessed in accordance with the criteria set out in the Science-led Contestable Tool, including the criteria specific to the relevant Investment Mechanism.
- 3.2 When having regard to how the proposal contributes to the mix of investments in respect of the relevant research fund for the purposes of clause 6(e) of the Science-led Contestable Tool, the Science Board must have regard, in addition to the matters listed in clause 6(e), to the extent to which the overall mix of investments is likely to best deliver research, science, and technology, or related activities in the areas set out in the relevant schedule to this notice.
- 3.3 The Science Board must make funding decisions that are consistent with any applicable requirements specified in the relevant schedule.

**4. 2013 SANDPIT ROUND: ELIGIBILITY CRITERIA AND OTHER MATTERS**

- 4.1 Funding is available under the 2013 Sandpit round for research, science, and technology, or related activities that meet the eligibility criteria specified in clause 4.2.
- 4.2 For a proposal to be assessed in accordance with clause 5, the proposal must:
- (a) be to undertake research, science, and technology, or related activities that are in an area specified in Schedule 5 of this notice;
  - (b) meet any requirements specified in Schedule 5 of this notice;
  - (c) meet any eligibility criteria specified in the notice entitled "Criteria for Proposals Generated by a Sandpit Process" published in the Supplement to the *New Zealand Gazette*, 5 December 2012, No. 146, page 4251 (the "Sandpit Tool"); and
  - (d) 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 2012.
- 4.3 The areas of research, science, and technology, or related activities referred to in clause 4.2(a) are derived from the 2013 Sector Investment Plan for the Environmental Research Fund. This provides the strategic context for the investment priorities, research questions and other requirements.

**5. CRITERIA FOR ASSESSMENT OF PROPOSALS UNDER 2013 SANDPIT ROUND**

- 5.1 A proposal assessed as having met the eligibility criteria in clause 4.2 must be assessed in accordance with the criteria set out in the Sandpit Tool.
- 5.2 The Science Board must make funding decisions that are consistent with any requirements specified in Schedule 5 of this notice.

**6. REQUESTS FOR PROPOSALS AND OTHER MATTERS**

- 6.1 The Ministry of Business, Innovation and Employment will release requests for proposals or similar documents that set out the timeframes for the investment processes, call for proposals, and provide information that may assist applicants when preparing their proposals.
- 6.2 Further information on the Investment Mechanisms referred to in this notice is provided in the Science-led Contestable Tool. Further information on the Sandpit process is set out in the Sandpit Tool. Further information on the research funds referred to in this notice is provided in the notice entitled "Description of Funds within Vote RS&T", published in the Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200.

Dated at Wellington this 26th day of November 2012.

HON STEVEN JOYCE, Minister of Science and Innovation.

**Schedule 1****Energy and Minerals Research Fund**

Proposals for funding out of the Energy and Minerals Research Fund may be considered in the 2013 science investment round under the following Investment Mechanism:

- Targeted Research – proposals must be for research, science, and technology, or related activities:
  - in one or more of the areas listed in the “Investment priorities” column of the table below; and
  - directed towards answering the corresponding research question listed in the “Research questions” column of the table below.

Investment priorities	Research questions	Other requirements
<b><i>Minerals</i></b>		
New Zealand's geothermal potential	What is the commercial potential of mineral extraction (for example lithium, silver, gold, rare earths) from geothermal fluids and how can it be realised?	Proposals must be of 4 years' duration.
<b><i>Energy resources</i></b>		
New Zealand's geothermal potential	How can we better understand and model multiple geothermal systems, the interactions between them and their sustainability through the use of geophysical, geochemical and, in particular, numerical modelling tools?	Proposals must be of 4 years' duration.
Improving industry energy efficiency	In the context of industry efficiency research, what research initiatives will provide the greatest impact in energy savings and greenhouse gas reductions for New Zealand industry? Research may include direct heat and / or process heat applications.	Proposals must be of 3 years' duration.  Proposals must not relate to on-farm (including in-forest and in-orchard activities), small business, residential or transport energy efficiency applications.

## Schedule 2

### High-Value Manufacturing and Services Research Fund

Proposals for funding out of the High-Value Manufacturing and Services Research Fund may be considered in the 2013 science investment round under the following Investment Mechanisms:

- Phase 1 Smart Ideas – proposals must be for research, science, and technology, or related activities in areas described under the heading “Nature of the Fund” in the High-Value Manufacturing and Services Research Fund section of the notice entitled “Description of Funds within Vote RS&T”, published in the Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200.
- Enabling Technologies – proposals must be for research, science, and technology, or related activities:
  - in one or more of the areas listed in the “Investment priorities” column of the table below; and
  - directed towards answering the research question listed in the “Research question” column of the table below;

Investment priorities	Research question	Other requirements
<b>Novel materials, manufacturing, and applications</b> New products and services created by transforming materials and/or automating production, and improved efficiencies in production from new engineering tools or processes.	How can we accelerate the development of one or more integrated, multidisciplinary technology platforms that will: <ul style="list-style-type: none"> <li>• provide a core of expertise, knowledge and relevant infrastructure;</li> <li>• be responsive to industry needs; and</li> <li>• provide significant economic benefit to New Zealand?</li> </ul>	Proposals must be of 4 to 6 years' duration
<b>Information and communication technologies (ICT)</b> Productivity improvement tools, data management tools, communications technologies and digital tools for creativity.		
<b>Medical and health technologies</b> New and emerging technologies that impact on human health and wellbeing. This includes diagnostic and imaging devices, health IT, drug discovery and delivery systems, and assistive and rehabilitative devices. Health services research is not included.		
<b>Agritechnologies</b> New and emerging technologies based on New Zealand's expertise in the agriculture and other primary sectors, particularly those technologies that exploit crossovers between agriculture and new materials, information and communications technologies, and health technologies.		

### Schedule 3

#### Biological Industries Research Fund

Proposals for funding out of the Biological Industries Research Fund may be considered in the 2013 science investment round under the following Investment Mechanisms:

- Phase 1 Smart Ideas - proposals must be for research, science, and technology, or related activities in areas described under the heading “Nature of the Fund” in the Biological Industries Research Fund section of the notice entitled “Description of Funds within Vote RS&T”, published in the Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200.
- Enabling Technologies – proposals must be for research, science, and technology, or related activities:
  - in the “protection and risk management” area listed in the “Investment priorities” column of the table below; and
  - directed towards answering the corresponding research question listed in the “Research questions” column of the table below.
- Targeted Research – proposals must be for research, science, and technology, or related activities:
  - in one or more of the areas listed in the “Investment priorities” column of the table below, except the “protection and risk management” area; and
  - directed towards answering one or more of the corresponding research questions listed in the “Research questions” column of the table below.

Investment priorities	Research questions	Other requirements
Improving the competitive advantage of existing export goods and services <i>(Targeted Research only)</i>	How can we improve the competitive advantage of, and returns from, export species of greater than \$150 million (fresh and processed state) worth of exports per year to ensure that our current primary-based production remains competitive, is sustainable, and can grow?	Proposals must be of 4 to 6 years' duration.  If a proposal covers more than one investment priority and/or more than one research question within an Investment Mechanism, it must include a separate impact statement for each research question.  Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.  Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.
New value-add export goods and services <i>(Targeted Research only)</i>		In all three areas proposals must focus on new goods or services that have the potential to form the basis of an export industry that: <ul style="list-style-type: none"> <li>• has an expected growth rate to meet the Business Growth Agenda target (between 5.5 to</li> </ul>

Investment priorities	Research questions	Other requirements
		<p>7.0% per year compounding); and</p> <ul style="list-style-type: none"> <li>the ability to grow to an export industry worth at least \$200 million per year by 2030.</li> </ul>
	<p><b><i>Industrial or consumer products</i></b></p> <p>How can we support the development of industrial or consumer products (which may include processes for their production) that sell at premium prices?</p>	<p>Proposals must be of 3 to 6 years' duration.</p> <p>If a proposal covers more than one investment priority and/or more than one research question within an Investment Mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>
	<p><b><i>Foods for health products or ingredients</i></b></p> <p>How can we support the development of foods for health products or ingredients (which may include processes for their production) that sell due to health benefits based on high-quality science?</p>	<p>Proposals must be of 4 to 6 years' duration.</p> <p>Proposals must not be for work on the discovery or validation of new biomarkers.</p> <p>If a proposal covers more than one investment priority and/or more than one research question within an Investment Mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>



Investment priorities	Research questions	Other requirements
	<p><b><i>Emerging industries based on established minor species</i></b></p> <p>How can we support the growth of exports, based on a current minor species in New Zealand, to over \$200 million per year in export earnings by 2030?</p>	<p>Proposals must be of 4 to 6 years' duration.</p> <p>Species in proposals must:</p> <ul style="list-style-type: none"> <li>• currently account for exports of less than \$150 million per year (combined fresh and processed state); and</li> <li>• have been piloted in a New Zealand-based production trial or used in commercial production.</li> </ul> <p>If a proposal covers more than one investment priority and/or more than one research question within an Investment Mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>
<p>Protection and risk management</p> <p><i>(Enabling Technologies only)</i></p>	<p>How can we protect or mitigate risks to New Zealand's industries or improve access to export markets?</p>	<p>Proposals must be of 4 to 6 years' duration.</p> <p>A proposal addressing this research question may not address any other research question in the same proposal.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>
<p>Market development</p> <p><i>(Targeted Research only)</i></p>	<p>How can we improve New Zealand industries' understanding of consumer behaviour, trends, or supply chains to inform business decisions in the relevant industry or industries?</p>	<p>Proposals must be of 2 to 3 years' duration.</p> <p>Proposals must relate to business decisions relating to market entry,</p>

Investment priorities	Research questions	Other requirements
		<p>modifying goods and services or making investments.</p> <p>Proposals must not relate to:</p> <ul style="list-style-type: none"> <li>• market research for specific firms on: <ul style="list-style-type: none"> <li>○ the feasibility of selling new goods and services;</li> <li>○ selling existing goods and services; or</li> </ul> </li> <li>• market research on specific goods or services.</li> </ul> <p>If a proposal covers more than one investment priority and/or more than one research question within an Investment Mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>
<p>International linkages with Singapore</p> <p><i>(Targeted Research only)</i></p>	<p>How could new or existing international linkages with Singapore improve the ability to undertake, or the quality of, research programmes relating to foods for health products or ingredients that sell due to health benefits?</p>	<p>Proposals must be of 2 years' duration only.</p> <p>The Science Board may allocate no more than \$500,000 per year for each proposal.</p> <p>Funding is only available for linkages that are likely to strengthen relationships with Singapore relating to research on foods for health products or ingredients.</p> <p>If a proposal covers more than one investment priority and/or more than one research question within an investment mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori</p>

Investment priorities	Research questions	Other requirements
		<p>organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>
<p>Food for health biomarkers from existing data (<i>Targeted Research only</i>)</p>	<p>How can health claims for food (ie for the prevention of disease and/or enhancement of human health and/or human development) be substantiated using biomarkers obtained from the compilation and collation of existing published data?</p> <p>(A biomarker is anything that can be used as an indicator of a particular disease or physiological state. Biomarkers can be specific cells, molecules, genes, enzymes, hormones or measurable indicators such as respiratory state. Complex organ functions or general characteristic changes in biological structures can also serve as biomarkers. Biomarkers help in areas such as early diagnosis and disease prevention.)</p>	<p>Proposals must be of 1 year's duration only.</p> <p>Proposals must not be for work on the discovery or validation of new biomarkers.</p> <p>If a proposal covers more than one investment priority and/or more than one research question within an investment mechanism, it must include a separate impact statement for each research question.</p> <p>Proposals must specify how stakeholders, including Māori organisations where relevant, were involved in scoping and setting the direction of the research in the proposal.</p> <p>Proposals must specify how researchers will work with those stakeholders to ensure they are able to utilise the research results.</p>

## Schedule 4

### Health and Society Research Fund

The following priorities relate only to the Society component of the Health and Society Research Fund. The Health component of the fund is managed by the Health Research Council.

Proposals for funding out of the Health and Society Research Fund may be considered in the 2013 science investment round under the following Investment Mechanism:

- Targeted Research – proposals must be for research, science, and technology, or related activities:
  - in one of the areas listed in the “Investment priorities” column of the table below; and
  - directed towards answering the corresponding research questions listed in the “Research questions” column of the table below.

Investment priorities	Research questions	Other requirements
Benefiting from the diversity of 21st century New Zealanders	<p>How can we prepare for and make the most of the projected changes in demographic structure of the New Zealand population – including increased numbers of older adults, high birth rates among Māori and Pasifika, and a high proportion of educated migrants?</p> <p>In particular:</p> <ul style="list-style-type: none"> <li>• What are the social and economic impacts and consequences of these emerging population changes?</li> <li>• What determines the effectiveness of societal institutions and their interactions in responding to these changes?</li> </ul>	<p>Proposals must confirm that co-funding by direct in-kind contributions has been secured.</p> <p>Proposals must:</p> <ul style="list-style-type: none"> <li>• be of 3 years’ duration (or 4 years if the Science Board considers there are exceptional circumstances warranting the extended time);</li> <li>• provide a brief literature review of the field and demonstrate how the research will leverage existing research findings, partnerships, or datasets, as appropriate;</li> <li>• explicitly outline what steps will be taken to ensure that research is carried out in an inclusive and mana-enhancing way – ie not “on” but “with” participants;</li> <li>• specify an explicit path from research into deliverables such as policy changes, programmes, tools or other forms of uptake; and</li> <li>• demonstrate that stakeholders, including Māori organisations where relevant, were actively involved in setting the priorities of the work programme to ensure that it:</li> </ul>

Investment priorities	Research questions	Other requirements
		<ul style="list-style-type: none"> <li>○ is designed with a clear understanding of end user requirements and likely knowledge uptake throughout the life of the work programme; and</li> <li>○ will be carried out in a manner that enables end users to access and use knowledge generated from the work programme at the earliest opportunity.</li> </ul>
<p>Successful families/whānau – embedding effective practice</p>	<p>How do we enable families/whānau to succeed to ensure that all New Zealand children fulfil their potential? What are the critical causal influences on positive outcomes for family/whānau, and are there connections between them? How do these critical influences differ for “family” and “whānau”?</p> <p>Proposed research should address one or both of the following:</p> <ul style="list-style-type: none"> <li>• What are the critical factors or leverage points that policy and services agencies must influence favourably as they interact and collaborate with each other and with families/whānau to enable positive outcomes? How can efforts directed towards these critical factors be sustained over time?</li> <li>• How can hard-to-reach populations be supported to connect to and uptake services, including those offered by community or iwi?</li> </ul>	<p>Proposals must confirm that co-funding by direct in-kind contributions has been secured.</p> <p>Proposals must:</p> <ul style="list-style-type: none"> <li>• be of 3 years’ duration (or 4 years if the Science Board considers there are exceptional circumstances warranting the extended time);</li> <li>• provide a brief literature review of the field and demonstrate how the research will leverage existing research findings, partnerships, or datasets, as appropriate;</li> <li>• explicitly outline what steps will be taken to ensure that research is carried out in an inclusive and mana-enhancing way – ie not “on” but “with” participants;</li> <li>• specify an explicit path from research into deliverables such as policy changes, programmes, tools or other forms of uptake; and</li> <li>• demonstrate that stakeholders, including Māori organisations where relevant, were actively involved in setting the priorities of the work programme to ensure that it: <ul style="list-style-type: none"> <li>○ is designed with a clear understanding of end user requirements and likely knowledge uptake throughout the life of the work programme; and</li> </ul> </li> </ul>

Investment priorities	Research questions	Other requirements
		<ul style="list-style-type: none"> <li>○ will be carried out in a manner that enables end users to access and use knowledge generated from the work programme at the earliest opportunity.</li> </ul>
<p>Building on known successes in societal research</p>	<p>Efficacy of research for societal intervention: How can we extract maximum benefit from the evidence base of existing research on societal issues and interventions to inform policy and practice?</p> <p>The proposed research project must generate one or more formal methodologies for assessing the quality of evidence about a societal topic or value of an intervention.</p> <p>The methodology must:</p> <ul style="list-style-type: none"> <li>• be demonstrated by a review of available New Zealand and relevant international research;</li> <li>• have wide applicability;</li> <li>• use cross-disciplinary and cross-issue search criteria (ie across various societal sectors); and</li> <li>• indicate how the findings might best direct future research.</li> </ul>	<p>Proposals must confirm that co-funding by direct in-kind contributions has been secured.</p> <p>Proposals must:</p> <ul style="list-style-type: none"> <li>• be of 2 to 3 years' duration;</li> <li>• provide a brief literature review of the field and demonstrate how the research will leverage existing research findings, partnerships, or datasets, as appropriate;</li> <li>• explicitly outline what steps will be taken to ensure that research is carried out in an inclusive and mana-enhancing way – ie not “on” but “with” participants;</li> <li>• specify an explicit path from research into deliverables such as policy changes, programmes, tools or other forms of uptake; and</li> <li>• demonstrate that stakeholders, including Māori organisations where relevant, were actively involved in setting the priorities of the work programme to ensure that it:               <ul style="list-style-type: none"> <li>○ is designed with a clear understanding of end user requirements and likely knowledge uptake throughout the life of the work programme; and</li> <li>○ will be carried out in a manner that enables end users to access and use knowledge generated from the work programme at the earliest opportunity.</li> </ul> </li> </ul>

**Schedule 5****Environmental Research Fund**

Because funding out of the Environmental Research Fund will not be allocated by a science-led contestable process an alternative document rather than a request for proposals will be issued.

Proposals for funding out of the Environmental Research Fund may be considered in the 2013 Sandpit round under the Sandpit Tool. Proposals must be for research, science, and technology, or related activities:

- in one of the areas listed in the “Investment priorities” column of the table below; and
- directed towards answering the corresponding research question listed in the “Research questions” column of the table below.

<b>Investment priorities</b>	<b>Research questions</b>	<b>Other requirements</b>
Terrestrial biodiversity and biosecurity	What methods of, or improvements to, biodiversity and ecosystem service measurement and reporting will best serve New Zealand?	Proposals must be of 2 to 6 years' duration.
Freshwater objectives, limits and responses	How can we address gaps in the national freshwater management framework around objectives, limits and responses?	Proposals must be of 2 to 6 years' duration.

## Criteria for Proposals for Science-led Contestable Funding

### 1 NOTICE TO THE SCIENCE BOARD

In this notice, I:

- (a) specify that the Science Board is to make funding decisions on proposals for Science-led contestable funding under section 10(3)(b) of the Research, Science, and Technology Act 2010; and
- (b) set the criteria for the assessment of proposals for Science-led contestable funding under section 8(1) of the Research, Science, and Technology Act 2010.

### 2 GENERAL POLICY OBJECTIVE

The general policy objective of Science-led contestable funding is to fund research, science, and technology, and related activities that have the potential to:

- (a) enhance the productivity of established industries;
- (b) generate new industries for New Zealand;
- (c) add new value to public services in New Zealand; or
- (d) develop world-leading technological capabilities by supporting programmes of research, science, and technology, and related activities to develop technology able to support a range of applications, products, and services.

### 3 VISION MĀTAURANGA POLICY

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 wellbeing; and
- (d) Mātauranga – exploring indigenous knowledge and science and innovation.

### 4 SCIENCE BOARD TO MAKE DECISIONS ON PROPOSALS FOR SCIENCE-LED CONTESTABLE FUNDING

4.1 The Science Board will make funding decisions on proposals for Science-led contestable funding.

4.2 In making funding decisions on proposals for Science-led contestable funding, the Science Board may allocate funds from the following research funds:

- (a) Biological Industries
- (b) High-Value Manufacturing and Services
- (c) Energy and Minerals
- (d) Environmental
- (e) Hazards and Infrastructure
- (f) Health and Society.

4.3 The Science Board must make funding decisions on proposals for Science-led contestable funding in accordance with:



- (a) the Public Finance Act 1989 and the relevant Appropriation Acts for Vote Science and Innovation;
- (b) the criteria set out in the notice entitled “Description of Funds within Vote RS&T”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200; and
- (c) the criteria specified in the relevant schedule to this notice.

**5 GENERAL ELIGIBILITY CRITERIA FOR SCIENCE-LED CONTESTABLE FUNDING PROPOSALS**

5.1 For a proposal to be assessed against the criteria in clause 6, the proposal must:

- (a) be made by a research organisation;
- (b) not be solely for the benefit of the research organisation;
- (c) be for research, science, and 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, and technology, or related activities being proposed to be undertaken overseas; and
- (d) meet any eligibility criteria specified in the relevant schedule to this notice.

5.2 For the purposes of clause 5.1(a), “research organisation” means an organisation that has internal capability for carrying out research, science and technology, and related activities.

**6 ASSESSMENT CRITERIA FOR SCIENCE-LED CONTESTABLE FUNDING PROPOSALS**

A proposal that has been assessed as eligible for Science-led contestable funding under clause 5 must be assessed having regard to the following criteria:

- (a) the assessment criteria specified in the relevant schedule to this notice;
- (b) the extent to which the proposal is likely to:
  - (i) achieve the general policy objective of Science-led contestable funding;
  - (ii) unlock the science and innovation potential of Māori knowledge, resources and people, in accordance with the aim of the Vision Mātauranga policy, in achieving the general policy objective of Science-led contestable funding; and
- (c) the extent to which the proposal is likely to achieve the specific policy objectives specified in the relevant schedule to this notice;
- (d) the extent to which the proposal is likely to achieve the objectives of the relevant research fund set out in the notice entitled “Description of Funds within Vote RS&T”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200; and
- (e) how the proposal contributes to the overall mix of investments in respect of each research fund, including the extent to which the overall mix of investments:
  - (i) is likely to best achieve the objectives referred to in clause 6(b)–(d); and
  - (ii) will ensure that funding is not concurrently provided in respect of any two or more programmes of research, science, and technology, or related activities that are the same or substantially similar (whether those programmes are part of a new proposal or are already being funded); and
  - (iii) will minimise the risk that an applicant will not be able to undertake the relevant programme of research, science, and technology, or related activities because the applicant, or any person involved in delivering the programme, would concurrently be committed to one or more other

programmes (whether those programmes are part of a new proposal or are already being funded).

## **7 REVOCATION OF PREVIOUS NOTICES**

The following notices are revoked:

- (a) The notice entitled “Science Board – Criteria for assessing proposals for specified Research, Science and Technology funding”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 193; and
- (b) the notice entitled “Criteria for Proposals for Science-led Contestable Funding”, *New Zealand Gazette*, 15 December 2011, No. 193, page 5657.

Dated at Wellington this 30th day of November 2012.

HON STEVEN JOYCE, Minister of Science and Innovation.

## **Schedule 1**

### **Smart Ideas Investment Mechanism**

#### **1 Specific policy objectives**

- 1.1 Smart Ideas is designed to drive innovation and an entrepreneurial culture in the research community. Supporting novel ideas and emerging capability in research, science, and technology, and related activities refreshes the national science portfolio.
- 1.2 Smart Ideas is intended to:
  - (a) support basic discovery of, or applied research into, novel, promising ideas; and
  - (b) provide early guidance to researchers on positioning research, science, and technology, or related activities for successful application or commercialisation; and
  - (c) attract proposals from, and support, early career researchers in addition to more experienced researchers.
- 1.3 Subject to clause 2.2, Smart Ideas funding is available in two phases: a research phase ("Phase 1") and an application phase ("Phase 2"). The objectives of each phase are as follows:
  - (a) The objective of Phase 1 is investigative, in that it aims to use an innovative approach to develop new knowledge that will solve a problem, fulfil a need, or prove a hypothesis. While proposals should identify the potential application and benefits of the idea, the implementation pathway or user relationships may be relatively unformed.
  - (b) The objective of Phase 2 is to encourage applicants to move towards research, science, and technology, or related activities that will help apply the idea to achieve its market potential.

#### **2 Specific eligibility criteria**

- 2.1 To be eligible for funding under the Smart Ideas investment mechanism in either Phase 1 or Phase 2, the applicant must have committed to:
  - (a) receiving advice or mentoring from an entrepreneur or similar commercialisation specialist to aid commercial positioning, or from an end-user or service provider who could potentially apply the results of the research, science, and technology, or related activities; and
  - (b) ensuring that some market or user needs analysis will be undertaken or sourced during the programme to aid its positioning.
- 2.2 A proposal is eligible for Smart Ideas funding of up to \$500,000 (excluding GST) per year for up to two years in Phase 2 only if the proposed research, science, and technology, or related activities are directly connected to research that received Smart Ideas funding in Phase 1.

#### **3 Specific assessment criteria**

A proposal for Smart Ideas funding that has been assessed as meeting the eligibility criteria for Science-led contestable funding must be assessed against the following specific assessment criteria, and each assessment criterion must be weighted as set out below:

### Specific Assessment Criteria for Smart Ideas Phase 1 Funding

Benefits to New Zealand	Risk Management or Success Factors
<b><i>Outcome benefits to New Zealand</i></b> <b><i>Key Question:</i></b> To what extent could the proposed research, science, and technology, or related activities create benefits for New Zealand?	<b><i>Implementation pathway</i></b> <b><i>Key Question:</i></b> To what extent might there be applications or markets for the idea if the idea were successfully developed?
Weighting 10%	Weighting 10%
<b><i>Benefits to New Zealand of research, science and technology, or related activities</i></b> <b><i>Key Questions:</i></b> How novel* is the idea? What is the quality of the proposed research, science, and technology, or related activities?	<b><i>Ability to deliver results (outputs) from research, science, and technology, or related activities</i></b> <b><i>Key Question:</i></b> What is the likelihood that the proposed outputs of the research, science, and technology, or related activities will be achieved?
Weighting 55%	Weighting 25%

\*See clause 4.2 of this schedule for information about what constitutes a novel idea for the purpose of this schedule.

### Specific Assessment Criteria for Smart Ideas Phase 2 Funding

Benefits to New Zealand	Risk Management or Success Factors
<b><i>Outcome benefits to New Zealand</i></b> <b><i>Key Question:</i></b> To what extent could the proposed research, science, and technology, or related activities create benefits for New Zealand?	<b><i>Implementation pathway</i></b> <b><i>Key Question:</i></b> To what extent does the proposal identify market opportunities for the idea?
Weighting 25%	Weighting 25%
<b><i>Benefits to New Zealand of research, science and technology, or related activities</i></b> <b><i>Key Questions:</i></b> How novel* is the idea? What is the quality of the proposed research, science, and technology, or related activities?	<b><i>Ability to deliver results (outputs) from research, science, and technology, or related activities</i></b> <b><i>Key Question:</i></b> What is the likelihood that the proposed outputs of the research, science, and technology, or related activities will be achieved?
Weighting 30%	Weighting 20%

\*See clause 4.2 of this schedule for information about what constitutes a novel idea for the purpose of this schedule.

**4 Other criteria**

- 4.1 The Science Board may allocate no more than \$500,000 (excluding GST) per year for up to two years for each Phase.
- 4.2 When considering the novelty of ideas under this schedule, the Science Board must consider:
  - (a) the novelty of the relevant idea itself rather than the novelty of the application of the idea (for example, an obvious extension of previous research, science, and technology, or related activities is not a novel idea for the purposes of this schedule); and
  - (b) novelty globally rather than merely in relation to New Zealand.

## Schedule 2

### Enabling Technologies Investment Mechanism

#### 1. Specific policy objectives

##### 1.1 Enabling Technologies is designed to:

- (a) support the development and application of generic technologies that have the potential to be applied in a number of different ways by a number of disparate users across New Zealand's scientific, business or other communities;
- (b) accelerate the development of technology platforms that will lead to the development of the technologies described in clause 1.1(a) of this schedule;
- (c) support the technology platforms' short-term, medium-term or long-term development needs and help them build a core of expertise, knowledge and relevant infrastructure;
- (d) fund research, science, and technology, or related activities that are:
  - (i) purpose-driven and aligned with national priorities that generate economic, environmental or social benefits for New Zealand; and
  - (ii) likely to involve knowledge-transfer and co-ordination between participants linked to the proposed activities;
- (e) build on New Zealand's existing capability to undertake research, science, and technology, or related activities so there are not long start-up periods before impacts begin to accrue;
- (f) support proposals that are closely aligned or partnered with users, including industry, so that pathways to development of tangible outcomes of benefit to New Zealand are incorporated from the outset;
- (g) involve an integrated and multidisciplinary mix of "fit-for-purpose" research, science, and technology, and related activities that includes the expertise, capabilities and infrastructure required to deliver results (ie encompassing all stages of research from basic-targeted to applied); and
- (h) support proposals that include, if appropriate, strong international links so there is both rapid absorption of relevant and applicable overseas knowledge and expansion of New Zealand's market potential, while ensuring appropriate safeguards for New Zealand's intellectual property.

##### 1.2 For the purposes of this schedule, a "technology platform" is a critical mass of capabilities and equipment that is responsive to industry needs and that provides the means to enhance the performance and capabilities of the users.

#### 2. Specific assessment criteria

A proposal for Enabling Technologies funding that has been assessed as meeting the eligibility criteria for Science-led contestable funding must be assessed against the following specific assessment criteria, which are all weighted equally:

Benefits to New Zealand	Risk Management or Success Factors
<p><b><i>Outcome benefits to New Zealand</i></b></p> <p><b><i>Key Questions:</i></b></p> <p>To what extent would the proposed research, science, and technology, or related activities create benefits for New Zealand?</p> <p>To what extent are there multiple opportunities arising from the technology platform?</p>	<p><b><i>Implementation pathway</i></b></p> <p><b><i>Key Question:</i></b></p> <p>To what extent does the proposal provide for engagement across multiple users and potential or proposed implementation through multiple channels, having regard for the stage of the development of the enabling technology?</p>
<p><b><i>Benefits to New Zealand of research, science, and technology, or related activities</i></b></p> <p><b><i>Key Questions:</i></b></p> <p>What is the quality of the proposed research, science, and technology, or related activities?</p> <p>To what extent could the proposed research, science, and technology, or related activities develop a platform of underpinning, enabling technologies that have multiple applications and many connections across science and business?</p> <p>To what extent would the proposed research, science, and technology, or related activities generate new knowledge?</p>	<p><b><i>Ability to deliver results (outputs) from research, science, and technology, or related activities</i></b></p> <p><b><i>Key Question:</i></b></p> <p>What is the likelihood that the proposed outputs of the research, science, and technology, or related activities will be achieved?</p>

### 3 Other criteria

The Science Board may allocate funding under the Enabling Technologies investment mechanism only:

- (a) in medium to large scale funding amounts of between \$1.5 and \$3 million (excluding GST) per year for up to six years; or
- (b) in lower value sector development funding amounts of under \$250,000 (excluding GST) to assist the applicant in developing its engagement with a sector in order to realise the commercial potential of its research, science, and technology, or related activities.

### Schedule 3

## Targeted Research Investment Mechanism

### 1 Specific policy objectives

- 1.1 Targeted Research is designed to support purpose-driven research, science, and technology, and related activities aligned with national priorities that generate economic, environmental or social benefits for New Zealand. To increase the impact of the national science portfolio, knowledge transfer is an important part of such programmes of research, science, and technology, or related activities.
- 1.2 Targeted Research addresses New Zealand's strategic needs, challenges and opportunities.

### 2. Specific assessment criteria

A proposal for Targeted Research funding that has been assessed as meeting the eligibility criteria for Science-led contestable funding must be assessed against the following specific assessment criteria, which are all weighted equally:

Benefits to New Zealand	Risk Management or Success Factors
<p><b><i>Outcome benefits to New Zealand</i></b></p> <p><b><i>Key Question:</i></b></p> <p>To what extent would the proposed research, science, and technology, or related activities create benefits for New Zealand?</p>	<p><b><i>Implementation Pathway</i></b></p> <p><b><i>Key Question:</i></b></p> <p>To what extent does the proposal have a credible pathway to implementation?</p>
<p><b><i>Benefits to New Zealand of research, science, and technology, or related activities</i></b></p> <p><b><i>Key Questions:</i></b></p> <p>What is the quality of the proposed research, science, and technology, or related activities?</p> <p>To what extent would the proposed research, science, and technology, or related activities generate new knowledge?</p>	<p><b><i>Ability to deliver results (outputs) of research, science, and technology, or related activities</i></b></p> <p><b><i>Key Question:</i></b></p> <p>What is the likelihood that the proposed outputs of the research, science, and technology, or related activities will be achieved?</p>



## Criteria for Proposals Generated by a Sandpit Process

### 1. NOTICE TO THE SCIENCE BOARD

In this notice, I:

- (a) specify that the Science Board is to make funding decisions on proposals generated by a Sandpit process under section 10(3)(b) of the Research, Science, and Technology Act 2010; and
- (b) set the criteria for the assessment by the Science Board of proposals generated by a Sandpit process under section 8(1) of the Research, Science, and Technology Act 2010.

### 2. GENERAL POLICY OBJECTIVE

- 2.1 The general policy objective of this notice is to fund research, science, and technology, and related activities that have the potential to:

- (a) enhance the productivity of established industries;
- (b) generate new industries for New Zealand;
- (c) add new value to public services in New Zealand; or
- (d) develop world-leading technological capabilities by supporting programmes of research, science, and technology, and related activities to develop technology able to support a range of applications, products, and services.

- 2.2 A Sandpit process is a process used to reach a consensus view on proposals for funding research, science, and technology, and related activities, when the amount of funding available does not justify a full contestable process. It involves bringing together expert researchers and end users for a specified period of facilitated discussions to generate one or more high-quality, collaborative, multi-disciplinary proposals to undertake research, science, and technology, or related activities that are directed towards solving defined problems, taking advantage of identified opportunities, or otherwise meeting investment objectives.

### 3. VISION MĀTAURANGA POLICY

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 wellbeing; and
- (d) mātauranga – exploring indigenous knowledge and science and innovation.

### 4. SCIENCE BOARD TO MAKE DECISIONS ON PROPOSALS GENERATED BY A SANDPIT PROCESS

- 4.1 The Science Board will make funding decisions on proposals for funding generated by a Sandpit process.

- 4.2 In making funding decisions on proposals generated by a Sandpit process, the Science Board may allocate funds from any of the following research funds:

- (a) Biological Industries
- (b) High-Value Manufacturing and Services

- (c) Energy and Minerals
  - (d) Environmental
  - (e) Hazards and Infrastructure
  - (f) Health and Society.
- 4.3 The Science Board must make funding decisions on proposals generated by a Sandpit process in accordance with:
- (a) the Public Finance Act 1989 and the relevant Appropriation Acts for Vote Science and Innovation; and
  - (b) the criteria set out in the notice entitled "Description of Funds within Vote RS&T", Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200.

## 5. ELIGIBILITY CRITERIA

- 5.1 For a proposal to be assessed against the criteria in clause 6, the proposal must:
- (a) be made by one or more research organisations;
  - (b) if made wholly or partly by a private research organisation, not be solely for the benefit of that organisation;
  - (c) be for research, science, and 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, and technology, or related activities being proposed to be undertaken overseas;
  - (d) be a collaborative, multi-disciplinary proposal for research, science, and technology, or related activities, that:
    - (i) contains a clear definition of the research, science, and technology, or related activities to be undertaken, and
    - (ii) has been generated using a Sandpit process; and
  - (e) be for funding of no more than \$3,000,000 (excluding GST) per annum.
- 5.2 For the purposes of clause 5.1(a), "research organisation" means an organisation that has internal capability for carrying out research, science, and technology, and related activities.

## 6. CRITERIA FOR PROPOSALS GENERATED BY A SANDPIT PROCESS

A proposal that has been assessed as eligible under clause 5 must be assessed having regard to the following criteria:

- (a) the following assessment criteria, which are all weighted equally:

Benefits to New Zealand	Risk Management or Success Factors
<p><b><i>Outcome benefits to New Zealand</i></b></p> <p><b><i>Key Question:</i></b></p> <ul style="list-style-type: none"> <li>To what extent may the proposed research, science, and technology, or related activities create benefits for New Zealand?</li> </ul>	<p><b><i>Implementation Pathway</i></b></p> <p><b><i>Key Question:</i></b></p> <ul style="list-style-type: none"> <li>To what extent does the proposal have a credible pathway to implementation?</li> </ul>

Benefits to New Zealand	Risk Management or Success Factors
<p><b>Benefits to New Zealand of research, science, and technology, or related activities</b></p> <p><b>Key Questions:</b></p> <ul style="list-style-type: none"> <li>• What is the quality of the proposed research, science, and technology, or related activities?</li> <li>• To what extent will the proposed research, science, and technology, or related activities generate new knowledge?</li> </ul>	<p><b>Ability to deliver results (outputs) of research, science, and technology, or related activities</b></p> <p><b>Key Question:</b></p> <ul style="list-style-type: none"> <li>• What is the likelihood that the proposed research outputs of the research, science, and technology, or related activities will be achieved?</li> </ul>

- (b) the extent to which the proposal is likely to:
- achieve the general policy objective in clause 2.1;
  - unlock the science and innovation potential of Māori knowledge, resources and people, in accordance with the aim of the Vision Mātauranga policy, in achieving the general policy objectives in clause 2.1; and
- (c) the extent to which the proposal is likely to achieve the objectives of the relevant research fund set out in the “Description of Funds within Vote RS&T”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200.

## 7 REVOCATION AND AMENDMENT OF PREVIOUS NOTICES

7.1 The notice entitled “Long-term non-contestable funding”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 195, is revoked.

7.2 The notice entitled “Description of Funds within Vote RS&T”, Supplement to the *New Zealand Gazette*, 31 January 2011, No. 9, page 200, is amended by replacing the following paragraph where it appears on pages 201, 202, 204, 205, 207 and 208:

- “• **Long-term non-contestable funding** — using non-contestable processes to invest in RS&T and related activities.”

with the following paragraphs:

- “• **Sandpit process funding** — using Sandpit processes to invest in RS&T and related activities.
- **Capability in Independent Research Organisations funding** — supporting nationally significant capability in independent research organisations that has the potential to contribute to major benefits or the mitigation of major risks.”

Dated at Wellington this 23rd day of November 2012.

HON STEVEN JOYCE, Minister of Science and Innovation.